The
Intelligence Revolution
A Historical Perspective

Proceedings
of the
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Preface

It is commonplace within and outside the intelligence community to acknowledge the predominant role of technology in the collection, dissemination, and even analysis of information. With roots traceable to events in the late 1800s, this technological phenomenon loomed ever larger in the twentieth century. The increasing reliance on photographic, signals, and electronic intelligence has been viewed with varying degrees of celebration and concern by scholars and intelligence professionals.

This volume contains the essays and commentaries originally presented at the Thirteenth Military Symposium held to address this topic at the United States Air Force Academy from October 12 to 14, 1988. The participants in the conference attempted to provide a preliminary evaluation of the transformations that have occurred within the military intelligence community as a consequence of the Second World War. Not only did that conflict accelerate advances in technical means of collection, it also led to an international willingness to share intelligence on an unprecedented scale. The years 1939-1945 therefore witnessed a true "revolution" in intelligence collection and cooperation. That war also caused an interrelated growth in organizational size, efficiency, and sophistication that helped gain the craft of intelligence an acceptance in operational circles that it had not previously enjoyed.

While this intelligence story is one of significant individual and corporate achievement, nearly all the participants in this conference reminded listeners of the inherent limitations of research into aspects of the subject that remain sensitive for today's national security. That is the salient lesson of these essays. Access to intelligence source material is limited and historians are often frustrated with conditions that necessitate less than full disclosure on many subjects. Nevertheless, with the growing awareness by the public of both the high cost of technology and the central role of intelligence in the national decisionmaking process, the citizenry can legitimately argue its own "need-to-know." An assessment of the role and importance of intelligence—and the effectiveness of the attendant technologies—can clearly benefit from the objective perspective of the historian.

The Symposium in Military History is a biennial event jointly sponsored by the Air Force Academy's Department of History and its Association of Graduates. It provides a public forum for academic scholars, military professionals, Academy cadets, and concerned citizens to exchange ideas on military affairs and military history.

Symposia of this scale and complexity are never realized without the

individual and collective contributions of many people and organizations. From the beginning of the symposium series in 1967, successive meetings have been devoted to a specific topic chosen for the occasion. The subject for this symposium was the brainchild of Maj. Bill Williams, an Air Force intelligence officer and history instructor at the Academy. Special thanks are owed to all those who offered their knowledge and wisdom in developing the program. Lt. Gen. Charles R. Hamm, Superintendent of the Academy, and Brig. Gen. Erlind G. Royer, Dean of the Faculty, deserve special recognition for their commitment and support of this event. As in the past, the Association of Graduates, the George and Carol Olmsted Foundation, and the Major Donald R. Backlund Memorial Fund provided generous financial assistance. The officers and staff of the Academy's Department of History were indispensable to the success of the symposium. Lt. Col. Harry Borowski and Lt. Col. Bryant Shaw provided important leadership during the formative stages of organization, and Col. Carl Reddel, Lt. Col. Phil Meilinger, Maj. Mark Clodfelter, and Capt. Lorry Fenner were the executive overseers and implementers for all phases of the actual conference. The professionalism and hard work of all members of the department ensured the meeting's success.

Bringing the record of the conference to published form was yet another formidable task. Mrs. Christy Whale, Mrs. Nellie Dykes, Mr. James Shatto, Mrs. Zoreen Cruise, and Mr. Antonio M. Rodriguez gave their expert typing support in preparing the manuscript for publication. Special thanks go to the individual contributors who made this volume possible. The views and interpretations contained in each essay are those of the author and do not necessarily reflect the official position of the United States Air Force. Indebted as I am to all those who gave so much of their time and effort to make this volume a reality, responsibility for all errors is mine alone.

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**The Thirty-first
Harmon Memorial Lecture
in Military History**

Thirty-first Harmon Memorial Lecture
World War II: An Intelligence Revolution
Sir Harry Hinsley

In the Second World War, if we leave aside the information they obtained by overt means from embassies, the Press, the radio and other such channels, governments received their intelligence from four sources:

1. Physical contact in the form of captured documents, the censorship of mail and the interrogation of prisoners;
2. Espionage;
3. Aerial reconnaissance, particularly aerial photographic reconnaissance; and
4. Signals intelligence, SIGINT for short.

About these four sources we should note two preliminary points. Essentially, each of them had always existed. There never was a time when governments did not avail themselves of censorship, captures, prisoners and spies; aerial reconnaissance was old-fashioned reconnaissance greatly extended by the development of flying since the beginning of this century; SIGINT, in the same way, was the product of the marriage of one of the most ancient of crafts—cryptanalysis—with the advent of wireless communication. In the second place, all governments exploited all these sources in World War II or did their best to do so.

To this extent the outbreak of the war was not at once followed by an intelligence revolution, and this was all the more the case because until the autumn of 1941—for the first two years of the war—the intelligence bodies on both sides achieved roughly equal success or failure. To illustrate this point by reference only to SIGINT, the most valuable and prolific of all the sources, British success in breaking the cypher used by the Germans in the April 1940 invasion of Norway and in reading the Luftwaffe's communications from May 1940 was balanced by the fact that the Germans read between 30 and 50 percent of British naval traffic in the North Sea and the Atlantic during 1940, and a considerable amount of the French Army's traffic from the outbreak of war to the fall of France. That the British were reading the high-grade cyphers of the

Italian Army, Navy and Air Force from September 1940 to the end of 1941 was offset by Axis successes during most of that period against equivalent British cyphers in the Mediterranean and Middle East.

Axis successes against British cyphers did not cease at the end of 1941. From January 1942 to June 1943 Germany continued to read many of the codes and cyphers associated with the Atlantic convoys. However, the previous rough equivalence of advantage in SIGINT gave way in the autumn of 1941 to massive Allied superiority. It did so in a process by which, while Axis openings were successively blocked, the Allied penetration of Axis communications, and especially of German communications, was progressively expanded. It was expanded to a degree that had never been achieved before, even in wartime. Leaving aside the decryption of tactical codes and cyphers—confining ourselves to the highest-grade decrypts for which London used the code-name ULTRA and Washington used the code-names ULTRA and MAGIC—the Allies were reading from the end of 1942 between 3,000 and 4,000 German signals a day and a large, but somewhat smaller, volume of Italian and Japanese traffic. Whereas to Germany, Italy, and Japan virtually all the Allied cyphers had by then been made invulnerable.

While SIGINT, as a result of the development of radio, was for the first time in history the most prolific as well as the most reliable intelligence source, and since the possession of it made it possible to maximize the benefits and minimize the defects of the other sources, the scale of this transformation enabled intelligence to exercise an unprecedented influence on the course and outcome of the war. In the longer term, as a direct consequence of that experience, it had a profound and permanent effect on the status and the organization of intelligence. Intelligence is unlikely ever again to return to the age of innocence—to that condition of general neglect interspersed with bursts of belated and amateur endeavor in times of crisis—that had characterized it to the middle of the twentieth century.

How, then, was the transformation brought about? In answering this question nothing is more striking than the extent to which both fortune and foresight, both good luck and good judgment, played their part. This point is best illustrated by the long and tangled history of that achievement which was most central to the transformation—the conquest of the German Enigma machine.

The Enigma was Germany's answer to the problems raised by their wish to most effectively utilize radio in military operations. Impregnable cyphers as well as the capability to cypher and decypher large volumes of confidential signals were necessary. To achieve the advantages of mass production, Germany chose to rely almost exclusively on a single electro-mechanical typing machine, called Enigma, distributing it widely throughout each of the three

services and within such other organizations as the *Abwehr* (the German counterintelligence service), the railways, and the police. By each of its user organizations, however, the machine was adapted to different arrangements and procedures, and each of them operated it with different keys for different functions and in different theaters. Some 250 keys, each constituting a different cypher, were identified during the war, and at no time after 1941 were less than fifty in force concurrently. Because each key was reset daily once war had begun, and as the finding of any setting involved the selection of one out of many millions of possible solutions, the Germans had good reason to feel confident that even in war conditions the Enigma would remain safe against all but local and temporary compromise. And yet the machine was basically, if not irretrievably, compromised as early as 1932, and beginning in May 1940 after an interlude since September 1938, the Allies went on to recover over 180 wartime keys and to read their traffic almost currently.

The prewar compromise owed almost everything to chance or, as the Germans might think, to misfortune. The Poles broke the machine by methods that involved great mathematical ingenuity, but the methods were possible only because in 1931 a German signals officer supplied its operating instructions and settings for periods of some length to the French Secret Service, which passed them to Warsaw. But fortune played a much less central part in the wartime conquest of the Enigma.

The Polish success had been brought to an end in 1938 by the last in a sequence of prewar German security improvements. Despite the invaluable assistance obtained from the Poles, and that from September 1939 the Germans used the machine more heavily in operational conditions, whereas they had previously used it sparsely and mainly for practice traffic, the British did not fully solve any wartime keys—to bring them to the point at which the settings were found daily without great delay—until the spring of 1940, when they mastered the key used in Norway from 10 April and the Luftwaffe's general purpose key from 20 May. Many regional and specialized Luftwaffe keys were thereafter solved, often as soon as they were brought into force; but it is further testimony to the formidable problems presented by the Enigma that no naval keys were solved regularly before June 1941, and no Army keys (with the exception of one on the Russian front from June 1941) till the spring of 1942. Nor need we doubt that but for careful preparations over a long period of time the British authorities would not, even then, have overcome these problems.

Without their foresight in centralizing cryptanalysis on an interdepartmental basis after World War I, in recruiting the best available talents to it from 1938, and not least in recognizing that those talents should be interdisciplinary, the conquest of the Enigma would have been impossible. And while it would have been impossible without brilliant mathematicians, and particularly without their development of machinery of a sophistication the Germans had not allowed for,

it would equally have been impossible without the input of a whole array of nonmathematical ingenuity.

These successes once achieved could not be counted on to continue. They were subject to two threats. The Germans, who had made successive improvements to the security of the Enigma before the war, might continue to do so as a matter of ordinary precaution. Or they might refashion it from suspicion or conviction that it had been radically compromised. Under the pressures of war and in view of the unexpected wide dispersal of their armed forces, the German authorities, with one notable exception, deferred routine precautionary measures until after the middle of 1944. Not until early in 1945, when the Enigma was daily vulnerable to physical compromise, did they take measures in the belief that it was no longer secure. The exception was the U boat Command. In February 1942, motivated initially by suspicion—which was, however, set aside after a professional inquiry—it took the precaution of bringing into force a new Enigma key, one that used an additional wheel and was 26 times more difficult to solve.

The effects of this setback, and of those originating from the burden of solving the ever increasing proliferation of ordinary keys, were offset, though with remarkably small delay, by another of the great developments of World War II. From the spring of 1942 the British and American intelligence bodies created for SIGINT, as for other forms of intelligence, a single organization in which the amalgamation of resources and the division of labor were virtually complete. This joint effort was necessary to sustain success against the Enigma. And as the Allies wrestled after the autumn of 1944 with Germany's adoption of increasingly severe security measures, they had to fear that not even their combined resources would suffice to maintain their critical advantage. As a result of Germany's delay in producing either precautionary measures or drastic revisions, the Allies kept their advantage, and even extended it, down to the end of the war.

It is tempting to attribute this incredible delay by the Germans to their undue confidence in the invulnerability of the Enigma before the war, and to their incompetence and complacency after the war began. But there are good grounds for holding that their original confidence was not unreasonable, and that to think otherwise is to belittle the ingenuity and the versatility of the Allied SIGINT effort. These capabilities were displayed against Japanese and Italian cyphers as well as against Germany's, and against other German cyphers besides the Enigma—most notably against the system Germany introduced for communication between her high-level headquarters in a signaling system based on teleprinter impulses that were automatically cyphered and decyphered on transmission and at the point of reception. The British had broken this system even before it was fully operational, by developing an approximation to the

modern computer. Thus, the argument for wartime German incompetence overlooks some important considerations which must be taken into account if one is to understand the intelligence revolution in this war.

In continuing to make no allowance for the development of machine methods against the Enigma, the Germans were undoubtedly swayed by their own inability to make any progress against Allied machine cyphers and the fact that they had no opportunity to capture them. The danger that they might believe the Enigma had become insecure, if only as a consequence of captures, was contained until almost the end of the war by, on the one hand, the existence of the other intelligence sources and, on the other, exceptionally careful Allied precautions. Oblivious of the Allied possession of ULTRA, but knowing that, like themselves, the Allies exploited the other sources, they attributed to prisoners, deserters, spies or treachery the setbacks they encountered as a result of SIGINT—and all the more so because they were fighting alongside unreliable Allies in occupied countries with hostile populations. The Allies also utilized this situation to conceal their reliance on ULTRA from their own forces by citing the other sources as the basis for operational orders inspired by SIGINT. Concealment from their own forces, however, was only one part of the meticulous system of precautions the Allies evolved to avert the enemy's attention from the use they were making of ULTRA intelligence in their operations.

At some stages in the war—as it happens, with the assistance of Italian machine decrypts as well as of Enigma decrypts—the British were sinking 60 percent of the Axis shipping that plied between the European Mediterranean ports and North Africa, but no Axis ship was attacked before the enemy had learned that it had been sighted by an aircraft or warship which, unknown to itself, had been put in a position to make the sighting. There were occasions on which, to the alarm of the Allied authorities, the procedures broke down—when orders were issued that referred to the intelligence or when a cover was not provided for the action that might result. There were also situations to which these precautions could not be applied. In the Atlantic, in particular, there was a long period in which the decrypts of the instructions to U boats, though used to great effect, were used only passively, to route convoys out of the path of U boats rather than to steer the escorts to where the U boats were waiting or refueling. In such a situation, in which more and more U boats made fewer and fewer sightings, the mere absence of sightings of convoys was bound to create enemy suspicions as happened in the German U boat Command in early 1942. In order to lull German suspicions the Allies utilized such methods as exaggerating the extension of Allied air reconnaissance to the mid-Atlantic and by propagating a rumor that the Allies had invented a miraculous radar which detected submerged U boats over great distances: The planting of this type of cover had to be very carefully controlled but without these tremendous efforts to

keep the secret, while maximizing its use, the situation would have been different.

Against these considerations it may be argued that if the Allied precautions were effective it was only because, like all successful deception measures, they buttressed known convictions, and that Germany's assumptions and blindspots must still be attributed in the last resort to undue confidence and profound carelessness. But it is necessary to guard against hindsight. The war by this time had seen a revolution—at least in the amount, the continuity, the reliability, and the currency of intelligence. This undermined Germany's security to an unparalleled extent, but, unlike the Allies, the Germans, did not know that the transformation had taken place. Moreover, the Allies were not entirely shielded against overconfidence. Although they were benefiting from the revolution, they did not realize that the Germans were reading their convoy cyphers until, from the end of 1942, the truth was revealed by explicit references in the Enigma decrypts of the instructions being issued by the U boat Command to their U boats. And while this confirms that it is a counsel of perfection to preach that it is unwise to be confident about anything, ever, it also raises a further question. What was the value of all this mass of intelligence? If its existence could remain undetected for so long, can its influence have been decisive, as is so widely believed?

In addressing this question it is important to distinguish between the impact of intelligence on the course of operations and, on the other hand, its strategic value.

As every commander and any intelligence officer knows, intelligence is only one among many elements affecting the course of operations. It is necessary to consider much else when reaching decisions, and many other factors besides the decisions affect the outcome. For these reasons the operational impact of intelligence was always variable, not to say haphazard, even if it was far less so than had previously been the case.

It was especially so up to the summer of 1941 when, as well as giving roughly equal advantage to both sides, intelligence was limited in volume and usually obtained with some delay, if obtained at all. Although claims to the contrary have been made, few British operations before that date benefited from intelligence. With photographic aerial reconnaissance, but without assistance from other sources, the authorities were able in the autumn of 1940 to time their bombing of the concentrations of invasion barges in the Channel so as to obtain maximum effect. In the winter of 1940-1941 the British were able to mitigate the ferocity of the Blitz with the help of SIGINT, prisoners of war and equipment recovered from crashed enemy aircraft. In the spring of 1941, thanks to advance warnings from SIGINT, the *Bismarck* was sunk at the beginning of her cruise, whereas the *Graf Spee* had been caught at the end of a long sortie without any

benefit from intelligence at all. Also, that same spring the Royal Navy intercepted the Italian Fleet and defeated it at the battle of Cape Matapan, with a slight amount of SIGINT. In Crete the defending force inflicted a severe mauling on the German airborne invaders. The operational achievements of intelligence were increasing, but they remained few in number.

After the summer of 1941, in contrast, most battles or sizable encounters in the European and Mediterranean theaters, with the possible exception of the Russian front, were influenced by the Allied superiority in intelligence, especially by the sheer volume of current decrypts. But the contribution made by intelligence was by no means always important, let alone decisive. Random factors like luck or misjudgment were sometimes uppermost. A great deal was known about the enemy's intentions when convoy PQ-17 sailed for Murmansk in June 1942, but the convoy still ran into disaster. On the other hand, the sinking of the *Scharnhorst* in the Arctic on the day after Christmas 1943 was almost wholly brought about because intelligence, though small, became crucial when the enemy made mistakes. Sometimes relative strength settled the question. In the first battle of El Alamein in June-July 1942 intelligence about the Africa Corps was not yet plentiful, but it was decisive in enabling the British commander to prevent Rommel's greatly superior armor from breaking through to Cairo—despite the fact that Rommel was better supplied with field intelligence. Before and during the second battle of El Alamein in October 1942 the amount of intelligence about Rommel's forces was massive, but those forces were by then so inferior to Montgomery's that it played little part in the British victory.

It would be very wrong, however, to assess the significance of intelligence for the outcome of the El Alamein battles by measuring only its direct impact on them. What limited Rommel's superiority before the summer of 1942, and helped to eliminate it by the autumn, was the British use of SIGINT to destroy his supply shipping. Axis losses, rising to a peak of over 60 percent of southbound Mediterranean shipping in November 1941 and to another peak between 50 and 60 percent in October 1942, were almost entirely attributable to decrypts of cypher keys that had been solved regularly since June 1941. Nor was this the only direction in which the transformation of the intelligence situation to the advantage of the Allies now laid the basis for the indirect, long-term, strategic effects that intelligence was to exercise till the end of the war. Also from June 1941, for the first time, the British read the U boat traffic regularly and currently, an advance that almost wholly explains why they prevented the U boats from dominating the Atlantic during the autumn of 1941 and the winter of 1941–1942.

What, then, was the overall influence of intelligence on the war? It is not easy to give a precise assessment. If its impact on individual operations was not always decisive, and was sometimes nil, its strategic impact was indirect and

cumulative. It is thus difficult to measure it now, as it was difficult for the enemy to discern it at the time. But two conclusions may be advanced without qualification. In the first place, the claim that intelligence by itself won the war—a claim that is self-evidently absurd—may be dismissed. The British survived with little benefit from it before Germany invaded Russia in June 1941, as the Russians survived invasion with little benefit from it; and as Russia's survival was followed by the entry of the United States in December 1941, the Axis would have been defeated even if the Allies had not acquired by that date the superiority in intelligence they retained till the end of the war. Till the end of the war? Nearly four more years is such a length of time that it might be thought that, far from not producing on its own the Axis defeat, intelligence made little contribution to it. That this was not the case, however, is the second point that may be made without qualification.

The war effort of the Western Allies on every front after the end of 1941 was guided by massive, continuous and frequently current information about the enemy's dispositions, intentions, resources and difficulties. The information was so comprehensive, though never complete, that, though the Allies occasionally misinterpreted it, the expectations they based on it, whether positive or negative, were generally correct. This enabled them not only to strike some decisive operational blows and avoid some operational setbacks, but also to shorten the war by setting the time, the scale and the place of their own operations in such a way as to achieve enormous economies for themselves in lives and resources and to add enormously to the burdens the enemy had to bear.

By how much did the Allied superiority in intelligence shorten the war? Even if the question is limited to the war in Europe the answer can only be approximate. By keeping the Axis out of Egypt it probably brought forward the conquest of North Africa and the reopening of the Mediterranean to Allied shipping, which were completed in the middle of 1943, by at least a year. By preventing the U boats from dominating the Atlantic in the winter of 1941–1942, and by contributing heavily to their defeat there in the winter of 1942–1943, it probably saved the Allies another two years. Had delays of this order been imposed by shortages of shipping and specialized landing craft on the Allied invasions of the Continent, those undertakings would have been further delayed by other considerations. As it was, the invasion of Normandy was carried out on such very tight margins in 1944 that it would have been impracticable without precise intelligence about German strengths and orders of battle and the fact that the Allied commands could be confident the intelligence was accurate. If it had had to be deferred it might well have been delayed beyond 1946 or 1947 by Germany's V-weapon offensive against the United Kingdom and her ability to finish the Atlantic Wall, not to speak of her deployment of revolutionary new U boats and jet and rocket aircraft which, as intelligence revealed, became imminent by the end of 1944. At best, the return

to the Continent might have been delayed till 1948 and the defeat of Germany till 1949, and that is probably a conservative estimate.

Neither the Western Allies nor the Russians would have been idle in these circumstances. What different strategies would they have pursued? Would the Russians have defeated Germany, or Germany the Russians? What would have been decided about the atom bomb? Historians cannot answer these questions, because fortunately they are concerned only with the war as it was. And it was not least because of the actual contribution made by intelligence to the course of the war that such horrible questions did not arise.

Session I

The Origins of
Modern Intelligence

Chair: Ernest R. May

Intelligence on the Eve of Transformation

Methodology, Organization, and Application

Dennis E. Showalter

Colorado College

Cynics—or realists—find continued amusement in describing military intelligence as an oxymoron. Nevertheless the gathering, organization, and assessment of information has from earliest history been part of the organized violence of war. The Old Testament's Book of Joshua describes the Son of Nun sending two men to "spy secretly" the land and the city of Jericho, and this is only the most familiar account of an early intelligence operation. Yet at the same time the study of military intelligence has until recently stood in the same relationship to military history that military history has borne to the broader discipline. Intelligence has been presented in drum-and-trumpet terms, dominated by tales of derring-do in strange disguises—exciting, perhaps, on the level of *Mad* magazine's Spy vs. Spy, but having little to do with war's main streams.[1]

Even before the revelations of ULTRA's and MAGIC's contributions to Allied operations in World War II, this pattern was beginning to change. The simultaneous and related developments of low-intensity conflict and thermonuclear capacities put corresponding emphases on accurate knowledge as a basis for action.[2] Intelligence has become a growth industry, with journals, anthologies, and symposia proliferating to mark its emergence into intellectual respectability.

Scholars may have been slower than social scientists and policy makers to mount the bandwagon, but in the previous decade they have well compensated for lost time. Characteristic of the study of military intelligence as a historical subject is a significant present-mindedness. A disproportionate number of the best works focus on World War II; few extend their discussion much further back than the turn of the twentieth century. Modern military intelligence, however, did not develop in a vacuum. The purpose of this paper is to establish the principal matrices that shaped intelligence work in the Atlantic world from the beginning of modern history to the emergence of modern intelligence communities before and during World War I.

A study of this breadth is best begun with its purpose. What kinds of information were sought, collected, and processed? Intelligence has two

principal taproots. One is diplomatic: seeking material pertaining to the policy-making of other countries. The other is operational: securing knowledge of the movements, capacities and intentions of other armed forces. The modern catalyst for both was the emergence, beginning in the fifteenth century, of states with permanent bureaucratic and military structures. Occasional envoys gave way to permanent embassies. Ad hoc, entrepreneurially raised armed forces were replaced by standing establishments. These processes in turn created a necessary precondition of intelligence: systematic observation over long periods of time.

Among the first principal assignments of resident ambassadors and their staffs was the reporting of anything which might be of possible diplomatic importance. Initially, and for decades thereafter, that meant almost anything— not because diplomats were masters of trivia, but because no one was quite sure what factors shaped a state's behavior. Generations of graduate students have found the Venetian State Papers a mine of information on the arcana of Tudor-Stuart England.

In the course of the seventeenth century, embassies evolved into think tanks and information centers on their host countries. This involved espionage in its classic sense. It involved creating staffs of able and agreeable young men able to establish contacts and cultivate indiscretions. It involved soliciting one's own countrymen, residents or travellers.[3] The combination rapidly served both to brand diplomats as little more than glorified spies and to restrict sharply the scope of their activities.

Embassies could no longer as a matter of course mount and report comprehensive covert operations. Foreigners were too easily watched; correspondence was too easily intercepted. Disloyalty became a risky business. The spectrum of probable costs is illustrated by an Austrian attempt in 1787 to suborn a dissident Ottoman pasha by sending him 100,000 gulden in the custody of two trusted agents. The pasha promptly forwarded the agents' heads to Constantinople as proof of his loyalty. The money remained safely in his strongbox.[4]

Diplomats responded by developing a highly specialized set of ground rules that increasingly came to resemble Japanese Kabuki theater: highly-ritualized performances with predetermined outcomes. Cloak-and-dagger machinations gave way to discreet mutual, and mutually understood, exchanges of information among consenting adults.[5] Embassies remained the principal conduits to their foreign offices, and diplomats increasingly resented actual or potential interference by outsiders. French diplomats during the Revolutionary-Napoleonic Era spent a good deal of the time apologizing for the gaucheries of their successive principals in Paris.[6] Throughout the nineteenth century foreign offices remained significantly isolated from politicization, jealously guarding both their independence and the sources of information that helped sustain it.[7]

Operational intelligence began as armies sought to extend the parameters of tactical reconnaissance: finding out exactly what lay on the other side of the hill. The contributions of reconnaissance to military intelligence are generally slighted in works with a modern focus.[8] But in an era when skill at scouting and reliability in reporting were seldom incorporated in the same formations, when successive creations of light cavalry assimilated to their heavier and more socially-acceptable brethren, deciding with some degree of assurance just where an enemy was located could be an unexpectedly daunting task.[9]

This form of intelligence gained importance as organizations and doctrines grew more stable. On one hand the institutionalization of standing armies made the acquisition of order of battle information readily easy. The regularization of war through *l'esprit géométrique* made command techniques similar enough to be predictable. The impossibility of supplying increasingly large field forces entirely from magazines meant that their movements were calculable.[10] But the very fact that armed forces were so much alike put added premiums on small percentages. Apparently marginal factors could play disproportionate roles in a battle or a campaign. Foremost among these was terrain information. Precise knowledge of the food and forage available in a given region could provide the key to an adversary's options. Even more important, precise knowledge of terrain could indicate possibilities for troop movement and deployment far more clearly in the early modern period, when the size and the nature of armies combined to limit their ability to challenge contours by comparison alike with their predecessors and successors.[11]

Before the seventeenth century mapmaking had been as much art as science, and the kinds of maps produced were of limited use at tactical or operational levels. Topographic surveys began in France and the Low Countries, with the enthusiastic support of most military establishments. The Austrian army, for example, had a topographic section as early as 1764, and topographic departments played a major role in the initial development of general staffs everywhere on the continent.[12] This did not mean that reliable maps, or indeed maps of any kind, were necessarily available. As late as 1815 a British captain in the Waterloo campaign, in an area where his army had fought for decades, regretted having depended on a map to find his way, rather than seeking a local guide.[13] When Napoleon's troops captured a city, a likely consequence was the dispatch of staff officers to check the stock of local bookstores.[14]

Mapmaking continued to remain an important aspect of intelligence for much of the nineteenth century. With the rise of imperialism, topographies became a crucial element of colonial expeditions. It was not by coincidence that Kipling's Kim was trained as a surveyor—or that he was cautioned to keep the tools of his craft well concealed.[15] Even in Europe's traditional cockpits there was ample room for improvement—a fact illustrated in 1870 as the armies of Napoleon III's Second Empire thrashed blindly across eastern French

provinces.[16] As late as 1914 the distribution of accurate maps at company and platoon level was a significant benchmark of an army's efficiency.[17]

Reconnaissance, on the other hand, became separated from intelligence, left to the cavalry as a technical mission. The specific task was no better performed for that. In 1859, 1866, and 1870, combatants suffered from a lack of battlefield information greater in some cases than that of their seventeenth-century forbears.[18] And if by 1914 Europe's cavalry had essentially abandoned its dreams of battle-deciding charges in the manner of a Seidlitz, its new focus was not on intelligence, but on large-scale actions against other cavalry. This exchange of knights, presumably to clear the board for more decisive operations, did nothing to nurture interest in the mundane tasks of gathering and transmitting information on an enemy's movements and whereabouts.[19]

The primary significance of this divorce of reconnaissance from intelligence came with the development of the airplane. Terrain recognition, transmission of information and unreliable material all handicapped the evolution of aerial observation. But at least as debilitating from a doctrinal perspective was the general impression that aircraft were best suited to extend the functions of cavalry. The new machines were seen as extensions of the horse, rather than as possible supplements to strategic and grand-strategic intelligence.[20]

This reflected in part the growing bureaucratization of the intelligence process—a development that will be further discussed below. It also reflected a significant shift in military emphasis. Increasingly large armies and increasingly technological battlefields made it correspondingly unrealistic to seek decisive victories at a tactical level. Clausewitz noted the problem. It was the elder Helmuth von Moltke who developed a solution. Like Clausewitz, Moltke regarded war as the province of confusion. But if no plan survived first contact with an enemy, it was correspondingly necessary to make that plan a good one. Moltke was concerned not with overcoming war's unpredictability, but preventing it. For him that meant transferring the search for control from the tactical to the strategic end of the operational spectrum.[21] Intelligence changed its focus to correspond. What became important were not the details of ground or deployment, but those of concentration in the theater of war. Knowing what an enemy could do was necessary. Knowing what he might do was desirable. Knowing what he was going to do was best of all. War plans became the nineteenth-century intelligence equivalent of the medieval knight's Holy Grail— and almost as much a *fata morgana*.

In 1903–1904 French intelligence obtained for 60,000 francs a set of documents outlining the developing Schlieffen Plan: a massive strike through Belgium. The circumstances of their delivery invited suspicion. "Le Vengeur" was presumably an officer of the German General Staff. But he kept his head swathed in bandages to prevent identification. Only his "Prussian" mustache was exposed, presumably as proof of his national origins! He had previously

furnished useful information. But had that merely been a preliminary to a massive disinformation plan? The "Vengeur" documents ultimately proved less useful for themselves than as a spur to study German railway construction along its Belgian frontier, and the writing of such contemporary military theorists as Friedrich von Bernhardi. Both of these led French military intelligence to predict a German invasion through Belgium and Luxemburg even before Schlieffen himself had made his final decision.[22]

Diplomatic and operational intelligence were supplemented beginning in the nineteenth century by two more forms. States and military systems increasingly emphasized short wars and decisive victories. Knowledge of potential enemies' economic capacities across a broad spectrum was increasingly seen as a precondition of these victories. As railroads became first an important, then a necessary, means of strategic deployment, armies could not afford to remain ignorant of carrying capacities, available rolling stock, and track density—their own and their neighbors'.[23] For navies, the development of steam technology was of corresponding importance in enhancing the value of keeping track of the rapidly changing economic bases of naval construction and of the peacetime movements of warships and merchantmen.[24]

Economic intelligence further increased its significance after 1871. The direct promotion of commercial interests through intelligence work increasingly reflected, for example, in the history of the U.S. Office of Naval Intelligence,[25] played a secondary role in Europe. There, on one hand industry steadily grew more flexible and on the other governments increased their capacity to mobilize the resources of their societies for military purposes. An essential negative aspect of the short-war illusion was its denial of any opportunity to recover from defeat at the first contact. This meant that every element of warmaking capacity, one's own or a potential enemy's, must be not only carefully but pessimistically calculated. It was not mere obsession with numbers in uniform that led the German General Staff to rate Imperial Russia's military potential so highly in the years before 1914. The capacity to feed, clothe, and arm those numbers, to bring them to specific points at specific times—these were benchmarks of operational efficiency as well as the traditional calculation of sabers, bayonets, and guns, or the estimation of command and staff performances. They depended increasingly on factors not specifically military. It is worth noting that the German General Staff's annual report on the Russian army during 1913 altered its internal structure. Traditionally finances, economics, and politics had been placed at the end of the document, a sort of afterthought. They were at the head of the new version, the final one before Sarajevo.[26]

The Age of Metternich also contributed to the emergence of internal security. Counterintelligence, the surveillance and hindering of enemy agents, was a familiar phenomenon. However, while fear of treason had generated

government response in earlier eras, notably the Reformation, subversion is a function of citizenship. Prior to the French Revolution, systematic surveillance of its subjects by a state of the Old Regime would have been an absurdity. But the Concert of Europe's concern for the survival of revolutionary ideals, combined with a fixed idea of the irreversibility of insurrections once begun, led, particularly in central and southern Europe, to the rapid expansion of domestically focused police functions. Initially these had nothing to do with the military. But no bureaucracy dissolves itself for lack of missions. The *Burschenschaften* and *carbonari* of *Vormärz* gave way to Socialists and anarchists in the second half of the century.[27] Systematic surveillance of suspicious characters led naturally if not automatically to the involvement of police forces in counterintelligence and counterespionage. The *Sûreté Nationale* of France became responsible for that country's domestic counterintelligence. British police kept alleged German spies under observation for British intelligence. Russia's police tightened already stringent internal controls. During World War I military intelligence even in the democracies would become increasingly domestically oriented, and in the process manifest significant disregard for civil rights and civil liberties.[28]

This represented in part a response to an alternate form of internal security: defense against subversion. Prior to 1914 intelligence services regarded attempts at tampering with loyalties on a large scale as unlikely to generate results proportionate to the effort. French ill fortune with Jacobites and Irish in the eighteenth century hardly seemed promising in an era when armed revolution from below was considered increasingly impossible. Actually or potentially disaffected elements existed—Ireland, Austria-Hungary, Russia. But a war expected to be short and decisive offered no time to turn disaffection to revolt. This attitude was reinforced by Bismarck's war of German unification, which had progressed too rapidly for any of the Chancellor's schemes of insurrection and uprising to bear fruit.[29]

Only as hostilities endured did intelligence services consider playing the card of rebellion. By and large they did it poorly. For all the panic anxieties of British intelligence, Germany's role in the Easter Rising of 1916 was marginal, just enough to get Sir Roger Casement executed for treason.[30] On the eastern front, even the "trainload of plague germs" allowed passage to Russia was more a shot in the dark than a calculated plan. As the Russian army sank deeper into chaos, German intelligence observed rather than influenced the process.[31] Not until World War II would military intelligence sources do more than dabble in overthrowing foreign governments and undermining foreign armies.

By the end of the nineteenth century military intelligence had developed a fifth role as well. It functioned as a public-relations instrument in increasingly politicized societies. At first glance this might seem a denial of the basic purpose of intelligence. But parliaments and ministries could be influenced in

their decisionmaking—at least in theory—by information provided through government intelligence services. States enhanced their credibility by trumpeting intelligence coups while conceding defeats in the "Great Game" could prove as devastating as a lost battle. The Dreyfus Affair may have developed into a struggle for the honor of the army of France. It began as an effort to sustain the maze of competence in France's intelligence services vis-à-vis presumed German superiority.[32]

The material sought for intelligence purposes structured and determined the manner of its collection. Intelligence-gathering falls into two broad categories, active and passive. Active intelligence involves the direct collection of information; passive intelligence depends on evaluating material available in other sources, from newspapers to satellite photos. In recent years it has become fashionable to stress the latter as more professional, more scientific, and ultimately more productive than the former. The title of Phillip Knightley's work on espionage, *The Second Oldest Profession*, reflects an academic view of active intelligence as the province of "inaccurate sensationalism."[33] For most of the period covered by this paper, however, active intelligence dominated the field as not merely the most reliable, but the only means of gathering specific information on other countries. This in turn highlighted the role of the agents, and in turn the spectrum of agent types grew broader.

From beginning to end of the period covered in this essay, the technicians remained important figures. These were the classic spies of cloak-and-dagger fiction. Motivated by various blends of pride in craft, loyalty to paymasters, or sympathy for states and causes, these individuals were nevertheless best characterized by their mastery—or presumed mastery—of what John Le Carré's novels call "tradecraft." It was British technicians, for example, who kept such close track of Bonnie Prince Charlie's movements in 1743-44 that France's efforts to play the Jacobite card in a projected invasion of England were significantly affected.[34] Legends clustered around these men and women. Some of the stories were even true. Probably the most familiar technician would be Sigmund Georgievich Rosenblum, a.k.a. Sidney Reilly, a blend of genius and mountebank who continues to baffle and fascinate researchers.[35] His checkered career also helps explain the position, increasingly common in military intelligence and best expressed by Prussian War Minister Karl von Einem, that no officer could maintain relationships with spies, traitors, and similar disreputable characters without damaging his own character.[36]

Einem's attitude was also influenced by the second category of intelligence agent, the informant. This was, simply put, a person with something to sell for the right price, whether in cash, protection, or silence. In the early modern period, before the emergence of the concept of citizen and the extension of the

concept of treason, what would today be considered classified information circulated with a high degree of freedom. Officers who changed service to improve their economic or professional opportunities saw no disgrace in freely communicating the details of their previous employer's military establishments. At somewhat higher levels, military enterprisers like Ottavio Piccolomini maintained their own private information networks, political as well as military—a fact contributing not a little to their desirability as permanent employees of one or the other emerging states.[37]

As the information needed became more specific, the nature of the informer changed as well. It became correspondingly desirable to seek key men in a system—people whose knowledge or position made a difference. Acquiring the services of such people, however, was an increasing problem. Direct subornation has always been risky, not least because it was impossible to be certain whether the central figure would stay bought—or indeed, had been bought in the first place. In the 1760's, for example, the Austrian Baron Thugut, attached to the embassy in Paris, spent some time on the French payroll. It is highly questionable, however, whether he ever delivered any significant information, and relatively likely that he kept his superiors informed of his under-the-table contacts.[38] By the nineteenth century, the development of romanticism and its impact on the concept of honor made it even more difficult to strike mutually acceptable business deals. Those who were willing to participate, like the French Major Esterhazy who played such a crucial role in the Dreyfus Affair, tended to be marginal figures with the kinds of personalities that sooner rather than later led them to trip themselves.[39]

This meant an increasing tendency to recruit informants and keep them in line by blackmail. The process demanded a delicate touch. Then as now, sex and greed were the principal lures. But in an era where honor made demands somewhat higher than at present, a man pushed too hard might inconveniently blow out his brains or worse, report the situation to his superiors. German intelligence, for example, was reluctant to use "honey traps" on Russian officers. By the end of the nineteenth century, far more likely blackmail subjects were likely to be homosexual. Partly this reflected a change in mores since the Enlightenment, which valued style over substance in *la vie intime*. Europe's intelligence services found homosexuals frequently to possess valuable experience in leading double lives, and a residue of unresolved hostility towards systems that forced them into the masquerades. In such circumstances no case is typical. The most familiar involves Alfred Redl who, as chief of the Austro-Hungarian Department of Intelligence and Counterintelligence and later as a corps chief of staff, conveyed a wealth of top-secret material, including the Austrian mobilization plans, to Russian intelligence. This coup seems to have involved more than simple blackmail sweetened by sizable amounts of cash. By the end of his career Redl was a full partner in a double game.[40]

An informant without such status could find himself at correspondingly high risk. In the spring of 1914, for example, German intelligence recruited an insurance agent in Poltava. His peacetime contacts were in Berlin and East Prussia—not quite routine, but explainable as business connections. Then on July 26, on the eve of war, the agent was ordered to send his reports to "Mademoiselle Robert" in Copenhagen. In a small city deep in Russia, it was hardly likely to escape notice when a man with a record of doing business in Germany, but not in Denmark, suddenly began corresponding with a lady in Copenhagen at a time of acute international crisis. Then, on August 26 or 27, the unfortunate man was sent two hundred rubles through a Königsberg bank. It is hardly surprising that the Germans heard nothing further from their Poltava connection![41]

The informant was supplemented, particularly at the beginning and the end of the period in question, by a third category: the pensionary. In the sixteenth and seventeenth centuries, these were no more than men paid retainers by foreign governments. Pensions were paid in secret; pensionaries, however, did not regard themselves as overt traitors, and usually were not so regarded by their own governments. Instead pensions were considered to encourage their recipients to support courses they were likely to support anyway. Seldom was anyone so crude as to discuss specific payments for specific services. During the War of the League of Augsburg, for example, Sweden's Chancellor, Count Bengt Oxenstierna, received a pension from English secret funds, while Field Marshal Count Nils Bielke, Governor of Swedish Pomerania, was in receipt of French money. Both men, however, continued to work for Sweden's welfare as they defined it—to the point of frequently disappointing their respective paymasters.[42]

With the growing accretions of state power in the seventeenth century, the line between pensionaries and informers became too fine to draw accurately. The last quarter of the nineteenth century witnessed emergence of pensions in slightly altered form, this time as "subsidies" to parliamentarians and newspapers in foreign countries. By this time the issues involved less the transmission of information than the propagation of ideas and policies acceptable to the paymaster. Here again, the problem lay in obtaining value for money. As one French official complained, the subsidies were too often used to buy words of praise for one or another politician.[43] And where newspapers were concerned, a thorny spirit of independence persisted even in the most venal enterprises:

> *No one can hope to bribe or twist*
> *Thank God the British journalist*
> *But seeing what the man will do*
> *Unbribed, there's no occasion to.*[44]

A fourth, increasingly fruitful source of agents was a class of people best described as ideologues—men and women who aided a foreign government from principle. Between the Renaissance and Sarajevo, principle fell into three categories. First came the regionalists. Authority in early modern Europe attenuated in proportion to distance from the capitol. From Catalonia to Transylvania, local notables fostered local loyalties against whatever central authority sought at the moment to extend its writ. If in the eighteenth century Habsburg armies invading the Ottoman Empire could count on a network of supporters in the Serbian countryside, this reflected less an affirmation of Christian identity than a desire to slide from under the control of Constantinople.[45] A variation on this theme was provided by the magnates and the gentry of Poland, who in defense of their traditional liberties against what they perceived as the unjustified encroachments of a centralizing monarchy during the eighteenth century provided France, Russia, and Austria with the details of Polish policies and military organizations.[46] One hundred fifty years later German intelligence would seek to establish contact with Irish dissidents as World War I loomed on the horizon, while after Sarajevo the Kaiser's Foreign Office was submerged in memoranda guaranteeing revolts next week among Russia's ethnic minorities if only the Reich would pay the bills and provide most of the troops and warships.[47]

Religion provided the second class of ideologues. The Reformations of the sixteenth century created ready-made Fifth Columns everywhere in Europe. Particularly among the political orders, religious principles were often intertwined with late-feudal and post-feudal approaches to state authority. The concept of the state as a trustee of public welfare was at best undeveloped before Bossuet, Locke, and Hobbes. Great lords or powerful clan networks, like France's Guises and England's Howards, were likely to be left alone until their behavior became overtly seditious. They were also likely to be regarded with sufficient misgiving that establishing information networks with their coreligionists across the border was no more than a prudent insurance policy.[48]

Catholic and Protestant, the Reformations made resistance legitimate, but not rebellion. That justification would come later, as the Age of the Rights of Man and Citizen created a third class of ideologues: the revolutionaries. They were particularly important for the evolution of intelligence because they emerged at a time when the increasing power and alertness of the state made overthrowing a government an increasingly unlikely process without outside intervention. And that intervention was likely to be forthcoming from states regarding not merely the policies, but the principles, of their neighbors as a mortal danger. Well into the First Empire, Royalist networks in the interior of France kept émigrés and foreign powers comprehensively informed of French plans. From the British Isles, committed republicans returned the favor. For the first time intelligence work began acquiring an aura of glamor, if not necessarily

full respectability. The men and women of these information undergrounds were perceived as standing between two compelling loyalties: to their states and to their principles. This differentiated them essentially from their religiously motivated predecessors, who ultimately had to choose between the City of God and the City of Man. Literary Romanticism further assisted the developing image of the gentleman-agent, exemplified in fiction by Sir Percy Blakeney, the Scarlet Pimpernel.[49]

In the course of the nineteenth century nationalism's development as a surrogate religion made conflicts of loyalty in the revolutionary mode increasingly rare. On the other hand nationalism combined with romantically influenced concepts of honor to make some forms of espionage more or less respectable. The yachting amateurs who solved Erskine Childers' *Riddle of the Sands* had real-life counterparts like Robert Baden-Powell, who posed as a butterfly collector to sketch the coastal fortifications of Dalmatia.[50] Such agents, however, functioned best in relatively open societies, posing as tourists or commercial travellers in environments where passports were unknown, residence regulations limited, and foreigners familiar. By the turn of the twentieth century increasingly efficient counterespionage combined with increasingly stringent controls on movement made military spies in particular too conspicuous to be risked except in specialized roles such as "tension travellers" legally dispatched across frontiers at times of heightened tension to evaluate possible war preparations.[51] One result of this during and after World War I was a tendency in all countries to fuse the technician and the gentleman. The result was the modern secret agent, who serves from commitment and is also a master of tradecraft. His story will be told in the course of this symposium.

Active intelligence was only half the monad. Its passive counterpart began as a form of signal intelligence (SIGINT): intercepting correspondence, and a necessary accompaniment, cryptanalysis. The familiar remark of U.S. Secretary of State Henry L. Stimson that gentlemen did not read each other's mail would have vastly amused Queen Elizabeth I's Sir Francis Walsingham, who in the 1580s established in his own house a ciphering department that was part of the best cryptographic agency in Europe. Letter-opening grew in importance as mail services expanded. In Britain, the Post Office Act of 1711 allowed government officials to issue their own warrants for the opening of mail—a classic example of making the goat a gardener.[52] No European state with pretensions to power lacked some version of a Black Cabinet to interpret and decipher dispatches. The north German states of Hannover and Brunswick regularly turned intercepted information from their more powerful neighbors to diplomatic profit.[53]

What had become a traditional practice was increasingly challenged in the liberal climate of the post-Napoleonic era. The public and its elected

representatives decried such activities as a threat alike to individual rights and international relations. England dissolved its deciphering service, albeit temporarily, in 1844. Germany had no central codebreaking agency at all by 1914. The intelligence services of the various army corps maintained their own linguists and cryptographers, though the grounds for appointment were often extremely casual. One officer, for example, received his assignment because he had been noticed reading a Russian newspaper.[54] Codebreaking, however, took on renewed significance as telegraphs, cables, and, in the years before World War I, radio became dominant means of transmitting intelligence. Senders faced a choice between speed and security. In the increasingly forced atmosphere of nineteenth-century diplomacy time was of the essence; devising and solving "unbreakable" codes grew correspondingly important.[55] Here France took pride of place. The foreign office, the War Ministry, and the *Sûreté Generale* all maintained codebreaking agencies by the end of the century. Decrypted German diplomatic telegrams proved a major source of political intelligence in both Moroccan crises, though interdepartmental rivalries and difficult German codes limited their usefulness in the months immediately before the outbreak of war.[56]

Signal intelligence also became by default an important element of naval planning. Mines and torpedoes had rendered impossible the traditional methods of tracking an enemy's movement by keeping him under the eye of a screen of cruisers. The introduction of wireless in capital ships generated opportunities to trace concentrations by the volume of traffic, even if the message remained incomprehensible. In the course of World War I naval intelligence services, particularly Britain's Room 40, would raise the related arts of interception and deciphering to levels deserving of praise from Walsingham himself.[57]

Even more than from SIGINT, passive military intelligence profited in the nineteenth century from the knowledge explosion. Not only were officer corps becoming increasingly professional. A literate and leisured bourgeoisie developed an interest in military matters all the sharper for remaining safely theoretical. The British Royal United Services Institute Journal, Austria's Streffleur's *Militärische Zeitschrift,* the *Allgemeine Militärische Zeitung,* published in Darmstadt—these were the first of a flood of books and periodicals, available for the purchasing, that provided the kind of details about Europe's military establishments that in earlier centuries had been worth high prices in money and lives. In a competitive, commercial atmosphere, publishers vied with each other to expand their coverage. Von Loebell's *Jahresberichte,* published in Germany after 1871 under several titles, was by itself worth a corps of secret agents both for what it contained and for what it was constrained to omit. In an age of mushrooming tourism, even guidebooks were valuable sources for material on railway connections, the condition of roads, and exact mileages. Newspapers featured the work of military correspondents, often

retired officers like Charles à Court Repington of the *Times*.[58]

Passive intelligence also depended on sources not quite so obviously in the public domain. In parliamentary states, governments were constrained to make available large amounts of data in conjunction with debates on military and naval budgets. Records of parliamentary debates were useful for information on the internal dynamics of armed forces, particularly where active Social Democratic parties criticized the military from principle. With interior ministries publishing plans for road and railway construction, it required no great degree of skill to determine where transportation networks were being built up for military purposes. When governments were silent, newspapers often filled the information gap. Everywhere in Europe there existed a significant opposition press willing and able to publish material embarrassing to those in power. In the absence of pre-publication censorship, their activities were almost impossible to deter except at disproportionate cost.[59]

In this context it was scarcely accidental that an increasing number of intelligence officers expressed with German Captain Walter Nicolai the desirability of avoiding isolated coups and bravura pieces in favor of working to establish total pictures by the systematic collection of fragments. This would reduce, if not entirely eliminate, reliance on human agents whose reliability was too often in inverse ratio to their cost, and whose cost was generally considered—at least outside intelligence circles—far to exceed their worth.[60]

Assembling and assimilating passive military intelligence was facilitated by the emergence of military attachés. As armed forces grew more complex and the countdowns to war grew shorter, war ministries sought to have professional military officers assigned to embassies specifically in order to assess the personnel and the institutions of potential enemies. They emerged in the face of adamant hostility from diplomats who feared the impact of uniformed outsiders ignorant of or indifferent to the way things were done. They also feared the development of alternate networks of transmission, particularly in states like Prussia or Russia whose soldiers stood in special relationships to the crown. Above all, diplomats were concerned that the involvement of military men in the direct conduct of foreign affairs might enhance the risks of war by exaggerating armed threats.

The major military powers, France and Prussia, began detaching officers to their embassies in the 1830s. Not until mid-century, however, did the practice become common—and with it the expected problem of dual loyalties. However strongly the various general staffs and war ministries might insist that service attachés were temporarily in the diplomatic service, these officers seldom forgot who their true and permanent superiors were. The military and naval attachés rapidly became a major source of direct information to their respective staffs.

In general these attachés were the successors of the sixteenth century's bright young men about town. Their normal routines were social: cultivating

contacts among their host-country counterparts, attending every social and professional function to which they could wangle invitations, and paying close attention to books, newspapers, and parliamentary debates. Initially military attachés in the nineteenth century had the same image as diplomats in the sixteenth: spies for their countries. In fact these officers were as a rule discouraged, and usually expressly forbidden, to involve themselves directly in espionage. Like diplomats, attachés were too visible to avoid being rapidly compromised. More to the point, they were too valuable as synthesizers and conduits of attitudes and information from foreign armed forces.[61]

The reports of military and naval attachés acquired increasing credibility as the nineteenth century waned. It was a far cry from the French government's virtual ignoring of the reports of its attaché in Berlin in 1869-1870, and the care with which his successors' reports from St. Petersburg were read before 1914.[62] Nor were attachés significantly given to warmongering. For example, the reports of Navy Captain Paul von Hintze, Germany's military plenipotentiary to St. Petersburg, usually took a hawkish tone. Nevertheless they also contributed to defusing the Bosnian crisis of 1908-1909 by stressing that whatever Russia's general attitudes and intentions might be, she was unlikely to go to war in the immediate future.[63] Other attachés played similar roles in other crises, reporting to their superiors that things did not seem as serious on the spot as they might to the newspapers and the politicians back home.[64]

Passive intelligence did not simply reflect the information explosion. It was also a manifestation of the bureaucratization of the craft of war—specifically, the emergence of general staffs and equivalent bodies. The evolution of their roles in war planning encouraged the systematization of all aspects of their work. Particularly after the mid-century wars of German unification, victory was regarded as the product of attention to details. Assembling the pieces of a complex mosaic, whether a mobilization chart or an enemy's intentions, provided higher truths than those of espionage. The former process was also attractive to general staffs because it offered an enhanced degree of control, at a time when Europe's military minds were deeply concerned with maintaining war's traditional parameters. Instead of depending on the catch-as-catch-can world of active intelligence, armed forces committed to passive intelligence could fit the material they discovered and processed into general networks of planning, costs, and force structures. Unpleasant surprises were still possible, but now they could be evaluated without disrupting the entire system of national security.[65]

What A.J.P. Taylor has called "war by time-table" meant something more than excessive reliance on mobilization schedules. It was a state of mind, perhaps best illustrated by the German Chief of Staff's reaction on August 1, 1914, to a report that France might after all remain neutral in the exploding world war. When a delighted Kaiser announced that now Germany could turn

its entire force against Russia, Moltke the Younger collapsed. The deployment of millions of men, he declared, could not be improvised.[66] Wilhelm's reply that "your uncle would have given me a different answer" expressed more than the difference of character and ability between two men. It described a mind-set tending to confuse systems with rigor—a mind-set that in the course of the twentieth century would continue significantly to affect the application of intelligence to military purposes.

In the period under consideration the application of intelligence depended to a great extent on its organization. Grand-strategic intelligence, the synthesis of the various forms and methods, first emerged in the second half of the eighteenth century. The process reflected, however, less deliberate intention than the emergence of two great soldier-monarchs, Frederick of Prussia and Napoleon of France. For Frederick, ruler of a state whose military prospects were limited relative to its geostrategic position and which could not afford long wars, it was correspondingly necessary to combine political and military leadership in one persona: "the Field Marshal and First Minister of the King of Prussia." The craft of war and the art of statesmanship were indivisible components of a monad. Dispatches from his diplomats and reports from his cavalry patrols were part of the same spectrum. And in the course of his forty-year reign, ambassadors and hussars alike learned what it meant to "work for the King of Prussia." Frederick's prompt preparations for the Seven Years' War owed much to the reports of his diplomats at Vienna, Paris, and the Hague—and these men in turn had been conditioned to the risks of providing inadequate or incomplete data. In particular Frederick's envoy to Austria, J.W. von Klinggraefer, had by 1756 been so often rebuked for his vague reports that he was all but useless during the final crisis.[67] Operationally the hussars in particular were instructed to develop themselves as the army's eyes—though the number of times Prussian forces were surprised between 1740 and 1763 suggests the less dramatic fact that these colorful troopers preferred to develop themselves as battle cavalry at the expense of the unglamorous work of scouting.[68]

Napoleon extended the development and integration of intelligence as he expanded the arms of war. Frederick's grand strategy was ultimately limited. He sought to place Prussia among Europe's great powers, as opposed to altering the nature of the international system. Napoleon's goal of a French Imperium meant that the Empire's wars became first general, then total—with correspondingly diminishing room for mistakes. Like Frederick, Napoleon was at once head of state and general-in-chief. He favored centralization of information, evaluation as well as decisionmaking, and to the end of his career acted as his own Chief of Intelligence as well as Chief of Staff. Everything from the reports of cavalry patrols through terrain and order of battle to analyses of

the political attitudes of opposing statesmen was channeled to his headquarters—a process facilitated by the Chiappe telegraph, a sophisticated semaphore which for all its unreliability enabled the rapid transmission of information at long ranges.[69]

Napoleon regarded intelligence as a vital element in achieving his operational goal of ending campaigns quickly and decisively by crippling the enemy's capacity to fight and breaking his will to resist. Both processes involved careful preparation: creating the impression that the French were omnipresent and omniscient.[70]

That image was more effective on the familiar battlefields of western and central Europe than further afield, in Russia or the Iberian peninsula.[71] It contributed a bit to the entropy that characterized military intelligence between 1815 and 1914. The growing discord owed more, however, to the increasing level of bureaucratization that characterized European administrations. Foreign officers, war ministries and general staffs, and increasingly internal-security agencies often seemed to spend more time and effort misleading each other than investigating other states. The intelligence world of double bluff and double cross was addictive, sometimes luring its votaries into playing the game for the game's sake, and on their own account. The tracks of Archduke Franz Ferdinand's killers might not, probably did not, lead directly to Belgrade. A Serbian government exhausted by war and preoccupied with absorbing its newly acquired territories had no interest in specifically provoking any kind of quarrel with Austria in the summer of 1914, to say nothing of giving such spectacular offense as murdering the heir to its throne. The exact nature and extent of Serbian involvement in the assassination is lost in the labyrinth of intrigue and counter-intrigue that masked the government's relationship with its intelligence service. There is evidence that some officials were aware before the Sarajevo murders that something involving clandestine operations in the Habsburg Empire was in the wind. But confrontation, to say nothing of disclosure, had obvious risks. Given Serbia's past history of conspiratorial politics, might not excessively rigorous inquiry prove physically as well as politically dangerous? It was by far the better part of valor and prudence alike to play the role of innocence outraged. Hindsight suggests, in short, that Belgrade's adamant rejection of Austria's demand to participate in the investigation was encouraged by a general sense of anxiety about what the foreigners might find when they took the trouble to look.[72]

More than simple *Ressortegoismus* shaped this process. Well before 1914 the world's great powers had developed functioning blends of active and passive intelligence. Few states lacked a broad spectrum of information on their neighbors' capacities and intentions. The problem involved assessment and application. This was in part a reflection of bureaucratization. Foreign offices, security services, and general staffs jealously guarded their own sources and

tended to demand of them increasingly specialized information. This in turn reinforced a developing tunnel vision. Diplomats increasingly ignorant of warfare were skeptical of the pessimism of soldiers who seemed to see Armageddon behind every new piece of foreign military legislation. War ministries and general staffs increasingly committed to the necessity of winning first battles and deciding wars in weeks despaired at what they considered the willful blindness of so-called statesmen. Internal security services warned of the related threats of espionage and subversion, with millions of socialists ready to be led into the streets by foreign agents.

Assessing and applying intelligence data was made even more difficult by the collegial patterns that prevailed at decisionmaking levels. Nineteenth-century Europe produced no soldier-kings in the pattern of Frederick or Napoleon. The growing complexity of warfare, diplomacy, and administration indeed made such an *uomo universalis* an anachronism. Heads of state and their chief ministers, even the Bismarcks and the Cavours, reigned. They did not rule. Ministers in parliamentary states, France or Britain, were men with independent power bases and—at least in theory—independent expertise, even though most of that expertise was provided by civil-service subordinates. Facts, as opposed to lines of reasoning, were seldom questioned. In theory, authoritarian to semiauthoritarian states, Tsarist Russia or Imperial Germany, should have had centralized decisionmaking process. In fact, Russia's ministers functioned as virtual independent satrapies, while in Germany neither Wilhelm II nor his successive chancellors succeeded in overcoming those politics of the diagonal intrinsic to a plural society with a limited social consensus. The usual result became the integration of intelligence information into the world-view and the bureaucratic requirements of a particular agency. Instead of being considered in its own right, military intelligence tended to become part of what amounted to legal briefs.[73]

From its modern beginnings into the First World War, military intelligence was only one element of complex structures of decisionmaking and implementation. Only in the U.S., which had no general staff, did the Office of Naval Intelligence evolve towards a war planning institution as opposed to a clearinghouse for collecting and disseminating information. These structures, moreover, were primarily concerned not with waging total war on the attritional model, but with limiting the effects of a future war whose destructiveness was all too clear to soldiers and statesmen alike. Ernest May accurately suggests that military intelligence systems before 1919 tended to get little things right and big things wrong.[74] They could analyze force structures, technological developments, and moral factors. They were less successful in dealing with questions of the changing nature of war or the endurance of states and peoples under conditions of total war. This reflects, however, less culpable shortsightedness than the fact that intelligence sources had never been tasked

with those kinds of responsibilities in the first place. Here as in so many other ways, World War I was a watershed in the interdependent crafts of war and statesmanship.

Notes

1. Representative examples of this approach include C.W. Haswell, *Spies and Spymasters: A Concise History of Intelligence* (London, 1977); Ladislas Farago, *War of Wits: The Anatomy of Espionage and Intelligence* (New York, 1954); and J.W. Thompson and Saul K. Padover, *Secret Diplomacy: Espionage and Cryptography, 1500-1815* (London, 1937).
2. Richard K. Betts, "Intelligence for Policy-Making," *Washington Quarterly* III (Summer 1980):118-129; and *Surprise Attack: Lessons for Defense Planning* (Washington, D.C., 1982); R. Godson, *Intelligence and Policy*, (Lexington, Mass., 1986); and John Prados, *The Soviet Estimate: U.S. Intelligence Analysis and Russian Military Strength* (New York, 1982).
3. Garrett Mattingly, *Renaissance Diplomacy* (Boston, 1955); W. Andreas, "Italien und die Anfang der neuzeitlichen Diplomatie," *Historische Zeitschrift* 168 (1942): 259-284; and Charles H. Carter, *The Secret Diplomacy of the Habsburgs, 1598-1625* (New York: 1964).
4. The incident is recounted in Karl Roider, *Austria's Eastern Question, 1700-1790* (Princeton, N.J., 1987).
5. Francois de Callières, *The Art of Diplomacy*, ed. H.M.A. Keens-Saper, K.W. Schweizer (New York, 1983), is an excellent contemporary handbook. Cf. D.B. Horn, *The British Diplomatic Service, 1689-1789* (Oxford, 1961); and William J. Roosen, *The Age of Louis XIV: The Rise of Modern Diplomacy* (Cambridge, Mass., 1970).
6. E. A. Whitcomb, *Napoleon's Diplomatic Service* (Durham, N.C., 1979), is a useful survey.
7. Cf. Zara Steiner, *The Foreign Office and Foreign Policy, 1898-1914* (Cambridge, 1969); and Lamar F. Cecil, *The German Diplomatic Service, 1871-1914* (Princeton, N.J., 1976).
8. David Kahn, *Hitler's Spies: German Military Intelligence in World War II* (New York, 1978), is a notable exception.
9. Curt Jany, *Der Kavalleriedienst vor 1806* (Berlin, 1906); and 'The Marquess of Anglesey, *A History of the British Cavalry*, Vol. I, *1816 to 1850* (Hamden, Ct., 1973), pp 34 ff.
10. Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge, 1988); and Martin van Creveld, *Supplying War. Logistics from Wallenstein to Patton* (Cambridge, 1977), pp. 26 passim.
11. Cf. Lee Kennett, *The French Armies in the Seven Years' War* (Durham, N.C., 1967), pp. 49 ff.; Christopher Duffy, *Frederick the Great. A Military Life* (New York, 1986), pp. 326 ff.; and John Childs, *Armies and Warfare in Europe 1698-1789* (New York, 1982), pp. 121-122.
12. Dallas D. Irvine, "The Origin of Capital Staffs," *Journal of Modern History* X (1938): 161-179; and "The French and Prussian Staff Systems Before 1870," *Journal of the American Military History Foundation* II (1938); and G.R. Crane, *Maps and their Makers: An Introduction to the History of Cartography*, 5th ed. (Hamden, Ct., 1978), pp. 85 ff.
13. Alexander C. Mercer, *Journal of the Waterloo Campaign*, intro. M. Glover (New York, 1970), p. 129.
14. Gunther E. Rothenberg, *The Art of Warfare in the Age of Napoleon*, (Bloomington, Ind., 1980), p. 211.
15. Thomas G. Fergusson, *British Military Intelligence, 1870-1914: The Development of a Modern Intelligence Organization* (Frederick, Md., 1984), pp. 20 *passim*. Cf. Gerald

Morgan, "Myth and Reality in the Great Game," *Asian Affairs* LX (1973): 55-65, for an analysis of British limitations in fact.

16. Cf. Michael Howard, *The Franco-Prussian War* (London, 1962), pp. 70 passim; and David Ascoli, *A Day of Battle: Mars-La Tour 16 August 1870* (London, 1987), p. 56.

17. One of the newly created German reserve divisions sent into battle at Langemarck, for example, seemed to have only a single map available! Karl Unruh, *Langemarck: Legende und Wirklichkeit* (Koblenz, 1986), p. 92.

18. Dennis E. Showalter, "Prussian Cavalry, 1806-1871: The Search for Roles," *Militärgeschichtliche Mitteilungen* XIX (1976): 7-22.

19. Maximilian von Poseck, *Die Deutsche Kavallerie 1914 in Belgien und Frankreich* (Berlin, 1921); General Chambe, *Adieu Cavalerie. La Marne, Bataille gagnée. Victoire perdue* (Paris, 1979).

20. For a detailed presentation of this point see Sam H. Frank, "American Air Service Observation in World War I," (PhD dissertation, Univ. of Fla., 1961).

21. Dennis E. Showalter, "The Retaming of Bellona: Prussia and the Institutionalization of the Napoleonic Legacy, 1815-1871," *Military Affairs* XLIV (1980): 57-63; Stig Forster, "Facing 'People's War': Moltke the Elder and German Military Options after 1871," *Journal of Strategic Studies* X (1887): 209-230.

22. The "Vengeur" affair has most recently been discussed in Christopher M. Andrew, "France and the German Menace," and Jan Karl Tanenbaum, "French Estimates of German Operational War Plans," in *Knowing One's Enemies: Intelligence Assessment Before the Two Worlds Wars*, ed. E.R. May (Princeton, N.J., 1984), pp. 137, 153-154.

23. John A. Harris, "Industrial Espionage in the Eighteenth Century," *Industrial Archaeology* VII (1985): 127-138; Dennis E. Showalter, *Railroads and Rifles: Soldiers, Technology, and the Unification of Germany* (Hamden, Ct., 1975): Richard Holmes, *The Road to Sedan: The French Army 1866-1870* (London, 1984).

24. Stephen S. Roberts, "The Introduction of Steam Technology in the French Navy, 1818-1852" (PhD Dissertation, Univ. of Chicago, 1976): H.R. Moon, "The Invasion of the United Kingdom: Public Controversy and Official Planning, 1888-1918," 2 vols. (PhD Dissertation, London, 1968): and John Gooch, "The Bolt From the Blue," in *The Prospect of War: Studies in British Defense Policy 1847-1942* (London, 1981), pp. 1-34.

25. Jeffrey M. Dorwart, *The Office of Naval Intelligence: The Birth of America's First Intelligence Agency 1865-1918* (Annapolis, Md., 1979).

26. "Die wichtigste Veränderundgen im Heerwesen Russlands im Jahre 1913," Bundesarchiv/Militärarchiv, RM5/1486, Russland Militärisches, April 1892-April 1914; Moltke to Bethmann, Jan 7, 1914, Politisches Archiv des Auswärtigen Amtes, Russland 72/96. Paul Kennedy argues for Russia having been systematically overrated in *The Rise and Fall of the Great Powers* (New York, 1987), pp. 232 ff.

27. Wilfram Siemann, *Deutschlands Ruhe, Sicherheit und Ordnung: Die Anfänge der politischen Polizei, 1806 – 1866* (Tübingen, 1985); P.S. Squire, *The Third Department: The Establishment and Practices of the Political Police in the Russia of Nicholas I* (Cambridge, 1968); Clive Emsley, *Policing and its Context, 1750-1870* (New York, 1984); and Frederick A. Hoffman, "Secret Roles and Provocation: Covert Operations in Movements for Social Change" (PhD Dissertation, U.C.L.A., 1979).

28. Cf. *inter alia* Nicholas Hiley, "Counter-Espionage and Security in Great Britain during the First World War," *English Historical Review*, 101 (1986): 635-670; Dorwart, *ONI*, 96 *passim*.

29. Cf. Jehuda Wallach, *The Battle of Annihilation* (Westport, Ct., 1986); and more generally Jack Synder, *The Ideology of the Offensive: Military Decision-Making and the Disasters of 1914* (Ithaca, N.Y., 1984).

30. Eunan O'Halpen, "British Intelligence in Ireland, 1914-21," in *The Missing*

Dimension: Governments and Intelligence Communities in the Twentieth Century, ed.
C.M. Andrew, D.N. Dilks (London, 1984), pp. 54-77.
31. Allan K. Wildman, "The End of the Russian Imperial Army," Vol. II, *The Road to
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of German efforts at subversion.
32. The most recent treatment is Jean-Denis Breden, *The Affair: The Case of Alfred
Dreyfus*, tr. J. Mehlman (New York, 1986). Cf. Allan Mitchell, "The Xenophobic Style:
French Counterespionage and the Emergence of the Dreyfus Affair," *Journal of Modern
History* LII (1982): 414-425.
33. Cf. Christopher Andrew, *Her Majesty's Secret Service: The Making of the British
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Oldest Profession: Spies and Spying in the Twentieth Century* (New York, 1987).
34. The best general treatment is E.J. McLynn, *France and the Jacobite Rising of 1745*
(Edinburgh, 1981).
35. Michael Kettle, *Sidney Reilly: The True Story* (London, 1983), is the best biography;
Robin Bruce Lockhart, *Ace of Spies* (London, 1967), remains the most familiar.
36. Fritz Gempp, "Geheimer Nachrichtendienst und Spionageabwehr des Heeres,"
National Archives T-77, Rolls 1438-1440, 1442, 1507-1509.
37. Thomas M. Barker, "Ottavio Piccolomini (1599-1650): A Fair Historical
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in Austria, 1618-1780* (New York, 1982), p. 77. Cf. generally Fritz Redlich, *The German
Military Enterpriser and His Work Force*, 2. vols. (Wiesbaden, 1964-65).
38. Karl Rorder, *Baron Thugut and Austria's Response to the French Revolution*
(Princeton, N.J., 1987), pp. 40 ff.
39. See particularly the account of the German attaché who was Esterhazy's contact.
Count Maximilian von Schwartzkoppen, *Die Wahrheit über Dreyfus; aus dem Nachlass,
herausgegeben von Bernhard Schwertfeger* (Berlin, 1930); and the analysis of Michel de
Lombares, "L' Affaire Dreyfus: apercu general, apercus nouveaux," *Revue de Defense
Nationale* XXU (1969): 1125.
40. Gempp, Geheimer Nachrichtendienst, "I", 138; Georg Markue, *Der Fall Redl*
(Vienna, 1984), is the best comprehensive treatment of this complex issue. Cf. Alan
Sked, "A Patriot for Whom? Colonel Redl and a Question of Identity," *History Today*,
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41. Gempp, "Geheimer Nachrichtendienst," II, 15 ff.
42. Ragnhild Hatton, "Gratifications and Foreign Policy: Anglo-French Rivalry in
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R. Hattan, J.S. Bromley (Toronto, 1968), 68-94.
43. Cited in Andrew, "France and the German Menace," *Knowing One's Enemies* p. 132.
44. Quoted in Joachim Remak, *The Origins of World War I, 1871-1914* (New York,
1967), p. 85.
45. Ranier Leignitz, *Des Kaisers Partisanen. Österreichs Turkenkrieg und der
Freiheitskampf auf dem Balkan* (Vienna, 1972), pp. 13 passim.
46. Norman Davies, *God's Playground. A History of Poland, Vol. I, The Origins to
1795* (New York, 1982), p. 512.
47. Reichenau to Foreign Office, Aug. 20, 1914, in PAAA, Krieg 1914,
Unternehmungen und Aufweigelung gegen unsere Feinde, WK 11 c Geheim; Lemberg
Consulate to Tschirsky; Tschirsky to Foreign Office, Aug. 11, 1914, PAAA, Krieg 1914,
WK d11 a, Ukraine.
48. Cf. H. Mitchell, *The Underground War against Revolutionary France: The Missions
of William Wickham, 1794-1800* (Oxford, 1968), and more generally Alfred Cobban,
Ambassadors and Secret Agents (London, 1954).

49. Robert Baden-Powell, *My Adventures as a Spy* (London, 1915), p. 88. Cf. David A.T. Stafford, "Spies and Gentlemen: The Birth of the British Spy Novel," *Victorian Studies* XXIV (1981): 489-509.

50. Gempp, "Geheimer Nachrichtendienst I," 17 *passim*. Nicholas P. Hiley, "The Failure of British Espionage against Germany, 1907-1914," *The Historical Journal* XXVI (1983): 867-889, also highlights the increasing difficulties of agent operations prior to World War I.

51. Richard Deacon, *A History of the British Secret Service* (London, 1969), pp. 9 *passim*; Fergusson, *British Military Intelligence*, 9-10. The best general history remains David Kahn, *The Codebreakers: The Story of Secret Writing* (New York, 1967), pp. 106 *passim*.

52. S.P. Oakley, "The Interception of Posts in Celle, 1694-1700," in *William II and Louis XIV*, pp. 95-116.

53. Gempp, "Geheimer Nachrichtendienst," Sonderabschnitt Ostpreussen, entry of July 31, 1914.

54. Kahn, *Codebreakers*, 262 ff. By contemporary standards, these codes were relatively crude. The German military code, for example, was a simple substitution cipher. In the interest of speed and convenience, moreover, dispatches and telegrams were often sent partially *en clair*. Gempp, "Geheimer Nachrichtendienst," II, 30.

55. Andrew, "France and the German Menace", *Knowing One's Enemies*, 129-130.

56. Patrick Beesley, *Room 40* (London, 1982); Robert M. Grant, *U-Boat Intelligence*, 1914–1918 (Hamden, Ct., 1969).

57. There is as yet no comprehensive history of the European military press. Helmuth Schnitter, *Militärwesen und Militärpublizistik: Die militärische Zeitschriftenpublizistik in der Geschichte des bürgerlichen Militärwesens in Deutschland* (Berlin, 1967), is a sound case study from an East German perspective.

58. For the impact of Repington's critiques of the German army see most recently Bernd Schulte, *Die Deutsche Armee 1900-1914: Zwischen Beharren und Verändern* (Düsseldorf, 1977), *passim*.

59. Cf. Norman Stone, "Austria-Hungary," *Knowing One's Enemies*, p. 42.

60. Gempp, "Geheimer Nachrichtendienst," I, 157.

61. Cf. Alfred Vagts, *The Military Attaché* (Princeton, 1967), which remains the best survey of this subject. Cf. Heinrich Otto Meisner, *Militärattachés und Militärbevollmächtige in Preussen und im Deutschen Reich* (Berlin, 1957).

62. Pertti Luntinen, *French Information on the Russian War Plans, 1880–1914* (Helsinki, 1984).

63. Cf. Hintze to Wilhelm, Oct. 23, 1908, PAAA, Deutschland, 131/30. Hintze to Bulow, March 20, 1909, *ibid.*; Hintze to Wilhelm, Jan 19, 1910, PAAA, Russland 98/5.

64. See, for example, the dispatch of the British naval attaché to Germany, Feb. 3, 1908, and his annual report on the German fleet for 1907 of Feb. 12, 1908, in *British Documents on the Origins of the War, 1898–1914*, ed. G.P. Gooch, H. Temperley, Vol. VII (London, 1930), Enclosures to Nos. 80 and 81; and Captain Hugh Watson's report of his period of appointment, Aug. 1910–Oct. 1913, in *ibid.*, Vol. X, Part II (London, 1938), Enclosure 2 in No. 482.

65. The growing systematization of warfare is clearly indicated by the contributions to War Plans of the Great Powers, 1880–1914, ed. P. Dennedy (London, 1979). Cf. also John Gooch, *The Plans of War: The General Staff and British Military Strategy, c. 1900–1916* (New York, 1974); Gerhard Ritter, *The Schlieffen Plan: Critique of a Myth*, tr. A. and E. Wilson (London, 1958).

66. Helmuth von Moltke, *Erinnerungen, Briefe, Dokumente, 1877–1916* (Stuttgart, 1922), pp. 18-19. H. von Staabs, *Aufmarsch nach zwei Fronten: Auf Grund der*

Operationspläne von 1871–1914 (Berlin, 1925).

67. A. Nauck, "Friederich der Grosse vor dem Ausbruch des Siebenjährigen Krieges," *Historische Zeitschrift* LV (1886): 425-462; LVI (1887): 404-462, relies heavily on these intelligence documents. Klinggraefen's fate is mentioned in Robert B. Asprey, *Frederick the Great: The Magnificent Enigma* (New York, 1983), pp. 423-424.

68. Christopher Duffy, *The Army of Frederick the Great* (Newton Abbott, 1974), pp. 98 ff.

69. Cf. Hermann Giehl, *Der Feldherr Napoleon als Organisator* (Berlin, 1911); and John R. Elting, *Swords Around a Throne; Napoleon's Grande Armée* (New York, 1988), pp. 81 passim.

70. French blindness is a significant theme, for example, of *The French Campaign in Portugal, An Account by Jean Jacques Pelet*, ed. and tr. by D.D. Horward (Minneapolis, Minn., 1973). Cf. in contrast E.C. Cocks, *Intelligence Officer in the Peninsula: Letters and Diaries of Major the Hon. Edward Charles Cocks, 1786–1812*, ed. J. Page (New York, 1986).

71. The process of decisionmaking in Serbia in 1914 remains controversial. The most complete collection of Serbian diplomatic documents from the period is *Dokumenti o spoljnoj politici Krajelvine Srbije, 1903–1914*, Vol. VIII, Part 2, 1/14 maj-22. juli/4. avgust 1914, ed. V. Dedijer, Z. Amic (Belgrade, 1980). Cf. Samuel R. Williamson, Jr., "The Origins of World War I," *The Journal of Interdisciplinary History* XVIII (1988): 810-811; and Gale Stokes, "The Serbian Documents from 1914: A Preview," *Journal of Modern History*, XLVIII, Supplement (1976). The best secondary accounts in English remain Joachim Remak, *Sarajevo: The Story of a Political Murder* (New York, 1959); and Vladimir Dedijer, *The Road to Sarajevo* (New York, 1966).

72. Ernest R. May, "Cabinet, Tsar, Kaiser: Three Approaches to Assessment," in *Knowing One's Enemies*, 11-36, draws sharper distinctions among decisionmaking systems than the present essay.

73. Ernest R. May, "Capabilities and Proclivities," *ibid.*, 504.

74. Dorwart, *ONI*, p.86.

Military Intelligence Sources during the American Civil War
A Case Study

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Few who have read them ever forget the dramatic opening lines in Michael Shaara's *The Killer Angels,* a 1974 Pulitzer Prize-winning novel about the Battle of Gettysburg:

He rode into the dark of the woods and dismounted. He crawled upward on his belly over cool rocks out into the sunlight, and suddenly he was in the open and he could see for miles, and there was the whole vast army below him, filling the valley like a smoking river. It came out of a blue rainstorm in the east and overflowed the narrow valley road, coiling along a stream..., spiked with flags and guidons like a great chopped bristly snake, the snake ending headless in a blue wall of summer rain.

The spy tucked himself behind a boulder and began counting flags. Must be twenty thousand men, visible all at once. Two whole Union Corps.[1]

As expected in a novel, much of the narrative in *The Killer Angels* is fiction, but in this case Mr. Shaara had introduced a real spy, one of the most famous in American history. Henry Thomas Harrison, a Mississippian, had discovered the Union Army of the Potomac rapidly nearing the Confederate Army of Northern Virginia commanded by General Robert E. Lee, who believed the Union Army was far away, still south of the Potomac River. When Harrison reached Confederate headquarters with his startling information on the evening of 28 June 1863, he precipitated the events that led to the Battle of Gettysburg. Based on Harrison's report, Lee ordered his invading army to concentrate in the Cashtown-Gettysburg area to meet the swiftly approaching menace.[2]

Three points about this episode deserve notice. First, the event is symbolic of the decentralized nature of Civil War military intelligence operations. Harrison was Longstreet's spy; that is, he worked for General James Longstreet, who commanded the Army of Northern Virginia's First Corps. Lee did not know Harrison and acted on the spy's information only because Longstreet vouched for him. In both the Union and Confederate armies, every commanding officer was free to devise his own intelligence operations, sometimes personally

supervising them, but oftentimes assigning them to a provost marshal, adjutant, signal officer, or perhaps to a specially designated staff officer. Neither the North nor the South developed a national intelligence organization that imposed even a semblance of coordination on these disparate efforts.[3]

However, despite the absence of a unified national intelligence system on either side, a few separate commands developed sophisticated intelligence operations. The foremost example was the Bureau of Information, which General Joseph Hooker established in the Army of the Potomac. Headed by Col. George H. Sharpe of the 120th Regiment of New York Volunteers, the bureau functioned until the end of the war. Sharpe's principal assistants were Capt. John McEntee and a civilian, John C. Babcock.[4]

A second noteworthy feature is that historians know the precise intelligence source that prompted Lee to act. In many cases, however, the source (or sources) is maddeningly ambiguous. Primary documents abound with references to commanders receiving or learning important information without ever disclosing how or from whom they obtained it,[5] and this vagueness in the original documentation often spills over into secondary accounts.[6]

Explaining the ambiguity in the primary sources is not difficult. Good intelligence people were reticent, especially when covert operations were concerned. General Grenville M. Dodge, perhaps the most effective Union spymaster in the Western theater, kept the names of his agents—almost 120 of them—from even his most trusted staff officers, and only he read their reports. When his immediate superior demanded all of his agents' names and locations, Dodge refused to provide the data, and appealed to General Ulysses S. Grant, then engaged in the siege of Vicksburg, for support. Like everyone else, Grant knew nothing about Dodge's spies, but he did know that the information Dodge supplied him was vital, and so he sustained him. "If I had the time," wrote Babcock, "I could not tell you now of my life and doings in the S.S. [Secret Service], so you must wait until the close of the war..." But forty years later at least one man who was familiar with the Union's intelligence operations still feared that "it would be impolitic to mention" the names of wartime agents. Reticence during the war was necessary not only because the adversaries frequently captured each others' mail, but also because official reports had a disconcerting habit of becoming public. Either way, the intelligence source would be exposed if explicitly identified in the documents.[7] In the postwar era, spies whose identity became known suffered ostracism and persecution from those whom they had betrayed.[8]

The third point about the spy episode is that Lee based such a momentous decision on a single source, and one of doubtful reliability at that. After all, Lee had scant opportunity to assess Harrison's veracity. Could the spy differentiate between an entire corps and a mere cavalry patrol? Perhaps Harrison had sold his services to the highest bidder, and was actually a double agent. Who knew for sure? In any event, few Civil War commanders ever had to muster the moral

courage to act upon such a questionable single source as did Lee that Sunday
night at his headquarters near Chambersburg, Pennsylvania. Generals usually
had multiple and diverse ways to obtain what General Philip Sheridan called
"that great essential of success, information."[9]

The methods of acquiring military intelligence fell into two broad
categories. By far, most of it came from HUMINT sources that armies had
historically used. But in military intelligence, as in so many other ways, the
Civil War marked a transition from traditional to modern warfare, for SIGINT
emerged as an important, if not yet indispensable, source.

One method of HUMINT is spying, which is as old as warfare.[10] Several
factors made espionage relatively easy, and hence common, during the Civil
War. The belligerents shared the same language and culture (with a little
practice, an agent could master regional dialects and cultural practices); they had
an extensive common border, unhindered by easily patrolled natural barriers;
and on both sides of this boundary numerous individuals were so opposed to
their government's war effort that they willingly assisted the enemy.

Great diversity existed among Civil War spies. They included men and
women, military personnel and civilians, and, occasionally, even children.[11]
But several distinctions among spies are especially significant. One is between
those who wrote memoirs and those who did not. Three points about the
espionage memoirs deserve emphasis. First, historians know the most about
those agents who wrote memoirs.[12] Second, a substantial amount of what the
agents wrote in their memoirs may not be true. Their accounts are almost never
possible to authenticate; since spying is a secretive business, the intelligence
agent is often the only witness to what he or she did. "That I shall speak often
of myself," wrote one spy, "is because much of my experience was acquired
when I was alone with God."[13]

Even when verifiable in their broadest outlines, the memoirs contain
embellishments and hyperbole.[14] Since giving more than a few examples of
these traits would be pedantic, let four suffice. Felix G. Stidger claimed that he
"succeeded, single handed and alone" in "completely overthrowing the
treasonable designs and intentions of" the Order of the Sons of Liberty. Rose
O'Neal Greenhow bragged that she "was, of course, a close observer of the
smallest indications, and often drew accurate conclusions without having any
precise knowledge on the subject" and that "of course, no word or indication
was lost upon me." On several occasions, Sarah Emma Edmonds, who served in
a Michigan regiment under the alias Franklin Thompson, allegedly assumed
female disguise to penetrate enemy lines—that is, she became a woman
impersonating a man impersonating a woman! Not one shred of valid historical
evidence confirms Edmonds' stories. Lafayette C. Baker perfectly recalled, a
half-dozen years after they supposedly occurred, several extensive dialogues
between himself and Jefferson Davis when the Confederate President was
interrogating him in Richmond as an alleged spy.[15]

Although almost all memoirs engaged in the highly suspect practice of recounting exact dialogues that took place many years before, specifics are conspicuously absent when it comes to dates, places, and precisely what intelligence the spy provided. To use Baker again as an example, after returning from his espionage mission to Richmond, he merely wrote, "I at once reported to General [Winfield] Scott, giving him all the information desired respecting Manassas, Fredericksburg, and Richmond, the resources and plans of the rebel chiefs, and the blockade running of the Potomac."[16]

The third point is that spies who wrote memoirs are invariably more famous, but were often less important, than those who did not. Greenhow, who operated in Washington, and Belle Boyd, whose exploits occurred in the Shenandoah Valley, published memoirs in 1863 and 1865 respectively. Their accomplishments were modest and Union counterintelligence quickly neutralized both of them, but they nonetheless became the war's (not just the South's) most famous female spies.[17] Having equal or even greater claim to fame were Elizabeth Van Lew, a Union agent in Richmond whose length of service and accomplishments far exceeded Greenhow's, and Rebecca Wright, a Unionist who, like Boyd, lived in the Valley. But neither of them wrote memoirs, and they remain virtually unknown.[18] Two male Union intelligence operatives, Allan Pinkerton and Baker, are much more famous—or perhaps that should be infamous—than Samuel Ruth, who was the superintendent of the Richmond, Fredericksburg, and Potomac Railroad, which was of vital importance to the Confederacy. Ruth was also a Union agent who had access to information about the movement of Confederate troops and supplies on Virginia's railroads, but alas for his historical reputation, he penned no reminiscences.[19]

Another useful distinction is between resident and itinerant spies. Van Lew and Ruth were the former type, for they stayed in Richmond and sent information to Union authorities via secret couriers. By contrast, early in their Civil War secret service careers, both Baker and Pinkerton undertook personal espionage missions into the South and then came back to friendly soil. Disguised as an itinerant photographer, Baker walked from Washington to Richmond and then returned to give his report to General Scott.[20] Pinkerton undertook a roving spy mission through Kentucky, Tennessee, and Mississippi. He also claimed to direct a band of operatives who "moved in and out among the Rebel troops at all times and places," including Pryce Lewis, who supposedly penetrated the South disguised as an English nobleman on a pleasure tour.[21]

A third distinction is between ordinary spies and double agents. One double agent was Richard Montgomery who, using the alias James Thompson, served as a trusted courier between the Confederate government in Richmond and rebel agents in Canada. On the way he regularly stopped in Washington, reporting to Assistant Secretary of War Charles A. Dana to allow Union authorities to read

the secret dispatches he carried.[22]   Other Union double agents were Timothy Webster, who was Pinkerton's favorite spy, and Philip Henson, whom Grenville Dodge considered "probably one of the best—if not the very best" man in his stable of talented agents.[23]

As at least some spies realized, being a soldier was easier than being a spy. Soldiers enjoyed long periods of relative safety while in camp or on the march and only occasionally confronted the dangers of the battlefield, where the comradeship that traditionally animates men in battle would sustain them.   On the other hand, spies were usually alone and unarmed in the midst of their enemies, were dependent solely on their wits and brains, and had to employ ceaseless vigilance lest the slightest misstep call forth the hemp.[24]   Indeed, the most important distinction to the spies themselves was undoubtedly between those who survived and those who hanged.   In at least one respect women spies had an advantage over males.   Although General Orders No. 100, issued by the War Department in April 1863, decreed that the law of war "makes no difference on account of the difference of sexes, concerning the spy," neither side hanged a female spy.[25]   However, both sides occasionally resorted to the hangman's noose when it came to males.[26]

Judging the significance of spying is difficult, but surely the small, loosely coordinated, and somewhat overlapping spy rings in Richmond headed by Van Lew and Ruth were a godsend to the Union.   Several points about these two rings warrant special notice.   First, although Van Lew and Ruth both commenced their pro-Union activities early in the war, their contribution to Northern victory reached its zenith during the siege of Petersburg.   With the Union armies essentially stationary so close to Richmond, intelligence steadily seeped through the Confederate lines.   Sometimes Union generals sent agents into Richmond to get the information from the spies, but often the spies sent couriers out of the city and into Union lines.[27]   Either way, the messages were at times verbal, and at other times written (either in plaintext or in cipher).[28] Occasionally difficulties occurred in one communications channel, but since multiple lines operated simultaneously, the information flow never ceased.[29] The communications channels became so systematic that when Grant's headquarters needed specific information from inside Richmond, all Grant or his subordinates had to do was ask and it could be obtained.[30]

Second, disentangling which ring provided what specific information is probably impossible in most cases because officials were so circumspect in their communications, usually using such innocuous phrases as "Our friends in Richmond," "The Union men of Richmond," and "It is reported from Richmond."[31]   However, in some cases the intelligence source can be pinpointed.   When, on separate occasions, General Benjamin F. Butler and Grant referred to intelligence "from a lady in Richmond," Van Lew was surely the source.[32]   And two congressional reports specifically linked the Ruth ring to ten specific intelligence items.[33]

Third, no matter which ring was the source, the information that came out of the Confederate capital was invaluable. As head of the Bureau of Information, Colonel Sharpe was more intimately involved than anyone else with acquiring and processing this information, and in the postwar era he lavished praise upon both Van Lew and Ruth.[34] Perhaps an even more glowing testimonial to their success came, unknowingly, from a Confederate source. Throughout the winter of 1864-65 John B. Jones, an astute clerk in the Confederate War Department, lamented the Union's espionage penetration of Richmond. "The enemy," he wrote in his diary, "are kept fully informed of everything transpiring here," and he informed President Davis that "there was no ground for hope unless communication with the enemy's country was checked..."[35]

A second traditional HUMINT source was scouting, which was frequently indistinguishable from spying. People used the words "spy" and "scout" interchangeably since men designated as scouts often combined legitimate scouting in their own uniform with actual spying, either in the enemy's uniform or disguised as civilians.[36] In *The Killer Angels,* Longstreet refers to Harrison as a spy, but Harrison retorts, "Scout sir. I am a scout." In spirit Harrison (both in fiction and in real life) may have been a scout, but his pre-Gettysburg activities were those of a spy. Although a Confederate lieutenant, in June 1863 he was operating in civilian attire, and General Orders No. 100 stated that "Scouts or single soldiers, if disguised in the dress of the country, or in the uniform of the army hostile to their own, employed in obtaining information, if found within or lurking about the lines of the captor, are treated as spies, and suffer death."[37]

With spying and scouting inextricably linked, commanding officers had to ask the same question about scouts that they asked about spies: Were they reliable? Scouts could be unreliable in two ways. All too often they reported rumors rather than facts. "Pickets or scouts bringing in false or exaggerated rumors," wrote Lee, "should be severely punished." Grant also questioned the overall veracity of scouts' reports, even though one of the war's best scouts worked for him when he was in the West.[38] Perhaps even worse, scouts were inherently untrustworthy because they could be working for the enemy. Horace Porter, one of Grant's aides, was so suspicious of scouts that he even doubted the loyalty of J. A. Campbell, who performed numerous heroic deeds for Sheridan.[39]

Like spying, scouting was decentralized; every general could establish his own scouting service. Some generals organized specialized scout battalions, which rarely contained more than a hundred men. While commanding at Rolla, Missouri, early in the war, Dodge formed a "Corps of scouts" from men in the 24th and 25th Missouri Regiments. Toward war's end Sheridan created a scout battalion commanded by Maj. Henry H. Young.[40] Other generals simply used aides and staff officers as scouts. General Thomas J. ("Stonewall") Jackson repeatedly sent his renowned mapmaker, Jedediah Hotchkiss, on scouting

missions. On the crucial second day at Gettysburg, Lee dispatched scouting
parties under staff officers Armistead H. Long, William N. Pendleton, and
Samuel R. Johnston to investigate the Union right flank. And much of General
Jeb Stuart's success can be attributed to an impressive list of individuals who
served him as scouts, including Redmond Burke, Will Farley, Charles Dabney,
John S. Mosby, and Frank Stringfellow.[41]

Scouts performed diverse functions. At times scout battalions conducted
irregular operations that were similar to those of organized guerrilla units, such
as the Confederacy's Partisan Rangers.[42] And the battalions often specifically
undertook anti-guerrilla missions. Young's unit "operated efficiently against the
guerrillas infesting West Virginia," and even captured Harry Gilmor, whose
partisans had bedeviled Union forces in the Valley for several years.[43] Scouts
acted as saboteurs when they penetrated enemy lines to burn or blow up
bridges,[44] and were invaluable as couriers.

Scout couriers accomplished some remarkable exploits. In October 1863
Corp. James Pike carried a vital message from Grant to General William T.
Sherman that hastened the latter's movement to Chattanooga. Pike, wrote
Sherman, "got a canoe at Whitesbury opposite Huntsville and came down the
Tennessee, over Muscle Shoals—all alone for one hundred miles of river, every
mile of which was picketed by the enemy, and reached me safely" at Iuka.[45]
And in March 1865, when Grant was anxious for news from Sheridan, A. H.
Rowland, Jr., and J. A. Campbell departed Sheridan's headquarters at Columbia,
Virginia, with a vital message. Dressed in gray, they rode hard for two days
through Confederate territory. Along the way they had "quite a confab with four
of General Lee's scouts," but escaped from the predicament by posing as
Confederate scouts. When they arrived at Grant's headquarters they were so
exhausted they could scarcely answer questions, but they produced Sheridan's
dispatch, written on tissue paper, wrapped in tin foil, and carried inside
Campbell's mouth.[46]

The most important scout duty was gathering information about the enemy's
location, movements, and order of battle. Generals kept their scouts active and
"well out," for they realized, as Lee phrased it, that their "own movements must
be in a measure regulated by" the enemy's activities.[47] During mid-1863, as
General William S. Rosecrans' army maneuvered Confederate forces out of
Middle and East Tennessee, scouts sent out by his chief secret service officer
and by his various corps and division commanders reconnoitered well in
advance of the army, as far south as Atlanta. Then in January and February
1864, Dodge's scouts traveled from Union-controlled Tennessee to Dalton,
Rome, Decatur, Atlanta, Savannah, Selma, Montgomery, Corinth, and dozens of
smaller communities, bringing back information on enemy fortifications, troop
locations and strength (including militia units), changes in command, the
condition of Confederate cavalry horses, and the shortages of forage and meat in
the South's interior.[48] So audacious were Southern scouts that Grant had reason

to worry about his personal safety from them, for the redoubtable Frank Stringfellow claimed that he had been near enough to a cluster of Union officers, including Grant, to hear their conversation.[49]

Knowing that each other's scouts were watching and probing, both sides tried to foil the enemy's scouts. Tight picketing could, at a minimum, forestall scouts by forcing them, as Lee once complained, "to make so wide a circuit, that their information is frequently late reaching me." When one side located a concentration of enemy scouts, it sent cavalry units to kill or capture them, and death and injury often resulted whenever either scouting parties or lone scouts bumped into each other. Scouts were also ready prey for bushwhackers and guerrillas.[50] The fate of Major Young's unit indicates how dangerous scouting was. It had fewer than sixty men and became operational only in August 1864, but it lost ten men by the time Lee surrendered in April 1865.[51]

If individual and small-scale scouting was often identical with spying, large-scale scouting blended almost imperceptibly into a third HUMINT source, that of cavalry reconnaissance. The cavalry's primary role was not fighting, but simply watching the enemy to discern its positions, movements, and numbers. Generals as diverse as George B. McClellan, Jackson, and Stuart realized this,[52] and the Union Army's regulations expressly stated that reconnaissance forces should "avoid fighting; and see, if possible, without being seen..."[53]

One of the South's great advantages early in the war was that Stuart excelled in the reconnaissance mission. "As soon as you can get exact information of the strength and movements of the enemy, let me know," wrote Lee to Stuart, fully aware that his cavalry commander could routinely acquire this knowledge. As Lee once emphasized to Stuart, he "received no positive information of the movements of the enemy, except through you."[54] However, after mid-1863, as the Union cavalry improved and the Confederacy's horsemen and mounts endured ceaseless attrition and inadequate logistical support, the North equaled, and perhaps exceeded, the South's reconnaissance capabilities.[55]

For both sides, no source of military intelligence was more vital than cavalry reconnaissance. It could not guarantee success in battle, but its absence was frequently a major factor in defeat. At the start of General John Pope's campaign leading to the Second Battle of Bull Run, many of his 4,000 cavalrymen, and especially their horses, were still recovering from unrelenting service during the Valley Campaign. Yet Pope continued driving them hard, despite withering heat, exhaustion, and near-starvation. When the battle began, his cavalry was in such deplorable condition from constant patrolling, marching, and countermarching that he had only about 500 serviceable mounts available, which was too few to provide necessary combat intelligence in a fluid situation.[56] As his adversaries admitted, Hooker's planning that resulted in the Battle of Chancellorsville was superb, except for one fatal defect: he sent most of his cavalry on a raid against Lee's supply and communications lines, leaving the infantry with no way to monitor Confederate movements or prevent Stuart

from discovering the Army of the Potomac's vulnerable right flank.[57]

Union generals were not alone in misusing their cavalry and thereby contributing to their own defeat. During his second invasion of the North, Lee expected Stuart to alert him when the Federal Army crossed the Potomac. Hearing nothing from Stuart, he "inferred that the enemy had not yet left Virginia." But Lee might just as logically have deduced that Stuart had encountered unexpected difficulties and was unable to communicate with him. Moreover, Lee still had two cavalry brigades (totaling 3,000 effectives) with the Army of Northern Virginia, but did not use them for reconnaissance missions. To Lee's credit, he reacted quickly once the spy-scout Harrison made his report. Yet, errors with the cavalry forces at his disposal meant that at Gettysburg the Army of Northern Virginia fought at an unexpected time and place, and without Stuart to supply the expert tactical intelligence to which Lee had become accustomed.[58]

Cavalry and scouts were often instrumental in providing a fourth source of HUMINT, captured documents and mail. The most famous example of this occurred on 22 August 1862 when Stuart raided Pope's headquarters at Catlett's Station and captured his official papers. From these Lee learned that Pope had only 45,000 men and that he intended to wait until McClellan's forces reinforced him before attacking. Forewarned, Lee launched a preemptive offensive against Pope and routed him at Second Bull Run.[59] Mail captured at Staunton in June 1864 revealed information to McEntee about reinforcements Lee had received. He also discovered that General Richard S. Ewell was incapacitated and had been replaced by Jubal A. Early as corps commander, that Pegram's Brigade had lost 300 men in a recent engagement, and that various brigades had been consolidated. The pockets of dead enemy soldiers were also ransacked for documents. A morning report found on General William E. Jones' body after the Battle of Piedmont allowed Babcock to determine the composition and numerical strength of Jones' command.[60]

One type of enemy document was so highly prized that it constituted a distinct HUMINT source: newspapers. Northern papers published so much reliable information that Sherman believed correspondents "should be treated as spies" because they revealed "all plans, and are worth a hundred thousand men to the enemy..." "Napoleon himself," he lamented, "would have been defeated with a free press."[61] Sherman was a special case—no Civil War general loathed the press quite as much as he did—but many other commanders on both sides would have agreed that a free press had become dangerously unfettered. Neither belligerent imposed efficient, consistent censorship, although Southern editors were more discreet than their Northern counterparts.[62] Still, again and again Lee had to urge Confederate secretaries of war to "use your influence" to prevent publication of sensitive information.[63] Repeated pleadings for discretion indicated the ineffectiveness of voluntary restraint.[64]

Significant leaks began early in the war and persisted for the duration. In

June 1861 a Hagerstown paper enumerated the units in General Robert Patterson's army in the Shenandoah Valley, thereby allowing General Joseph E. Johnston to confirm that reports from his scouts and civilians regarding Patterson's strength were correct.[65] Sherman discerned the South's intentions in the Western theater during the fall of 1864 by reading published accounts of President Davis' speeches. Davis "thus gave us the full key to his future designs," wrote Sherman. "To be forewarned was to be forearmed, and I think we took full advantage of the occasion."[66] Sherman's intentions also became public when, just before he departed on the "March to the Sea," the *Indianapolis Journal* discussed the size of his force and his plans. Other Northern papers picked up the story, compelling Grant to try to prevent them from getting into Southern lines. If Confederate authorities read the article, he feared it would allow them to make "the best arrangements they can to meet this move."[67] Another serious leak occurred the next month when the papers disclosed "some confidential circumstances which ought not to be made public" about the Wilmington expedition.[68]

With so much vital information being printed, enemy papers were worth acquiring systematically. In the summer of 1861 the "principal business" of Confederate agents in Washington was to get Northern papers. "From them," wrote Edward P. Alexander, the future commander of the Army of Northern Virginia's artillery, "we learned not only of all arrivals, but also of assignments to brigades and divisions, and, by tabulating these, we always knew quite accurately the strength of the enemy's army." Stuart sent one of his best scouts, Frank Stringfellow, to live in Alexandria for months to gather information from enemy newspapers.[69] And, of course, Union authorities just as diligently sought papers from Richmond and other enemy cities. As Grant wrote in March 1865, he received the Richmond papers daily at his headquarters.[70]

No two officers were more avid readers of enemy newspapers than Grant and Lee. During the siege of Petersburg, Grant not only read the papers from Richmond and elsewhere, but also regularly telegraphed summaries of the military information he gleaned from them to Secretary of War Edwin M. Stanton, Assistant Secretary of War Dana, and Chief of Staff Henry W. Halleck. If a day or two went by without Washington receiving these communications, President Abraham Lincoln wanted to know why. On a less regular basis, Grant also sent summaries to his foremost subordinates and to Rear Adm. David D. Porter.[71]

Grant considered much of the published information reliable. When Southern papers showed that Confederate forces at Wilmington had been weakened to send reinforcements to oppose Sherman in Georgia, Grant hastened the departure of the December 1864 expedition against that North Carolina seaport.[72] During his marches through Georgia and the Carolinas, Sherman was never cut off from communications with the North because the Union high command "watched" Sherman's campaigns through Confederate newspapers.

Grant and his staff were so anxious to maintain this one-way communications link that at one point his adjutant, John A. Rawlins, cautioned that "it would be well not to take official notice of this summary of news from the Richmond papers lest the rebel authorities prohibit the publication of news from Sherman altogether."[73]

Rivaling Grant's scrutiny of enemy papers was Lee's perusal of Northern papers. After digesting their contents, Lee customarily sent the papers to Davis, with comments directing the President's attention to items of special interest.[74] "I hope you get the Northern papers," Lee wrote to Early in July 1864, "as they will keep you advised of their [the enemy's] preparations to oppose you." This was good advice that Lee himself followed throughout the war.[75]

A sixth HUMINT source, which was less romantic than spying, less dangerous than scouting and cavalry reconnaissance, and as mundane as reading the enemy's newspapers, was the interrogation of deserters, prisoners, "contrabands" (fugitive slaves), refugees, and ordinary civilians. Although not always exciting, interrogations were essential, as every commanding officer recognized. "All spies, 'contrabands,' deserters, refugees, and many prisoners of war, coming into our lines from the front, were carefully examined," wrote McClellan, who had issued a special circular and specific orders to ensure that the examinations were thorough and coordinated.[76] High-ranking officers, such as Sheridan and George C. Meade, frequently became personally involved in the interrogations.[77] And if a delay occurred in forwarding people for examination, army headquarters wanted to know why, since intelligence must be timely to be useful.[78]

What types of intelligence did interrogations yield? Perhaps the most important was the location and movements of enemy units. "Have you any information of changes or movements of the Enemy in your front? If so please communicate the same to the Head Qrs.," Rawlins wrote to Butler and Meade. Both responded by reporting the most recent information from deserters.[79] Through rebel deserters and prisoners during the siege of Petersburg, Grant kept daily track of almost every enemy division and brigade. For this purpose, knowing that no changes had occurred in the Confederate lines was as valuable as learning when the enemy moved.[80] If doubts existed about which units were located where, a raid might be ordered with the intention of taking prisoners and extracting this information from them.[81] Reports from refugees and citizens were also helpful in locating and tracking the enemy.[82]

Before the 1864 campaign began, Lee issued a circular imploring his soldiers, if captured, to "preserve entire silence with regard to everything connected with the army, the positions, movements, organizations, or probable strength of any portion of it," but he failed to dissuade many Confederate prisoners from telling their captors all that they knew. Lee may have sincerely believed that the "chief source of information to the enemy is through our negroes," and their contribution to the Union cause in this respect was very

great, but at least during the war's last year the worst information hemorrhage regarding the Army of Northern Virginia came from Confederate deserters and prisoners.[83]

Interrogations also supplied data about the strength of units,[84] establishment and location of artillery batteries,[85] extent of railroad repair and construction,[86] location of mines,[87] local topography and roads,[88] and enemy intentions. For instance, deserters indicated that Longstreet's corps intended to attack the Union lines before dawn on 18 July 1864 so that Lee could throw the Yankees onto the defensive, which would allow him to detach troops to Georgia. Grant alerted his appropriate corps and they were ready to spring the trap on Longstreet. But no attack came because, as Grant learned from a deserter, "so many deserters had come into our lines & exposed their plans."[89]

The final HUMINT category might simply be called "visual observations." Sentinels and vedettes, of course, watched the enemy,[90] but two newer methods of observation deserve special notice: balloons and Signal Corps stations of observation. War balloons had a short history, beginning in 1794 when the French Committee of Public Safety created a balloon company. Between then and 1860 various European nations sporadically experimented with balloons in their military establishments. Meanwhile, the first ascension in the United States, which was non-military in nature, occurred in January 1793, sparking an enthusiasm for ballooning among innovative (and brave) civilians. But suggestions for using balloons in the Seminole and Mexican Wars came to naught. During the Civil War, however, both sides employed balloons for aerial reconnaissance.[91]

As in most of the war's major technological developments, the resource-poor South could not compete on equal terms with the more populous, wealthy, industrialized North. The Confederacy produced only a few balloons, and their active service lasted from June 1861 until late 1862 or early 1863. The most famous Confederate balloon was the so-called "Silk Dress" balloon. Built in Savannah—from donated silk dresses according to legend, but actually from new silk purchased in Savannah's shops—and transported to Richmond, it made daily ascensions during and immediately after the Seven Days Battles until captured by Union forces on July 4. Subsequently the South constructed only one more balloon, which did brief service at Richmond and Charleston before being carried away by a strong wind. Thus ended the South's limited experimentation with aerial reconnaissance.[92]

In the North many civilian balloonists hurried to Washington to offer their services, but the dominant figure among them was Professor Thaddeus S. C. Lowe, who gained the support of Joseph Henry of the Smithsonian Institution and then of McClellan. By early 1862 Lowe's aeronautic corps had at least seven balloons, along with a system of portable generators for inflating them in the field. During the Peninsula Campaign, the Battle of Fair Oaks, and the Seven Days Battles, his balloons made hundreds of ascensions with two

balloons often aloft simultaneously. Passengers on some of these flights often included Generals McClellan, Fitz John Porter, Daniel Butterfield, George Stoneman, and Samuel P. Heintzelman. The balloon corps was inactive during the Second Bull Run and Antietam Campaigns, but played a modest role at the Battles of Fredericksburg and Chancellorsville. Immediately after the latter battle Lowe resigned. His health was precarious, his patron McClellan was no longer in command, and his dedication was undercut by army red tape and a recent pay cut. Lowe's sudden departure abruptly ended the balloon corps' existence.[93]

A balloon's great advantage over a land-bound picket was its elevation. From heights of 500 feet or more, an observer could study the terrain and sketch maps or take pictures; locate encampments, artillery batteries, and field fortifications; estimate the enemy's strength by counting tents or campfires; watch the movements of troops and wagon and railroad trains; direct artillery fire; and scan the countryside for dust clouds indicating deployments beyond the horizon. Under favorable conditions and with competent observers aloft, an army had a large measure of security against unpleasant surprises, and could readily exploit unexpected opportunities.[94]

The phrases "favorable conditions" and "competent observers" indicate the limitations of balloons as a reconnaissance tool. Circumstances were frequently far from favorable. High winds could keep a balloon from attaining sufficient elevation or make the basket wobble and spin, preventing the observer from focusing his telescope or field glasses. A hazy atmosphere, fog, and battlefield smoke—not to mention rain, snow, and ice—hindered vision. Although enemy artillery fire never downed a balloon, it often kept the passengers ducking, and not particularly eager to stay aloft any longer than pride demanded. Moreover, troops in the vicinity did not appreciate incoming artillery projectiles aimed at the balloons, and in one instance a general ordered a balloon to descend to protect nearby soldiers. Civilian balloonists lacked the expertise for accurately estimating enemy forces. Generals knew this, and sometimes went aloft themselves or ordered a qualified observer to accompany the ascension. Even then oblique distortion prevented perfect observation, and armies soon learned to use camouflage and terrain features for concealment.[95]

Despite these weaknesses, Confederate officers were envious of the North's balloon corps., "We longed," wrote Longstreet, "for the balloons that poverty denied us." Another officer noted that, at a minimum, balloons "forced upon us constant troublesome precautions in efforts to conceal our marches." A number of Union generals also recognized the balloons' value and tried to persuade Lowe to return. But after May 1863, neither side again used balloons.[96]

Although balloon use reached its zenith during the spring and early summer of 1862 and then faded rapidly, Signal Corps stations of observation were of paramount importance throughout the war. When the Confederates fired on Fort Sumter in April 1861, the United States army had exactly one signal officer,

Maj. Albert J. Myer, who had developed a system of visual signaling that had been successfully field tested just prior to the war with the assistance of Lt. Edward P. Alexander. When the onset of war fractured the officer corps, Myer remained loyal and Alexander joined the South. Both men introduced ad hoc signal services into their respective armies in 1861. In April of the following year the Confederacy created a Signal Corps—the world's first independent organization of professional signalmen—and the North did likewise nearly a year later. Myer became the Union's Chief Signal Officer, but Alexander had rejected an analogous position and transferred to the artillery. Command of the South's Signal Corps went to William Norris, who had established a signal system in the Army of the Peninsula during the second half of 1862.[97]

From the beginning, signalmen utilized both stations of observation and of communication; individual stations, of course, frequently combined both functions. Stations of observation had four important similarities with balloons. First, they needed height to be effective. As one signal officer recalled, he spent much of his time "watching the rebel roads from any high point I could find, for movements of their troops."[98] Energetic observers utilized a variety of high points. They could erect towers, some reaching skyward more than two hundred feet. Rooftops, courthouse cupolas, and church steeples afforded good views, as did ships' masts when campaigning was near navigable waterways. In the absence of manmade help, nature sufficed. Mountain tops, high hills, and tall trees served admirably on numerous occasions.[99] Second, height did not guarantee unimpeded observation. Many of the factors that afflicted aerial reconnaissance, such as atmospheric conditions and enemy suppressive fire and concealment, also affected Signal Corps observers.[100] Third, from their commanding elevations signalmen provided the same types of military intelligence that balloonists observed.

Signal observation played a significant role in all of the war's battles. At First Bull Run, Alexander was at one of his signal stations when he noticed a glint of sunlight reflecting off a brass artillery piece eight miles away toward Sudley Springs Ford. He had discerned the North's turning movement in time to allow the Confederates to react successfully.[101] Perhaps the most famous example of signalmen influencing a battle occurred on July 2 at Gettysburg, where the Union had a signal station on Little Round Top. Eager to launch a surprise attack against the enemy's left flank, Lee ordered Longstreet to avoid being seen on the approach march. To follow this order, Longstreet had to make a long countermarch, delaying the attack for several hours. During this time Union forces that were crucial in the late afternoon fighting arrived on the battlefield.[102]

The fourth similarity was that observation alone did balloonists and signalmen little good. They also had to communicate what they saw quickly and often over long distances, which they did by sending signals. Signal-sending impelled the enemy to try intercepting the signals, which resulted in the

signalers employing ciphers to foil the interceptors. And using ciphers led, inexorably, to codebreaking.[103] Thus, the need to communicate pushed Civil War armies beyond HUMINT and into the realm of SIGINT. In SIGINT, as with steam and steel warships, submarines, railroads, massive firepower, conscription, and trench warfare, the American fratricidal conflict presaged many of the hallmarks of twentieth-century warfare.

In theory, the Signal Corps provided frontline communications, sending messages in four ways. By using different colored flags depending on the background (white against a forest, for instance, or scarlet against snow) and wagging them to the left or right to imitate the dot and dash of telegraphy, signalmen could send fifteen to twenty words in five minutes. On a clear day, flag signals could be sent up to twenty-five miles, though the normal distance between stations was far less than this. A second method, used at night, substituted torches burning turpentine for the flags, and a third utilized colored lights and rockets.[104] Finally, Myer's Signal Corps developed a field telegraph system, based upon a device invented by George Beardslee, that had the advantages of needing neither batteries (it operated on a pile of magnets) nor trained operators. Myer employed the first one during the Peninsula Campaign, and by mid-1863 sixteen were in use among various Union armies.[105]

Unfortunately for Myer, with the introduction of field telegraphy the Signal Corps collided with another new organization, the United States Military Telegraph, which initially provided only medium- and long-range telegraphic communications. The USMT developed as an expedient to operate existing commercial lines, and to build new ones as occasion demanded. It utilized the telegraphic system introduced by Samuel F. B. Morse in the mid-1840s. Although technically under the Quartermaster General's orders, Secretary of War Stanton exercised direct control over it. Anson Stager, the prewar general superintendent of the Western Union Company, headed the organization, with his principal assistants being Thomas T. Eckert in the East and Robert C. Clowry in the West.[106]

Both Myer and Stager realized that the distinction between battlefield telegraphy transmitted by the Signal Corps and longer-range messages wired by the USMT made little sense. The result was a battle over roles and missions, with each man laying claim to all telegraphic communications. Resolving the conflict became urgent in mid-1863 when, after the Beardslee machines had consistently malfunctioned, Myer decided to convert to Morse telegraphy, which meant raiding the USMT's personnel and logistical support. The climax came in November when Stanton ordered Myer to an obscure job in the Western theater, and directed the Signal Corps to surrender its field telegraph equipment to Stager. From then on the Signal Corps employed visual signals only. The USMT never used the Beardslee machines, but instead relied on the Morse system for all telegraphy.[107]

The telegraph was of immense importance. By mid-war the USMT had

created a network linking Washington to various army headquarters. From there temporary field lines snaked forward to corps and division headquarters, and even to advanced field works, Signal Corps stations, and picket lines. When an army advanced, telegraphic communications moved apace, to the marvel of commanding officers. At times, telegraphers even extended their operations into enemy lines during the heat of battle.[108] Through mere strands of wire (which were relatively impervious to atmospheric conditions and weather), generals directed the movement of their armies, in both the strategic and tactical arenas. They synchronized advances (or retreats) and logistical support, learned about enemy activity, and dispatched reinforcements. The number of telegrams indicated how heavily Union armies relied upon the USMT. For the fiscal year ending 30 June 1863, Stager reported that it had sent and received 1,200,000 messages ranging in length from ten to more than a thousand words. During the war, the daily average of military and government telegrams was 4,500.[109]

Both sides sent many of their important visual and telegraphic messages in cipher. In both the North's and the South's Signal Corps, authorities changed codes frequently, but none of them remained secure for long. The Chief Signal Officer of the Department of the Cumberland reported that the same day the enemy changed its cipher, two of his men broke it, and a Confederate signalman recalled that the rebels "not infrequently" deciphered Federal messages. Lee's aide-de-camp sent General Early a copy of "the enemy's signal alphabet as deciphered by some of our signal corps," and noted that the Confederates were reading enemy messages "with facility." As one Union Signal officer lamented, "the enemy can read our signals when the regular code is used, and it is equally evident to the minds of all who have had anything to do with interpreting ciphers that our cipher is unsafe and cannot be trusted."[110]

At times, Grant noted, it took too long "to make translations of intercepted dispatches for us to receive any benefit from them. But sometimes they gave useful information."[111] With such a potential intelligence bonanza so readily available, Signal Corps personnel spent much of their time watching each others' signal stations, jotting down the wigs and wags, and then decoding the communications. "I am daily reading the en[em]y's signals & get much good information," wrote one. On the Bermuda Hundred expedition a Union station provided a superb view of three enemy signal stations, so a regular watch was established over them. And in operations around Charleston in 1863 the Confederates employed seventy-six signalmen, twelve of whom did nothing but read enemy messages.[112] One historian has estimated that the respective Signal Corps fought about 99 percent of the Civil War's SIGINT war, and if the Official Records are an accurate indicator, he is correct, for they teem with reports of intercepted Signal Corps messages.[113]

Anson Stager devised the first military telegraph cryptographic system, which was an enciphered code that fit on a single card, for use in McClellan's 1861 West Virginia campaign. Stager's original system went through numerous

improvements, primarily at the hands of youthful War Department cipher operators. Finally, in its twelfth and final version introduced in March 1865, its codewords and plain-language equivalents filled forty-eight printed pages.[114] Those responsible for the code were primarily the USMT's civilian operators, who swore not to "reveal or divulge to any person or persons any cipher that may be given me for United States military purposes," and who reported directly to Stager. Commanding officers and their most trusted staff officers had no access to the ciphers.[115]

Occasionally this situation bred tension. The most notable instance concerned Grant's cipher operator, Samuel H. Beckwith. Grant ordered him to give the cipher to Captain Cyrus B. Comstock, who was going to accompany him on a trip, and whom Grant considered "a wise and discreet man who certainly could be trusted with the cipher..." Beckwith refused, Grant threatened dire punishment, and Beckwith relented. When the War Department learned of the operator's indiscretion, it ordered him fired; only Grant's most earnest entreaties got Beckwith restored to duty. However, with the old cipher compromised, the War Department sent a new cipher. Its secret, wrote Beckwith, "remained close locked in my possession, and henceforth the General always took me with him on his travels." To avoid similar difficulties, cipher operators customarily accompanied Union expeditions; for example, nine went with Sherman through Georgia.[116]

Apparently, Confederates never broke the USMT's ciphers even though this should have been possible. After all, they regularly broke Yankee Signal Corps ciphers, the USMT ciphers were quite simple, the rebels captured several USMT cipher operators and their operating books, and they got their hands on a number of enciphered Union messages. Still, no evidence has come to light to contradict the judgment of a USMT cipher operator that "no case is recalled of the enemy having translated a Federal cipher despatch."[117] The Confederacy's secret service records, however, were destroyed in the fires that gutted much of Richmond in early April 1865, which may explain the absence of relevant evidence.

The USMT definitely read some enemy enciphered messages. The Confederate Signal Bureau in Richmond, headed by William Norris for most of the war, was not only the headquarters of the Signal Corps, but also of the Secret Service Bureau, which had authority over the cipher used by government officials, generals, secret service agents, and diplomats.[118] The Confederates believed their cipher, which was based on a system developed by Blaise de Vigenére in the sixteenth century, was safe, but it actually contained weaknesses that allowed Union cipher operators to solve it. The enciphered messages read by USMT personnel were captured in the field or delivered by spies; none resulted from a wiretap.[119]

However, wiretapping or capturing a telegraph station could be an intelligence triumph because both sides sent many unenciphered messages. In

either case, the interloper could sit quietly and listen or send bogus dispatches that confused the enemy. A federal operator tapped the line between Albert S. Johnston's headquarters at Bowling Green and rebel forces at Cave City, another tapped a line between Charleston and Savannah, two telegraphers listened in between Chattanooga and Knoxville for a month, and one of Sherman's operators tapped an important enemy line during the March to the Sea. Much of the success of George Stoneman's southwestern Virginia raid resulted from capturing the Bristol telegraph office, where Stoneman's operator listened to enemy communications and compelled the Confederate operator to send false traffic.[120] The South had similar successes.[121]

"Many intelligence reports in war," wrote the Prussian soldier-scholar Carl von Clausewitz in his monumental *On War*, "are contradictory; even more are false, and most are uncertain." Two dozen pages later he returned to the problem, noting that "the general unreliability of all information" ensured that military action occurred "in a kind of twilight, which, like fog or moonlight, often tends to make things seem grotesque and larger than they really are."[122] Few, if any, Civil War generals would have disagreed with him.

Despite their many HUMINT and SIGINT sources, commanding officers on both sides never found it easy to discover the truth. Echoing Clausewitz, Lee informed President Davis that "The reports are so conflicting and sometimes opposing, and our people take up so readily all alarming accounts, which swell in their progress, that it is difficult to learn the truth till too late to profit by it." About a year later he wrote a similar missive to Stuart: "I am unable yet to determine what are the plans or intentions of the enemy; reports are so contradictory."[123] Union generals, and their subordinates engaged in intelligence work, had the same problem. One particular enemy division, Meade told Grant in July 1864, "has now been positively placed in our front—on our left & rear & on its way to Pa."[124] And how was George Sharpe, commanding the Bureau of Information, to reconcile a report from his trusted assistant, John Babcock, that a certain Confederate division had "positively gone to Wilmington," and a telegram the next day from Maj. Gen. E. O. C. Ord presenting evidence that the division had not left?[125]

Why were so many intelligence reports contradictory or wrong? One reason was that rumors and exaggerations often shielded the truth. "Rumors, and reports of rumors," Hooker wrote Lincoln, indicated that the enemy was making changes, but he could not yet determine what they were.[126] "Reports from citizens however intelligent and honest cannot be relied on," Lee asserted. "Had General Foster received all the reinforcements that have been reported...he ought to have the largest Federal army now in the field." And a citizen informed Henry Gilmor that one hundred enemy cavalrymen were nearby; this, he said, "I put down at fifty, and was right." Deserters often embellished their stories "to add to their consequence, and the supposed value of their information." When writing about the interrogation of blacks, McClellan (no doubt unaware of the

irony in accusing others of his own glaring fault) asserted that "their estimates of numbers were almost ridiculously inaccurate."[127] Newspapers contained intelligence nuggets, but they were usually buried in tons of useless ore consisting of bluster, puffery, blatant fabrications, sensationalism, faked eyewitness accounts, and conjectures based on nothing more substantial than a reporter's unrestrained imagination.[128]

A second explanation for contradictory intelligence was enemy deception. Each belligerent understood the other's HUMINT and SIGINT information-gathering methods and developed ways to foil them. Spies and scouts could be—and sometimes were—double agents. Along with reconnaissance, cavalry also conducted counterreconnaissance missions to protect their army from prying enemy cavalrymen.[129] Captured mail could contain documents manufactured to mislead, and commanders sometimes told correspondents lies disguised as facts, knowing that the enemy would read them.[130] Interrogators could be deceived in many ways. On his ride around McClellan's army, Stuart queried citizens about the road network leading one way and then quietly moved in the opposite direction, hoping that the civilians would tell his pursuers what he had asked them and thereby sow doubt and confusion.[131] Deserters sometimes lied,[132] or perhaps were not even genuine deserters. Both sides used mock deserters to plant false information, or to have them acquire intelligence and then return.[133] Bogus deserters were in a dangerous situation, especially those interrogated by Sharpe and his subordinates, who knew enough about Lee's army and Virginia's topography to ask probing questions that could trip up an unwary man. And if they doubted a deserter's authenticity, they were not above using torture to try to learn the truth.[134]

Visual observers could also be frustrated. One method was to make them keep their heads down through suppressive fire. Another was to create illusions by such ruses as kindling extra campfires and mounting dummy guns, or by leaving "the usual amount of force generally visible" to persuade the enemy that all was normal when a movement was actually in progress. Generals also learned how to conceal their forces behind hills or woods, or by moving at night.[135]

As with HUMINT, so with SIGINT: both sides developed techniques to lead it astray, especially by sending false messages when they knew the enemy would intercept them. On the night of 26 June 1862, during the Seven Days Battles, a Union force planned to evacuate a position. But to confuse the Confederate high command about Yankee intentions, the signal officer had his men send in cipher, but from a location that the rebels could see, a message saying that five divisions had arrived; he expected the enemy to decipher it. The telegraph could also be manipulated to mislead. In September 1864 a rebel operator got on a Union line pretending he was the regular USMT employee. Because the interloper's key signature was different, a USMT operator at another station recognized what had happened and alerted the commanding officer. The latter then fed the enemy

operator misinformation about nearby Union forces.[136]

"It behooves us to be on the alert," Lee wrote to Longstreet in March 1864, "or we will be deceived. You know that is part of Grant's tactics." The Confederate commander was correct, for Grant was a master at deception. He had, continued Lee, "deceived Pemberton when he turned him, and in this last move of Sherman threw dust in Polk's eyes." Of course, Grant had lots of help, for deception was a collective enterprise. As Assistant Secretary of War Dana assured him, "If you wish any false information to be given to the Rebel authorities, I have the means of conveying it so that it will be believed. It will take seven to ten days to reach them."[137] Confederate generals and government officials returned the favor whenever they could.

How could generals stitch together the truth from their intelligence sources when they knew that each was vulnerable to falsehood and deception? Generally, they followed two practices. One was to be discerning, to assess the reliability of the source of every single intelligence report. Interrogators consistently differentiated between well-informed, intelligent deserters, contrabands, refugees, and citizens,[138] and those who appeared dull and uninformed.[139] When Grant received a scout's report that Early was returning to Richmond from the Valley, he wanted the scout sent to him so that he could personally judge his reliability. And Lee attached special importance to the Philadelphia *Inquirer* because its stories were often more accurate than those of other Northern papers.[140]

The second practice was to seek cumulative corroboration from multiple sources; indeed, the quest for confirmation pervaded the intelligence war. When confronted with new information, intelligence operatives and consumers immediately asked others whether they could verify it.[141] "By our scouts from the Chickahominy last night," wrote Sharpe to a general, "we have received a written communication from an agent in Richmond, much of which is only strongly corroborative of our own information, but is repeated here in order to show the value of the whole." Dana wrote that a spy's report about the Confederate army "was of no particular value, except that in its more interesting features it agreed with our information from other sources."[142]

Yet, until war's end reality confounded even the most diligent intelligence assessments. In March 1865 Grant received reports from deserters, refugees, and scouts all confirming, over a two-day period, that Sheridan had defeated Early and captured the Confederate commander and his staff. As had been true so often in the previous four years, these reports, all seemingly certain, were only partly true: the rebels had been smashed, but Early had escaped.[143] Nor could the truth always win the battle against self-deception. McClellan, Pope, and Hooker were victimized not so much by faulty intelligence as by their inability to cast aside preconceived notions even when confronted with evidence that their ideas were wrong.[144]

Thus, despite the numerous methods of acquiring HUMINT and SIGINT, and

despite efforts by wise and clever men to evaluate and apply the information these sources provided, Civil War military intelligence was never perfect, as the numerous successful surprise attacks from the spring of 1861 through the spring of 1865 so amply attest!

Notes

The author expresses his most profound thanks and appreciation to Mr. Edwin C. Fishel of Arlington, Virginia, who knows more about Civil War military intelligence than anyone. He is not a professionally trained historian, but is a former employee of the National Security Agency and its predecessors, the Signal Intelligence Service and the Army Security Agency. Mr. Fishel has greatly helped shape this paper through his published works cited in the following notes, and through numerous phone calls and an extensive correspondence. In a noble display of scholarly generosity, he has even shared his sources and some of his notes with me and one of my graduate students, Mr. William B. Feis, who is currently working on Grant's use of military intelligence. Mr. Fishel's forthcoming book, tentatively entitled The Secret War for the Union, will be a magnificent contribution to Civil War literature. The author also wishes to thank Professors Howard Jones of the University of Alabama and Benjamin Rader of the University of Nebraska-Lincoln for critiquing a draft of this essay. Although neither is an expert in Civil War history, I admire their keen intellects and fine writing styles, and, as I expected, their comments were extremely helpful.

1. Michael Shaara, *The Killer Angels* (New York: Ballantine Books, 1976), p 3.
2. James O. Hall, "The Spy Harrison," *Civil War Times Illustrated* 24 (Feb 1986):18-25; Clifford Dowdey, ed, and Louis H. Manarin, associate ed, *The Wartime Papers of R. E. Lee* (New York: Bramhall House, 1961), p 574; Gen G. Moxley Sorrel, *Recollections of a Confederate Staff Officer,* reprint ed (Dayton: Morningside Bookshop, 1979), pp 161-65; Harry W. Pfanz, *Gettysburg: The Second Day* (Chapel Hill: University of North Carolina Press, 1987) pp 3-5; Edwin B. Coddington, *The Gettysburg Campaign: A Study in Command,* reprint ed (Dayton: Morningside Bookshop, 1979), pp 180-81. Historians knew Harrison only by his last name until Hall's article appeared and finally revealed his true identity.
3. Edwin C. Fishel, "The Mythology of Civil War Intelligence," *Civil War History* (hereafter *CWH*) 10 (Dec 1964):344-367, and "Myths That Never Die," *International Journal of Intelligence and Counterintelligence* 2 (Spring 1988):27-58; David C. Sparks, "General Patrick's Progress: Intelligence and Security in the Army of the Potomac," *CWH* 10 (Dec 1964):371-384; Marc B. Powe and Edward E. Wilson, *The Evolution of American Military Intelligence* (Fort Huachuca: U.S. Army Intelligence Center and School), p 9.
4. On the Bureau of Information, see Record Group 393, The Records of United States Army Continental Commands, 1821-1920, Part I, Entry 3980, Box 9 ("Miscellaneous Letters, Reports, and Lists Received, 1861–1865"), Box 10 ("Miscellaneous Letters, Reports, and Lists Received, 1861-1865), and Box 11 ("Miscellaneous Letters, Reports, and Lists Received, 1861-1865"), in the National Archives, Washington, D.C. (Sharpe Papers henceforth); Fishel "Mythology" and "Myths;" Sparks, "Patrick's Progress;" Lt. Col. C. T. Schmidt, "G-2, Army of the Potomac," *Military Review* 28 (July 1948):45-56; Robert Isaac Schneider, "General Hooker's Use of Combat Intelligence During the Chancellorsville Campaign, April 30-May 5, 1863," unpublished M.A. thesis, University of Maryland, 1957.
5. For just a few specific examples, see U.S. War Department, *The War of the Rebellion: Official Records of the Union and Confederate Armies (OR* henceforth) (128 vols., Washington: Government Printing Office, 1880-1901) Series I (henceforth all references are to Series I unless noted), vol 11, pt 1, p 262, vol 39, pt 2, pp 727-28; Dowdey and Manarin, *Wartime Papers of R.E. Lee,* p 192; E. P. Alexander, *Military Memoirs of a Confederate: A Critical Narrative* (New York: Charles Scribner's Sons, 1907) p 324; Ulysses S. Grant, *Personal Memoirs of U.S. Grant* (2 vols., New York: Charles L.

Webster, 1886) II, pp 326-27; Philip H. Sheridan, *Personal Memoirs of P. H. Sheridan* , 2 vols., (New York: Charles L. Webster, 1888) I, p 481; William T. Sherman, *Memoirs of General William T. Sherman By Himself*, 2 vols, (Bloomington: Indiana University Press, 1957) II, p 56.

6. As one recent example see James Lee McDonough and James Pickett Jones, *War So Terrible: Sherman and Atlanta* (New York: W. W. Norton, 1987), p 129.

7. Stanley P. Hirshson, *Grenville M. Dodge: Soldier, Politician, Railroad Pioneer* (Bloomington: Indiana University Press, 1967), pp 67-68; John C. Babcock to Dear Aunt, 6 June 1862 and Henry G. Sharpe to Babcock, 11 Jan 1905, both in the John C. Babcock Papers, Manuscript Div, Library of Congress, Washington, D.C. For an example of a spy's exposure via captured mail, see *OR*, vol 12, pt 3, p 943.

8. See Elizabeth Van Lew to Mr. Rogers, 10 Apr 1877, to Dear General, 1 Feb 1887, and to Mr. Forbes, 20 Mar 1891, all in the Elizabeth Van Lew Papers, New York Public Library.

9. *OR*, vol 46, pt 1, p 481.

10. Sun Tzu had much to say about spying; see Samuel B. Griffith, trans., *Sun Tzu, The Art of War* (New York: Oxford University Press, 1963), p 147.

11. For example, during the siege of Petersburg, Lee reportedly had "two little boys trained as spies" who traveled in the Union lines posing as newsboys; see *OR*, vol 42, pt 3, p 472.

12. Belle Boyd, *Belle Boyd in Camp and Prison: Written by Herself*, edited by Curtis C. Davis (New York: Thomas Yoseloff, 1968) Appendix. Davis identified twenty-five intelligence service accounts, with some having appeared in several editions. I have read at least one edition of each.

13. James Dudley Peavey, ed, *Confederate Scout: Virginia's Frank Stringfellow* (Onancock, Va: Eastern Shore Publishing, 1956), pp 1-2.

14. As Davis, *Belle Boyd*, pp 8, 38-45, has shown, these memoirs often fit into the accepted standards of mid-nineteenth-century romantic fiction. Davis argues that Boyd's memoir "has proved itself out as reliable to a high degree," yet points out that she employed a literary advisor to add zest to the narrative. In one case, the editor of a memoir admits that he cannot prove whether his subject's story is fact or fiction, but that either way it "is one of the most unusual stories to come out of the Civil War;" see [Henry J. Acker], *Gulf Spy: Sgt. Henry J. Acker, 23rd Wisconsin Vol. Inf.* (Tall Timbers, Md: Headquarters Press, 1961) p 3.

15. Felix G. Stidger, *Treason History of the Order of Sons of Liberty...* (Chicago: Published By The Author, 1903) p 23; Mrs. [Rose O'Neil] Greenhow, *My Imprisonment and First Year of Abolition Rule at Washington* (London: Richard Bentley, 1863), p 229; Mrs. *Emma E. Edmonds, Nurse and Spy in the Union Army...*(Hartford: W. S. Williams, 1865); Sylvia G. L. Dannett, *She Rode with the Generals: The True and Incredible Story of Sarah Emma Seelye, Alias Franklin Thompson* (New York: Thomas Nelson, 1960); and Betty Fladeland, "New Light on Sarah Emma Edmonds, Alias Franklin Thompson," *Michigan History* 47 (Dec 1963):357-362; Fishel demolished Edmonds' more blatant fabrications in a letter to the author dated 28 June 1988, and in an enclosure with that letter entitled, "Female Nurse, Male Spy;" General L. C. Baker, *History of the United States Secret Service* (Philadelphia: L. C. Baker, 1867) pp 56-60.

16. Baker, *United States Secret Service*, p 72.

17. As Greenhow's book explains, she was arrested in August 1861 and deported in the spring of 1862. Her fame rests upon messages she sent to General P. G. T. Beauregard warning him of the Union army's advance in July 1861. However, her information was only one of many sources Beauregard utilized; see John Bakeless, *Spies of the Confederacy* (Philadelphia and New York: J. B. Lippincott, 1970) pp 18-26. Davis, *Belle*

Boyd, shows that Union authorities arrested Boyd twice before deporting her in late 1863. Although she had engaged in some genuine espionage, her fame derives from a wild dash she made on May 23, 1862, to alert Jackson of the small size of Union forces at Front Royal; this was not an act of espionage, and merely confirmed what Jackson already knew. Davis considers her "The Civil War's Most Over-Rated Spy," *West Virginia History* 27 (Oct 1965):1-9; also see his "'The Pet of the Confederacy' Still? Fresh Findings About Belle Boyd," *Maryland Historical Magazine* 78 (Spring 1983):35-53. Greenhow would be a close second for the title of most over-rated spy.

18. The best single statement of Van Lew's importance is the long letter from Sharpe to General C. B. Comstock, Jan 1867. A copy is in the Van Lew Papers. Wright once provided invaluable information about Confederate forces in the Valley to Sheridan; see Sheridan, *Memoirs,* II, pp 2-6.

19. On Ruth, see U.S. Congress, House of Representatives, 43d Cong. (1874), 1st Sess., Report No. 792, and 44th Cong. (1876), 1st Sess., Report No. 823; Angus J. Johnston, II, "Disloyalty on Confederate Railroads in Virginia," *The Virginia Magazine of History and Biography* (hereafter *VMHB*) 63 (Oct 1955):410-426; Meriwether Stuart, "Samuel Ruth and General R. E. Lee: Disloyalty and the Line of Supply to Fredericksburg, 1862-1863," *VMHB* 71 (Jan 1963):35-109.

20. Jacob Mogelever, *Death to Traitors: The Story of General Lafayette C. Baker, Lincoln's Forgotten Secret Service Chief* (Garden City: Doubleday, 1960) pp 52-60; Baker, *United States Secret Service,* pp 45-71.

21. Allan Pinkerton, *The Spy of the Rebellion...*(Hartford: M. A. Winter & Hatch, 1885) pp 183ff, 210ff, 467; Harriet H. Shoen, "Pryce Lewis, Spy for the Union: Operations in Western Virginia, June-July 1861," *Davis and Elkins Historical Magazine* 2 (Mar and May 1949):22-30.

22. Charles A. Dana, *Recollections of the Civil War: With the Leaders at Washington and in the Field in the Sixties* (New York: D. Appleton, 1898) pp 238-47; David Homer Bates, *Lincoln in the Telegraph Office...*(New York: Century Co., 1907) pp 78-81; Meriwether Stuart, "Of Spies and Borrowed Names: The Identity of Union Operatives in Richmond Known as 'The Phillipses' Discovered," *VMHB* 89 (July 1981):308-327.

23. Pinkerton, *The Spy of the Rebellion,* p 469; George S. Johns, *Philip Henson, the Southern Spy...*(St. Louis: Nixon-Jones Printing, 1887)—the quote is on p 87.

24. Johns, *Henson, the Southern Spy,* pp 5-6, explains how much easier soldiering was than spying. Van Lew's autobiographical sketch, in the Van Lew Papers, vividly describes the constant tension that Richmond Unionists endured.

25. Section V, paragraph 102, General Orders No. 100, in *OR,* Series III, vol 3, pp 148-64. General Braxton Bragg sentenced Union spy Pauline Cushman to be hanged, but fortuitous circumstances saved her; see F. L. Sarmiento, *Life of Pauline Cushman, Celebrated Union Spy and Scout* (Philadelphia: John E. Potter, 1865) pp 270-325.

26. Two Union spies who hanged were Timothy Webster and Spencer Brown, and two Confederate spies were Sam Davis and David O. Dodd. See Pinkerton, *The Spy of the Rebellion,* p 56; George G. Smith, ed, *Spencer Kellogg Brown: His Life in Kansas and His Death as a Spy, 1842-1863, as Disclosed in His Diary* (New York: D. Appleton, 1903) p 374; Grenville M. Dodge, *The Battle of Atlanta and other Campaigns, Addresses, etc.* (Council Bluffs: Monarch Printing, 1910) pp 165-70; Bakeless, *Spies of the Confederacy,* p 258.

27. *OR,* vol 33, pp 519-21, 681-82 and vol 42, pt 3, pp 226, 445, 613; Marsena R. Patrick, *Inside Lincoln's Army: The Diary of Marsena Rudolph Patrick, Provost Marshal General, Army of the Potomac* [David Sparks, ed] (New York: Thomas Yoseloff, 1964) pp 349-50.

28. Sharpe to Bowers, 21 Jan 1865, Box 9, Sharpe Papers.

29. For problems in communications, see Stuart, "Samuel Ruth," pp 94-99; Sharpe to Bowers, 29 Aug 1864, Box 9 Sharpe Papers; Sharpe to Rawlins, 29 July 1864, Record Group 108, The Records of the Headquarters of the Army, Entry 112, Box 1 ("Information from Examination of Scouts, Deserters, etc."); *OR,* vol 46, pt 3, pp 29, 1073. For the simultaneous channels, see *OR,* vol 46, pt 2, p 75.

30. *OR,* vol 42, pt 2, pp 568, 736, and pt 3, p 710; Sharpe to Comstock, Jan 1867, Van Lew Papers.

31. *OR,* vol 42, pt 2, p 1050, and vol 46, pt 2, p 525; John Y. Simon, ed, *The Papers of Ulysses S. Grant (GP* henceforth) (15 vols. to date, Carbondale and Edwardsville: Southern Illinois University Press, 1967-) XIII, p 5.

32. *OR,* vol 33, p 519; *GP,* XIV, p 160.

33. Report No. 792 and Report No. 823.

34. Sharpe to Comstock, Jan 1867, Van Lew Papers; Report No. 792. Butler once wrote that he "would willingly stake my life" on Van Lew's loyalty; see *GP,* X, p 560.

35. John B. Jones, *A Rebel War Clerk's Diary,* edited by Earl Schenck Miers (New York: Sagamore Press, 1958) pp 469, 477, 486, 492, 505, 509. Besides the Ruth and Van Lew rings, other individual spies penetrated Richmond. For example, Orazio Lugo de Antonzini was a navy spy who visited Richmond, Charleston, and Wilmington; see Meriwether Stuart, "Dr. Lugo: An Austro-Venetian Adventurer in Union Espionage," *VMHB* 90 (July 1982):339-358.

36. For examples of the words used interchangeably, see Pinkerton's *The Spy of the Rebellion,* which refers to Timothy Webster in the title of Chapter XX as "The Spy at Richmond" and to him in Chapter XXXIV, "No Tidings of the Faithful Scout;" [John Fitch], *Annals of the Army of the Cumberland...*(Philadelphia: J. B. Lippincott, 1864) p 491; Johns, *Henson, the Southern Spy,* p 9; *OR,* vol 33, p 1324.

37. Shaara, *Killer Angels,* p 7; Section IV, paragraph 83, General Orders No. 100 (also see Section IV, paragraph 84 and Section V, paragraph 88).

38. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 673; *GP,* XII, p 101. The scout who worked for Grant was Corporal Lorain Ruggles; see *GP,* XII, pp 457-58; and E. C. Downs, *Four Years a Scout and Spy...*(Zanesville, Ohio: Published by Hugh Dunne, 1866). Another scout Grant praised was C. S. Bell; see *GP,* X, p 387.

39. Horace Porter, *Campaigning with Grant* (Bloomington: Indiana University Press, 1961), p 455. For a scout who was an enemy spy, see Sheridan, *Memoirs,* II,pp 108-11.

40. Dodge, *The Battle of Atlanta,* p 19; Sheridan, *Memoirs,* II, pp 1-2.

41. Jedediah Hotchkiss, *Make Me A Map of the Valley: The Civil War Journal of Stonewall Jackson's Topographer,* edited by Archie P. McDonald, (Dallas: Southern Methodist University Press, 1973) pp 47, 55-56, 83; G. F. R. Henderson, *Stonewall Jackson and the American Civil War,* 2 vols., (London and New York: Longmans, Green, 1898) II, p 427, concluded that "Jackson had scouts who were more useful to him than many of his brigadiers;" Pfanz, *Gettysburg,* pp 105-07; R. Shepard Brown, *Stringfellow of the Fourth: The Amazing Career of the Most Successful Confederate Spy* (New York: Crown Publishers, 1960) pp 61-64. Mosby tells of his own exploits in *The Memoirs of Colonel John S. Mosby,* edited by Charles Wells Russell, (Boston: Little, Brown, 1917).

42. *Revised United States Army Regulations of 1861.* With an Appendix... (Washington, D.C.: Government Printing Office, 1863) p 95, defined the purpose of partisan corps in words that are almost a perfect description of what scouting battalions did.

43. Sheridan, *Memoirs,* II, pp 104-07; Harry Gilmor, *Four Years in the Saddle* (New York: Harper & Brothers, 1866) pp 277-78; Hirshson, *Grenville M. Dodge,* p 69.

44. Patrick, *Inside Lincoln's Army,* p 222; Sheridan, *Memoirs,* I, pp 248-50.

45. James Pike, *Scout and Ranger: Being the Personal Adventures of James Pike of the Texas Rangers in 1859-1860,* [Carl L. Cannon, ed,] (Princeton: Princeton University

Press, 1932) p ix.

46. Sheridan, *Memoirs,* II, pp 120-21; Porter, *Campaigning with Grant,* pp 397-99; William G. Beymer, *On Hazardous Service: Scouts and Spies of the North and South* (New York: Harper & Brothers, 1912) pp 31-33. For another example of using a scout as a courier, see *GP,* XIII, p 102.

47. *OR,* vol 33, pp 1324-25; vol 46, pt 2, p 357; vol 46, pt 3, p 549; and vol 51, pt 1, p 1159; *GP,* XIII, p 464; Dowdey and Manarin, *Wartime Papers of R. E. Lee,* pp 251-52.

48. See Record Group 393, Part I, Entry 986 ("Summaries of the news reaching Headquarters of General W. S. Rosecrans, 1863-64") and the reports from Dodge in *GP,* X, pp 44, 507-08, 521-22, 537-38. Sherman also had scouts scouring the rebel heartland; see *ibid,* pp 272-73. I am indebted to W. Glenn Robertson of the Combat Studies*ibid,* Institute of the U.S. Army Command and General Staff College for calling my attention to the "Summaries of the news" document.

49. *GP,* XIV, p 259; Peavey, *Confederate Scout,* pp 61-62. Gilmor, *Four Years in the Saddle,* p 273, claims that he and six of his men, dressed in blue uniforms, "went within one hundred yards of Sheridan's headquarters..."

50. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 594; *OR,* vol 33, pp 830-31 and vol 42, pt 3, p 664; Gilmor, *Four Years in the Saddle,* pp 87, 273-74; McEntee to Sharpe, 22 Apr, 27 Apr, and 3 May 1864, all in Box 11, Sharpe Papers.

51. *OR,* vol 46, pt 1, p 481.

52. George B. McClellan, *McClellan's Own Story...*(New York: Charles L. Webster, 1887) p 109; Russell, ed, *Memoirs of Colonel John S. Mosby,* p 31; James B. Avirett, *The Memoirs of General Turner Ashby and His Compeers* (Baltimore: Selby & Dulany, 1867) pp 185, 212-13, 300, 336, 362-63, 366, 401; Henderson, *Stonewall Jackson and the American Civil War,* I, p 274.

53. *Revised United States Army Regulations,* p 94.

54. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 329; *OR,* vol 25, pt 2, pp 827-28. Also see Douglas Southall Freeman, *R. E. Lee: A Biography* (4 vols., New York: Charles Scribner's Sons, 1934-35) IV, p 171.

55. For the improvement in the Union cavalry, see Stephen Z. Starr, *The Union Cavalry in the Civil War,* 3 vols., (Baton Rouge: Louisiana State University Press, 1979-85).

56. Starr, *Union Cavalry in the Civil War, I,* pp 299-302.

57. Alexander, *Military Memoirs of a Confederate,* p 324; Douglas Southall Freeman, *Lee's Lieutenants: A Study in Command,* 3 vols., (New York: Charles Scribner's Sons, 1944) II, p 639; Henderson, *Stonewall Jackson and the American Civil War,* II, pp 525-26.

58. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 574; Coddington, *The Gettysburg Campaign,* pp 183-84; Edward G. Longacre, *The Cavalry at Gettysburg: A Tactical Study of Mounted Operations during the Civil War's Pivotal Campaign, 9 June-14 July 1863* (Rutherford: Fairleigh Dickinson University Press, 1986) pp 151, 271.

59. *OR,* vol 12, pt 3, pp 940-43; Emory M. Thomas, *Bold Dragoon: The Life of J. E. B. Stuart* (New York: Harper & Row, 1986) p 149.

60. McEntee to Sharpe, 8 June 1864, Box 11, Sharpe Papers; Marginal notation in the "Index of the Army of Northern Virginia," Babcock Papers. For other examples of captured mail, see *GP,* X, p 539, and the entries for 24 and 29 June, 4 and 28 July, and 10 Sept 1863 in RG 393, Part I, Entry 986 ("Summaries of the news").

61. Rachael Sherman Thorndike, ed, *The Sherman Letters: Correspondence Between General Sherman and Senator Sherman from 1837 to 1891,* (New York: DeCapo Press, 1969) pp 187, 190, 193-94. Also see Sherman, *Memoirs,* II, p 408; M. A. DeWolf Howe, ed, *Home Letters of General Sherman* (New York: Charles Scribner's Sons, 1909) pp 238-40; John F. Marszalek, *Sherman's Other War: The General and the Civil War Press*

(Memphis: Memphis State University Press, 1981).

62. J. Cutler Andrews, *The North Reports the Civil War* (Pittsburgh: University of Pittsburgh Press, 1955) and Andrews, *The South Reports the Civil War* (Princeton: Princeton University Press, 1970); James G. Randall, "The Newspaper Problem in Its Bearing upon Military Secrecy during the Civil War," *American Historical Review* 23 (Jan 1918):303-323.

63. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* pp 191, 240-41, 607-08; Douglas Southall Freeman, ed, With Additional Dispatches and Foreword by Grady McWhiney, *Lee's Dispatches: Unpublished Letters of General Robert E. Lee, C.S.A. to Jefferson Davis...*(New York: G. P. Putnam's Sons, 1957) pp 240-41.

64. In mid-July 1863 a Charleston newspaper proposed a set of voluntary censorship guidelines. In a negative sense, the guidelines indicate the extremely valuable military information that the Southern press had been publishing. See Andrews, *South Reports the Civil War,* p 530.

65. Joseph E. Johnston, *Narrative of Military Operations Directed, During the Late War Between the States,* By Joseph E. Johnston (Bloomington: Indiana University Press, 1959) p 22.

66. Sherman, *Memoirs,* II, p 141.

67. Marszalek, *Sherman's Other War,* pp 172-74; Andrews, *North Reports the Civil War,* pp 576-77; *GP,* XII, pp 403-04.

68. Howard K. Beale, ed, *Diary of Gideon Welles: Secretary of the Navy Under Lincoln and Johnson* (3 vols., New York: W. W. Norton & Company, 1960) II, p 205.

69. Alexander, *Military Memoirs of a Confederate,* p 55; Brown, *Stringfellow,* pp 76-80, 93.

70. *GP,* XIV, p 80. Commanders in the Western theater also perused enemy papers for military intelligence; see, for instance, the entries for June and July 1863 in RG 393, Part I, Entry 986 ("Summaries of the news").

71. *Ibid,* XII, XIII, XIV. He often received papers from Raleigh, Columbia, Savannah, and Augusta. Recipients of his summaries included Sheridan, Meade, Butler, Thomas, and Schofield. For Lincoln's interest in the Richmond papers, see XIV, pp 80-81.

72. *Ibid,* XIII, pp 36-37, 401-02. The Assistant Secretary of the Navy wrote to Grant regarding the Wilmington expedition that "I hope you will use every exertion to get us a Richmond paper as we shall hear first through that source concerning the joint expedition." *Ibid,* p 165.

73. *Ibid,* XIII, XIV. As Grant wrote Sherman in March 1865, "the Richmond papers were full of the accounts of your movements..." XIV, p 173. The Rawlins quote is in XIII, pp 57-60.

74. Freeman, *Dispatches,* pp 51, 223, 241, 265, 362-63; Dowdey and Manarin, *Wartime Papers of R. E. Lee,* pp 257, 345, 832.

75. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 819.

76. George B. McClellan, *Report on the Organization and Campaigns of the Army of the Potomac...*(Freeport, NY: Books for Libraries Press, 1970), pp 119-21.

77. *GP,* XI, 219, XIII, 111, XIV, pp 160-61; *OR,* vol 33, p 998; Babcock to Sharpe or Patrick, 31 Dec 1864, Box 11, Sharpe Papers.

78. Sharpe to General [A. A. Humphreys] 20 July 1864, and the multiple endorsements on this letter, Box 11, Sharpe Papers. Also see Sparks, p 379.

79. *GP,* XIII, p 14. For similar examples, see *ibid,* XI, p 370, XIII, p 39, XIV, p 282; Meade to Babcock, Dec 16, 1864, Babcock Papers. For examples of the detailed information derived from deserters, see Patrick to Humphreys, Mar 28, 1864, Patrick to Humphreys, Mar 30, 1864, and Sharpe to Humphreys, May 1, 1864, all in RG 108, Entry 112, Box 1. Lee also milked deserters and prisoners for similar information; see Dowdey

and Manarin, *Wartime Papers of R. E. Lee*, pp 247, 253-54, 404, 449.

80. *GP*, XI, p 228, XII, p 64; *OR*, vol 42, pt 2, p 552, vol 42, pt 3, pp 666, 955-56; McEntee to Sharpe, 22 Nov 1864, Box 10, Sharpe Papers.

81. *OR*, vol 42, pt 3, p 959.

82. *Ibid*, vol 12, pt 3, p 946, vol 42, pt 2, pp 75-76, 195-96; Shepley to Davis, 14 Sept 1864, Box 9, Sharpe Papers; McEntee to Sharpe 22 Apr 1864 and 27 Apr 1864, both in Box 11, Sharpe Papers; Dowdey and Manarin, *Wartime Papers of R. E. Lee*, pp 294-95; Henderson, *Stonewall Jackson and the American Civil War*, II, p 148.

83. Dowdey and Manarin, *Wartime Papers of R. E. Lee*, p 693; *OR*, vol 25, pt 2, p 826. For examples of blacks supplying important information, see *GP*, X, p 537, XI, pp 95, 203, XIII, p 93, XIV, p 253; *OR*, vol 33, pp 616, 683, vol 42, pt 2, p 116, vol 42, pt 3, pp 152-53; Patrick, *Inside Lincoln's Army*, p 271; JCB [Babcock] to Sharpe, 4 Feb 1864, Box 11, Sharpe Papers; Meade to Grant, 14 July 1864, RG 108, Entry 112, Box 1.

84. *OR*, vol 42, pt 2, pp 656-57, 734, 1050, vol 42, pt 3, p 956. RG 393, Part I, Entry 975 ("Summaries of the news") contains much detailed information obtained from deserters and civilians about the enemy's order of battle in mid-1863.

85. *GP*, XIII, p 479; *OR*, vol 42, pt 2, p 266.

86. *GP*, XIII, p 478, XIV, p 18; many entries in RG 393, Part I, Entry 986 ("Summaries of the news").

87. *OR*, vol 42, pt 3, p 666.

88. *Ibid*, pp 659-60; Patrick, *Inside Lincoln's Army*, pp 175-76, 202-03; Hotchkiss, *Make Me A Map*, p 13; many entries in RG 393, Part I, Entry 986 ("Summaries of the news").

89. *GP*, XI, pp 269-75; Patrick, *Inside Lincoln's Army*, pp 399-400; Grant, *Memoirs*, II, p 308.

90. *Revised United States Army Regulations*, p 90.

91. F. Stansbury Haydon, *Aeronautics in the Union and Confederate Armies, with a Survey of Military Aeronautics Prior to 1861* (Baltimore: Johns Hopkins University Press, 1941) pp 8-35; Joseph J. Cornish, III, *The Air Arm of the Confederacy: A History of Origins and Usages of War Balloons By the Southern Armies During The American Civil War* (Richmond: Richmond Civil War Centennial Committee, 1963) pp 7-11; J. Duane Squires, "Aeronautics in the Civil War," *American Historical Review*, 42 (July 1937):653-54.

92. Cornish, *The Air Arm of the Confederacy*, pp 17, 30, 33-34, 39-43, 48; Squires, "Aeronautics in the Civil War," pp 663-64; J. H. Easterby, ed, "Captain Langdon Cheves, Jr., and the Confederates Silk Dress Balloon," *The South Carolina Historical and Genealogical Magazine*, 45 (Jan 1944):1-11 and 45 (Apr 1944):99-110; John R. Bryan, "Balloon Used for Scout Duty," *Southern Historical Society Papers*, 32 (1905):32-42; Alexander, *Military Memoirs of a Confederate*, p 172.

93. William A. Glassford, "The Balloon in the Civil War," *Journal of the Military Service Institution of the United States*, 18 (1896):255-266; General A. W. Greely, Chief Signal Officer, USA, "Balloons in War," *Harper's Monthly Magazine* 101 (June 1900):33-50.

94. Haydon, *Aeronautics* pp 308-20, has an excellent discussion of these matters; Squires, "Aeronautics in the Civil War," p 662, notes that Lowe took pictures from a balloon on several occasions; for exploiting an unexpected enemy movement, see *OR*, vol 11, pt 1, p 456.

95. Haydon, *Aeronautics* pp 92-93, 116-18, 206-16, 335-40; Bryan, "Balloon used for Scout Duty," pp 35-37; Greely, "Balloons in War," p 40; Glassford, "The Balloon in the Civil War," p 256; Cornish, *The Air Arm of the Confederacy*, p 36; *OR*, vol 25, pt 2, p 277.

96. James Longstreet, "Our March against Pope," *The Century Illustrated Monthly*

Magazine, 31 (February 1886): 601-02; Alexander, *Military Memoirs of a Confederate,* p 172-73; Squires, "Aeronautics in the Civil War," p 668.

97. Paul J. Scheips, "Union Signal Communications: Innovation and Conflict," *CWH* 9 (Dec 1963):399-404, 406; J. Willard Brown, *The Signal Corps, U.S.A., in the War of the Rebellion* (New York: Arno Press, 1974), pp 20-22, 43-45, 50, 55-56, 207; Lt. Col. Max L. Marshall, ed, *Story of the U.S. Army Signal Corps* (New York: Franklin Watts, 1965) pp 21-24, 63; Alexander, *Military Memoirs of a Confederate,* pp 3-4, 13-16; David W. Gaddy, "William Norris and the Confederate Signal and Secret Service," *Maryland Historical Magazine* 70 (Summer 1975):167-188, and Gaddy, "Gray Cloaks and Daggers," *Civil War Times Illustrated* 14 (July 1975):20-27; William A. Lidwell, with James O. Hall and David Winfred Gaddy, *Come Retribution: The Confederate Secret Service and the Assassination of Lincoln* (Jackson, Miss: University Press of Mississippi, 1988) Chapter 3, "The Secret Service Corps."

98. Brown, *Signal Corps,* p 125; *OR,* vol 11, pt 1, pp 238, 240, 242; Lester L. Swift, ed, "The Recollections of a Signal Officer," *CWH* 9 (Mar 1963):48.

99. Porter, *Campaigning with Grant,* p 207; Swift, "Recollections of a Signal Officer," p 43; *OR,* vol 11, pt 1, pp 241-42, 248-49, 250, 257, vol 25, pt 1, pp 224-25; Sheridan, *Memoirs,* I, pp 489-90; Dr. Chas. E. Taylor, *The Signal and Secret Service of the Confederate States* (Harmans, Md: Toomey Press, 1986) pp 6-7; [Fitch], *Annals,* pp 304-05.

100. For examples, see *OR,* vol 11, pt 1, p 235, vol 42, pt 2, pp 1124-25, vol 42, pt 3, p 807. As Sherman lamented about flag and torch signals, "almost invariably when they were most needed, the view was cut off by intervening trees, or by mists and fogs;" see Sherman, *Memoirs,* II, p 398.

101. Alexander, *Military Memoirs of a Confederate,* pp 30-31; Johnston, *Narrative of Military Operations,* p 42; Marshall, *Story of the U.S. Army Signal Corps,* pp 24-25, asserts that "Bull Run was the first battle of modern times that was lifted to victory by causes clearly traceable to the use of combat signaling;" Edward H. Cummins, "Signal Corps in the Confederate States Army," in Ben LaBree, ed, *The Confederate States Soldier in the Civil War* (Paterson: Pageant Books, n.d., reprint) p 196.

102. Coddington, *The Gettysburg Campaign,* pp 378-79; Pfanz, *Gettysburg,* pp 116-19; Alexander, *Military Memoirs of a Confederate,* p 391.

103. Ciphers and codes are technically different, but in the Civil War people used the words interchangeably, as have I. The word "codebreaking" includes solving ciphers. See David Kahn, *The Codebreakers: The Story of Secret Writing* (New York: Macmillan Company, 1967) pp xiv-xv; Ralph E. Weber, *United States Diplomatic Codes and Ciphers, 1775-1938* (Chicago: Precedent Publishing, 1979) pp 3-5.

104. Brown, *Signal Corps,* Chapters V and VI; Scheips, "Union Signal Communications," pp 400-01; Taylor, *The Signal and Secret Service of the Confederate States,* pp iii, 5, 8-9; [Fitch], *Annals,* 307; *OR,* vol 5, p 71, vol 11, pt 1, p 252. Communication from balloons was by dropped messages, visual signals, or telegraph; see Haydon, *Aeronautics,* pp 244, 323-26.

105. Brown, *Signal Corps,* p 177; Scheips, "Union Signal Communications," pp 420-21; Marshall, *Story of the U.S. Army Signal Corps,* pp 29-43; OR, vol 11, pt 1, pp 236-37; William R. Plum, *The Military Telegraph during the Civil War in the United States,* 2 vols., (New York: Arno Press, 1974, reprint) II, p 89.

106. Scheips, "Union Signal Communications," pp 402-03; Plum, *The Military Telegraph,* I, p 130; Bates, *Lincoln in the Telegraph Office,* pp 27, 31-35; "Relief of Telegraph Operators Who Served in the War of the Rebellion," Senate Document No. 251, 58th Congress, 2d Sess., p 1; John E. O'Brien, *Telegraphing in Battle: Reminiscences of the Civil War* (Scranton, Pa: n.p., 1910) pp 295-99, 311. As several of

these sources explain, the South did not develop an equivalent of the USMT, but relied on its commercial and railroad telegraphers for its military telegraphy.

107. Marshall, *Story of the U.S. Army Signal Corps,* pp 46, 53-58; Scheips, "Union Signal Communications," pp 408-10; Plum, *The Military Telegraph,* II, pp 97-103; *OR,* vol 25, pt 1, pp 217-18, 229.

108. Grant, *Memoirs,* II, p 207; Sherman, *Memoirs,* II, p 398; "Relief of Telegraph Operators," pp 7-8, 41; O'Brien, *Telegraphing in Battle,* p 142.

109. Plum, *The Military Telegraph,* II, p 366; W. G. Fuller, "The Corps of Telegraphers Under General Anson Stager During the War of the Rebellion," in *Sketches of War History, 1861-1865: Papers Read Before the Ohio Commandery of the Military Order of the Loyal Legion of the United States* (Cincinnati: Robert Clarke, 1888) II, p 399. Naturally, everyone wanted to use the telegraph for every message. The result was that the telegraphic network became "lumbered up with long unimportant dispatches," detracting from one of its greatest virtues: its rapidity; see "Relief of Telegraph Operators," p 32.

110. Brown, *Signal Corps,* p 215; Taylor, *The Signal and Secret Service of the Confederate States,* pp 10-11; *OR,* vol 25, pt 1, p 228, vol 43, pt 1, pp 1009-10. The aide-de-camp also reported that "The enemy also reads our messages, and the general suggests that your signalmen be put on their guard to prevent the enemy obtaining information by that means."

111. Grant, *Memoirs,* II, pp 207-08.

112. Wayne C. Temple, ed, "A Signal Officer with Grant: The Letters of Captain Charles L. Davis," *CWH* 7 (Dec 1961):435; Swift, "Recollections of a Signal Officer," p 48; Taylor, *The Signal and Secret Service of the Confederate States,* p 12.

113. Fishel, "Myths," p 54. For just a few examples see *OR,* vol 42, pt 2, p 28, vol 42, pt 3, pp 645-46, 660, 711-12. Determining whether intercepted Signal Corps messages were in a genuine cipher or simply in a new wig-wag alphabet is frequently impossible. Signalmen often used the word "cipher" loosely, or else merely stated that they had intercepted a message without giving any hint as to whether or not the enemy originally sent it in cipher.

114. Kahn, *Codebreakers,* pp 214-15; Plum, *The Military Telegraph,* I, pp 56, 60; Bates, *Lincoln in the Telegraph Office,* pp 49-53.

115. "Relief of Telegraph Operators," p 2; John M. Schofield, *Forty-six Years in the Army* (New York: Century Co., 1897) pp 169, 232.

116. John Y. Simon and David L. Wilson, eds., "Samuel H. Beckwith: 'Grant's Shadow'," in Simon and Wilson, eds., *Ulysses S. Grant: Essays and Documents* (Carbondale and Edwardsville: Southern Illinois University Press, 1981); Grant, *Memoirs,* II, pp 103-04; *GP,* X, pp 48-49, 79-82; "Relief of Telegraph Operators," pp 41, 56.

117. The judgment is in David H. Bates, "A Rebel Cipher Despatch: One Which Did Not Reach Judah P. Benjamin," *Harper's New Monthly Magazine* 97 (June 1898):105-06. O'Brien, *Telegraphing in Battle,* p 88, asserted that "it is believed that no instance is known of the enemy having been able to decipher a telegraph in one of our ciphers." Fishel, "Myths," pp 53-55, believes that the South probably managed to translate at least a few USMT messages. He argues his case at much greater length in a letter to the author, dated June 29, 1988, and in an enclosure with that letter entitled, "Some General Thoughts on Civil War COMINT."

118. Cummins, "Signal Corps in the Confederate States Army," p 197; Gaddy, "William Norris," 173 and "Gray Cloaks," pp 23-26; Taylor, *The Signal and Secret Service of the Confederate States,* pp v, 4.

119. David W. Gaddy, "Secret Communications of a Confederate Navy Agent,"

Manuscripts 30 (Winter 1978):50-53; Kahn, *Codebreakers,* p 217; Fuller, "The Corps of Telegraphers," p 394; Fishel, "Myths," pp 54-55; Plum, *The Military Telegraph,* I, p 36; Bates, "Rebel Cipher Despatch," p 106.

120. Plum, *The Military Telegraph,* I, pp 201, II, 163-65, 247; O'Brien, *Telegraphing in Battle,* pp 125-27; "Relief of Telegraph Operators," p 54.

121. Bates, *Lincoln in the Telegraph Office,* pp 58-60; Plum, *The Military Telegraph,* II, pp 264-66; O'Brien, *Telegraphing in Battle,* p 303; James A. Ramage, *Rebel Raider: The Life of General John Hunt Morgan* (Lexington: University Press of Kentucky, 1986) pp 51, 95-97, 140, 166.

122. Michael Howard and Peter Paret, eds. and trans., *Carl von Clausewitz, On War* (Princeton: Princeton University Press, 1976) pp 117, 140.

123. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 232; *OR,* vol 25, pt 2, p 844.

124. *GP,* XI, p 225. For other examples of conflicting intelligence reports, see *ibid,* pp 214-15, XIII, pp 9-10, 86; J.C.B. [Babcock] to Dear Gen'l, 19 Mar 1865, Box 11, Sharpe Papers.

125. J.C.B. [Babcock] to Sharpe, 26 Dec 1864, and Ord to Sharpe, 27 Dec 1864, both in Box 11, Sharpe Papers. For a similar example, see McEntee to Sharpe, 28 Apr and 29 Apr 1864 (two different communications on 29 Apr), all in Box 11, Sharpe Papers.

126. *OR,* vol 25, pt 2, p 529. Also see McClellan, *Own Story,* p 391.

127. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 386; Gilmor, *Four Years in the Saddle,* pp 152-53; Sharpe to Parker, 31 July 1864, RG 108, Entry 112, Box 1; McClellan, *Own Story,* pp 253-54.

128. Andrews, *North Reports the Civil War,* pp 639-44; Marszalek, *Sherman's Other War,* pp 43-44; Fishel, "Mythology," p 366.

129. For example, before departing on his ride around the Union army during the Gettysburg campaign, Stuart had engaged in "inspired counterreconnaissance efforts;" see Longacre, *Cavalry at Gettysburg,* p 272.

130. Despite his loathing of a free press, Sherman was not above using it to plant misleading information; see Marszalek, *Sherman's Other War,* p 167. Lee well understood that the Federal government used Northern papers "to create false impressions;" see Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 682.

131. Thomas, *Bold Dragoon,* p 118.

132. *OR,* vol 42, pt 3, pp 924-25, vol 46, pt 2, p 287.

133. For examples of mock deserters, see *GP,* XII, p 476, XIII, p 489; *OR,* vol 11, pt 3, p 22, vol 42, pt 3, pp 608-09; [Fitch], p 574; General Braxton Bragg, "The Chickamauga Campaign, August 16 to September 22, 1863," in LaBree, *The Confederate States Soldier,* p 199; Meriwether Stuart, "Operation Sanders: Wherein Old Friends and Ardent Pro-Southerners Prove to Be Union Secret Agents," *VMHB* 81 (Apr 1973):180.

134. Sharpe to Parker, 31 July 1864, RG 108, Entry 112, Box 1; McEntee to Sharpe, 31 Aug 1864, Box 10, Sharpe Papers. In this letter McEntee writes that he had one deserter "tied by the thumbs all day yesterday and still he sticks to his story," and that it would be "useless to abuse" another deserter any more because he had been "tortured here and it made a perfect lunatic of him for twenty four hours."

135. *OR,* vol 11, pt 1, pp 228-29, vol 42, pt 2, p 131; Haydon, pp 215-16; Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 746; Sheridan, *Memoirs,* II, pp 35-37; Grant, *Memoirs,* II, p 55; *GP,* XI, p 214.

136. *OR,* vol 11, pt 1, p 250; "Relief of Telegraph Operators," pp 57-58. For other examples, see Brown, *Signal Corps,* pp 213-15.

137. Dowdey and Manarin, *Wartime Papers of R. E. Lee,* p 685; *GP,* XIV, p 26.

138. *OR,* vol 11, pt 3, pp 415-16, vol 33, p 1014, vol 42, pt 2, pp 169-70, 476, 629-30, 988-89, vol 46, pt 2, pp 499, 827; Babcock to Humphreys, 17 July 1864, RG 108, Entry

112, Box 1; multiple entries in RG 393, Part I, Entry 986 ("Summaries of the news").

139. *OR,* vol 42, pt 2, pp 267, 855, 965. No wise general would put credence in the information a deserter provided when he learned that it came from the deserter's regimental doctor, who heard it from a lieutenant, who had supposedly heard it from a government official! See *GP,* XIII, p 156.

140. *GP,* XII, p 107; Freeman, *R. E. Lee,* IV, p 171.

141. Babcock to Oliver, 29 Jan 1865, Box 11, Sharpe Papers; *OR,* vol 42, pt 2, p 1079; *GP,* XIII, p 82.

142. *OR,* vol 42, pt 3, pp 1107-08; Dana, *Recollections of the Civil War,* p 240. Similar examples of a concern for confirmation abound; see *OR,* vol 42, pt 2, pp 41-42, 256, 662, vol 42, pt 3, pp 893-94, 956, vol 53, p 410; *GP,* X, p 176, XI, pp 233, 387-88, XIII, pp 364, 489, XIV, p 160; Dana, *Recollections of the Civil War,* pp 235-36.

143. *GP,* XIV, pp 102-03, 107.

144. Michael C. C. Adams, *Our Masters the Rebels: A Speculation on Union Military Failure in the East, 1861-1865* (Cambridge: Harvard University Press, 1978) pp 89-98, makes this point, especially about McClellan. Reinforcement for Adams's argument comes from two more recent studies. See Edwin C. Fishel, "Pinkerton and McClellan: Who Deceived Whom?" *CWH* 34 (June 1988):115-142, and Stephen W. Sears, *George B. McClellan: The Young Napoleon* (New York: Ticknor & Fields, 1988). Henderson, in *Stonewall Jackson and the American Civil War,* II, p 229, concluded that more fatal than Pope's "neglect of personal reconnaissance was his power of self-deception." Provost Marshal General Patrick made essentially the same point about Hooker in mid-June 1863; see Sparks, *Inside Lincoln's Army,* p 261.

The Origins of Modern Intelligence Comments

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These papers in some ways overlap and intersect in very interesting ways. Professor Maslowski's paper can be used as a case study to test some of the propositions or hypotheses in Professor Showalter's paper. One can ask, did the United States, in 1861-65, show evidence of the trends identified by Professor Showalter? To the extent that it did not, is there a basis for saying that the case is in some respects exceptional — that the United States was not like other powers in the period or the Civil War was different from others wars? Or is it in fact a perfect illustration of the trends?

In order to raise that question, I have to begin by summarizing those of Professor Showalter's propositions that seem to me to lend themselves to testing by Professor Maslowski's case. These are in part inferences, rather than a direct summary of what Professor Showalter says. I want to start with a characterization of intelligence at the end of 1914, then at 1815, the mid-point of the period he is dealing with, and then ask if Professor Maslowski's paper illustrates trends that are underway between those two dates.

Intelligence, between 1815 and 1914, was, in the broadest sense, information about possible or actual threats to the state and what to do about those threats. It embraced political, diplomatic and military intelligence. But if you take intelligence in the narrow sense of being the product of people who regarded themselves as professional intelligence officers, by 1914 intelligence was almost exclusively military intelligence. Political intelligence, in the sense of looking at threats to the state from subversive internal forces, was regarded as primarily the province of the police or ministries of the interior. Diplomatic intelligence was regarded as the province of professional diplomats — people who were in the business of dealing formally with other governments. But intelligence, as an honorable and demanding professional specialty, was primarily for those who wore uniforms — the army and, to a lesser degree, the navy.

As of 1914, the mission of intelligence was divided into two functions. The first was the acquisition of information useful to the preparation for future wars. Intelligence officers were thinking about wars and about campaigns and battles

as subsidiaries to wars. They were thinking in terms of war preparation and they required information about that. Secondly, they analyzed that information in order to gaininsight into the preparations and plans of potential adversaries. The activities of intelligence officers by that time included, on a very limited basis, the collection of intelligence via human agents and, somewhat less so, collection via signal interception. But primarily collection came from combing overt sources — attaché conversations, the press, parliamentary proceedings, and various other kinds of open sources. It included analysis of an adversary's economic resources as well as military plans. Another function, identified by Professor Showalter, was the separate support for efforts by the services to obtain funds or to build domestic backing for military programs. That was the characterization in 1914.

As for 1815, intelligence was not so sharply defined. In the first place, political intelligence was the highest business of state. It was in some degree collected, and certainly analyzed, at the very top of governments — by Napoleon, by Fouché for Napoleon, by their British adversary Pitt, by Lord Liverpool to a slightly lesser extent, by Canning to a greater extent, and certainly by Metternich. Look at Metternich's correspondence or Srbik's biography of Metternich and you see he spent a great deal more of his time reading what one regards as police reports for intelligence on internal security than he did on diplomacy. Any of the political leaders or heads of state around 1815 would have been absolutely astonished with the concern expressed in the United States during the 1970s over President Nixon's "plumbers." They would have thought that's what the heads of government do. Political intelligence was something that was not separated; it was part of the business of government.

Diplomacy at that time had become, to some degree, bureaucratized and professionalized, but it was supplemented by the use of secret agents. In the eighteenth century it had been supplemented by the use of secret agents at the highest level of government. Kings resorted to what in France was called *secrets du roi,* the use of their own private, secret diplomatic agents. And certainly at the Congress of Vienna you find Talleyrand, Metternich, Gentz and others making use of secret agents to a greater extent than certainly was characteristic of people who regarded themselves as in the business of dealing with diplomatic intelligence in 1914.

This tactic in the diplomatic services shriveled soon after the Congress of Vienna. You find much less use of clandestine intelligence by 1820 — in part due to the emergence of parliaments and the press. Military intelligence as of 1815 had only begun to extend from the battle to the campaign, had not yet really extended to intelligence for wars, and it was not a staff specialty. It was still the case, as with Napoleon, that the chiefs of armies tended to be their own intelligence officers. However, the trend from 1815 to 1914 was for intelligence to become the more particularized province of people who were military intelligence officers. World War I then altered that trend and you get a

movement back toward the earlier views and roles of intelligence.

Professor Maslowski's paper is a good test of the trends that one can infer from Professor Showalter's description. It seems to me that it does in fact describe intelligence in transition at approximately the midway point, even though the United States was in some respects politically exceptional and the Civil War was an extraordinary war in itself. Intelligence, as Professor Maslowski describes it, was almost exclusively military intelligence, not political or diplomatic. It is intelligence in transition — not just for battles and campaigns, but also for wars. But it's not yet there. It still tends to be intelligence for campaigns under the purview of the commander who is preparing the campaign. It is diverse in activity — moving toward the kinds of collection (human agents, scouts, overt sources, more sophisticated communications intercepts) and analysis that is managed by intelligence professionals by 1914. But it is not yet the kind of professional specialization that existed in 1914; it is not yet focused on wars, war plans, or the total strength of the adversary.

In my view these papers fit together perfectly. One is a brilliant summary of general trends underway over a longer period than I specified. The second, a case study, illustrates the trends that were occurring during the century between 1815 and 1914.

Session II

The Intelligence Revolution
World War II
The European Theater

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Allied and Axis Radio-Intelligence in the Battle of the Atlantic
A Comparative Analysis

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Probably the most fruitful example of the effects of radio-intelligence in the decisionmaking processes and the operations of World War II is the Battle of the Atlantic.[1] Here the operational and intelligence documents are available on both sides with an astonishing completeness. In this battle the use of radio-communications was of the first importance in the operational control of the operations on both sides. Radio signals were as indispensable to the German Commander-in-Chief, U-boats (BdU*) for directing his U-boat groups at sea as they were to the Allied commanders directing the convoys of merchant ships and their escorts. The necessary and unavoidable radio signals to and from the U-boats or to and from the convoys and their escorts opened up ways to gain highly valuable information about the enemy's intentions by using one or more methods of radio-intelligence: radio direction-finding, traffic analysis, or decryption.

In this battle, fought from the first to the last day of the war, the Allies' objective was to secure the flow of shipping transporting the vital civilian and military supplies from all over the world and especially from the United States to Great Britain. The method of defending merchant ships against attacks was a convoy system.

The aim of the Axis powers was to sever these lines of communications by using surface raiders, aircraft, and especially U-boats to attack the ships in the convoys and thus to sink more vessels and tonnage than the Allied shipbuilding yards could replace. The German method of attack on the convoys was by groups or wolf packs of U-boats. Eight main phases of the Battle of the Atlantic are identifiable, each with changing operational patterns on both sides. This paper describes the methods used by both sides to direct the operations by radio signals and to encode or encypher the signals against the listening enemy in each phase and analyzes how and to what effect both sides used the three methods of

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* The literal German is Befehlshaber der Unterseeboote – Commander in Chief of Submarines. The German acronym BdU is used throughout this paper to signify this command.

radio-intelligence to counter the efforts of the enemy.

First Phase: Single U-boats against Independent Ships

In the first phase from September 1939 to June 1940 a small number of German U-boats, very seldom more than ten at a time, cruised separately west of the British Isles and in the Bay of Biscay to intercept Allied merchant ships which sailed mostly independently because the convoy system was only taking shape slowly.[2] U-boats found enough targets. Since the U-boats had to depart from the Baltic of the German Bight and go round to the north of Britain their range was limited to the meridian of 15° West and later to 20° West. Accordingly the British and French navies had to escort the incoming convoys only east of this line, while outgoing convoys could be dispersed after passing this line.[3]

Shore Based Control by Radio-Communication

During this time radio communication between the shore authorities and forces at sea was only necessary on a limited scale. On the Allied side besides enemy situation reports changes in the prearranged meeting points of convoys and escorts had to be transmitted. On the German side the U-boats got their written operational orders before they departed, and so radio signals were only used for sighting reports of U-boats about convoys or for ordering changes in the operational set-up from the shore command.

The first three trials of shore-directed group operations of U-boats against convoys in October and November 1939 and February 1940 confirmed the concept of leading other U-boats up to the convoy by the regularly transmitted contact signals of the first U-boat reporting the convoy.[4] But the insufficient numbers of the U-boats and the many failures of the torpedoes prevented real successes.

Because the German BdU had great fears that the signals of his contact holding U-boats could be fixed accurately enough by shore direction finders to start countermeasures he introduced the short-signals system, using a codebook to shorten the contents of a signal to a few four-letter groups which were then super-encyphered with the daily setting of the Enigma-cypher machine Schlüssel M [M-key] in the circuit *Heimische Gewässer* [home waters].[5]

The Allied shore high-frequency direction finding stations were able to pick up such signals but with the then used methods the very short transmission time of the signals prevented exact fixes of the positions of sending U-boats at distances of over 200 – 300 miles. When the German command realized the inaccuracy of the fixes a great relaxation took place which later had grave consequences when the British introduced high-frequency direction finding sets with cathode-tube display aboard escort vessels in 1942.[6]

British Crypto-Systems and the B-Dienst

The Royal Navy used at this time two crypto-systems.[7] There was a "Naval Cypher," operated by officers only, for operational signals mainly concerning ships down to destroyers. And there was the Naval Code operated by ratings, used first for administrative signals and messages covering small ships and later also for signals about ship-movements. The first was based on a four-figure, the second on a five-figure, codebook and both were super-encyphered by long subtractor tables of 5000 groups each, changing every month or two months.

While the British decryption service at Bletchley Park had no real success against the German naval Enigma Schlüssel M during this phase, the German naval decryption service, the B-Dienst, had achieved the first breaks in the Naval Code in peacetime, when it was used partly without super-encyphering.[8] By the end of 1939 a great part of the codebook had been reconstructed, as had more and more parts of the long subtractor tables, also of the "Naval Cypher." In April 1940, during the Norwegian operation, for instance, the B-Dienst was able to decrypt some 30 to 50 percent of the signals in the "Naval Cypher" and could deliver to the operational command good estimates about the location and the movements of the main units of the Home Fleet. But it was never possible to penetrate the separate long subtractor tables of the commanders-in-chief or the flag-officers: there was not enough signal material to work on, and later these signals of the highest grade were encyphered in real one-time pad* cyphers. Because it was always a big logistical problem to change the codebooks, such changes could only be made at long intervals. Thus the German B-Dienst could solve more and more code groups, when they were in use for extended periods.

There was one more code which was of great importance during the Battle of the Atlantic, the "Merchant Navy Code," introduced in January 1940 for radio signals to and between merchant ships. The B-Dienst achieved the first breaks already in March 1940 and could decrypt most of the signals with captured code materials from Bergen since May 1940 and later from captures during the operations of the armed merchant raiders.[9]

In this first part of the war the German B-Dienst was clearly more successful than its British counterpart.

Second Phase: Wolf Packs against Convoys

The conquest of Norway and Western France provided the German U-boats

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*A one-time pad is an encryption system that seeks to avoid repetition, the weakness in any coding system that allows penetration of it. One-time pads use a unique random key only once in a text, producing another random key for the same plaintext letter or sequence. See: David Kahn, *The Codebreakers: The Story of Secret Writing,* New York: Macmillan Co., 1967. pp. 398–400.

with new bases, much closer to the main operational area west of the North Channel. This allowed the U-boats in the second phase from July 1940 to May 1941 to operate in wolf packs directed by radio signals from the shore against the convoys which now constituted most of the traffic to and from Great Britain.[10] Even if the number of German U-boats in the operational area did not rise to more than ten at any one time, they now reached their peak efficiency in the relation of tonnage sunk against the days at sea. This was partly made possible by the weakness of escort groups, because the Royal Navy had to hold back its destroyers against an awaited German invasion.

The British merchant shipping losses were greatly increased during this phase by operations of German battleships and cruisers in the North and Central Atlantic, by armed merchant raiders in all five oceans, by attacks of German long-range bombers in the western approaches to Britain and to a lesser extent by the Italian U-boats sent into the Atlantic.[11]

British Cypher Systems Broken Again

During this time the German B-Dienst suffered its first setback, when on August 20, 1940, the British Admiralty distributed new codebooks based on the four-figure groups for both systems to make the distinction between the Naval Code and the "Naval Cipher No. 2" more difficult, and started to break down the cypher circuits into smaller ones and to change the long subtractor tables partly two or three times a month.[12]. During the most successful convoy operations of September and October 1940, the B-Dienst could not help much. When the B-Dienst had reconstructed by January 1, 1941, about 19 percent of the new codebook KÖln, as the Germans called "Naval Cypher No. 2, and 26 percent of München or the Naval Code, as well as great parts of the tables,[13] on the other side the danger of the German invasion was over and most of the destroyers were again transferred to escort duties with the convoys. At the time the squadrons of the RAF Coastal Command became more effective in driving the U-boats away from the coastal area.

On the British side the Admiralty had sent radio-observation vessels into the Atlantic to analyze the German methods of radio-directed convoy operations by wolf packs.[14] The results of this traffic analysis, as well as the improved shore based direction finding gave the Submarine Tracking Room (STR) and the Trade Plot of the Admiralty much better possibilities to route the convoys round the dispositions of the still few German U-boats.

Third Phase: Evasive Routing and the U.S. Entry into the Battle

The great change in the intelligence race came with the third phase from June to December 1941. At first Bletchley Park had great difficulties with the German naval Enigma cyphers.

The Breakthrough at Bletchley Park against the Naval Enigma

The "Schlüssel M 3" used three out of a stock of eight rotors instead of the stock of five used by the air force and the army Enigmas.[15] So while the inner wirings of the rotors I-V and of the reflector "B" were known, the wirings of the additional naval rotors VI - VIII could not be solved with the available means. Even the capture of three rotors from *U-33,* sunk on February 12, 1940, in shallow waters off the Clyde, did not change the situation.[16] In the spring of 1941, the British forces at sea were ordered to spare no effort to get aboard sinking German ships or U-boats and to capture cypher machines and cypher or code materials. This was accomplished first during the Lofoton Raid on March 3, 1941, when a boarding party took a case containing five stored rotors from the German patrol vessel *Krebs,* including the ones missing from the collection at Bletchley. Now Bletchley Park could start at last analytical work on the naval Enigma.[17]

A key of the Enigma at the time consisted of two inner settings, the *Walzenlage,* or the rotor order, and the *Ringstellung,* or the setting of the alphabet rings at the rotors. They were changed at two-day intervals by officers. In addition there were two outer settings, the *Steckerverbindungen,* or plugboard settings connecting about ten pairs of letters, and the *Grundstellung,* or starting position of the rotors before the separate message key was set. These settings were changed daily by the operators.[18]

From mid-March to the end of May the decryption of the daily settings of *Heimische Gewässer* proved to be a difficult and time-consuming task, because Bletchley Park lacked then the necessary "cribs" or probable plaintexts of intercepted messages, necessary to feed the *bombes* with *menues* to find the daily keys. With the keys for the days from February 13 to 23 broken only from March 20 to April 5, using a key list captured from *Krebs* which was probably damaged because the printing was with water-soluble colors, and with further cryptanalytical breaks for some March and April days coming only with delays of a fortnight or more, the results were hardly of great operational use.[19]

Only when, on May 7 and 8, 1941, the British captured intact cypher machines, the short-signal book, the weather codebook, the naval grid chart and other secret materials[20] in an operation planned for this purpose from the German weather-reporting ship *München* and from *U-110.* It was now feasible to prepare a decrypting machine or *bombe* for the possible 336 rotor sequences, instead of the sixty used up to this time by the air force Enigma, broken regularly since 1940. From the beginning of June 1941 the British could first read the German naval signals of the circuit most commonly used, *Heimische Gewässer* or later HYDRA, called DOLPHIN by the British, by using the captured monthly programme of cypher settings.[21] A second operation against the weather reporting ship *Lauenburg,* located by direction-finding at the end of June 1941, brought the cypher settings for the month of July 1941.[22]

Bletchley Park and the German Surface Operations

This breakthrough came too late to be of influence in the operations against the German surface-raiding operations, especially against the battleship *Bismarck* in May, but the captured materials gave away the planned meeting points with the German surface oilers so that the British could smash the whole supply-system in the North and Central Atlantic in June 1941.[23]

The loss of most of the oilers in so short a time came as a surprise to the German Naval High Command and led to an investigation into the security of the communications and the cyphers.[24] The British experts feared such research and the possible compromise of Bletchley Park's success; the Admiralty prohibited any similar capture-operations for the future. But the German experts could not find any clear evidence for a cryptanalytical break into the M 3 cypher system and ascribed the losses at the meeting points to some noncryptological material captured from the oiler *Gedania,* which was known to be taken to Gibraltar.[25] To counter this, a codeword was sent to put a prearranged change in the daily cypher settings into use. The BdU remained doubtful and tried to improve the security of his communications by additional measures. By June 16 he introduced a reference-point system to designate the positions instead of using the two-letter-four-numbers code from the grid maps.[26]

Bletchley Park and the U-boat Signals

But this caused at Bletchley Park only some small troubles in finding the correct positions. Otherwise the German signals could be decyphered from June to the end of July by using the captured German cypher settings. So it became clear very soon that the Germans now tried to send the rising number of U-boats in fast moving patrol lines across the whole North Atlantic convoy route, forcing the British Admiralty to extend the antisubmarine escort of the convoys over the whole route between Newfoundland and the western approaches, starting with Convoy HX.129 in June 1941.[27]

Without any idea why the German U-boats could no longer find convoys, the BdU changed his strategy and sent his U-boat groups in July and August against the U.K. -- Gibraltar convoys where the now available long-range Focke-Wulf FW-200 Condor aircraft could locate the targets and home the U-boats in by sending MF/DF bearing signals.[28]

After the expansion of listening stations all around the Atlantic during autumn 1940 and spring 1941, traffic analysis and direction finding from the shore gave the British Submarine Tracking Room (STR) precise and immediate information about the positions of individual U-boats every time they sent a signal.[29] These intercepts even indicated when U-boats had established contact with a convoy, because it was easy to pick out the contact short signals, which were marked by the two Greek letters "beta-beta" at the beginning of the transmission to silence all other German radio stations on the same frequency.

The STR could identify the threatened convoy and send a warning without knowing the contents of the signal itself.

When the captured cypher settings were running out and analytic decryption had to start in August 1941, these methods also gave Bletchley Park great help in cracking the daily settings of the German cypher machine. Because those concerned with the traffic analysis knew the normal set-up of a contact signal, and could estimate from their own situation map the probable contents of this signal, they could feed the *bombes* with a possible clear text and the actual encyphered text. Only a few changes in the data and terms were then necessary to find the "crib" and to prepare the *menue* to get the daily key.[30]

With more and more new U-boats coming out, the BdU started in mid-August again to send his groups to rake the North Atlantic routes, but he was upset when his U-boats could only very seldom find a convoy. ULTRA, as the decryption of the Axis military and naval radio signals was later called, gave the STR ample time to reroute the convoys so perfectly around the German dispositions that only some chance meetings took place which could never have been avoided by ULTRA, as it could not prevent the interception of convoys on the Gibraltar run when German agents reported their departure from Gibraltar and air reconnaissance supported the U-boats. But the knowledge about the German U-boat concentrations enabled the Admiralty to strengthen the escort groups of the convoys in danger to fight off the U-boats.[31]

German Cypher Improvements

When on the German side the reference-point system proved to be too cumbersome, the grid square system was reintroduced on September 11, 1941, but now with randomly chosen two-letter digraphs.[32] New fears about the security of the cypher came up when on September 28 two German U-boats were surprised by the British submarine *Clyde* during a replenishment operation in the Tarafal Bay on the Cape Verde Islands.[33] So on October 5, the U-boat signal traffic was separated from the *Heimische Gewässer* circuit into a new cypher circuit TRITON. Because the new four-rotor cypher machine M 4 which was to be distributed to the U-boats, was not ready now, TRITON first had to use the old M 3 machine.[34]

But all these countermeasures gave Bletchley Park only some trouble with the positions. The problem that fewer and fewer contact signals came in was overcome by changing over to another source for "cribs": the weather short signals.[35] They were first encoded by a special *Wetterkurzschlüssel,* which was known already from the *München* booty, and then they were super-encyphered by the daily setting of the M 3. The signals were very short and difficult to intercept, but easy to sort out because they started with a designator "WW." The Y-stations could try to get a fix, and then the weather team in Hut 10 at Bletchley Park started to work out the *menue* for the *bombes* by comparing the

signals of Allied vessels in the area about weather conditions and the signals of the German weather-recce airplanes. When the *bombes* found the coincidence, naval cryptanalytical Hut 8 quickly got the daily key. Every day in October 1941 in which four settings changed on the German side added two to three days to the time needed to catch up at Bletchley, while the two settings of the following day needed then only a few hours more.

From June 1941 to December 1941 the ULTRA-based rerouting by the STR and the Trade Plot of the Admiralty was so successful that by very cautious estimates about 1.6 to 2.0 million gross register tons (GRT) were saved from being lost to U-boat attacks.[36]

ULTRA and the U.S. Entry into the Battle of the Atlantic

ULTRA had one other very important consequence during the second half year of 1941 in the Atlantic. Because Hitler wanted to avoid war with the United States as long as he was fighting his war to conquer the European part of the Soviet Union, he ordered the navy several times to avoid any incident with the U.S. Navy, notwithstanding the fact that it was supporting the British and Canadians more and more openly.[37] Since April 18, 1941, the U.S. Atlantic Fleet had extended its patrols to the meridian of 30° West and on June 14, 1941, up to 26° West. On July 15 even Iceland was included into the Western Hemisphere. After June 21, 1941, the decrypted radio signals containing Hitler's restrictive orders gave Churchill and Roosevelt clear evidence of Hitler's intentions after a German U-boat had reported a meeting with the U.S. battleship *Texas* inside the German operational zone on June 19. The president learned that he did not have to fear a German declaration of war when he ordered the U.S. Atlantic Fleet secretly to join in the search for suspected German surface raiders in later August and to start escort and war operations in early September 1941, allowing the Chief of Naval Operations in Washington to take over operational control of all Allied convoy operations in North Atlantic west of 26° West. Only because the Allied convoys escorted by U.S. escort groups were so cleverly routed round the German patrol lines up to early November, and because the BdU had to transfer his U-boats to the Mediterranean and the area off Gibraltar to counter the dangerous developments in North Africa, very few incidents between German U-boats and U.S. ships took place. The cancellation of an Atlantic raiding operation of the pocket-battleship *Admiral Scheer* owing to a machinery defect prevented a German-American naval battle in the Denmark Strait on November 5, 1941, when ULTRA indications had led the dispatch of two battleships, two heavy cruisers and three destroyers of the U.S. Task Force 1 at Hvalfjord to intercept the German ship.[38]

## Fourth Phase: "Happy Days" for U-boats off America

In the public memory this active participation of the U.S. Navy in the Battle of the Atlantic before Pearl Harbor and the big set-back to the German U-boat campaign in the second part of 1941 are almost forgotten, because the U-boats in the fourth phase from January to June 1942 sank more shipping than in any other period during the "happy days" off the U.S. East Coast. But this was not — as many people said — the consequence of the big black out at Bletchley Park, brought about by the introduction of the new four-rotor cypher machine M 4 and the complete separation of the U-boat radio signals from the general naval cypher HYDRA into the new TRITON-cypher circuit, starting on February 1, 1942.[39]

Off the American East Coast and in the Caribbean, the merchant ships were running individually and unescorted notwithstanding the experience the U.S. Atlantic Fleet had already gained in convoy routing and escorting in the North Atlantic from September 1941 to January 1942.[40] It was only in May 1942 that the Americans, under strong pressure from the British, slowly started their Interlocking Convoy System.[41] German U-boats to this time had no reason to operate in groups. They could find plentiful targets more easily by operating singly in prearranged areas. Therefore the need to send radio-signals dropped off sharply, and even with decrypting Bletchley Park could have done little to prevent the heavy shipping losses.

New British Cyphers and the B-Dienst

Under such circumstances also on the German side the ups and downs in the possibility of decrypting the British and Allied naval codes and cyphers were of lesser importance during this period. When the British in September 1941 introduced a new procedure for the indicators of the long subtractor tables a cryptological mistake made the work of the German B-Dienst easier than before.[42] But when January 1, 1942, new codebooks and tables came into use and the numbers of circuits with the new Naval Cypher No. 4 (KÖLN) and the Naval Code No. 2 (MÜNCHEN) were going up to sixteen or twenty-six, the results dropped off until October 6, 1942, when some codebooks and a few tables became available from the destroyer *Sikh* and the *MTB 314*, sunk or captured off Tobruk on September 13 – 14, 1942.[43]

It was during this time that the B-Dienst step by step had to transfer its main effort to the new Naval Cypher No. 3 (FRANKFURT), which was introduced in June, 1941, to carry the growing amount of radio traffic necessary for routing and rerouting the Allied convoy system in the Atlantic, especially after the U.S. Navy started to participate in the escort operations and took over operational control in the western part of the North Atlantic on September 15, 1941.[44]

MERCHANT LOSSES
TO U-BOATS

DECEMBER 1941 - AUGUST 1942
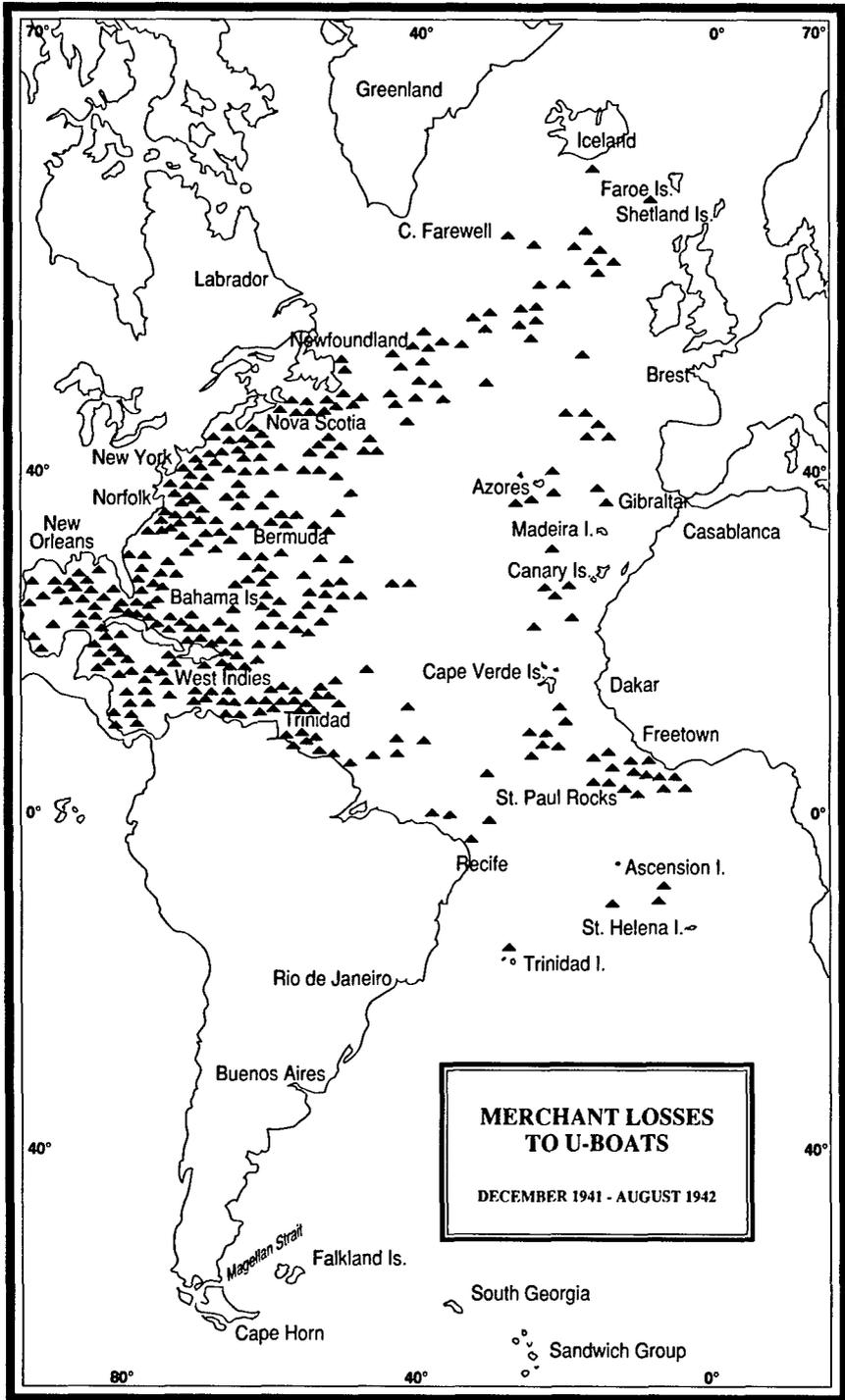
Allied Cypher Machines and the Navies

Neither the Americans nor the British were willing or able to introduce their cypher machines at the time. Both had started to develop such machines, using the commercial Enigma D which they had bought in the twenties and in the United States in addition the Hebern machine as a starting point.[45] The American Electrical Cypher Machine, or ECM-Mark I, was already in use with the U.S. Navy but it was not possible in 1941 to provide the machines in great numbers to the British and Canadians. The British had during the thirties developed their super Enigma, called Typex, which was used since 1939 with the Royal Air Force and the Army. But the Royal Navy had declined then the introduction because the book cyphers and subtractor tables were regarded easier to handle and more secure. Only in June 1942, the British and Canadians reached an agreement with the Americans to modify the ECM to work to the Typex using an adaptor for the latter. The modified machines became two versions of the compatible "Combined Cypher Machine" or CCM. In November 1942, the British Navy started to equip the shore commands with Typex, but only from November 1943 the ships of the three Allied navies began to get the new CCM machines.

There remains the question what would have happened had the navies introduced these cypher machines earlier, working on systems derived from the German Enigma, even if greatly improved. Then the German B-Dienst would have had to concentrate its work on this system generally known from some machines, captured at Dunkirk in a damaged state, but which were repaired by some enterprising German expert to be used as an Enigma, in the same way as Bletchley Park used some adapted Typex machines to avoid a special production line for remade Enigmas for decyphering the German signals with the decrypted daily settings. Of course, it was too late in 1943 to start analytical work, so the Typex or the ECM and the CCM were never really attacked or broken.

Fifth Phase: Decisive Convoy Battles on the North Atlantic Route

When sightings off the U.S. East Coast dropped off sharply after the introduction of the convoys there, the BdU found the single operations in so distant an area uneconomic, and switched back to the North Atlantic convoy route in July 1942, starting the fifth phase of the battle.[46] Now the operations of the U-boats against the North Atlantic convoys took place along the following pattern: approximately ten or fifteen U-boats which had sailed from Norwegian or French bases at intervals of several days, after reporting that they had passed the Iceland – Faroes gap or the area west of the Bay of Biscay, would receive orders to go for a heading point, a square of the German grid map in an area in which the BdU intended to form a patrol line.[47]

The B-Dienst and the Convoy Battles of 1942

The slowly growing successes of the B-Dienst against FRANKFURT gave the BdU some help. At the end of 1942 the B-Dienst could decrypt up to 80 percent of the intercepted signals, but the extent of decrypting was variable and, most important, the time needed for decryption was much longer than Bletchley Park needed against HYDRA. Only about 10 percent of the intercepted and decrypted signals came in time to be used in actual operations. But the other signals gave important background information, and they especially allowed the reconstruction of the Allied convoy time tables, so that the BdU could form patrol lines at the right time and could identify the reported convoys.[48]

The BdU often became able to send his U-boats five or seven days before the arrival of the convoy to the heading point and unfold his patrol line so that the expected convoy would have to pass the line in daylight. If no convoy was picked up, the patrol line was given a direction of advance and the day's run was fixed in such a way that the group could rake up on its assumed course. Upon sighting a convoy, the U-boat making the first contact transmitted a signal. The BdU then ordered the U-boats to concentrate on the convoy and attack. During the convoy operation one of the U-boats had to operate as contact holder, send off contact signals every hour and give bearing signals for the other U-boats of the group. If this U-boat had to dive, because the convoy's escorts drove it down or off, another U-boat had to take over the task of contact keeping. After the convoy operation the BdU would signal a new heading point for those U-boats with fuel and torpedoes left, and order the other boats to return to the bases or to a U-boat-tanker. For this kind of operational and tactical guidance of the U-boat groups from the short an extensive radio traffic was necessary.[49]

Bletchley Park and TRITON

It was of immense importance to the Admiralty to gain access to the new German TRITON cypher circuit. The Operational Intelligence Centre (OIC) in a letter of November 22, 1942, to Bletchley Park stated that the U-boat campaign was "the only one campaign which Bletchley Park are not at the present time influencing to any marked extent...and it is the only one in which the war can be lost unless Bletchley Park do help."[50] Bletchley Park had already learned that the U-boats used in their TRITON circuit the new four-rotor cypher machines, and using a grave mistake of a German operator, encyphering the same signal with the old HYDRA three-rotor settings and the new TRITON four-rotor settings even before the new machine was operational.[51] Bletchley Park had solved the inner wirings of the new small reflector B and the Greek-rotor Beta, replacing the old big reflector B. But because there were no preparations against such an eventuality the three-rotor *"bombes"* in use worked too slowly to check out the now-raised cycle length of the machine. It took the three-rotor *bombes* in use twenty-six times longer to go through the cycle length of an four-rotor signal

than to a three-rotor signal.[52] And because the Germans had changed their short-signal codebooks, too, there was no possibility of finding the cypher-to-clear text compromise as easily as before. In only three instances in 1942, when the mentioned mistake was repeated, sending the same signal in both the three- and the four-rotor cypher, decrypts of keys were achieved. And Bletchley Park did not discover then that the Germans used the "M 4" machine in the "M 3" mode when sending weather short signals.[53]

Only after October 30, 1942, when a boarding party captured the new weather code and some other cypher materials from *U-559* before it sank in the Mediterranean was it possible to crack the TRITON cypher again, starting on December 13, 1942.[54]

From July to December 1942 the German B-Dienst was in an advantageous position against Bletchley Park concerning the decryption of convoy or U-boat signals. But Bletchley Park notwithstanding had an almost exact estimate about the U-boats at sea from the continued decryption of the HYDRA circuit, containing all the signals of the vessels escorting the German U-boats in or out of Norway or the Biscay ports.[55] And there was one more field in which the Allies made great progress during this phase: The introduction of the FH-4 HF/DF equipment aboard the rescue ships and most destroyers. This equipment allowed the escort commander to intercept the first contact signals of an U-boat, take an exact bearing and drive the U-boat down while the convoy turned away. In many cases contacts were lost and convoy battles avoided.[56]

When the break into TRITON was accomplished on December 13, 1942, at first there were some gaps and time lags, and only from mid-January 1943 and during February it was against possible to break the daily settings regularly so fast that the convoys could be rerouted around the German U-boat lines.[57]

Convoy Routing and the B-Dienst 1943

But by the end of February the number of German U-boat in the operational area had risen to more than forty in the North Atlantic alone, because the BdU now sent all available boats, including the bigger Type IX's, into this decisive area.[58] He could build up there three or more long patrol lines which became more and more difficult to circumvent by the STR. And now the BdU was assisted in his movements of those groups by his B-Dienst, which was able at this time to decrypt more and more routing—and rerouting signals, and even the daily U-boat situation reports, encyphered in the Naval Cypher No. 3, or FRANKFURT. The decryption success was made possible by the many routine signals necessary to direct the complicated convoy routing system.[59]

As the first basis for planning, the Admiralty in London would transmit a route-recommendation to all commands concerned, about eight days before the convoy was to go out from Halifax or from Sydney (in Canada) and later New York on the western, or from Liverpool on the eastern side. It was based on an

assessment of the enemy's situation and took into consideration the availability of the sea- and air-escort forces. This signal contained the following data:[60]

    a) the ocean route positions, designated by letters.

    b) the position and the date of the ocean meeting point, where the ocean escort groups relieved the local escort groups off Newfoundland or west of the North Channel.

    c) the standard route for the stragglers.

    d) some secret reference points designated by codewords.

Two or three days later, after coordination with the other commands concerned, the route would be agreed and the routing signal sent to the commands concerned. While these instructions could be transmitted by cable or other wire-communication networks, the port director's "sailing telegram" was sent by radio at the time of departure of the convoy, because by then some of the forces concerned were already at sea and had to be informed. This signal contained the points *a* and *b* mentioned above, some information about the composition of the convoy, and details about the communication arrangements. The second part of this telegram would contain the complete list of all ships in the convoy, their nationality, their position numbers, their speed, their cargo, and their destinations.

Further radio communication was indispensable for effecting the filtering-in of feeder convoys and for relieving the local escort groups by the ocean escort group, but especially when orders for a change of the route had to be given; for example, because U-boat had been located near the route. This unavoidable radio-traffic was the source of the most important intelligence for the BdU.[61] During these most successful weeks of the German B-Dienst in early 1943 the exactitude of the U-boat dispositions led the BdU again to fears concerning cypher security, and a new investigation was started.[62] It took weeks before the result was presented, placing again other reasons before the command: It seemed to be the increased air coverage of the North Atlantic and especially the new location devices on the basis of an improved radar.

Bletchley Park and the Change of the Tide

Notwithstanding such evaluation the BdU ordered new precautions in the communication- and cypher-systems. First on March 10, 1943, a new weather codebook was to be put into use by giving a prearranged codeword.[63] The old weather code, captured from *U-559,* had become very important for finding the daily key and when the codeword was decrypted at Bletchley Park on March 8, there was a great fear of a new big black-out for TRITON, or SHARK, as this cypher was called there. Without this vital source of information on the enemy's dispositions, it seemed almost impossible to route a convoy clear of the German wolf packs, whose numbers were rising swiftly. The whole convoy system seemed to be in danger, if convoy after convoy were to be intercepted

and lose up to 20 percent of its ships, as was the case with the four following eastbound convoys — SC.121, HX.228, SC.122, and HX.229 — in the first twenty days of March.[64] All depended now on the speed with which Bletchley Park could solve the new cryptological problem. Because the Germans did not change the operational short-signal book at the same time the many contact signals from the heavily attacked convoys were now of great help. By concentrating all available means, including the use of six *bombes* from the other services, and aided by some luck, the experts solved the problem in only ten days.[65]

Perhaps this was the most important single achievement of Bletchley Park in the whole war, which was used to implement a new strategy.[66] Up to this time, ULTRA intelligence was utilized to avoid convoy battles and shipping losses by going away from the U-boat concentrations. Now the few additional ships and very-long-range aircraft as well as the first support groups with escort carriers, made available after the Casablanca conference in January 1943 (when Roosevelt and Churchill put the victory in the Battle of the Atlantic at the top of their list of priorities), were used now in such a way that convoys in danger could be fought through bay concentration of forces. This much more cost-effective use of the few newly allocated forces turned the tide of the battle in only eight weeks completely.[67] After heavy losses and failure to come to grips with intercepted convoys, on May 24, 1943, the BdU had to admit defeat and cease wolf-pack tactics against the North Atlantic convoys.[68]

Sixth Phase: Distant Operations and the Bay Offensive

In the following sixth phase from June to August 1943 the race for advantages in the cypher security and cryptanalytic efforts again took a sharp turn in favor of the Allied side.

The Struggle for Cypher Security

From mid-February to May 24, 1943, the B-Dienst with the timely decryption of rerouting signals and the daily U-boat situation reports had allowed the BdU to intercept no less than 54 percent of the Allied convoys running on the North Atlantic route during the time, after the problem with the changes of December 15, 1942, in the indicator procedure in Naval Cypher No. 3 had been overcome.[69] But during the same time fears concerning the security of their own naval cyphers in Great Britain led to the development of a new Naval Cypher No. 5 to replace the No. 4 for British and No. 3 for combined British-Canadian-American use. This cypher together with a new secure recyphering system was brought into service on June 10, 1943, leading first to a complete black out on the German side, which was only therefore not really fatal because the convoy operations in the North Atlantic were already broken off.[70]

But to the BdU this seemed not to be the final turning point in his U-boat tonnage war, it was only a lost battle, and he hoped to overcome the crisis in a short time with the introduction of new weapons and equipment like the new radar-search receivers *Hagenuk Wanz* and *Naxos,* the radar-deception balloon *Aphrodite*, strong antiaircraft armament and the new acoustic-homing torpedo *Zaunkönig*.[71] Up to the time when he hoped to resume the convoy battles in late Summer 1943 he would send his U-boat groups into the Central Atlantic to intercept the convoys on the U.S.-Gibraltar route outside the land-based air-cover which had now almost closed the Greenland air gap or "black pit."[72] He ordered a few U-boats to stay in the North Atlantic to simulate big groups by sending radio signals from changing positions with different signatures and frequencies. So he hoped to surprise the Americans with his new Group Trutz in the Central Atlantic.[73]

But both hopes were frustrated by ULTRA even if Bletchley Park experienced some problems with the additional security measures the commander U-boats introduced for the cypher TRITON. On April 3, a new four-letter message key had closed one of the doors used to get the necessary "cribs" for entering Triton.[74] From March 19 to June 30 only ninety of 112 daily keys could be broken, and the *bombe* time to try the great number of possibilities led to delays.[75] Just when this problem seemed to be overcome with the introduction of the first British high-speed *bombe* for the four-rotor machines in June,[76] the Germans introduced on July 1st, 1943, the second set of the new rotors, the reflector C and the Greek rotor Gamma.[77] A three-week blackout and new long delays in getting the daily keys in the first ten days of August were the consequences. The work of Bletchley Park was made even more difficult because the German U-boats now used much more "Offizier"-signals which were double-encyphered and could be solved up to September very often only after seven or fourteen days.[78] The problems were finally overcome, when the Americans from August onwards got their own high-speed *bombes* in greater numbers, so that they in November 1943 could take over the work on the TRITON (SHARK) cypher, exchanging the results with the British of course.[79]

ULTRA Provides Flexibility

But because in June and July the BdU had to send his orders well in advance it remained possible to route the U.S. - Gibraltar convoys clear of the U-boats of Group Trutz. The most effective American shore-based high-frequency direction-finding system was of great help in this effort, especially during the times when ULTRA failed because of black outs or delays. So the German attempt to send the U-boats again to the distant and not so well defended areas was frustrated in July by the pinpointed destruction of the German U-boat-tankers at their replenishment places by hunter-killer groups of escort carriers and destroyers, a practice, the British thought correctly, that could warn the

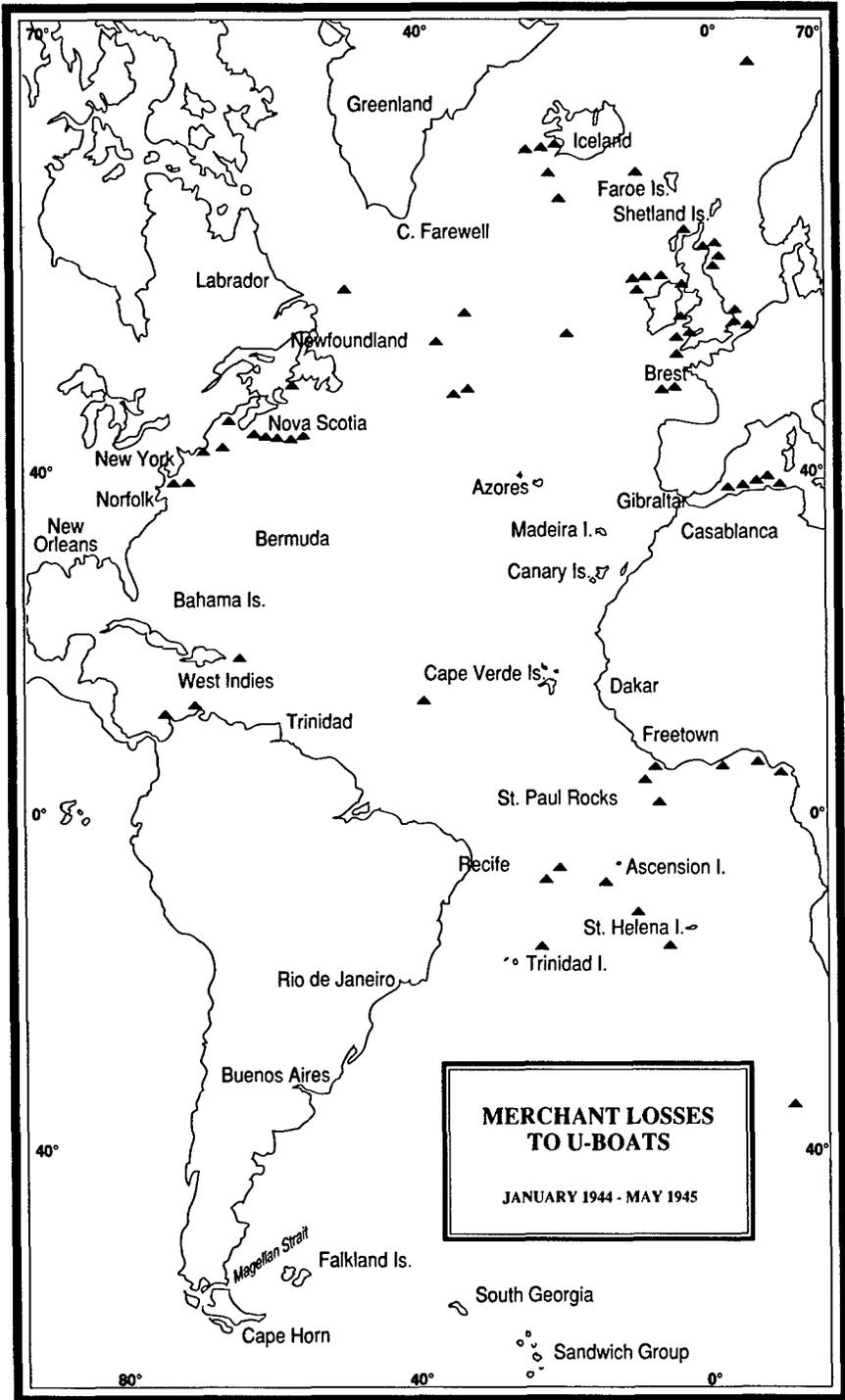Germans to look again into their cypher security.[80]

For the British and the Canadians in the North Atlantic the results of ULTRA, even if delayed, gave clear evidence of the retreat of the German U-boats from this area, allowing in June a reorganization of the convoy system to come to a more economic use of the shipping and the escort forces, and at the same time to a reallocation of the sea and air forces in the North Atlantic area.[81] Coastal Command squadrons used to escort convoys were now transferred to Southwest England to start a strong offensive against the transit areas of the German U-boats in the Bay of Biscay. While ULTRA brought about the fast concentration of forces for the Bay offensive, and revealed the results afterwards, it could not help much in the tactical operations. By following the HYDRA signals, the mine-sweepers and coastal patrol vessels used to escort the U-boats in- and outward bound, which could be decrypted with very short time lags, it was possible to ascertain the number of U-boats at sea.[82] Sometimes the signals could be fixed by direction finding to send aircraft to the area. But the decryption of U-boat signals took too long a time to vector aircraft to the scene. It was only possible to react with some delay to changes in the German tactical behavior when this became known from decrypts.

Seventh Phase: Last Group Operations Against Convoys

These problems for the STR are best described by an example of September 1943, when the Germans started to resume the convoy operations, opening up the seventh phase of the Battle of the Atlantic.[83] The outward passage of the twenty U-boats of Group Leuthen, beginning on August 23, was not disturbed by Allied forces, because they kept strict radio silence and cleverly used their radar-search receivers to evade the Allied air offensive PERCUSSION.[84] On August 30th the BdU ordered the first of these boats to a waiting area north of the Azores, while the British, counting the outgoing boats by HYDRA decrypts, thought they were headed for the distant areas of Central America, western, or even South Africa. Because the time needed at Bletchley Park to break the double-encyphered TRITON signals, ULTRA did not disclose that something was going on up to September 13th, when the first *Offizier* signals of September were decrypted.[85]

Delays in ULTRA and Tactics

This becomes obvious looking at the operation of the U-boat-tanker *U-460*.[86] On September 4th the BdU had radioed to the boat, outbound along the Spanish northern coast to replenish three long-range Type IX boats to the west of the Azores. But on the 7th this order was canceled. *U-460* was now to go north for a replenishment operation on September 10th with the first five Leuthen boats, and only after completion of this operation was it to go southwest

Greenland

Iceland

Faroe Is.

Shetland Is.

C. Farewell

Labrador

Newfoundland

Brest

Nova Scotia

New York

Azores

Gibraltar

Norfolk

New
Orleans

Bermuda

Madeira I.

Casablanca

Canary Is.

Bahama Is.

West Indies

Cape Verde Is.

Dakar

Trinidad

Freetown

St. Paul Rocks

Recife

Ascension I.

St. Helena I.

Rio de Janeiro

Trinidad I.

Buenos Aires

MERCHANT LOSSES
TO U-BOATS

JANUARY 1944 - MAY 1945

Magellan Strait

Falkland Is.

South Georgia

Cape Horn

Sandwich Group

to resupply the Type IX boats on the 14th and 15th. These signals were not decrypted in time to be able to send in two U.S. hunter-killer groups, which were in easy striking distance while the replenishment of the first group was going on from the 10th to the 12th. Only on the 13th and 14th did the two parts of the signals of the 7th become available, but there remained some uncertainties because of a newly introduced German reference-point system to designate positions. So it was too late to send a third escort-carrier group with the USS *Bogue*, searching just to the south for some U-boats suspected outward bound there, for the first replenishment area.[87] When the position for the next replenishment on the 14th and the 15th became clear, *Bogue* was ordered in at high speed. When she reached the position, *U-460* had finished with the second group and was off. So *Bogue* sailed north to the waiting area, known from ULTRA since the 14th, but she came too late here too, because already on the 15th the twenty boats of Group Leuthen were ordered into a patrol line across the estimated course of the next two west-bound convoys, expected on the 21st and 23rd, according to the convoy-time table the B-Dienst was able to reconstruct from the now again decrypted straggler-routes.[88]

This signal was decrypted at Bletchley Park on the 18th, but again there was at first no possibility to pinpoint the end positions of the patrol line, given in reference points known only to the commanding officers of the U-boats when they were ordered by a codeword to open the sealed envelopes. But even without the exact positions the STR now had clear evidence that the awaited new round in the convoy operations was on.[89] The reallocation of sea and air forces was started immediately. When Bletchley Park on the 19th decrypted the first of the most unnecessary admonition signals that the BdU sent to his commanding officers to bolster their morale and drive, it was obvious that the two convoys were the intended targets of U-boats with new weapons and they were rerouted accordingly. But because the Germans estimated the positions of the convoys for the 21st and 23rd more to the east, the detours were too short-legged, and on the 20th the first contact signals were picked up.[90]

ULTRA and the Technical and Tactical Evaluation of the Operation

In the evaluation of the battle afterwards ULTRA provided the British with a great advantage.[91] The BdU, counting on the radio signals of his U-boats, considered the battle with twelve destroyers and seven merchant ships sunk and three more each damaged against the loss of three U-boats a great success.[92] So he tried to exploit this "victory" by a succession of similar operations. On the British side the STR was much better informed. There were not only the reports of their own escort groups, showing three escorts and five merchant ships lost and one more escort torpedoed, but there were also the decrypts of the German U-boat signals. Comparing both sources it was possible to find out the reasons

for the greatly overestimated successes on the German side. This knowledge was of the utmost importance for the development of technical and tactical countermeasures.[93]

The shorter delays in ULTRA from late September 1943 allowed the Admiralty and the RAF Coastal Command to respond to the new German offensive by redeploying some of the support groups from the Bay patrols as well as new support groups with new escort carriers to the North Atlantic route. At the same time very long range air squadrons from the Bay offensive were deployed back to the RAF's 15th Group in Northern Ireland and Iceland, and the RCAF sent additional aircraft to Newfoundland.[94] The most effective routing of the convoys and the timely despatch of the sea and air forces to support the convoys in danger frustrated all attempts by the BdU to attack in force any of the convoys, expected from the timetable reconstructed by the B-Dienst from the straggler routes.[95]

On November 7th, 1943, a disappointed BdU had to abandon his tactical idea of surface night attacks with groups against convoys.[96] ULTRA also frustrated his attempts to bring submerged patrol lines, supported by new long-range air reconnaissance, to attacks against convoys of the Gibraltar – U.K. route, because the almost stationary lines at their known positions could easily be outmaneuvered by the convoys and attacked by the accompanying support groups.

When in February 1944 the next attempt to intercept and to surprise some convoys by widely dispersed small U-boat groups failed, the only hope to the BdU remained to use the old Type VII and -IX boats in a holding campaign to deny the Allies the use of their antisubmarine forces for offensive operations up to the time in summer or autumn of 1944 when he assumed he would be able to start the battle again with the new Type XXI U-boats to prevent an Allied invasion of Europe.[97]

This hope faded in the spring of 1944 when the mounting effect of the Allied bomber offensive against the shipbuilding yards and the supplying industries delayed the delivery of the new U-boats until after the start of the Allied operation OVERLORD in Normandy, while the intensified minelaying campaign of the RAF Bomber Command interfered increasingly with the U-boat training program in the Baltic.[98]

Eighth Phase: Holding Campaign with Schnorkel U-boats

In the last phase from June 1944 to the end of the war the old-type U-boats, now equipped with their schnorkel breathing mast could only operate independently from each other submerged in the shallow areas of the Channel, off the western approaches to Great Britain and off the Canadian coastal areas to bind the Allied antisubmarine forces by their presence and some attacks which could not change the tide again and win decisive influence on the outcome of the war.[99]

Radio-Intelligence and Schnorkel U-boats

Now radio-intelligence became of lesser importance. The U-boats got their operational areas mostly in written orders before departure. Because of the limited intelligence the BdU could get in time about the situation in the operational areas not so many changes in the orders had to be sent by radio. The U-boats, for fear of being located by direction finders, tried to avoid sending radio signals. In addition, new measures for securing the radio signals were taken.[100] The signals from the shore command increasingly used coded references to the written orders held on board the boats and not readable to the fast working American high-speed *bombes*. In December 1944 the Germans started to use separate, special keys for single U-boats which made the few sent signals practically unbreakable one-time pads. The experts at Bletchley Park and the United States had also to fear the introduction of a new Off-Frequency High-Speed Transmitter, Kurier, which had already been tested aboard some frontline U-boats and would bring almost unsurmountable problems with interception.[101]

MAGIC and the U-boat War

Yet another radio-intelligence source gave rise to some fears. For much of the war, the very detailed reports of the Japanese ambassador and the military and naval attachés in Berlin to their superiors in Japan, encrypted with the PURPLE diplomatic cypher, broken by the Americans since 1940 in an operation called MAGIC, provided much material about the development of new German weapons, and also about the new fast Diesel-electric German U-boat Types XXI and XXIII and the Walter Type XXVI, as well as rumors about ballistic rockets fired from tubes towed from submarines.[102] The increase in the number of completed new U-boats and their awaited arrival in the operational areas forced the Allies to keep their strong sea and air antisubmarine forces in most areas, to be able to mount overwhelming swamping operations, when, as in March 1945, there seemed to be a danger of a German U-boat group going for the U.S. East Coast, possibly towing the V-2 rockets in tubes.[103]

But with the Soviet army at the Oder River and the armies of the Western Allies forcing the Rhine River and driving into Western and Central Germany the fears from a new U-boat offensive abated also in ULTRA and MAGIC since the second part of March 1945, when the "mystery of the non-appearance of the Type XXI U-boat"[104] was clearing up in the messages of the Japanese as caused by the losses and damages during the heavy air raids against the building yards and from the mining campaign, as well as from the loss of the training areas in the Baltic.

On the day of the German surrender, an ULTRA decrypt disclosed that the first Type XXI boat, *U-2511*, had departed on its first patrol.[105]

Conclusion

What was the role of radio-intelligence in the Battle of the Atlantic; was its outcome decisively influenced not only by ULTRA but also by the German B-Dienst and the efforts on both sides to improve the cypher security?

In the first two phases of the Battle of the Atlantic up to May 1941 there was as clear superiority with cryptanalytical successes on the German side, but this changed the operational developments only to a small degree. They were more dependent on the number of U-boats and available escorts, or the changes in the base situation following the conquest of the European coast from Norway to France by German forces. Intelligence was of limited value to the actual operations.

In the third phase in the second half year of 1941 there was a fundamental change in favor of the British with Bletchley Park's mastering of Schlüssel M 3. By perfectly routing the North-Atlantic convoys round the German U-boat groups with the knowledge gained by ULTRA, the STR was able to avoid the loss of about 300 - 400 ships of about 1.5 to 2.0 million GRT. And without ULTRA information President Roosevelt probably would not have decided to send the U.S. Atlantic Fleet into the battle three months before Pearl Harbor.

In the fourth phase in the first half year 1942 the German U-boats achieved their biggest successes off the Americas. This was neither supported to any great extent by the B-Dienst, nor could ULTRA have prevented this even without the black out of February 1, 1942.

In the fifth phase we have to distinguish some subphases. In the second half year 1942 the B-Dienst was able to increase the decryptions of rerouting signals delivered in time so that the BdU accomplished more and more interceptions, while Bletchley Park remained blind against TRITON. But during this time the Allied escort commanders were able to prevent many convoy battles which might have led to heavy losses by using shipboard high-frequency direction finding to drive the contact holders down.

After Bletchley Park had mastered TRITON in December 1942, in January and February 1943 rerouting was first used again with some success until the B-Dienst delivered its decrypts of rerouting signals and U-boat situation reports so fast that the STR had more and more difficulties to evade the rising number of German U-boat groups.

In late March 1943 Bletchley Park overcame the great danger of a new black out which might have wrecked the whole North-Atlantic convoy system. After the Casablanca Conference in January 1943 this was the backbone of the Allied strategy to win the war. This achievement of Bletchley Park, perhaps its greatest of the whole war, allowed the Admiralty to change to a new operational pattern. Now the initially limited additional forces sent to the North Atlantic were used in such a way that convoys in danger were fought through the U-boat lines by a concentration of forces. This led in only eight weeks to the final

change of the tide in favor of the Allies in May 1943.

There can be no doubt: without the use of ULTRA in this way many more ships, aircraft, and support groups would have been necessary to achieve this result, and these forces became available only from the late summer of 1943 onwards.

A delay of three months or more in the turn of the tide in the Battle of the Atlantic would have entailed great additional shipping losses in the Atlantic. Losses of 1.5 to 2.0 million GRT in late 1941 and again more than 0.5 to 0.7 million GRT in 1943 would have upset the whole timetable of the Allied strategy. In all probability, no invasion of Normandy would have been possible in May or June 1944, or even in the late summer of 1944.

In the sixth intermediate phase in summer 1943, even with the delays in ULTRA caused by German cypher improvements, the intelligence gained was enough for the Allies to divide German intentions in time, and to disrupt the operations by concentrating the shore-based air forces for the Bay offensive and the carrier-based air against the supply system for distant operations. At the same time the B-Dienst experienced its black out.

In the seventh phase ULTRA, now based more and more on the U.S. high-speed *bombes,* was of great assistance in frustrating the German attempt to resume the convoy battle in the North Atlantic with the old U-boats equipped with new weapons.

In the last phase radio-intelligence was only of minor operational influence because the Germans used radio-signals only in a limited scale during their inshore schnorkel missions. But in the last months there was some fear on the Allied side from the awaited improvements in German communications and cypher systems to be used by the new U-boats of Type XXI, whose capabilities had become known by MAGIC decrypts of the signals of the Japanese diplomats in Berlin to their superiors in Tokyo, encyphered with the PURPLE machine.

When asking if radio-intelligence was indeed the most important and decisive factor in the outcome of the Battle of the Atlantic, we should never forget that the decision had to be fought for at sea by the thousands of men in the U-boats, the merchant ships, the escorts, and in the aircraft, with the ships, planes, sensors, and weapons designed and built by the countless scientists, engineers, and workers in the engineering offices, the factories, and the shipbuilding yards. There were a great number of factors, the combination of which played the decisive part in the changes of tide in the longest battle of World War II.

But without the three pillars of radio-intelligence, direction finding, traffic analysis and decyphering, neither could the BdU have used his U-boats as effectively as he did against the convoys, nor could the Allied commands on both sides of the Atlantic have routed their convoys and assigned their forces even more successfully. Radio-intelligence, there is no question, was of much greater importance for the strategic, operational, and tactical decisions taken on

the Allied side than on the German side.

If we have to place the many factors which decided the outcome of the Battle of the Atlantic in an order of precedence, we should place ULTRA at the top, followed by the closing of the air-gap in the North Atlantic, the high-frequency direction-finding equipped escort and support groups, the introduction of the decimeter radar, etc.

Without the many cryptographers of Bletchley Park, the Wrens working there and the men, who had to translate the intelligence into operational decisions, the turn in the Battle of the Atlantic would certainly have come much later. The chain of events would have taken a completely different course, with grave consequences for both sides, even when there was never a question about a final Allied victory.

Notes

1. It is impossible here to mention all the primary sources available to the historian in the archives of the nations participating in the Battle of the Atlantic. A summary of the most important sources follows.

Germany
Bundesarchiv/Militärarchiv (hereafter BA/MA), Freiburg/Breisgau, Federal Republic of Germany
  -Kriegstagebuch der Seekriegsleitung, 1939-1945, Teil A. (KTB/Skl./A/)
A facsimile publication of the 68 vols. from 15 August 1939 to 20 April 1945 is just started under the editorship of Werner Rahn, Gerhard Schreiber, and Hansjoseph Maierhofer. Herford: Mittler 1988 —.
  -KTB/Skl. Teil B. IV: Übersicht U-Bootskrieg. Wöchentliche Lageüberblicke mit Anlagen and Kurzberichten. 4 Bde. BA/MA RM/7/839ff.
  -KTB Skl. Teil C I. Kreuzerkrieg in außerheimischen Gewässern mit Lageüberblick Atlantik . . ., 5 Bde. BA/MA RM 7/118ff.
  -KTB Skl. Teil C. IV. U-Bootskriegführung. 8 Bde. BA/MA RM 7/844ff.
  -KTB Skl. Teil D. III. Fernschreib- und Funkspruchsammlung. 1.January 1940-28.February 1945. 178 Bde. BA-MA RM 7/483-660.
  -KTB Skl. Teil D VIIId: 3.Skl.Chef MND III: wöchentliche B-Berichte 8.9.1939-20.4.1945. BA-MA RM 7/728ff.
  -KTB Befehlshaber der U-Boote 1939-1945. 15.August 1939-15.January 1945 BA-MA RM 87/. Available also in Microfilm U.S. National Archives Microcopy T-1022, Roll 3979, 4063, 3980, 3981, 4064, 4067, 4065, 4066.
  Bibliothek für Zeitgeschichte, Stuttgart.
  -J. Rohwer Collection: Battle of the Atlantic, containing a great number of documents and evaluations from German, British, Canadian, and U.S. sources.

United Kingdom
Public Record Office, London-Kew
-Records of the Admiralty, especially of the groups
-ADM 1 Naval Policy,
-ADM 199 Naval Operations and War History Cases and Papers,
-ADM 223 Naval Intelligence
-DEFE 3 Decrypts of German radio-signals, vols. of Naval signals.

United States
National Archives and Records Administration, Washington, DC
-RG 80, Secret Records of the Chief of Naval Operations
-RG 457, NSA/CSS Cryptologic Documents.
-Operational Archives, Center for Naval History, Washington, DC
  Action Reports and Narratives of Patrols by Task Forces, etc.
  Convoy Folders including Radio Messages
  Daily Situation Maps, August 1941 to May 1945, North Atlantic.
Canada
Directorate of History, Department of Defense, Ottawa
-RCN Papers and Records on Convoy Organization and Routing,
-Reports of Proceedings including radio-signals.
  Many documents from the United Kingdom, the United States, and Canada are available in microfilm or reprographic copy in the Bibliothek für Zeitgeschichte,

Stuttgart: Collection J. Rohwer.

Deutsche Marine-Dienstvorschriften (M.Dv.) [German Naval Service Memoranda].

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102. Beesly, *Very Special Intelligence,* p 247 - 250; Hinsley, *British Intelligence in the Second World War,* vol II, Appendix 10: Technical Intelligence on U-boats, p 683– 685.; Hinsley, *British Intelligence in the Second World War,* vol 11, vol III, 2: Intelligence on U-boats from Japanese Diplomatic Decrypts, May and October 1944. p 519–526.
103. Farago, *Tenth Fleet,* p 14–23.
104. Hinsley, *British Intelligence in the Second World War,* vol III, 2, p 627–632, esp 630.
105. Hessler, The U-Boat War in the Atlantic, vol III.

Intelligence Collaboration between Britain and the United States during the Second World War

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Like most major episodes in the history of intelligence services, the making of the Anglo-American intelligence alliance during the Second World War is usually interpreted in too narrow a context without reference either to the development of other intelligence systems or to its own historical origins. As a result it has been widely misunderstood in at least two ways. First, because of the failure to see the Anglo-American intelligence alliance in comparative perspective, its uniqueness has been underestimated. There had been occasional examples before of intelligence collaboration between independent powers but never anything which even approximated that between Britain and the United States. American cryptanalysts actually worked with British cryptanalysts at Bletchley Park on ULTRA, the most valuable raw intelligence in British history. X-2 (counterintelligence) officers from OSS in London followed in all its operational detail the entire Double Cross system, the most important system of deception in British history. It is not, of course, difficult to find examples of friction as well as intimacy in the special relationship between the two intelligence communities — particularly in Asia where British and American interests diverged.[1] But such conflicts have been common to all alliances, however close. Even the worst moments of friction between the British and American intelligence communities were probably no more severe than the conflicts which occurred from time to time within each intelligence community: between, for example SIS and SOE in Britain, or between the FBI and OSS (as later between the FBI and CIA) in the United States. When Nigel Clive was posted to Epirus as the SIS representative, he discovered that his immediate predecessor, Costa Lawrence, had been shot by SOE as a suspected traitor.[2] It is doubtful whether there was a more fraught episode in Anglo-American intelligence relations. What was unique to the transatlantic intelligence alliance were not the inevitable moments of friction but the unprecedented trust and intimacy which it generated. The most special part of the "special relationship" was and remains collaboration in intelligence.

The second common misunderstanding about the intelligence "special relationship" stems from a failure to grasp its historical context. The intelligence alliance is usually seen simply as a product of the Second World War. In fact, it cannot be satisfactorily understood without reference to the precedents set during the First World War. The best publicized example of Anglo-American intelligence collaboration in World War Two, British Security Coordination (BSC) in New York, headed by the SIS station chief, Sir William Stephenson, so far from being, as is frequently supposed, a complete innovation, did little more than continue the work of its First World War predecessor, the office of the British Military Attaché in New York. That office reported on March 28, 1918:

> There is complete cooperation between this office and
> 1. United States Military Intelligence
> 2. Naval Intelligence
> 3. U.S. Secret Service
> 4. New York Police Department
> 5. Police Intelligence
> 6. U.S. Customs House
> 7. The American Protective League and similar civic organizations
> 8. U.S. Department of Justice, Bureau of Investigation.
> ...Everyone of them is in the habit of calling us up or visiting the office daily.
> They have access to our files under our supervision and we stand ready to give
> them all information in our possession. They, on the other hand, are equally
> ready to reciprocate, and the spirit of friendly cooperation makes the work
> extremely pleasant and, I venture to think, useful.[3]

The history of BSC in the Second World War has been confused by the sensationalist myths woven around Sir William Stephenson's career by the best-selling *A Man Called Intrepid.* Sir William now insists that "I never at any time claimed to provide a secret liaison between the British Prime Minister and the American President".[4] His First World War predecessor, Sir William Wiseman, however, did just that. By the end of 1916 Wiseman, unlike the British ambassador, Sir Cecil Spring-Rice, had won the confidence of both President Woodrow Wilson and his confidential agent, Colonel House. Lord Northcliffe concluded during his missions to the United States in 1917 that Wiseman was "the only person, English or American, who had access at any time to the President or Colonel House".[5] Wiseman found Wilson "ready to discuss everything on the frankest possible terms".[6] In the course of 1917 what MI1c (the First World War predecessor of SIS) described as Wiseman's "political work" became so time-consuming that he was obliged to hand over the day to day running of the New York Office of the British Military Attaché to his deputy Maj. Norman Thwaites. In March 1917 control of the office was formally transferred to the chief MI5 representative, Col. H. A. Pakenham, with Wiseman acting as "Liaison Officer between the War Cabinet and Lord Reading [Spring-Rice's successor as ambassador], his chief duty being to keep open channel of communication between the Foreign Office and Colonel House".[7]

No existing study of Franklin D. Roosevelt's foreign policy grasps the importance of his admiration for the achievements of British Intelligence during the First World War in explaining his readiness to embark on a special relationship with it in the Second, well before Pearl Harbor. As a young assistant secretary of the navy, FDR had listened spellbound as Admiral "Blinker" Hall, Director of Naval Intelligence (DNI) and the most powerful of Britain's First World War intelligence chiefs, explained how British spies crossed the German-Danish border each night, went by boat to Sylt and thence by flying boat to Harwich. When Admiral John Godfrey, Hall's successor as DNI, visited Washington in the summer of 1941, he was amazed to be regaled by FDR's recollections of this and other amazing exploits of Britain's "wonderful intelligence service" in the First World War. Godfrey could not bring himself to tell the President that the exploits which had so impressed him a quarter of a century before were entirely imaginary. Hall had invented them to conceal from the young FDR that his intelligence came not from spies but from codebreakers.[8] Had Roosevelt realized that Britain's best and most plentiful First World War Intelligence about Germany came from cryptanalysis, he would probably have deduced — correctly — that Britain was tapping the American transatlantic cable which, until the breach in US-German relations, carried German as well as American diplomatic traffic. And had he deduced that, he might also have suspected — also correctly — that Room 40, the main British wartime SIGINT agency, had broken American as well as German codes. The State Department had yet to emerge from a state of cryptographic innocence and placed its faith in what Herbert Yardley, head of the interwar Black Chamber, later described as "schoolboy codes and ciphers". President Wilson, the great champion of open diplomacy, was splendidly unaware of how open was the secret code he employed for communications. Despite the close transatlantic collaboration in HUMINT, Britain was not yet ready for a SIGINT alliance. Before handing over the decrypted Zimmermann telegram which helped to ease the American entry into the First World War, "Blinker" Hall went to great pains to obtain a copy from Mexico City in order to conceal from the United States that its own cables were being tapped.[9]

The most important Allied intelligence achievement of the Second World War was the use made of SIGINT. The prime mover in the sharing of it was probably Winston Churchill. By one of the most fortunate coincidences in British history Churchill became prime minister in the very month — May 1940 — when ULTRA began to come on stream. Churchill had a longer and more intense interest in intelligence than any other statesman in British history. Much of the story of Churchill's passion for intelligence is, surprisingly, omitted from the vast and otherwise impressive official biography. Churchill had been a member of the Asquith cabinet which had founded SIS in MI5 in 1909. As First Lord of the Admiralty in 1914, he had presided over the renaissance of British SIGINT in Room 40 in the Admiralty Old Building. Ten years later he claimed,

almost certainly correctly, that he had studied the subsequent development of SIGINT more closely than any other minister. He became prime minister in May 1940 determined both to gear intelligence to the war effort and to establish a special relationship with the United States.[10]

When Colonel "Wild Bill" Donovan arrived in London as President Roosevelt's special envoy in July 1940, Churchill ensured that he was shown the red carpet — indeed a whole series of red carpets. He was received by Churchill, granted an audience with King George VI, and taken to meetings with most of Britain's intelligence chiefs. Donovan returned to urge on FDR "full intelligence collaboration". In November 1940 Commander A. G. Denniston, the operational head of Bletchley Park, and his main American counterpart, Col. William Friedman, reached a general understanding on SIGINT cooperation. That cooperation began in earnest in February 1941 when American cryptanalysts delivered a copy of the Japanese PURPLE machine to Bletchley Park and demonstrated its working method.[11]

Churchill knew that victory would depend on harnessing America's immense resources to the war in Europe and set out with consummate skill to win over FDR. Between May 1940 and Roosevelt's death in April 1945, he sent him on average one message every thirty six hours. "No lover", he said later, "ever studied the whims of his mistress as I did those of President Roosevelt".[12] Among the methods of seduction which Churchill employed, despite the anxieties of his secret service chief, Sir Stewart Menzies, was SIGINT. On important intercepts, particularly those dealing with the Far East, he would add the minute: "Make sure the President knows this" or "Make sure the President sees this".[13] In the days before Pearl Harbor, Churchill was so anxious for the latest Japanese intelligence that he rang up Bletchley Park himself. Capt. Malcolm Kennedy, one of the leading cryptanalysts of Japanese traffic, wrote in his diary on 6 December 1941:

> ...The All Highest (...Churchill) is all over himself at the moment for latest information and indications re Japan's intentions and rings up at all hours of the day and night, except for the 4 hours in each 24 (2 to 6 a.m.) when he sleeps. For a man of his age, he has the most amazing vitality.

One of the many conspiracy theories generated by the attack on Pearl Harbor next day asserts that Churchill was given, and deliberately suppressed, an intelligence warning. In reality, Bletchley Park was unable to give a warning. Kennedy wrote in his diary on 7 December:

> A message rec[eived] just before leaving the office this evening had indicated that the outbreak of war was probably only a matter of hours, but the news on the 9 p.m. wireless, that Japan had opened hostilities with an air raid on Pearl Harbour, more than 3000 miles out in the Pacific, came as a complete surprise.[14]

Allied collaboration in the use of ULTRA at the operational level came earlier on

the naval than on the military side for the simple reason that the British and American navies began joint operations well ahead of the armies. The key to the Admiralty's use of ULTRA was its Operational Intelligence Centre (OIC) which used ULTRA to monitor enemy naval movements. In the spring of 1942 a member of OIC went to Washington at the Navy Department's request to help it establish a U-boat tracking room on the British model. Communication via direct signal links between the tracking rooms in London, Washington (and later in Ottawa also) was, writes Sir Harry Hinsley, "so good that they operated virtually as a single organization without any need to change or integrate their staffs". By the beginning of 1943 British and American work on naval Enigma was being carried out according to a single programme coordinated by GC and CS: an arrangement which worked smoothly for the remainder of the war. In the battle of the North Atlantic, the longest and most complex battle in the history of naval warfare which reached its climax in the spring of 1943, ULTRA probably made the difference between victory and defeat. But ULTRA was able to make a probably decisive contribution only because of transatlantic collaboration.[15] Anglo-American military collaboration in the operational use of ULTRA took longer to work out. When Dwight D. Eisenhower arrived in Britain as commander-in-chief of American forces in June 1942, Churchill briefed him personally on ULTRA at Chequers.[16] TORCH, the allied invasion of North-West Africa in November, under Eisenhower as supreme allied commander, was the first allied military operation of the war. But because Ike's chief intelligence officer, Kenneth Strong, was a British brigadier, it seemed unnecessary to the British to work out detailed arrangements for Allied collaboration in the use of ULTRA in the field. Strong was provided with an SCU/SLU (Special Communications Unit/Special Liaison Unit) which received ULTRA direct from GC & CS without passing through Washington. General George Strong, chief of G-2 in Washington (and not to be confused with Kenneth), came to the conclusion that he was being bypassed. In February 1943 the War Department accused Bletchley Park of withholding SIGINT from G-2.[17] A later American analysis of the tension between G-2 and GC & CS concluded:

> ...As one examines the early records, the picture that emerges is of G-2 and British authorities walking around and eyeing each other like two mongrels who have just met. Presumably and quite naturally the ministries in London were reluctant to risk Source's [Ultra's] neck by sharing his precious information with an unproved and shadowy group in Washington. Presumably and equally naturally, G-2 was from Missouri and wished to be quite certain that he had access to all the material Source was turning up.[18]

The conflict was resolved in the spring of 1943 by an exchange of missions between Bletchley Park and the War Department. On 25 April an American mission composed of William Friedman of the Special Branch and Col. Alfred McCormack of G-2 arrived in Britain to visit GC & CS. Simultaneously a GC & CS delegation, headed by Commander Edward Travis (who had succeeded

Denniston as operational head of Bletchley Park) and including the twenty-four year old F. H. Hinsley, visited Washington to negotiate the BRUSA agreement which provided the framework for Anglo-American collaboration in military and air force SIGINT.[19] A sanitised version of that agreement has been released to the Washington National Archives but not as yet to the London Public Record Office. The essence of the agreement is summarized in its first three clauses:

> (1) Both the U.S. and British agree to exchange completely all information concerning the detection, identification and interception of signals from, and the solution of codes and ciphers used by the Military and Airforces of the Axis powers, including secret services (Abwehr).
> (2) The U.S. will assume as a main responsibility the reading of Japanese Military and Air codes and ciphers.
> (3) The British will assume as a main responsibility the reading of German and Italian Military and Air codes and ciphers.[20]

The BRUSA agreement also provided for an American SIGINT liaison unit responsible for handling ULTRA intelligence in the European theatre, which became known as the Military Intelligence Service War Department (MIS WD) London. Its main component was an American unit in Hut 3 at Bletchley Park, 3-US, headed by Telford Taylor, which took part in the selection of ULTRA material to be sent to both field commands and G-2 in Washington. GC & CS also helped to train US Special Security Officers (SSOs), "patterned after the British SLU organization" to disseminate ULTRA to American commanders in the field and to "overcome differences in language" on the two sides of the Atlantic.[21]

The still classified sections of the BRUSA agreement are probably largely concerned with diplomatic SIGINT.[22] After Denniston was replaced as head of Bletchley Park early in 1942 he became head of the diplomatic section of GC & CS, henceforth housed in Berkeley Street, London, where later that year the German "FLORADORA" diplomatic code was broken for the first time. Curiously, though many thousands of Enigma decrypts were released to the Public Record a decade ago, Her Majesty's Government still considers "FLORADORA" decrypts and all other intercepts so sensitive that they remain classified indefinitely.[23] MIS WD London posted a liaison officer to Berkeley Street whose primary task was to cable to Washington each night diplomatic intercepts "which seemed to be of immediate intelligence value". He also saw the American ambassador, John G. Winant, every four or five days and usually showed him copies of important intercepts. Winant "repeatedly expressed the opinion that the service was invaluable to him".[24] They will doubtless prove invaluable to historians also when HMG at last reaches the common-sense conclusion that their release will no longer put national security at risk.

Operation OVERLORD, the Allied invasion of occupied Europe in the summer of 1944, may well have used intelligence more successfully than any other great offensive in the history of land warfare. Kenneth Strong, whom Eisenhower had

insisted on having once again as his G-2, concluded that "the best time in a man's life is when he gets to like Americans".[25] ULTRA was vital not merely in the planning and execution of OVERLORD but also to the success of Operation FORTITUDE, the great system of deception on which the Normandy landings depended. But ULTRA could not have been used so effectively but for the success of the BRUSA agreement and the SIGINT liaison which stemmed from it. In April 1945 the head of Hut 3 at Bletchley Park praised "the friendship and close cooperation that have throughout so clearly marked the integration of American and British personnel;" 3-US agreed. The only substantial problem of SIGINT liaison which remained unresolved was not between Britain and the United States but between military and naval SIGINT within the United States. General Taylor as 3-US regretted that he had not represented naval as well as military and air interests: The problems concerned with a joint combined intelligence service have not been solved by this war. A solution is not impossible and is greatly to be desired".[26]

Close collaboration between British and American SIGINT personnel did not, of course, ensure that the Allied chiefs of staff would give equal weight to the intelligence they received. OVERLORD, perhaps the high point of Anglo-American intelligence collaboration, was swiftly followed by a serious dispute over Allied strategy. Late in June 1944 ULTRA revealed that the Germans felt themselves particularly vulnerable in northern Italy. Churchill and his chiefs of staff were determined to follow General Sir Harold Alexander's successes in Italy with a further advance. The Americans insisted, despite ULTRA'S revelations, in going ahead with the ANVIL landings in the south of France at the expense of the Italian offensive. Churchill unsuccessfully sought a meeting with FDR in order to persuade him of the vital importance of the German intercepts. In a final attempt to win Roosevelt over he instructed Sir Stewart Menzies to prepare an intelligence assessment to send directly to the President. But Roosevelt's mind was already made up for him by his chiefs of staff. Churchill told the President that the decision to proceed with ANVIL at the expense of a major Italian offensive was "in my humble and respectful opinion, the first major strategic and political error for which we two have been responsible".[27]

The SIGINT accords were simply the most important of a series of formal agreements and informal understandings between the various sections of the British and American intelligence communities which collectively represented an intelligence alliance unique in history. By D-day there had been a complete merger of British and American strategic photo-reconnaissance from bases in the United Kingdom.[28] The founding of OSS in 1942 was accompanied by an agreement with SIS and SOE on spheres of influence. SOE gained the major responsibility for most of Europe but OSS was given the leading role in North Africa, Finland, and eventually Bulgaria, Rumania and northern Norway.[29] The relations of OSS with SOE and SIS, though not always smooth, were, in the words of Sir Harry Hinsley, "always close and eventually harmonious".[30] X-2,

the counterintelligence branch of OSS, founded in 1943 partly in response to British pressure, rapidly developed a relationship with MI5 which compared in intimacy with that established by 3-US with Bletchley Park. An X-2 officer had a desk in the office of the head of MI5's Double Agent section and followed the entire Double Cross system in all its operational detail. X-2 itself concluded:

> For even an Ally to be admitted to a full access to all secret files and to a knowledge of their sources; to information on most secret methods and procedures; and to a knowledge of personnel and the system of organization and of operations — in short, to the innermost arcana, in this case, of perhaps the world's most experienced and efficient, and therefore most carefully safeguarded security systems — was beyond precedent or expectation. Yet the British did it. The implications of this fact are staggering — and completely inexplicable in terms of merely cheap exchange of mutual advantages. The advantages were enormously heavy on the American side.

But OSS did sometimes notice one false assumption behind British generosity — the belief that American intelligence would be willing to "accept a pupil role" even after the war was over: "There is, however, no sign that this feeling went beyond the state of upset that oldsters usually fall into when the youngsters strike out for themselves. This fact does nothing to invalidate the other fact of their very real generosity to their erstwhile pupils."[31] The many friendships formed between OSS and British intelligence officers were of fundamental importance in the postwar as well as the wartime development of the "special relationship". And it was precisely because the sense of wartime comradeship was so close that former X-2 officers felt a sense of personal betrayal when they discovered that some of those with whom they had shared their secrets — Anthony Blunt in MI5, Kim Philby in Section V of SIS —were working for the KGB.

The intelligence alliance with Britain brought the United States into an intelligence network which, especially in SIGINT, stretched far beyond the United Kingdom and embraced much of the Commonwealth. GC & CS stood at the centre of a SIGINT network which by the 1930s already extended to the Middle East, India, and the Far East, and which during the Second World War associated with major new SIGINT agencies in Australia and Canada. When General Douglas MacArthur arrived in Australia in 1942 as allied commander-in-chief South-West Pacific Area he set up his own SIGINT organization, Central Bureau in Brisbane, with an American head, an Australian deputy and special channels of communication with both the Signal Security Agency at Arlington Hall, Virginia, and Bletchley Park.[32] The U-boat tracking room in Ottawa played a major role, together with those in London and Washington, in winning the battle of the North Atlantic. From May 1943 onwards there were no restrictions in the supply of naval ULTRA to it.[33]

At the end of the war, as the American intelligence community sought to make the difficult transition from war to peace under the skeptical eye of a new president suspicious of peacetime espionage, it tried to emphasize the importance of its links with Britain and the Commonwealth. As OSS struggled for postwar survival in the summer of 1945, one of the arguments which it used was the importance of the intelligence it received from SIS. In August 1945 SIS passed on seventy-six intelligence reports to the OSS mission in London. OSS was enthusiastic about their quality. SIS reports on Greece were described as "excellent", those from Italy and Siam were rated "of special interest", those from Austria as "of considerable interest", and one from Yugoslavia as "most interesting". The last OSS London report in September 1945 was even more enthusiastic: "There has been a marked step-up in the importance was well as an expansion in coverage in the reports received from Broadway [SIS] in the course of our normal exchange".[34] President Truman was unimpressed. But though he took some time to become reconciled to HUMINT, Truman had been in office long enough for ULTRA and MAGIC to persuade him of the importance of SIGINT. A week before the President signed the order winding up OSS in September 1945, we now know that he signed another order authorizing the Secretaries of War and the Navy "to continue collaboration in the field of communications intelligence between the United States Army and Navy and the British, and to extend, modify or discontinue this collaboration, as determined to be in the best interests of the United States".[35] That collaboration was to produce in 1948 the still secret UKUSA SIGINT agreement between Britain, the United States, Canada, Australia and New Zealand, the first truly global intelligence alliance.

Notes

1. See, e.g., Richard Aldrich, "Imperial Rivalry: British and American Intelligence in Asia 1941–46", *Intelligence and National Security*, vol. III (1988), no 1.

2. Nigel Clive, *A Greek Experience 1943–1948* (London, 1985)

3. General McLachlan and Colonel Pakenham (Washington) to MI5 (London), 28 March 1918, Wiseman papers, I/6, folder 173, Yale University Library.

4. David Stafford, "'Intrepid': Myth and Reality," *Journal of Contemporary History*, vol. XXII (1987).

5. Northcliffe to Reading. 2 Sept 1917, Wiseman papers, I/3, folder 59, Yale University Library.

6. Wiseman to Northcliffe, 14 Feb 1918, *ibid*, I/3, folder 63.

7. "Memorandum on the Scope and Activities of MI1c in New York", 27 Apr 1918, *ibid*, I/6, folder 174.

8. Admiral Godfrey, Unpublished Memoirs, vol V, p 129, Churchill College Archives Centre, Cambridge; Christopher Andrew, *Her Majesty's Secret Service* (New York, 1986). p. 466.

9. Andrew, *Her Majesty's Secret Service*, ch 3.

10. Christopher Andrew, "Churchill and Intelligence", *Intelligence and National Security*, vol III (1988) no 4.

11. Andrew, *Her Majesty's Secret Service*, p 466; Thomas Parrish, *The Ultra Americans* (New York, 1986).

12. The most recent study of the growth of the special relationship is David Dimbleby and David Reynolds, *An Ocean Apart* (London, 1988).

13. Martin Gilbert, *Winston S. Churchill* (1966-88), vol VI, p 126n; Sir F.H.Hinsley *et al; British Intelligence in the Second World War* (London, 1979-88), vol II, p 55.

14. See the extracts from Captain Kennedy's diary, edited by John Ferris, forthcoming in *Intelligence and National Security*.

15. Hinsley *et al., British Intelligence in the Second World War*, vol II, chs 16, 19.

16. Stephen Ambrose, *Ike's Spies* (New York, 1981), ch 1.

17. Hinsley *et al., British Intelligence in the Second World War*, vol II, p 57 and appendix 18; Bradley F. Smith, "Sharing Ultra in World War II", *International Journal of Intelligence and Counter Intelligence*, vol II (1988), no 1.

18. Operations of the Military Intelligence Service War Department London (MIS WD London), 11 Jun 1945, pp 36–37, National Archives Washington (henceforth NAW) RG 457 SRH-110.

19. *Ibid*, p.10; Parrish, *Ultra Americans*, ch.5.

20. Tab A, NAW RG457 SRH-110.

21. *Ibid*, p.2. "Problems of the SSO System in World War II", NAW RG457 SRH-107.

22. This is indicated by, for example, incompletely sanitised sections referring to Berkeley St in "MIS War Department Liaison Activities in the United Kingdom 1943–1945", NAW RG457 SRH-153.

23. A.G. Denniston, "The Government Code and Cypher School between the Wars", in Christopher Andrew (ed.) *Codebreaking and Signals Intelligence* (London, 1986). P. William Filby, "Bletchley Park and Berkeley Street", *Intelligence and National Security*, vol III (1988), no 2.

24. "MIS War Department Liaison Activities in the United Kingdom 1943–1945, p.12, NAW RG457 SRH-153.

25. Sir Kenneth Strong, *Intelligence at the Top* (London, 1968), pp 112ff.

26. "Operations of the Military Intelligence Service War Department London (MIS WD London)", p 38, NAW RD457 SRH-110.

27. Gilbert, *Churchill*, vol VII, ch.44.

28. Hinsley, *et al, British Intelligence in the Second World War*, vol III, part I, appendix 1.

29. NAW RG218, box 370 file 385.

30. Hinsley, *et al, British Intelligence in the Second World War*, vol II, ch 16; vol III, part I, appendix 1.

31. X-2 History, NAW RG226 Entry 176, box 2 file 16.

32. Christopher Andrew, "The Growth of Intelligence Collaboration in the English-Speaking World", Wilson Centre Working Paper no 83, 1987. *Idem*, "The Growth of the Australian Intelligence Community and the Anglo-American Connection", forthcoming in *Intelligence and National Security*.

33. Hinsley, *et al, British Intelligence in the Second World War*, vol II, p 551. Patrick Beesly, *Very Special Intelligence* (London, 1977), p 169. Wesley K. Wark, "Cryptographic Innocence: The Origins of Signals Intelligence in Canada in the Second World War", *Journal of Contemporary History*, vol XXII (1987).

34. NAW RG226 Entry 99, box 7 folders 28, 29.

35. Truman to Secretaries of State, War and Navy, 12 Sep 1945, Naval Aide file, Harry S. Truman Library, Independence, Missouri: cited by Bradley F. Smith, "A Note on OSS, Ultra and World War II's Intelligence Legacy for America", *Defense Analysis*, May 1987.

Soviet Operational Intelligence
A Case Study
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Military intelligence is often one of the most glorified and over-simplified aspects of warfare. History is sprinkled with infamous intelligence failures and intelligence coups which have altered the course of battle and even history itself. The existence of these popularized cases blind us to one of the realities of modern combat—that intelligence in war is a mundane, time-consuming, and frustrating process which often confuses, as much as it clarifies, the course of battle and war. Intelligence, simply defined as knowledge of the enemy and his intentions, is seldom a decisive factor in war. It does not alter the strength of contending armies and the overall war aims of contending states, and it may have little effect on the planning and conduct of operations. A force which lacks good intelligence may still succeed because of its strength, sound planning, and military efficiency. The converse is also true. Sound intelligence can affect a nation's decision to go to war in the first place; and, once that nation is at war, it can reveal enemy intentions and dispositions. While providing a foundation for sound planning, it also forms a basis for conducting and verifying the effects of deception. Consequently, intelligence provides leverage with which to accentuate the positive effects of military actions, be they offensive or defensive. Intelligence collection, analysis, and exploitation is a difficult process, made more so by the fog of war and by chance, which makes its effects even less predictable. Throughout the twentieth century, the growing complexity, scale, and technological content of war has provided greater opportunity for intelligence collection while, at the same time, complicating the process of analyzing and exploiting its effects.

Few nations have developed a healthier respect for the relationship between intelligence and warfare than has the Soviet Union. The four years of warfare on the Eastern Front during the Second World War, known by the Soviets as the Great Patriotic War, were unprecedented in scale and intensity. From the commencement of BARBAROSSA on June 22, 1941 to the end of the European War in May 1945, intelligence played a significant role in the course and outcome of operations. Most Westerners have only a sketchy awareness of that role. The Soviet intelligence failure of June 1941 and the apparent intelligence

success at Kursk in 1943 have received attention in numerous works. Yet the appreciation of both has been, at best, superficial, replete with generalizations which have characterized most descriptions of war on the Eastern Front. This paper builds on earlier studies of Soviet intelligence performance and examines in detail Soviet intelligence actions prior to and during the Vistula-Oder operation of January and February 1945.

Prewar *Razvedka*

The Soviets use a single generic term—*razvedka*—to describe all actions necessary to achieve a better understanding of the enemy. The term *razvedka* means both intelligence and reconnaissance and, with an appropriate adjectival qualifier, it pertains to every possible means of intelligence collection and analysis.[1] During the period between the Bolshevik Revolution and the outbreak of the Second World War the Soviets created a sound theoretical basis for intelligence collection and analysis. Building upon pre-First World War regulations, World War regulations and experiences, and Civil War experiences, they fashioned a rational *razvedka* system which sought to capitalize on the rapid technological changes which occurred in the 1920s and 1930s.[2] They inherited from Tsarist times many organizational concepts for intelligence work. To these, the Soviets added an ideological dimension which impelled them to embrace more thoroughly subtle operational-intelligence techniques, such as deception.

The World and Civil Wars confirmed the necessity for centralized control of *razvedka* and produced a new intelligence structure, which included specialized *razvedka* organs at each level of command. After 1918 the High Command centrally controlled *razvedka*, and intelligence departments within fronts and armies directed the activities of intelligence chiefs within subordinate divisions.[3]

Building on existing principles and wartime structures for *razvedka*, in the 1920s the Soviets sought to match intelligence activities to their changing perceptions of the nature of war. Soviet military theorists studied ways to restore to warfare mobility and maneuver so lacking in the major theaters of the World War. Based on their study, they rejected the older categorization of warfare into strategic and tactical levels and defined a new intermediate level of war which they called operational. They concluded that only by conducting successive operations using operational maneuver could modern armies convert tactical success into strategic victory.

The emergence of new Soviet concepts required creation of mobile forces capable of conducting deep operational maneuver and new intelligence methods to support that force. Soviet theorists accepted the role of existing intelligence organs but debated what new elements were required to supplement older *razvedka* capabilities and match the requirements of maneuver war. Quite naturally, they began by analyzing the most mobile existing intelligence assets,

cavalry and aircraft.

Numerous works appeared during the 1920s analyzing joint use of cavalry and aviation in intelligence collection. These and other writings found full expression in the 1929 Field Regulations of the Red Army, which, for the first time, articulated the concept of deep battle [*glubokyi boi*].[4] Deep battle envisioned the use of newly created mechanized and tank units to lead the attack and conduct tactical maneuver through the tactical depths of the enemy defense, a task which heightened the need for accurate pre-combat intelligence.

The concept of deep operations and existence of armored and mechanized forces throughout the force structure had a considerable impact on virtually all combat techniques including the conduct of *razvedka*. Need for more rapid-paced, mobile operations to greater depths over shorter durations placed great strain on the intelligence system. Consequently, intelligence agencies, had to increase their range of operations and respond more rapidly to changing conditions. Technological changes themselves generated new challenges regarding how to integrate them into a new system and how to process the increasing volume of often confusing intelligence data collected.

The Soviet 1936 Field Service Regulation established a framework within which orderly change could take place.[5] This, and subsequent regulations for armored, mechanized, and artillery forces, defined the concept of deep operations, set forth requirements for all types of forces, and established basic staff procedures for *razvedka*. While accepting most of the responsibilities and procedures outlined in the 1929 Regulation, it integrated aviation and mechanized/armored concepts and extended the range of *razvedka* activities. It underscored the importance and complexity of the subject and focused attention on new technical *razvedka* means, such as aircraft reconnaissance and radio-location which, operating in tandem, seemed to offer a solution to the dilemma of conducting deep, extensive, and timely intelligence collection in support of deep operations.[6]

By 1941 Soviet military theorists had developed a thorough understanding of the importance of intelligence and its critical role in the conduct of operations at every level of war. Intensive study of the subject and detailed analysis of *razvedka* experiences produced sound and detailed concepts for its future use, which found expression in the 1936 and 1941 Field Service Regulations and in a host of other books and journal articles. Superb Soviet analysis of German operations in Poland and France further illustrated the remarkable Soviet grasp of what had to be done in the *razvedka* field. A series of articles in *Voennaia mysl'* [Military Thought] and *Voenno-istoricheskii zhurnal* [Military Historical Journal] reached sound conclusions regarding German use of intelligence, deception, and, ultimately, deep operations.[7] The Soviets saw the Germans doing all that they had wished to do in war and doing it effectively.

There was, however, a contradiction between Soviet appreciation of and theoretical concepts for *razvedka* and their ability to convert theory into practice.

Hence, Soviet war experiences prior to June 1941 were replete with failures in a host of realms, including intelligence.

In the Soviet-Finnish War (1939-1940), hasty Soviet war preparations and an almost cavalier attitude toward planning led to numerous initial battlefield disasters across the breadth of the front. Inadequate preparations, including almost total lack of sound intelligence, caused Soviet forces to go into battle virtually blind, with predictable negative results. Only after extensive preparations in a more sober atmosphere did the Soviets prevail during the second phase of the war. Many of the same faults marred Soviet participation in the military dismemberment of Poland. Only at Khalkhin-Gol, in the Far East, did Soviet forces operate with requisite efficiency.

Soviet failures resulted, in part, from an absence of capable leadership in the aftermath of the 1937 purges which had liquidated the most experienced and thoughtful senior commanders. They were a consequence as well of the poor level of training of junior commanders, now suddenly propelled to higher command, and of individual soldiers serving in the drastically expanded Red Army. Compounding these difficulties were technical problems experienced by a nation simultaneously trying to expand its force structure, modernize its technological base, and assimilate a host of new technologies into its operating techniques. By trying to do too much too fast, the Red Army failed to achieve most of its goals. When war broke out in June 1941, neither the Red Army's mechanized forces nor air forces were ready. Advanced equipment was just beginning to be fielded and had yet to be fully tested. The logistical and technical support systems for the Red Army and Air Force were equally unprepared. Training, equipment, and leadership deficiencies all underscored the fact the Red Army was not prepared for war. This applied as well to *razvedka*.[8]

The First Period of War

The first period of war, by Soviet definition, encompassed the period from June 22, 1941, the day Operation BARBAROSSA began, to 19 November 1942, the day the Soviet Stalingrad counteroffensive commenced.

The Soviet intelligence effort in the first period of war was little short of dismal. Strategically, the High Command utterly and repeatedly failed to discover German intentions. In June 1941 and in May and June 1942, the Soviets paid dearly for these failures. In the end, only the flow of combat defined German intentions in time for the Red Army to bring the German offensives to a halt. Operationally, the Soviet High Command, fronts, and armies fared no better. Intelligence lost track of German forces as they plunged forward along their strategic axes in 1941. They failed to detect the sudden German turn southward toward Kiev in September and likewise were surprised by the location and ferocity of the October assault toward Moscow.

In 1942 Soviet intelligence, already mesmerized by phantom German

intentions to march on Moscow, misassessed the probable locations of German attacks in the south. Throughout the advance toward Stalingrad and the Caucasus, Soviet forces were constantly off-balance trying to determine where the next blow would fall. Finally, Soviet intelligence misjudged the direction and strength of the German drive into the Caucasus. In the last analysis, the Soviets determined German intentions and dispositions simply by hurling forces into their path. These forces, though roughly handled, took their toll on German strength and, together with the configuration of the terrain in southern Russia and the fortuitous decision of the German Army to challenge the Red Army at Stalingrad, the Red Army finally halted the German drive.

With few exceptions, Soviet tactical intelligence in 1941 was as poor as its operational and strategic counterparts. In addition, operational and strategic mistakes rendered tactical intelligence almost superfluous, even when it was effective. In 1942 Soviet tactical intelligence improved, in particular where the front had stabilized. Driven by wartime necessity and the specter of potential defeat, the Soviets reviewed the theoretical context for *razvedka*, postulated new systems and means for its conduct, and began a lengthy process of implementing the new system. Shortages of material and trained manpower inhibited the process and produced innumerable frustrations. The Soviets, however, demonstrated their forte for *poruchnio* [by hand] improvisation of *razvedka* techniques which slowly satisfied the requirements of the system.

By late 1942, after publication of a stream of orders, directives, and regulations, Soviet intelligence had made significant progress, in particular at the tactical level. Distinct sources of intelligence had emerged, each more refined and better capable of performing its collection function.

The first major test of Soviet intelligence capabilities in support of a large-scale offensive came during the successful Stalingrad counteroffensive of November 1942. In fact, this was the first major offensive in which the Soviets employed a coordinated intelligence collection effort. Many of the individual component parts of that system were incomplete, and personnel involved in operating it were inexperienced in preparing for large-scale offensive operations. Classified Soviet critiques of *razvedka*, compiled shortly after the operation, provide an accurate appreciation of how well the intelligence system functioned.[9] While praising the thoroughness of *razvedka* planning and the integrated use of multi-source intelligence, the critiques highlighted weaknesses applicable to the entire Eastern Front. The first was a Soviet tendency to treat every piece of intelligence with equal credibility. Moreover, although air and engineer *razvedka* were quite effective, High Command assessments were still affected by the earlier preconceived notion that the Germans would undertake new offensive action in the Moscow sector. This perception tainted intelligence, which, in turn, focused undue attention on detecting a build-up preparatory for that offensive.

In addition intelligence collection produced a profusion of reports and

information which strained analytical capabilities. Hence, more attention had to be paid to verification of reports and careful sorting and analysis of collected data. Compounding the collection and analysis problem was the lack of tactical expertise, "often the simplest military literacy" on the part of agents and air reconnaissance crews who reported virtually everything they saw, whether or not the information was worthwhile or valid.

Engineer *razvedka* was clearly the most effective of all the types of *razvedka* conducted during the Stalingrad operation. Yet, even in this realm, Soviet critiques specified two areas where improvements could be made. More extensive double-checking and analysis of data received from ground reconnaissance patrols could have improved the process of detecting minefields. In addition, more thorough use of photography and, in certain cases, interrogation of POWs could have provided a further check on data provided by units performing engineer *razvedka*.

One of the most important *razvedka* innovations employed in the Stalingrad operation was the general use of reconnaissance in force [*razvedka boen*] prior to the operation to verify data received from other intelligence sources. Even so, reconnaissance over an extended period of eight days failed to provide the most up-to-date data on enemy force dispositions and, since the reconnaissance occurred in different sectors and at different times, forces could shift between sectors without Soviet intelligence noting the moves.

The limited size of many of the reconnaissance detachments hindered operations, as German and Rumanian forces often blocked them and prevented them from determining deep enemy dispositions. More important, conduct of large-scale reconnaissance in force could become a potential offensive indicator in its own right. If conducted well before a planned offensive, enemy forces could use the indicator as justification for reinforcing defenses in regions where the reconnaissance in force occurred.

In general, despite the problems they encountered, Soviet intelligence organs made more than a modest contribution to Soviet success in the Stalingrad operation and showed marked improvement when compared with their earlier performance.[10]

Although uneven in its effectiveness, Soviet *razvedka* performance was markedly better than the previous year. Strategic *razvedka* was still weak, due in part to the fragility of strategic collection systems and in part to lingering misperceptions on the part of the General Staff and Stavka which tinged strategic estimates. The High Command, fronts, and armies had a crude air *razvedka* system and force structure, but a combination of factors including German air superiority, equipment shortages, and communications problems inhibited the system's performance. Air *razvedka* took place but was only partially effective. It detected many important German troop movements and concentrations in the deep German rear before and throughout the operation, but it could neither determine unit identification with any certainty nor could it

precisely detect the direction of movement or ultimate destination of these units. Fortunately for the Soviets, there were few German reserves to detect.

A Soviet agent and reconnaissance-diversionary structure functioned during the Stalingrad operation but seemed to have had only marginal effect on the operation's outcome. Moreover, no substantial partisan organization existed in southern Russia to emulate contributions of the partisans during the winter campaign of 1941-1942 or to anticipate the extensive partisan warfare which would rage throughout central and northern Russia in 1943 and 1944. A few specialized radio *razvedka* units attempted radio intercepts in late 1942; and these, as well as regular communications units in the force structure, were able to log the identity of enemy units. However, their range was limited to the tactical and shallow operations depths.

At operational depths, Soviet intelligence relied on a combination of air, agent, reconnaissance-diversionary, radio, and long-range troop *razvedka*. While each means was subject to severe limitations, used in combination they were able to "sense," and sometimes clearly detect, changes in German dispositions and major troop movements. However, *razvedka* information was not exact enough to tell precisely where these units were moving. In short, collection systems were incomplete and thus imprecise. At Stalingrad this impeded but did not halt or abort operations.

Soviet tactical *razvedka* made striking progress at Stalingrad in comparison with its earlier performance. This is so because it was absolutely necessary to solve the problem of penetrating enemy defenses; in part because the General Staff and higher commands paid tremendous attention to the problem; and finally, in part because Soviet commanders now had the ability and the will to effect positive changes. Consequently, despite equipment problems, artillery *razvedka* worked particularly well in the initial offensive. Difficulties encountered elsewhere resulted not from lack of proper procedure or target identification but rather from fog and bad weather which curtailed planned observed fire. Engineer *razvedka* was effective and also proved its worth.

The tactical-scale reconnaissance in force preceding offensive operations also proved effective. They upset the stability of German and Axis defenses, clarified enemy firing and defensive systems, and improved jumping-off positions for main attacks. On several occasions they also induced complacency on the part of enemy units which felt they had successfully repelled an offensive and had thus gained a respite from further combat. In time, however, the Soviets realized reconnaissance in force could become an attack indicator in its own right. They also learned that reconnaissance in force conducted unevenly across the front too many days prior to an offensive could defeat its own purpose if the enemy shuffled his forces prior to the attack. This was part and parcel of a learning process which prompted Soviet improvements of these techniques in the future.

Soviet *razvedka* was most effective during the preparatory period prior to

the offensive. It was markedly less effective once operations had begun and during fluid combat. The Soviets also had difficulty in organizing *razvedka* while planning operations on the march. This recurring problem would have deadly consequences later in the winter during operations around Khar'kov and in the Donbas.

In short, Soviet employment of *razvedka* at Stalingrad was a modest, if successful, beginning. Experiences at Stalingrad, both positive and negative, provided Soviet commanders and staffs with a blueprint for future improvements. The challenge to the Soviets was to act on that blueprint so that they could continue to achieve success in the future.

The Second Period of War

After Stalingrad the Soviets conducted a series of simultaneous and consecutive front offensives across southern Russia. The Stavka pushed forward the hastily planned offensives with abandon in hopes of collapsing German defenses. Early success ultimately ended with a series of setbacks which stabilized the front in April along the Northern Donets line and set the stage for the Kursk operation. During the February operations the Soviets again misread extensive intelligence data and operated instead on the basis of their misperceptions regarding German intent.[11]

The events of February and March had a sobering effect on the Soviet High Command. Once and for all, it ended the Soviet tendency to launch offensives designed to succeed at all costs. Henceforth the Soviets would interpret intelligence data more cautiously and resist the natural impulse to let preconceptions rule over objective data. They also took a more jaundiced and prudent view of information provided by Western and "special" sources. The Soviets began a period of sober reflection which lasted until July 1943. For the Soviets, that period was probably the most productive in the entire war in terms of force reorganization and analysis and inculcation of war experience into Red Army combat theory and practice. In the late spring and early summer of 1943 the Soviets created the basic force structure which would endure until war's end and drafted the directives and regulations which incorporated lessons learned at Stalingrad and during the winter. Subsequent Soviet combat performance in July at Kursk and thereafter attested to the effectiveness of that Soviet study and analysis.

Soviet defensive positions at Kursk mirrored the maturity of Soviet planning in the summer of 1943 and reflected realistic Soviet interpretation of intelligence indicators.[12] Soviet forces prudently defended every critical strategic axis and disposed of reserves flexibly so that they could regroup to meet any eventuality. The Soviets did not repeat the mistakes of May and June 1942 and February 1943 when they had placed too much faith in their intelligence and deployed accordingly, only to be surprised and defeated. Moreover, at Kursk they

positioned their reserves to resume the offensive when the energy of the German offensive had dissipated. Strategic warning produced by *razvedka* was helpful, but not critical. Operational warning produced by *razvedka* was even more important but still not decisive. The greatest contribution was made by efficient tactical *razvedka*, for it, in the final analysis, contributed to Soviet success in blunting the German thrust before it had penetrated into the operational depths. In the end, tactical warning plus skillful Soviet tactical, operational, and strategic deployments spelled doom for the last German strategic offensive of the war.

Razvedka, in close concert with deception, played a significant role in the successful Soviet strategic defense at Kursk and during the strategic counteroffensive which followed. Soviet intelligence assessments by late April were accurate enough for the Stavka to decide to organize an initial strategic defense in the summer of 1943 while, at the same time, incorporating into that plan a significant counteroffensive phase and a complex strategic maskirovka [deception] plan.[13] Despite the accurate strategic *razvedka* assessments, the Soviets avoided earlier mistakes by treating the assessments skeptically and by creating powerful defenses on every major potential strategic axis the Germans could employ. Thus, throughout the planning phase they took into account potential German deceptions such as those which had been so effective in the spring and summer of 1942.

Having created a strategic "safety net," the Soviets focused on operational and tactical *razvedka* to refine their appreciation of German intentions. These measures, focused primarily on detecting German troop movements, produced the warnings of May and June and, ultimately, of the actual German attack in July. Careful and patient control over strategic reserve units enabled the Soviets to redeploy those forces and commit them to combat at the most critical times and in the most important sectors. *Razvedka* thereby detected and helped thwart the German offensive.Subsequently, *razvedka* provided the requisite information for successful implementation of the strategic *maskirovka* plan. To a far greater degree than before, the Soviets were able to monitor German troop units in the operational and strategic depths. This increased sophistication in *razvedka* was absolutely vital for such an equally sophisticated *maskirovka* plan to succeed. Succeed it did, in large part due to improved Soviet intelligence.

At Kursk the Soviets successfully detected German strategic, operational, and tactical intent, while masking to a considerable degree their own counteroffensive intent. This combination of factors spelled doom for German offensive plans in the summer of 1943 and, more important, ultimately sealed the fate of German fortunes on the Eastern Front as a whole.

After the Kursk operation, the Soviet High Command commenced a general offensive across the breadth of the Eastern Front from west of Moscow to the Black Sea. By September the concerted drive had slowly forced German forces westward to the line of the Dnepr River. In November the Soviets skillfully

employed operational *maskirovka* to concentrate secretly sufficient forces for a breakout across the river north of Kiev. The Kiev operation created a strategic *platsdarm* [bridgehead] west of the river from which Soviet forces launched renewed offensives deeper into the Ukraine in December 1943. Throughout the drive to the Dnepr in the fall of 1943, Soviet *razvedka* effectively monitored the movement of German operational reserves and facilitated both successful Soviet *maskirovka* and the accomplishment of Soviet objectives. As the second period of war ended, Soviet forces commenced operations which, by late spring, would clear the Ukraine of German forces.

Razvedka in the Vistula-Oder Operation

Unlike 1943, in 1944 strategic initiative was in Soviet hands. Beginning in January 1944, with a major strategic offensive in the Ukraine, the Soviets orchestrated a series of successive strategic offensives, each more successful than its predecessor. The series of Soviet strategic offensives were prepared and launched within the context of an effective strategic deception plan which played on German misconceptions and used both active and passive *maskirovka* measures both to take advantage of German force dispositions and to conceal like Soviet dispositions. As a result, virtually all Soviet offensives achieved a significant degree of surprise and greater than anticipated success.[14] *Razvedka* played a critical role in the achievement of these successes by closely monitoring German force movements and by checking the effectiveness of Soviet *maskirovka* measures. Throughout 1944 all types of *razvedka* capitalized on 1943 experiences and improved. These improvements, most apparent in the Belorussian offensive of June 1944 and in subsequent operations in southern Poland and Rumania, pertained both to the effective operations of each type of *razvedka* and to the integrated use of all means of intelligence collection.

Soviet Plans

General planning for the 1945 winter strategic offensive began in late October 1944 while Soviet forces on the main direction of advance, along the Vistula and Narev rivers, were fighting to extend the offensive deeper into Poland. The Soviets assessed the condition of their forces and concluded, at General G.K. Zhukov's urgings, that Soviet forces needed a rest before resuming the offensive. Consequently, while operations continued on the flanks, after 3 November Soviet forces in the central sector of the front went over to the defensive.

In late October the Stavka and general staff developed the general concept for an offensive to end the war. The concept involved a two-stage campaign commencing in November with the following aims:

-to rout the East Prussian grouping and occupy East Prussia;
-to defeat the enemy in Poland, Czechoslovakia, Hungary, and Austria;

-to advance a line running through the Vistula mouth, Bromberg (Bydgoszcz), Poznan, Breslau (Wroclaw), Moravska Ostrava, and Vienna.

The Warsaw-Berlin line of advance—the zone of the 1st Byelorussian Front— was to be the direction of the main effort. Routing the Courland enemy grouping (the 16th and 18th Armies) was assigned to the 2d and 1st Baltic Fronts and the Baltic Fleet. They were also to prevent the enemy forces pressed to the Baltic Sea from being transferred to other fronts.[15]

Gen S.M. Shtemenko later explained the rationale for a two-stage campaign:

It was assumed from the start that the last campaign of the war against Hitlerite Germany would be carried out in two stages. In the first stage, operations were to continue mainly on what might be described as the old line of advance—the southern flank of the Soviet-German front in the Budapest area. It was calculated that a break-through could be achieved here by inserting the main forces of the Third Ukrainian Front between the River Tisza and the Danube, south of Kecskemet. From there they would be able to assist the Second Ukrainian Front with thrusts to the northwest and west.... We had no doubt that the grave threat to their southern flank would force the German command to transfer some of their forces from the Berlin sector, and this in its turn would create favorable conditions for the advance of our main forces—the Fronts deployed north of the Carpathians. The General Staff firmly believed that by the beginning of 1945 the Soviet Army on the lower Vistula would reach Bromberg, capture Poznan and take over the line running through Breslau, Pardubice, Jihlava, and Vienna, in other words, advance a distance of between 120 and 350 kilometers. After that would come the second stage of the campaign, which was to culminate in Germany's surrender.[16]

During November and December, the Soviet assaults in the Baltic region and in Hungary confirmed the Stavka's judgement that the Germans would react to threats against their flanks by transferring reserves from their center. Meanwhile the Soviets began detailed planning for the January strategic offensive which included two large scale operations, both focused on the western strategic direction *(See Map)*. The first, conducted by the 3d and 2d Belorussian Fronts, would strike the heavily entrenched German East Prussia group.

The 1st Belorussian and 1st Ukrainian Fronts would jointly launch the main strategic attack across Poland. As described by Zhukov:

The immediate strategic objective for the 1st Byelorussian Front was to break the crust of the enemy defense in two different areas simultaneously, and having knocked out the Warsaw-Radom enemy grouping, to move out to the Lodz meridian. The subsequent plan of action was to advance towards Poznan up to the line running through Bromberg (Bydgoszcz)-Poznan and further south until tactical contact with the troops of the 1st Ukrainian Front was made.

The subsequent advance was not planned, as General Headquarters [Stavka] could not know beforehand what the situation would be by the time our forces reached the Bromberg-Poznan line.[17]

The original Warsaw-Poznan operation became the Vistula-Oder operation

**Russian Offensive
Vistula River to the Oder River
January - March 1945**

Soviet Offensives

German Offensives

Simulations

1939 National Boundaries
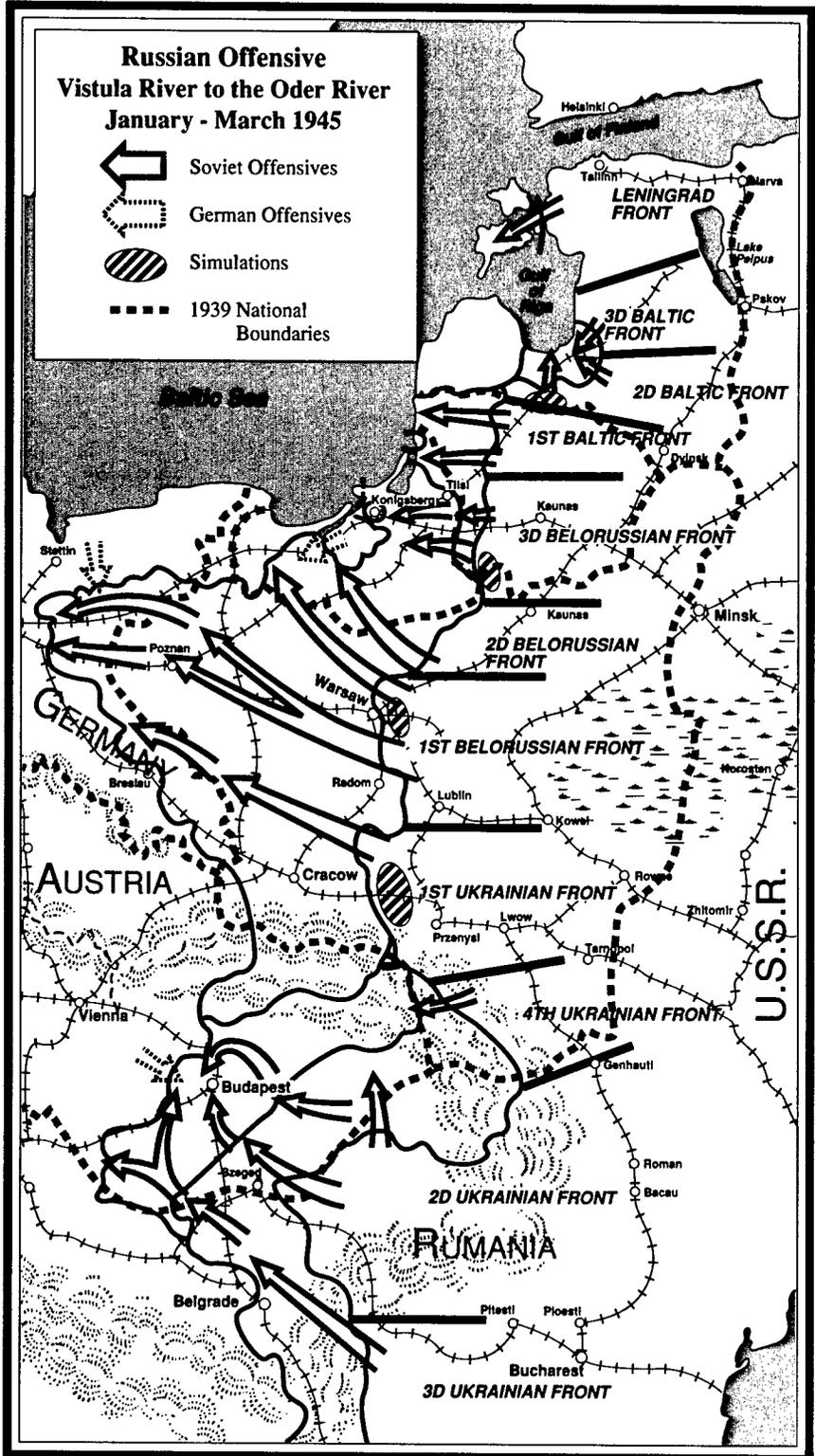
only after the plan was exceeded and Soviet forces had reached the Oder River. The Stavka and Stalin did not use a Stavka representative to plan and coordinate the operations and instead coordinated directly through each front commander. On 15 November Zhukov took command of the 1st Belorussian Front. In mid- and late December the Stavka approved initial front plans, altered the concept slightly and designated an attack date of 12 January, eight days earlier than planned, to assist the Allies, then struggling in the Ardennes.[18]

From the standpoint of conducting strategic and operational *razvedka* and *maskirovka,* the Soviet High Command and fronts faced a different set of circumstances and problems than they had faced earlier in the war. By January 1945 the Eastern Front's length had shrunk considerably producing an increased concentration of Soviet and German forces along the front. The Germans knew the Soviets were going to attack, probably in many sectors; and the geographical configuration of the front also posed definite problems for the Soviets. They now faced heavy defenses on the East Prussian-Königsberg direction and heavy German concentrations on the western outskirts of Budapest. Soviet forces were mired in mountain fighting across the width of the Carpathian Mountains; and, on the western direction, they occupied restrictive bridgeheads across the Narev and Vistula Rivers from which they would have to launch their new offensive. Thus, the Soviets would have difficulty masking their intent to attack and the attack's location, strategically and operationally. Continued operations in Hungary could distract the Germans but only regarding the scale of offensives elsewhere.

To solve these problems, Soviet plans sought to conceal primarily the scale of the attack rather than its location, timing, or their overall offensive intent. The plans included operational and tactical deception measures designed to blur German perceptions regarding attack timing and location. This required strenuous Stavka efforts to conceal regrouping and concentration of forces on the critical western direction. All the while the Soviets continued operations in Hungary to fix German reserves in that region and postured forces on the western direction to distract German attention from the key Königsberg approach and the Narev and Vistula bridgeheads. *Razvedka* plans had to fulfill the important functions of validating the effectiveness of the deception plan, monitoring the movement of German reserves, and facilitating a rapid and complete penetration of German defenses along the Vistula River.

By early December 1944 the Stavka had established the direction and zones of attack and the depth of immediate and subsequent objectives for each front and had assigned front commanders who would coordinate directly with the Stavka while preparing and conducting the operation. On November 16, Zhukov took command of the 1st Belorussian Front. Gen. I. S. Konev retained command of the 1st Ukrainian Front. Although, by mid-November, the offensive plan was complete, with the attack date set for 20 January, to maintain secrecy the Stavka did not issue detailed directives to the fronts until late December.[19]

The Stavka concept required the 1st Belorussian Front to launch three attacks. It would launch its main attack from the Magnushev bridgehead, using three combined arms armies (61st, 5th Shock, and 8th Guards) to penetrate German defenses; and two tank armies (1st Guards and 2d Guards), and one cavalry corps (2d Guards) to conduct the exploitation toward Poznan. The 69th and 33d Armies, backed up by 9th and 11th Tank Corps and 7th Guards Cavalry Corps, would conduct a secondary attack from the Pulavy bridgehead toward Lodz; and the 47th Army, cooperating with the 1st Polish Army, would launch another secondary assault to envelop Warsaw. 3d Shock Army was in front reserve.[20]

Konev's 1st Ukrainian Front was to conduct one powerful assault from the Sandomierz bridgehead. The 6th, 3d Guards, 5th Guards, 13th, 52d, and 60th Armies, supported by the 25th, 31st, and 4th Guards Tank Corps, would penetrate German defenses; and the 3d Guards and 4th Tank Armies would conduct the exploitation. The 21st and 59th Armies, in front second echelon, were to join the attack shortly after it had begun. Konev's front was to attack toward Radomsko and subsequently develop the offensive toward Breslau. The two fronts would attack in time-phased sequence with Konev's forces initiating their attack on January 12 from the Sandomierz bridgehead and, two days later, Zhukov commencing his assaults from Pulavy and Magnushev.[21]

The geographical position of the two Soviet fronts made deception extremely difficult. The Germans knew an attack was likely and had been predicting precise attack dates since late November. Repeated failure of the attack to materialize, however, dulled the credibility of these predictions. They also knew the attack would have to come from the bridgeheads across the Vistula or from the area south of the Vistula to the Carpathian Mountains. The primary indicator of an imminent attack would be the obligatory build-up of Soviet forces along the front, in particular within the bridgeheads. To continue confusing the Germans regarding the time of attack, the Soviets would have to keep secret the build-up of forces while attempting, insofar as possible, to deceive the Germans regarding attack location.

Both Zhukov's and Konev's fronts required large-scale reinforcement before they could mount decisive offensives, which they could then sustain through the depths of Poland. This meant increasing the strength of Soviet forces in central Poland by as much as 50 percent by the assignment and movement into the area of significant strategic reserves. Consequently, the Stavka reinforced the 1st Belorussian Front with three combined arms armies (33d, 61st, and 3d Shock), one tank army (1st Guards), and numerous supporting units. The 1st Ukrainian Front received four combined arms armies (6th, 21st, 52d, 59th), one tank army (3d Guards), and one tank corps (7th Guards). Total reinforcements amounted to almost sixty rifle divisions, four tank corps, one mechanized corps, and over 120 artillery regiments.[22] Regrouping of these forces had to be accomplished secretly if the Soviets were to achieve any degree of surprise.

The deception plan required by the Stavka and implemented by Zhukov and Konev sought to achieve two distinct aims. First, it sought to conceal the size of the regrouping effort and the timing and the scale of the offensive. Second, the Soviets sought to focus German attention on secondary sectors, in particular on the region south of the Vistula River. The Soviets had no misconceptions concerning the German belief that an attack would occur in the near future. Their overall intent was to weaken the German capability to resist the attack, principally by concealing its scale.

The elaborate deception planning for the penetration operations from the Vistula bridgeheads placed a high premium on implementation of an effective and thorough *razvedka* plan emphasizing all *razvedka* means. *Razvedka* had to reveal the nature and depth of German tactical defenses and the forces deployed in them. More important, *razvedka* had to monitor movements and dispositions of German operational reserves, in particular those which had earlier moved into East Prussia and Hungary. Although the Soviets were certain of penetrating German defenses, intervention of fresh German reserves could significantly limit the depth of the Soviet advance given the existence of extensive pre-planned, but unmanned, German defense lines existing at varying depth across Poland. In addition, *razvedka* had the task of verifying the effects of Soviet deception. In fact, the Soviet *razvedka* plan itself incorporated measures designed to deceive the Germans regarding where the main attack would occur.

Within an atmosphere of strict secrecy, Zhukov and Konev prepared deception plans which incorporated active measures to disinform the Germans about the location of the attack and passive measures to conceal the arrival of reserves and concentration of attack forces in the bridgeheads.[23] Zhukov created a simulated force concentration on the extreme left flank of the 1st Belorussian Front near Joselow and on the army right flank north of Warsaw to attract German reconnaissance and reserves. Meanwhile, in the fronts' actual attack sectors, troops continued defensive work and maintained strict *maskirovka* discipline. All of this activity was closely coordinated with the real regrouping and concentration of forces in the Magnushev and Pulavy bridgeheads, all conducted under a cloak of extreme secrecy.

Konev's *maskirovka* plan was far more elaborate than Zhukov's, in part because it had to be, given that Konev's attack would occur from only one bridgehead and also because Konev could use the region south of the Vistula River as a part of his deception plan. Konev realized the difficulties he faced and later modestly wrote: "I do not insist that our deceptive measures enabled us to achieve a complete tactical surprise in the direction of our main attack from the Sandomierz bridgehead, although I can vouch for the fact that they were helpful."[24]

These helpful measures included a major active simulation on the front's left flank and Draconian measures to conceal the concentration of resources and the build-up in the Sandomierz bridgehead.[25]

Throughout the period of these intensive preparations, the Soviets supplemented their active and passive deception measures with intensive security activity conducted by the NKVD in the rear to uncover agents and counter German diversionary activity. Only one example is cited by the Soviets, who wrote:

> In the beginning of January 'Abwehrkommando 202' alone dispatched behind the front lines more than 100 diversionary reconnaissance groups. Their liquidation was the basic task of the NKVD, all of whose activity occurred in accordance with the orders of the front military councils. They maintained close ties with the local party and democratic organizations, which helped expose the enemy and his agents. The security organ of the staffs and rear services played an important role in the search for diversionary forces.[26]

The increased efficiency of Soviet rear security services, which were employed in ever-greater numbers, partially explained the deterioration of German human intelligence sources in this as well as in previous operations.

Razvedka Planning

Throughout the late fall of 1944, continuous conduct of *razvedka* permitted Stavka planners to adjust their concept for the Vistula-Oder operation while formulating an ongoing *razvedka* plan. Within the *Stavka*, the GRU surveyed conditions along the front and provided the context within which operational planners could formulate operational *razvedka* concepts.

Initially, in late October 1944, the Stavka concluded on the basis of intelligence that the 1st Belorussian and 1st Ukrainian Fronts would be able to penetrate to a depth of up to 140-150 kilometers, given German strength in Poland. A subsequent thorough assessment in early November indicated German strength was still too formidable for a large-scale Soviet attack to succeed in the near future.[27] At that point the decision was made to mount a two-phase campaign with the Polish phase commencing in January. This would accord well with the planned final Allied drive into Germany expected early in 1945.

Throughout November and December, Soviet High Command intelligence focused on German troop transfers to East Prussia and Hungary in response to the first phase of the Soviet offensive against German positions in East Prussia and Hungary.

Shtemenko noted:

> Our expectations were confirmed. Soviet attacks in November-December 1944 caused the enemy, according to our calculations, to concentrate 26 divisions (including seven Panzer divisions) in East Prussia and 55 divisions (including nine Panzer divisions) near the capital of Hungary ...The German command was once again compelled to obey our will and left only 49 divisions, including a mere five Panzer divisions, on what was for us the main sector of the front.[28]

If this was not enough information upon which to base a decision to attack, news

received in late December and early January confirmed the Soviet decision. In early January Soviet intelligence detected the movement of German IV SS Panzer Corps, a critical operational reserve, from the Warsaw area to Hungary. Specifically:

> On December 30, 1944, our radio *razvedka* established that radio stations of the enemy's 3d and 5th Tank Divisions and 4th Tank Corps had ceased to operate. On January 1, 1945, *razvedka* agents reported that soldiers wearing the insignia of 5th Tank Division had been spotted in Czestochowa and on January 3, radio *razvedka* detected movement of radio stations of the 3d and 5th Tank Divisions in the direction of Kryukov. Finally, the seizure of a prisoner from the 3d Tank Division in the area of Komarno definitely confirmed the transfer of the 4th Tank Corps to the new area.[29]

Fresh intelligence assessments made in late November of both enemy force dispositions and the terrain prompted Stavka adjustments in the offensive scheme. Initially, the 1st Belorussian Front was to have attacked due west from the Pulavy and Magnushev bridgeheads while 1st Ukrainian Front did likewise from the Sandomierz bridgehead toward Kalisz on 1st Belorussian Front's left flank to avoid the heavily built-up Silesia industrial region.

New data brought by Zhukov to a November 27, meeting in Moscow altered this plan.

> On November 27, Zhukov arrived in Moscow in answer to a summons from GHQ. On the basis of Front reconnaissance data he had reached the conclusion that it would be very difficult for the First Belorussian Front to attack due west because of the numerous well-manned defense lines in that area. He thought that success was more likely to be achieved by aiming the main forces at Lodz with a follow-up toward Poznan. The Supreme Commander agreed with the amendment and the operational aspects of the plan for the First Belorussian Front's initial operation were slightly modified.
>
> This altered the position of the Front's left-hand neighbor. There was no longer any point in the First Ukrainian Front's striking at Kalisz, so Marshal Konev was given Breslau as his main objective.[30]

While the Stavka sifted through its data to formulate and modify strategic plans, the two fronts developed *razvedka* plans to complement their offensive concepts. The *razvedka* plans were designed to fulfill two groups of concrete missions: *razvedka* of enemy defenses along the Vistula River and *razvedka* of enemy dispositions throughout the depths up to the Oder.[31] The first group involved:

> Determining the exact disposition of the enemy combat formation and of elements of the enemy defense down to company strong points and the location of artillery and mortar batteries to a preciseness of 100 meters; revealing the location of staffs and command and observations posts down to battalions; and discovering the weakest places in the enemy defense along the Vistula.[32]

The most important tasks within the second group of missions were to determine

the strength and composition of enemy defensive positions in the depths and detect, identify, and track operational reserves and potential reinforcements for German forces defending along the Vistula. Both fronts ordered *razvedka* missions to be fulfilled by January 1—during a period of forty-five days.

Unlike earlier periods of the war, the *razvedka* plan encompassed the entire period of preparation and conduct of the offensive rather than only fifteen to twenty days.[33] This provided greater unity of purpose for the effort. To provide total planning secrecy, both fronts often abandoned the practice of preparing written *razvedka* orders for subordinate headquarters and instead transmitted appropriate sections of the front *razvedka* plan verbally to those units which would fulfill them. Periodically, front headquarters held conferences with army RO (Intelligence Department) chiefs and representatives of other involved staffs (artillery, engineers) to explain the plan and clarify missions assigned to each *razvedka* organ. The front commanders also organized staff war games attended by the chiefs of army RO's to refine missions and surface unanticipated *razvedka* problems.

Fronts took considerable care to plan for the use of each type of *razvedka* and to insure all means were fully integrated with one another. This included front assets (reconnaissance aviation regiments, reconnaissance-corrective aviation regiments, separate special designation radio battalions, and organs of agent *razvedka*), and reconnaissance subunits of thirty-five first echelon divisions and fortified regions of armies, as well as eleven artillery instrumental *razvedka* (AIR) battalions.[34]

Unlike earlier operations, the Soviets were now operating on non-Soviet soil. As Zhukov explained, this posed new problems for intelligence.

> Preparations for the Vistula-Oder operation were largely different from those of similar scale on Soviet territory. Previously, we were fed with intelligence by guerrilla [partisan] detachments operating in the enemy rear. We did not have this advantage any more.
>
> Now we could only gather intelligence through secret service agents and by means of aerial and ground reconnaissance...Our supply routes along railroads and motor roads now lay in Poland where, besides true friends and the people loyal to the Soviet Union, there were enemy intelligence agents. Special vigilance and secrecy of maneuvers were required in the new conditions.[35]

Once fronts had formulated initial *razvedka* plans, they then prepared oral orders for subordinate formations. One such order issued to 38th Army on December 22, 1944 read in part:

> Study the enemy in the entire depth of his tactical defense (8-10 kms.), especially the forward area and defenses on the western bank of the River Vislok. Enemy firing positions must be revealed to commanders at all levels up to corps inclusively; they must be tied in with topography on the ground, logged in the observation journal and numbered. Special attention must be paid to the organization of generals' and officers' *razvedka*, which must be conducted continuously.[36]

Within the armies, subordinate corps, divisions, and regiments now implemented their planning to complete the *razvedka* continuum. 5th Army's actions were representative.

> All commanders and staffs devoted great attention to the organization and conduct of continuous and active *razvedka* of the enemy. Constant observation of troops scouts, artillerymen, and sappers was organized over the enemy defense. Ambushes and radio interception was systematically organized, small groups were sent into the enemy rear, and reconnaissance in force was conducted, as a result of which, every three to five days we secured prisoners. We had sufficiently full information concerning all that occurred in the enemy rear from aviation *razvedka*. The enemy defense was systematically photographed. All of this provided a full and accurate picture of enemy dispositions, his defense and his intentions.[37]

Planning periods for army-level *razvedka* varied according to front missions, conditions, and policies. Most armies, however, organized *razvedka* within specific planning periods. For example, 60th Army of 1st Ukrainian Front planned for 15 day periods, its corps for periods of 5-10 days, and rifle divisions usually for 2-3 day periods.[38] The 60th Army relied principally on sweeps, ambushes, ground and aerial observation, and artillery and engineer *razvedka*.

The 5th Guards Army, which planned *razvedka* in similar time frames, also instituted special periodic meetings between army and corps commanders and staffs and *razvedka* officers from corps, divisions, and specialized forces. These sessions reviewed all *razvedka* data and determined subsequent *razvedka* missions. In addition, "special attention was paid by commanders and chiefs of staff to the organization of close cooperation of all types of *razvedka*."[39]

In 5th Guards Army the RO formulated a detailed *razvedka* plan, based on chief of staff guidance, which specified tasks for subordinate *razvedka* organs and the period for their completion. In addition, to insure continuity of *razvedka* up to the time of the attack, the army formulated an overall plan encompassing the entire preparatory period which sought to determine, "enemy dispositions and intentions; enemy defense system and defensive structures; organization of firing systems and engineer obstacles; and enemy combat methods."[40]

Other armies implemented similar procedures. It was then the task of various *razvedka* organs to implement the elaborate plans and pave the way for the offensive.

Preoperational Air *Razvedka*

The Soviets conducted air *razvedka* with units subordinate to the High Command and to the two fronts involved in the operation. The High Command employed separate reconnaissance aviation regiments of Long Range Aviation to conduct deep observation and photography while front air armies carried out front air *razvedka* plans employing all front aviation assets. Specialized front reconnaissance aviation regiments and squadrons conducted about 19 percent of

the sorties, while TOE (establishment) assets conducted the remaining 81 percent. Between 70 and 80 percent of the sorties concentrated on the main axes of the front's offensive with over 70 percent of these concentrated on targets in the tactical depths.[41]

General S.I. Rudenko's 16th Air Army supported Zhukov's 1st Belorussian Front. Rudenko's army consisted of six aviation corps and fourteen separate aviation divisions and regiments totaling 2,396 aircraft. Of this force, the 16th, 47th, and 72d Reconnaissance Aviation Regiments and fighters of the 286th Fighter Aviation Division and 6th Fighter Aviation Corps performed dedicated reconnaissance missions. A total of 96 aircraft engaged solely in reconnaissance activity. General S. Krasovsky's 2d Air Army provided similar support for Konev's 1st Ukrainian Front. Krasovsky's army contained eight aviation corps, one separate division, and three separate aviation regiments. As in Zhukov's front, the separate regiments provided reconnaissance capabilities. 2d Air Army included 2,273 aircraft, of which 93 were dedicated to reconnaissance missions. In addition, air armies possessed over 150 Po-2 light night bombers, which were often used for reconnaissance.[42]

The 1st Belorussian Front's air *razvedka* plan, developed by air army chief of staff, Lt. Gen. P.I.Braiko, called for a continuous deep reconnaissance and concentrated planned reconnaissance activity for six days prior to the offensive. Rudenko later noted that Zhukov:

> ...demanded that we discover the nature and system of enemy defense throughout the entire tactical depth and also detect the presence, nature, and degree of preparation of intermediate and rear defensive positions (lines) from the Vistula to Poznan . We were charged with providing a clear picture showing the disposition of aerodromes, field and anti-aircraft artillery, especially in the bridgehead regions, the concentrations of enemy reserves, in particular tanks.[43]

A total of 5,025 aircraft sorties during this period covered force concentrations, protected airfields, and conducted air *razvedka*.[44] For forty days prior to January 12, Braiko's plan required intensive conduct of *razvedka* between the Vistula and Oder Rivers to a depth of 400-500 kilometers.

To foster more efficient use of *razvedka* assets, the *razvedka* plan subdivided the enemy defense sector opposite 1st Belorussian Front into two zones—close and distant. Reconnaissance-corrective aviation regiments and close *razvedka* aviation squadrons reconnoitered the former, and long-range reconnaissance regiments and long-range night reconnaissance aircraft concentrated on the latter.[45] These flights produced aerial photographs and mosaics of virtually all German defenses in depth. Later in the operation, shorter-range air *razvedka* missions prepared similar photos of enemy tactical defenses. Up to seven such efforts permitted front analysts to compare and detect changes in defensive positions and troop dispositions at frequent intervals. A total of 109,200 square kilometers of territory in 1st Belorussian

Front's offensive sector were thoroughly photographed.[46] The three reconnaissance aviation regiments (16th, 47th, and 72d) accomplished most of this work using Po-2 aircraft for night observation and Il-4 aircraft to photograph enemy positions as far west as Poznan.

Weather conditions prior to the offensive were characteristically bad, and most flights were limited to two days in November, six in December, and only one in early January. Despite the bad weather, a total of 1,759 sorties were flown in good and bad weather, an average of twenty-five per day. Heavy German flak and bad weather made tactical photography difficult. Despite the difficulties, aircraft photographed German tactical defenses from a depth of four to eight kilometers three times before the attack. In the immediate environs of the Magnushev and Pulavy bridgeheads, German trenches and strongpoints were photographed four times, and mosaics of German defenses in these main attack sectors stretched twenty-five to forty kilometers to the west.[47] This permitted detection of an additional six antitank barriers extending twenty to forty kilometers from north to south and a series of intermediate positions and defense lines. Close and careful aerial *razvedka* also facilitated detection of false enemy defenses and simulated artillery positions, as in the region north of Warka.[48]

Other photographic flights concentrated on communications lines, key road junctions, and German airfields. Rudenko noted:

> From the air we succeeded in discovering active army aerodromes and determined what units were located there. In the interests of our aviation all crossings over the Vistula from Modlin to Vlotslaveka, across the Pilitsa from Warka to Tomashuv and railroad centers and cities to the meridian of Kutno were photographed.[49]

This reconnaissance facilitated their future destruction.

Assault aircraft of the 6th Assault Aviation Corps detected movement of German artillery westward from the Warka region, and reconnaissance aircraft of the 2d and 11th Guards Assault Aviation Divisions discovered that German forces had abandoned the first line of trenches in the bridgehead regions (to avoid the effects of the artillery preparation). The Soviets subsequently adjusted their artillery preparation accordingly.

With Zhukov's approval, Rudenko also employed experimental use of motion picture filming over German forward positions using assault aircraft. Rudenko noted, "The information from film and photographic *razvedka* helped specify and complete conditions marked on maps. New structures, antitank ditches, and roads were discovered."[50] As in earlier operations, air crews were assigned specific sectors in which to operate, thereby increasing their ability to detect even the slightest change in enemy disposition and terrain conditions.

Analagous activity took place on Konev's 1st Ukrainian Front where Maj. Gen. A. S. Pronin developed and implemented an air *razvedka* plan whose objectives were similar to those of the 1st Belorussian Front. Planned

photographic missions by 1st Ukrainian Front's air *razvedka* aircraft over German tactical defenses took place on December 6, 16, 21, and 28 and immediately prior to the offensive. This facilitated comparison of photo-images and notation of changes in the defense.[51] Marshal Konev noted, "Accurate *razvedka* data was collected, the entire enemy defense was photographed ahead of time, and changes occurring there subsequently were detected in timely fashion."[52] Long-and short-range *razvedka* by the three reconnaissance aviation squadrons photographed 193,587 square kilometers of territory, including intermediate defensive positions; road and rail junctions; towns; and, most important, tactical defenses around the Sandomierz bridgehead. Just before the offensive, while Soviet forces occupied jumping-off positions for the attack, four to five pairs of reconnaissance aircraft per day conducted continuous reconnaissance to detect enemy troop and tank concentrations, movement of enemy reserves, and antiaircraft artillery positions in key offensive sectors.[53]

In general, the growing number of Soviet aircraft available to perform *razvedka* missions and near-total dominance of Soviet aircraft in the skies made air *razvedka* a powerful Soviet offensive tool. Poor weather inhibited Soviet air *razvedka* plans, but only to a minimal extent.

Agent-Diversionary-Partisan *Razvedka*

For the first time in the war, in January 1945 the Soviets had to do without large-scale partisan *razvedka* since combat operations would occur on Polish soil. Instead, the Soviets relied on agent and reconnaissance-diversionary forces to gather strategic and operational intelligence. Because the Polish population was understandably suspicious of Soviet intent, only greater Polish hatred of the Germans fostered support for Soviet operatives in the German rear. Further complicating the milieu in which Soviet intelligence forces operated was the split in the Polish underground between the London-based Polish Home Army and forces supported by the Soviet sponsored Lublin Committee.

To compensate for these difficulties, the Soviets relied on a small indigenous agent network and more numerous agent and diversionary-reconnaissance teams inserted into the German rear by air drop or ground infiltration. Characteristically, the Soviets say little about these activities, so one must rely on earlier patterns of Soviet agent use and information in German intelligence records.

In Poland the Soviets employed four types of human intelligence collectors in the German rear. The NKVD and GRU (Main Intelligence Directorate of the General Staff) both employed operatives either already in Poland or inserted before the Vistula-Oder operation commenced. The former conducted extensive counter-*razvedka* work against the Abwehr, and the latter used a variety of agents and special teams of various sizes to collect intelligence data or engage in diversionary activity. Front RU's (Intelligence Directorate) and army RO's

(Intelligence Department) also fielded long-range reconnaissance groups or detachments from front commando brigades at shallower depths, and formations below army level employed short-range *razvedka* detachments and patrols. All of these activities were coordinated by the GRU and the RU's and RO's in the intelligence chain of command.[54]

Somewhat more shadowy were links between Soviet intelligence and Polish anti-Nazi factions which German reports show to have existed. Although these did not replicate the full scale of earlier partisan organizations, they were undoubtedly controlled in the same centralized fashion. Soviet sources make numerous references to agent-diversionary operations but primarily at lower command levels. A 5th Guards Army history recognized "well organized" use of *razvedka* groups dispatched into the enemy rear. General V. I. Chuikov, commander of 8th Guards Army, described in some detail deep *razvedka* in his sector:

> Before [the army] stood the mission—in the interests of other armies and the front, to conduct deep, careful *razvedka* of enemy forces with which we now anticipated close struggle. We well knew what units were located in the forward line of the enemy defense. But these were very little. We needed to know what forces were located in the second echelon and in the entire depth of the enemy defense. It was necessary for our razvedchiki [scouts] to slip into the enemy rear, secure prisoners there, interrogate them and, through personal observation, obtain exact additional information.[55]

Chief of 8th Guards Army's RO, Colonel Gladky, formulated a *razvedka* plan involving insertion of several *razvedka* groups as far as twenty-five to forty kilometers into the enemy rear to observe German movements and identify units. Those groups deployed forward on foot by infiltration, and the army RO used radio and Po-2 aircraft operating at night to communicate with them. The first *razvedka* group, made up of a sergeant and a private, infiltrated into the German rear in early October north of Czeczylovka and penetrated the forests twelve kilometers southwest of Warka to survey German defenses and note force dispositions. After three days, they found no German units and were ordered to create a base for a larger *razvedka* group which could continue to monitor German troop movements toward the Magnushev bridgehead. The new group of seven men, commanded by Lt. I. V. Kistaev, operated for two months from the hidden base. Chuikov stated the group

> ...secretly penetrated into the forest, camouflaged themselves there and successfully worked for more than two months, transmitting to the army staff very valuable information about the enemy obtained from observation and interrogation of prisoners. Enemy artillery, six barrel mortars, and tank unit positions were discovered. Special attention was paid to the daily life of enemy forces and their daily routine. We knew when the fascist soldiers went to the field kitchen and when they left and when changes in security were made. All of this had to be studied to deliver a surprise attack.[56]

Shtemenko, in his memoirs, alludes to agent activity in southern Poland that helped track the transfer of IV SS Panzer Corps from southern Poland to Hungary.

One reference to higher-level, longer-range reconnaissance activity probably accurately typifies the operations of GRU-level *razvedka* forces. In January 1945 an OMSBON (a mobile rifle unit supporting the NKVD) operational group of fifteen experienced men, code-named "GROZNYI" [Formidable], parachuted into the Althorst region, 100 kilometers northeast of Berlin. There they operated in the forests through the spring of 1945 when the front lines reached the area. The operational group "radioed the command information about the dislocation of enemy forces, the position of military objectives, and the construction of defensive structures on the approaches to Berlin."[57] To emphasize this was not an isolated incident, one Soviet critique added, "Other large groups of OMSBON men greeted the 'Day of Victory' in the Berlin area."[58]

While the Soviets are reticent to detail agent *razvedka* operations, German records reflect the extensiveness of those operations and provide hints as to their effectiveness. Among the many documents highlighting agent activity, four illustrate the scope of the problem and evidence German concern for it.

A report prepared by German Army Group A logged enemy activity in the rear area from November 1 to December 31, 1944 and assessed the impact of that activity on lines of communications.[59] It identified thirty-eight separate *Banden* [bands] operating throughout Poland in November. It further subdivided the bands into Soviet, Polish, and Slovak and recorded identified *Kundschaftengruppen* [Scouting groups] and the location of known Soviet parachute drops. At this point, the highest density of Soviet agent and reconnaissance-diversionary forces was in the region southeast of Lodz (Litzmannstadt), due west of the Magnuslav and Pulavy bridgeheads and along the projected main axis of advance of the two Soviet fronts.

A *Fremde Heere Ost* [Foreign Armies East] assessment of Soviet *Kundschaftengruppen* operating during November 1944 identified twenty-six such groups, under High Command (GRU) control, active across the front. The 1st Belorussian Front controlled an estimated nineteen groups which operated primarily northwest and southwest of Warsaw, while the 1st Ukrainian Front controlled nineteen groups operating from the Iaslo region south of Krakow northwestward to the region just southeast of Lodz (Litzmannstadt).[60]

A third document, prepared by Army Group Center in January 1945, showed *Banden* activities in December 1944 using the same notation system as the earlier report.[61] It evidences the same general pattern as the Army Group A report but notes increased activity (in particular parachute drops) in the region south of Krakow.

A higher level report prepared by Foreign Armies East recorded the operations of Soviet "scouting detachments" from December 1, 1944 to January 4, 1945.[62] It noted that Soviet teams under GRU control operated primarily in

the region north and south of Krakow, 1st Belorussian Front teams concentrated on the area west and southwest of Warsaw; and 1st Ukrainian Front reconnaissance-diversionary groups and detachments focused primarily on the region south of Krakow toward Iaslo. This report identified twenty-three groups [teams] under High Command control and thirty-three under control of the two fronts, probably only a fraction of those actually operating in the German rear. Subsequent reports in February identified up to fifty-eight such groups by name or code number. In addition, reports counted more than twenty "regiment" size groups operating under the auspices of National Polish authorities (*Armia Krajova* [Krakow Army]) and another eight to ten brigades or groups under communist Polish command [*Armia Ludova*].

Sketchy Soviet descriptions of agent *razvedka* activity and extensive German documentation underscored the extensive scale of these activities. Clearly, by 1945 agent *razvedka* was one of the principal sources of Soviet strategic and deep operational intelligence information. Moreover, close cooperation of Soviet agents and reconnaissance-diversionary forces with some Polish bands in part replicated earlier extensive cooperation with partisan forces operating in the German rear area.

Radio *Razvedka*

Radio electronic *razvedka* was more extensive in 1945 than at any time earlier in the war. Radio intercept assets operated at High Command level under the GRU, within fronts under RU supervision, and under army command as well. Each Soviet front had one special designation radio battalion both to intercept and jam enemy communications. The 130th Radio Battalion supported the 1st Belorussian Front, and the 132d Radio Battalion supported the 1st Ukrainian Front.[63] The High Command probably assigned two additional battalions as reinforcements for each front.[64]

As was the practice in 1944 operations, armies created their own internal radio intelligence capability by forming special radio *razvedka* teams from the army signal regiment. For example, six such radio *razvedka* groups supported the armies of 1st Belorussian Front. Although the Soviets provide little detail concerning radio intercept operations, fragmentary reports attest to its effectiveness, such as the claim, "On December 30, 1944 our radio reconnaissance established that radio stations of the enemy's 3d and 5th Tank divisions had ceased to operate."[65]

German intelligence reports throughout 1943 and 1944 recognized the seriousness of communications security problems and the likelihood that German transmissions were being intercepted and decoded. Additional judgments will remain speculation until Soviet archival materials cast light on real Soviet capabilities, but Soviet claims of success with radio *razvedka* track closely with subsequent Soviet operational performance. Certainly the success

of the Soviet deception plan indicated high probability that the Soviets were able to verify German troop movements by other means, if not by means of radio.

Troop *Razvedka*

During preparations for the Vistula-Oder operation the Soviets continued to display their mastery of troop *razvedka*. They employed the entire panoply of techniques, including sweeps, ambushes, and raids associated with ground *razvedka*; observation and commanders' personal reconnaissance; and sophisticated techniques for conducting reconnaissance in force [*razvedka boem*]. All of these measures, carefully integrated into front, army, corps, and division *razvedka* plans, reached a new scale of intensity and variety. For example, during the preparatory period, 1st Belorussian Front forces conducted 509 sweeps and ambushes, including three of regimental scale; fourteen daylight raids; twelve withdrawals from the enemy rear; and twenty-two series of reconnaissance in force. These measures produced seventy-eight prisoners and thirty-eight captured documents.[66]

Literally hundreds of examples of troop *razvedka* are detailed in Soviet works ranging through every combat level. In a typical example, on the night of December 3, 1944, a *razvedka* group of the 244th Guards Rifle Regiment, 82d Guards Rifle Division of 8th Guards Army conducted a sweep which carried it up to the forward German trench where it was halted by antipersonnel mines. Based upon their experience, the 246th Guards Rifle Regiment dispatched a large *razvedka* group to the same region several nights later. Covered by special flank security groups, the new reconnaissance force burrowed under the minefield and reached the German trenches where they captured a German corporal. Documents on the prisoner identified him as a member of the 1st Battalion, 184th Infantry Regiment, 221st Infantry Division. The prisoner also provided information about neighboring units. To verify the data, on December 16, the regiment conducted a second sweep using the same methods to confirm the information obtained earlier.[67] Another 8th Guards Army division commander noted:

> *Razvedka* sweeps occurred every day. However, *razvedka* was conducted with all comprehensible means. By virtue of its results, we recreated the enemy defense system, his firing system, the presence of reserves and his dispositions. Razvedchiki tried as exactly as possible to determine the trace of trenches and the position of firing points. All of this was recorded on maps, and artillery fire and aviation strikes were directed against the revealed targets...In a word, we decided many questions without which it would have been impossible to count on a successfully developing offensive.[68]

Similar extensive use of troop *razvedka* occurred in the 1st Ukrainian Front. In 5th Guards Army's sector, sweeps and ambushes were conducted by small groups consisting of a combined arms nucleus, one-two sappers to study engineer obstacles, and a similar number of artillerymen to determine the enemy

firing system. Ambushes were generally employed where the enemy defenses were less dense and where enemy reconnaissance units were active, either in advance of or to the rear of the front. Where defenses were continuous, ambushes took place during sweeps. Groups conducting sweeps, which were not detected by the enemy, would leave detachments in the enemy rear to operate ambushes at night.[69]

Extensive use of ambushes and sweeps by both fronts continued to provide a steady flow of German prisoners and facilitated almost daily updating of the assessed configuration of enemy tactical defenses. These active measures went hand-in-hand with more passive planned observation by front line units.

By 1945 the Soviets had developed thorough procedures for visual and optical observation. Formal networks for observation, complete with optical equipment, existed from front down to battalion level. This network employed maps to record data and reported observation data to higher headquarters through a formal communications and data-collecting system.

Observation points, distinct from those employed for artillery observation, formed a dense network at corps and division level and were tied in closely with main and rear command posts. In the forward area, commanders created observation posts as close as possible to the front lines or first echelon subunit positions where the commander could personally observe the field of battle, especially on the main axis of advance.[70] Division commander observation posts (OP) were colocated with those of the division artillery group commander.[71] Routinely, representatives of each branch (artillery, engineer, armor) manned OP's.

An even denser network of battalion and regimental OPs supplemented those of divisions and corps. OP's were placed in first and second trench lines and on any commanding terrain. Ideally, these posts conducted continuous observation to a depth of two to three kilometers into the enemy rear. Staff officers manning these posts were required to note all observed data in an "observation journal," which was subsequently forwarded to and "systematically studied by the staff."[72] Observation posts often acted as bases for both patrol activity and eavesdropping on enemy wire communications lines, thus inevitably they were critical nodes in the *razvedka* system. By late 1944 first echelon battalions customarily employed one eavesdropping post while regiments and divisions fielded two or three posts each. High level observation posts were sited to increase the range of observation up to five kilometers, depending on terrain conditions. Typically, an army preparing for offensive operations would create over a thousand 1000 OPs of various types. In the Vistula-Oder operation, 69th Army employed up to 750 combined army observation posts and up to 520 artillery observation posts.[73]

The 1st Belorussian Front's 5th Shock Army formed army observation posts in the offensive sectors of each first echelon rifle division and also created one mobile observation post of three to five men to deploy forward once the

offensive had begun.[74] The 129th Rifle Corps of 47th Army, by January 4, had created one or two observation posts for each of its companies, battalions, regiments, and divisions of the first echelon. These posts were able to observe routinely up to three kilometers into the enemy defenses and, in some critical sectors, up to four kilometers. Artillery OPs operated either as a part of this OP system or adjacent to individual OP's to facilitate more responsive and accurate artillery fires.[75] An officer of neighboring 61st Army described the scene at his observation post: "Beside the stereoscopes lay maps and forms with the results of aerial photography, all speckled with conditionally designated pillboxes, machine gun positions, and artillery and mortar batteries. I carefully compared them with the observed panorama of the enemy defense."[76]

Careful, disciplined conduct of commanders' personal reconnaissances [*recognotsirovka*] increased the effectiveness of the observation post system.[77] All prewar and wartime regulations required such reconnaissance, and Soviet commanders attested to its value. Konev later wrote:

> In preparing for the breakthrough we also counted on a powerful artillery blow. To make this blow effective, the command of the Front, the commanders of armies, corps, and divisions, as well as the artillery commanders concerned, made the most careful reconnaissance of the entire penetration sector. We, the command of the Front, commanders of armies, corps, divisions and regiments, together with the artillerymen and airmen, literally crawled all over the front line, mapping out the main objects of the attack.
>
> Incidentally, it is my profound conviction, such a reconnaissance of the terrain, even to the point of crawling on all fours, is in no way at variance with the operational art. Some theoreticians are inclined to overestimate the operational art and hold that the rough work on the spot is so to speak, the business of the lower commanders, not the operations planners. My opinion, however, is that thorough preparation on the spot and the subsequent practical realization of the theoretical postulates go very well together.[78]

Soviet commanders conducted personal reconnaissance in sequence from higher level to lower level command over a number of days. Senior commanders normally accompanied their subordinates in groups of up to five-six individuals. All work was conducted from operating observation posts. (It was forbidden to bring along maps with conditions noted on them.) Cooperation on the terrain was organized during the following periods: January 6-9—by the corps commander with regimental commanders and attached force commanders with participation of the division commander; January 9-11—by the commander of the division with battalion and attached subunit commanders with participation of the regimental commanders; January 11—by the rifle regiment commanders with company commanders with participation of battalion commanders.[79]

Marshal Zhukov conducted his personal reconnaissance in the Magnushev bridgehead with individual corps and division commanders on the terrain across which they would operate. "On this *recognotrisovka,* the orientation, missions, and combat formation of units: the subordination of artillery, and the order of

infantry support tank use was specified."[80] Division commanders of 5th Shock Army supervised their personal reconnaissance process after 10 January. Since the first German trenches were only 500 to 1,000 meters distant, company, battalion, and regimental commanders could often observe to four kilometers depth—that is through the second German defensive position.[81]

Standardized personal reconnaissance procedures throughout both front sectors often served two purposes. It certainly contributed to a clearer understanding of enemy defenses. When skillfully orchestrated, it could also serve as a means of disinformation regarding attack intentions and main attack location. While camouflaged parties of officers conducted real personal reconnaissance, bogus parties, dressed and posturing to draw enemy attention, could often trick enemy reconnaissance, since by 1945 it was clear that personal reconnaissance by Soviet officers was a major attack indicator. Often the Soviets included in these parties armor force officers with their characteristic garb to indicate the likely commitment of a Soviet tank army in the sector.

One of the most critical means of last minute *razvedka* was the reconnaissance in force [*razvedka boem*], a technique which by 1945 had become far more sophisticated than it had been in earlier years. The purpose of reconnaissance in force had not changed. Its task was to verify intelligence data received from all *razvedka* means and note any last minute changes in enemy dispositions before commencement of the attack. By 1945, however, the general purpose of reconnaissance in force had expanded. Often the reconnaissance, if successful, became an integral part of the offensive. For example, during the Belorussian operation, when 43d and 6th Guards Armies' reconnaissance forces succeeded in seizing the first German defensive positions, the front commander ordered the remainder of his forces into action to exploit the success without firing an artillery preparation.

To further confuse the Germans, by late 1944 reconnaissance in force often occurred immediately before the attack (up to one day) and in all sectors, so as not to reveal the main attack direction. Often reconnaissance in force also became a diversionary measure. Since they had become a clear attack indicator, Soviet commanders employed them in secondary sectors to draw German attention away from the main attack sector or conduct them well before a planned attack to confuse the enemy regarding offensive intentions and timing. For example:

> Sometimes reconnaissance in force would be conducted at an earlier time in order to delude the enemy. On January 5, 1945, for example, that is, ten days prior to the start of the Vistula-Oder offensive operation, the 1st Rifle Battalion of the 240th Guards Rifle Division, with an antitank battalion 76-mm battery, and a combat engineer company, supported by two artillery regiments and a mortar battalion, conducted reconnaissance in force with the objective of reconnoitering the forward edge of the enemy's main defensive position, to take prisoners for identification purposes, and to demolish antipersonnel obstacles in a sector 500 meters north of Grabow-Zalesny (south of Warsaw).

The mission was accomplished. Raids, ambush and dispatch of reconnaissance parties and detachments behind enemy lines were for the purpose of capturing prisoners, documents, specimens of weapons and combat equipment, and inflicting losses on the enemy. The raid and ambush were the most effective and widely-used techniques. In January 1945 alone (during the period of defense) the army mounted sixty and twenty-three respectively. These actions killed seventy officers and men and took five prisoners. Reconnaissance party losses totaled four killed and forty-five wounded.[82]

The latest guidance for conducting reconnaissance in force appeared in the 1944 Instructions on Penetrating a Positional Defense which, first and foremost, required reconnaissance in force to verify existing defensive positions to insure the Soviet artillery preparation did not strike unoccupied positions. The instructions required the "advanced battalions" of the reconnaissance to pave the way for successive operations by the main force. Advance battalions were assigned deeper missions, often including "tactically important objectives in the enemy defense."[83] To accomplish these missions, the Soviets attached reinforcements to the advanced battalions including tanks, self-propelled guns, sappers, etc. "Thus *razvedka* became an operational factor, and not tactical."[84]

Advance battalions in the Vistula-Oder operation conducted reconnaissance immediately before the main force attack *(See Figure 1)*[85] The battalions were often reinforced by minesweeper tank platoons and assault companies, and an artillery preparation preceded their advance. Konev described the methods he used:

Reconnaissance in force was nothing new; it had been made before the beginning of the offensive in many other operations. We realized, however, that it had acquired a certain stereotype pattern to which the Germans had become accustomed and against which they had found an antidote. The stereotype part of it was that the reconnaissance in force was usually made the day before the offensive, then the data obtained was collected and analyzed, assault positions were taken up correspondingly and the offensive was begun the next day.

This time we decided to act differently, so as to prevent the enemy from reorganizing his defenses after our reconnaissance in force. To achieve this, we resolved to deliver a short but powerful artillery attack and immediately follow it up with reconnaissance in force by our forward battalions; if we then discovered that the enemy had not withdrawn his troops, we were to bring down the whole power of our artillery fire upon his positions. Such was our plan. If it had turned out, however, that the Nazis had withdrawn their troops, we would, without wasting any shells, immediately shift our fire to where they had taken up their new positions.

Apart from my natural desire to see the beginning of the offensive with my own eyes I came to the Front observation post to be able to make the necessary decisions on the spot, if the operations of the forward battalions showed that the enemy had withdrawn.

The enemy might withdraw to any depth, including one that would require redeployment of some of the artillery and, consequently, a certain lull. In short, a situation might arise in which I, as the Front commander, would have to make urgent decisions which it would be desirable to check on the spot so that I

Reconnaissance in Force

Vistula - Oder Operation

Formation	Force Deployed	Support Elements	Time	Results
69th Rifle Corps, 61st Army, 1st Belorussian Front	reinforced rifle battalion per first echelon division	3 to 4 mortar or artillery battalions	0855, Jan 14, 1945	confirmed positions of enemy
29th Guards Rifle Corps, 8th Guards Army, 1st Belorussian Front	assault battalion per first echelon division	3 to 4 mortar or artillery battalions	0855, Jan 14, 1945	confirmed enemy dispositions
26th Rifle Corps, 5th Shock Army, 1st Belorussian Front	reinforced rifle battalion per first echelon division	3 to 4 mortar or artillery battalions	0855, Jan 14, 1945	secured defensive position to depth of 2 to 3 kilometers.
73d Rifle Corps, 82d Army, 1st Ukrainian Front	reinforced tank-minesweeper and assault rifle comapny per first echelon division	3 to 4 mortar or artillery battalions	1500, Jan 12, 1945	confirmed that first positions unoccupied; secured prisoners.

Figure 1

could issue appropriate instructions.

The observation post in the immediate proximity of the battle formations and provided with all means of communication and control was the most suitable place. I arrived at the observation post together with Generals Krainyukov and Kalchenko, members of the Front Military Council, and General Sokolovsky, Chief of Staff of the Front.

At 05.00 hrs after a short but powerful artillery attack, the forward battalions launched an assault and soon captured the first trench of the enemy defenses. The very first reports made it clear that the enemy had not withdrawn, but had remained in the zone of all the artillery attacks we had planned.

Despite its short duration the artillery attack was so powerful that the enemy thought it was the beginning of the general artillery preparation. Taking the action of the forward battalions for the general offensive of our troops the nazis tried to stop it with all the fire weapons at their disposal.

This was just what we had counted on. After capturing the first trench our forward battalions took cover between the first and second trenches. This was when our artillery preparation started. It lasted one hour and forty-seven minutes and was so powerful that, judging by a number of captured documents, it seemed to the enemy to have lasted not less than five hours.[86]

In essence, Konev's reconnaissance in force transformed itself into the first phase of the main attack. While doing so it simulated a main attack and forced the Germans to reveal all their troop and firing positions.

Marshal Zhukov devised a different plan for reconnaissance in force preceding the 1st Belorussian Front's assault. He planned a 25-minute heavy artillery preparation followed by a reconnaissance in force by advanced battalions and companies. If the reconnaissance by the twenty-two reinforced battalions and twenty-five reinforced companies succeeded in seizing advanced German positions, the main attack would commence without further artillery preparation. If, however, the reconnaissance in force failed, an extended second artillery preparation would precede the main attack. This reconnaissance in force by advanced battalions and companies (called a "special echelon"—*osobyi eshelon*) succeeded in overcoming the first two German defensive positions; Zhukov, in due course, ordered his main forces to continue the attack without the additional artillery preparation.[87]

An example from 47th Army illustrates another variation in the conduct of the reconnaissance in force:

For conducting reconnaissance in force, during the night of 14 January, the two previously created and reinforced groups of 400 men each, covertly moved up to the enemy barbed-wire obstacles where they prepared to blast passages through them for the [subsequent] attack. In the morning, after a 10-minute intense shelling by all the corps artillery which caught the enemy by surprise, a detachment from the 143d Rifle Division, without a pause, captured two trenches; and a detachment from the 132d Rifle Division captured one along a front of 150-200 m. The enemy, having considered the reconnaissance in force as an offensive by the main forces, committed a larger portion of its weapons to battle and began to bring up reserves to the penetration sectors. During the following 24 hours, the enemy's attempts to drive our reconnaissance forces

> from the captured trenches were unsuccessful. As a result of the reconnaissance
> in force, the personal observation of the commanders, and with the aid of
> artillery reconnaissance and observation, the enemy grouping and fire plan had
> been ascertained while the enemy was confused about the nature and aims of
> our troops.[88]

In essence, the reconnaissance turned into the main attack which, within hours, had torn apart the entire first German defensive position.[89]

The reconnaissance in force, combined with systematic troop reconnaissance measures conducted earlier during the preparation phase, rendered German defenses virtually transparent and satisfied the principal task assigned troop *razvedka* by 1944 Regulations—to verify enemy dispositions and facilitate conduct of a rapid penetration operation.

Artillery *Razvedka*

Extensive artillery *razvedka* assets were available to both fronts during preparation for the Vistula-Oder operation. These included TOE subunits of troop artillery *razvekda,* separate reconnaissance aviation battalions, aeronautic battalions for aerostatic observation (VDAH), and separate corrective reconnaissance aviation regiments. Eighty-five percent of these forces were concentrated on the army main attack sectors of both fronts. This provided an artillery instrumental *razvedka* (AIR) density of one reconnaissance battalion per every 4-5 kilometers of front.[90] All artillery *razvedka* assets were closely integrated with collection activities of other *razvedka* forces (for example, observation).

The most effective aspect of artillery instrumental *razvedka* was sound ranging, as indicated by this critique of 61st Army (1st Belorussian Front) artillery *razvedka*:

> Artillery reconnaissance was conducted by artillery reconnaissance and fire
> subunits with the aid of optical, sound ranging and other devices. Its mission
> was to spot promptly and to determine precisely the coordinates of important
> targets. The SChZM-36 sound-ranging unit was the most sophisticated. From
> July 1943 through April 1945 sound ranging took part in the major operations
> of the Great Patriotic War in determining coordinates on the average of up to
> 90 percent of the total number of reconnoitered targets by all artillery
> weapons.[91]

All armies on main attack axis possessed dedicated artillery *razvedka* assets. The 1st Belorussian Front assigned artillery *razvedka* assets to its subordinate armies as shown in Figure 2.

The 13th Army's artillery group consisted, in part, of the 14th Guards Separate Reconnaissance Artillery Battalion and the 1st Aeronautic Detachment whose mission it was to detect enemy artillery and mortar locations and conduct counterbattery fire during and after the artillery preparation.[92] The 5th Guards Army received *razvedka* support from the 118th Separate Corrective

Artillery *Razvedka* Elements

1st Belorussian Front, January 1945

Army	*Reconnaissance Artillery Battalions*	*Corrective Aircraft*	*Aerostatic Observation*
61st Army	45th ORAD	4 aircraft, 98th OKAP	3d Detachment, 6th VDAN
5th Shock Army	725th, 821st ORAAD, Recon Aviation Battalion, 44th Guards Army Gun Artillery Brigade	6 aircraft, 98th OKAP, 3d Night OKAP	1st, 2d Detachments, 4th VDAN
8th Guards Army	OKAP, 6th Artillery Penetration Corps	6 aircraft, 98th OKAP	3d Detachment, 4th VDAN
69th Army	810th ORAD, Recon Aviaiton, 62d Army Gun Artillery Brigade	8 aircraft, 93d OKAP, 3d Night OKAP	2d Detachment, 6th VDAN

Figure 2

Reconnaissance Aviation Regiment consisting of four Il-2 and four Yak-9 aircraft with ground artillery instrumental units similar to those supporting 13th Army.[93]

It was the task of division, corps, and army artillery staffs to integrate all artillery *razvedka* collection means. An account by an officer in 61st Army's 9th Guards Rifle Corps described how it was done:

> Special attention was paid to artillery *razvedka*. A large network of observation posts was deployed in corps artillery. From the army artillery staff we were sent

a large scale map with aerial photographic data. Each battery of the corps artillery group and countermortar group were assigned specific targets. The German-fascist command employed various methods of disinformation, a system of false firing positions, in which they placed actual weapons served by truncated crews. This occurred during preparation for the operations in the Magnushev and Pulavy bridgeheads. *Razvedchiki* [scouts] of our army and of the front artillery staff sounded the alarm about the former. When the results of *razvedka* were generalized and analyzed on the basis of various sources, we discovered that the quantity of artillery exceeded the combat strength of defending enemy formations several times over...the data of aerial photographs, visual observation, and corrective-reconnaissance aviation affirmed the [actual] presence of enemy artillery batteries.

Careful observation by artillery *razvedka* in the forward area over the flashes and timing of enemy fire by various means confirmed the firing activity of batteries. From battery and battalion OPs we received intelligence information, and before sending the next *razvedka* report and map to corps artillery staff, I sat for a long time, thought over, and calculated how many and what kind of detected artillery and mortar batteries fired shells on our force dispositions.[94]

By careful analysis 61st Army was able to decipher just what enemy artillery strength was deployed across its front.

In total, the two fronts employed about twenty separate reconnaissance artillery battalions (one per artillery division), three-four aeronautical battalions of aerostatic observation, and four separate corrective-reconnaissance aviation regiments.[95] In general, the openness of the terrain mitigated against the negative effects of unfavorable weather to produce better than adequate artillery observation data.

Engineer *Razvedka*

Engineer *razvedka* support for the Vistula-Oder operation was provided by engineer units assigned to front and army and by the TOE sapper battalion organic to rifle divisions. Front assets included engineer-sapper brigades, some motorized and usually one special-designation engineer brigade to handle specialized tasks such as mine-clearing. Armies had brigades or engineer battalions attached from front as well as organic engineer units. The rifle division sapper battalion, according to the new 1944 TOE, assigned one combat engineer platoon the mission of combat reconnaissance and provided it specialized training for the mission.[96]

Engineers established a network of engineer observation posts (INP) closely interlinked with their combined arms and artillery counterparts. Usually rifle divisions established two such posts, each manned by three men, but in main attack sectors the density of INP reached three to four per kilometer of front. Each INP was equipped with optical devices (binoculars, stereoscopes), compasses, and watches; and troops manning them maintained observation journals and maps of sketches of the region. Often INPs also photographed enemy defenses using periscopic cameras. All data collected by the INP was

processed through engineer channels to the division, army, and ultimately front intelligence directorates for processing and collation.

To verify the information recorded by observation and photography, engineers either organized or participated in sweeps to study the defenses firsthand or take prisoners. These sweeps, usually conducted at night, were made by parties of four to five men armed with machine guns, grenades, mine detectors, and wire cutters. The sweep group was normally led by the engineer *razvedka* platoon or company commander.[97] The average depths of the sweeps were one to two kilometers; but, by January 1945, larger groups occasionally penetrated to up to 40 kilometers.[98]

Engineer activity during the preparatory period was intense. The 1st Ukrainian Front Chief of Engineers, Lt. Gen. I. P. Galitsky, established over 180 engineer observation posts and supervised the conduct of 1,300 sweeps, 118 of which penetrated into the operational depths (greater than twenty kilometers).[99] For the most part, these posts and sweeps were organized and conducted by division and corps sapper battalions and by army engineer *razvedka* companies (for example, the 460th Separate Reconnaissance Company of 5th Guards Army).[100] The 60th Army, operating on a broad front from the southern portion of the Sandomierz bridgehead south to the Tarnow region, organized INPs on the basis of one per first echelon rifle battalion, one per first echelon rifle regiment, and two or three per rifle division. Every ground *razvedka* group contained two or three sappers; and, in addition, special engineer parties conducted deeper engineer *razvedka*.[101]

Similar activity took place in the 1st Belorussian Front where the density of INPs reached three to four posts per kilometer of penetration sector. The 8th Guards Army in the Magnushev bridgehead, established twenty-eight INPs along a seven-kilometer front, while 69th Army, in the Pulavy bridgehead, deployed forty-two INP's on a 10.5-kilometer front. The 8th Guards Army conducted fifty sweeps and 69th Army fifty-six to a depth of up to twenty-five kilometers.[102] During the four days prior to the offensive, 47th Army conducted forty-five sweeps in the area north of Warsaw.[103] According to one Soviet critique:

> "The results of engineer *razvedka* permitted composition of a full picture of the state of enemy engineer structures and obstacles and helped determine the most expedient form of combat use of engineers and means of performing their engineer work".[104]

In addition, engineer forces actively participated in the reconnaissance in force which immediately preceded the offensive. In the 1st Belorussian Front:

> To fulfill the former mission [clear routes for reconnaissance advance battalions] a destruction group consisting of a sapper squad and automatic weapons squad was included in each company of first echelon assault battalions. In the 1st Belorussian Front the 166th and 92d Engineer Tank Minesweeper Regiments were used as well to clear passages. They secured

passages through mine fields for two tank brigades and seven tank and SP
artillery regiments during the penetration of the defense.[105]

Engineer forces operated analogously within the 1st Ukrainian Front.

Effectiveness of *Razvedka*

Comparison of German defensive dispositions and force transfers during the
two months prior to the offensive with Soviet accounts of *razvedka* and
examination of the course of the operation indicates that Soviet *razvedka* organs
did their job well. The Soviet *maskirovka* plan was successful; the Soviets were
able to pinpoint the location of German reserves, and the penetration operation
developed more rapidly than planned. The effectiveness of Soviet forces in the
early phases of the operation did such damage to defending German forces that
ultimately the offensive plunged westward well beyond the planned objective of
Poznan to the Oder River only 60 kilometers from Berlin.

Certainly some of the Soviet success is attributable to the weakness of
German defenses and the absence of large German operational reserves due to
the large German transfer of forces southward from September to November
1944 in response to Soviet activity in the Carpathian Mountain region and in
Hungary. Soviet intelligence was able to monitor movement of these reserves
and was aware of their location in early January. The clearest example was
Soviet tracking of the movements of IV SS Panzer Corps from the Warsaw
region to Hungary in December and January.

Soviet strategic and operational *razvedka* collection organs, responsible for
monitoring these movements as well as for uncovering the nature of German
defenses across the expanse of Poland, accomplished both tasks successfully.
During the nine favorable flying days available between November and January
12, Soviet air *razvedka* of the 1st Belorussian Front conducted 1,700
reconnaissance aircraft sorties.

> The total area of aerial photography comprised 109,000 square kilometers.
> Of this total enemy defensive positions to a depth of eight kilometers were
> photographed three times over, and the enemy defense sectors in front of the
> Magnushev and Pulavy bridgeheads to a depth of 25 to 40 kilometers [were
> photographed] four times every 10 to 12 days. Perspective [oblique]
> photography of the forward edge and the entire tactical defense zone in front of
> the bridgehead occurred repeatedly. All of this provided the capability of
> discovering the nature and system of the defense and the grouping of enemy
> field and antiaircraft artillery throughout the entire tactical depth.
>
> In the operational depth, army rear positions and cut off positions along the
> Pilitsa River were photographed twice and the Warta and Poznan defensive
> positions once. As a result of the survey a series of intermediate positions
> between the Vistula and rear belt were revealed, six antitank positions from
> twenty to sixty kilometers long were uncovered, as well as an entire aerodrome
> net with aviation forces based on them.[106]

General S. I. Rudenko, 16th Air Army commander, commented:

> The air *razvedka* plan, drawn up by the staff of the air army under the supervision of General P.I.Braiko was fulfilled. Our RO led by Colonel G.K. Prussekovy applied much creative effort and organization skill in order to employ all types of aviation effectively and purposefully.[107]

Lt. Gen. Chuikov, 8th Guards Army commander, seconded Rudenko's judgment, stating, "With satisfaction I mention that our army air *razvedka* coped with its missions. Information gathered by it received high marks from the front staff and staffs of neighboring armies."[108] The 1st Ukrainian Front achieved similar results as its air *razvedka* photographed over 108,000 square kilometers of territory and monitored movement of German reserves in the key sector south of the Vistula River.[109]

Finally a critique of the Soviet Air Force command and staff during the Vistula-Oder operation noted:

> Reconnaissance aviation uncovered beyond the Vistula River enemy prepared defensive belts, six antitank positions...and determined concentration areas of enemy reserves and enemy artillery groupings. All crossings over the Vistula and Pilitsa Rivers were photographed, and airfield nets with aviation units were uncovered. The information from air *razvedka* permitted the High Command and front commands to plan correctly the offensive operations.[110]

Radio *razvedka* by fronts and armies helped reveal German tactical defensive dispositions and movement of reserves. The Soviets have revealed little about their achievements except a critique of 1st Belorussian Front radio *razvedka* and mention of radio *razvedka*'s role in tracking the southerly move of IV SS Panzer Corps. The critique of 1st Belorussian Front radio *razvedka* declared:

> Radio *razvedka* of the front ascertained the dispositions of 9th Army, and the staffs of all corps and five (of seven) enemy divisions, operating in the first line. It had undoubted merit in revealing the operational regrouping occurring in this period in the sector of this army. Thus radio *razvedka* was the first to notice the withdrawal by the German-Fascist command of 4th SS Tank Corps to Hungary where a counterattack was being prepared. According to its data, the front staff succeeded in establishing the transfer of the left flank 56th Tank Corps from 4th Panzer Army to 9th Army, as well as the change in the defensive sector of 8th Army Corps.The successful activity of radio *razvedka* organs was caused first of all by the presence of the front composition of radio equipment which was powerful for its times (four radio battalions OSNAZ and the forces themselves had six army groups for close communications *razvedka*).[111]

Soviet sources are almost silent regarding the impact and effectiveness of agent *razvedka*. Scattered accounts of agent actions cited earlier obviously supplemented the intelligence picture. For example, "On 1 January, *razvedka* agents reported that soldiers wearing the insignia of 5th Tank Division had been

spotted in Czestochowa."[112]

One Soviet critique, referring to agent *razvedka* as *"spetsial'naia"* [special], stated:

> For example, in the Vistula-Oder operation special *razvedka* of the 1st Ukrainian Front revealed the basing of aviation and the capacity of the aerodrome net in the front sector, and also established the concentration regions of three divisions, the 17th and 4th Tank Army staffs, the 48th Tank and 42d Army Corps staffs, and added other information concerning the grouping of enemy forces, and his operations and intentions.[113]

Once again German reports illustrate the extent to which Soviet agents operated throughout their rear area. German periodic intelligence studies assessed significant numbers of agents, bands, and reconnaissance units in the rear.

German documents also indicate the Soviets often used these agents or groups for deceptive purposes. For example, a study of German intelligence procedures employed in the east contained a section on how intelligence dealt with enemy agents. In addition to cataloguing all agent activities, German intelligence concluded that the "places at which the agents were detected or apprehended, as these entries increased in density in certain sectors of the front, were found through experience to indicate very closely where the Russians were planning to engage in large-scale operations."[114]

A report on agent activity prepared on January 5, 1945 revealed agent activity to be concentrated west of Warsaw and south of Krakow. In fact, these were the regions where Soviet deception plans were attempting to simulate attack preparations to distract German attention from the real main attack sectors adjacent to the Vistula River bridgeheads. German documents thus vividly attest to the effective Soviet use of agents and reconnaissance-diversionary teams in deception operations. At the same time, they tacitly underscore the growing role of these *razvedka* organs in the more common role of intelligence gathering.

As had been the case since late 1942, Soviet troop *razvedka*, including artillery and engineer measures, were particularly effective and helped produce rapid, immense Soviet success in the penetration operation. All sources indicate the Soviets possessed detailed knowledge of enemy troop and artillery dispositions throughout the tactical depths of the German defense. It is apparent that Soviet intelligence knew German operational reserves opposite the Sandomierz bridgehead were deployed within the tactical depths. Hence, the Soviets were able to target these units during their artillery preparation and, as a result, destroy their command and control and inflict heavy losses. The German 16th and 17th Panzer Divisions suffered severe damage during the preparation.

Extensive sweeps, ambush, and raid activity produced a steady stream of prisoners and documents and combined with ground and air observation to blanket the enemy defense:

> As a result, troop *razvedka* studied in detail all groupings of enemy forces within the limits of the main defensive belt. By the beginning of the operation, front army, and division staffs had sufficiently complete information about the composition of the combat formation of fascist formations, defending in first echelon.
>
> In cooperation with engineer [*razvedka*] troop *razvedka* found out the true outline of the forward edge of the defense, the engineer obstacle system in the forward region and particularly in the depths of the defense, as well as the junction [boundary] of the divisions, regiments and battalions; and on the Pulavy bridgehead even the junction between companies. Together with artillery [*razvedka*] it revealed the enemy firing system.[115]

General Moskalenko of 38th Army reinforced this judgment, stating, "As a result, by the beginning of the operation the system of enemy trenches, fortifications, obstacles, and observation posts was uncovered and studied by all officers down to company and battery commanders, inclusively."[116] An account of 47th Army offensive preparations echoed Moskalenko's view:

> As a result, by the start of the offensive the configuration of the forward edge had been determined, the fire plan and weapons of the enemy defenses had been discovered down to the individual submachine gun, the coordinates had been determined for 18 artillery and mortar batteries, 12 assault guns, 17 machine guns, 11 covered trenches and 2 pillboxes. This comprised around 70 percent of the basic enemy weapons in the corps' sector of advance.[117]

Reconnaissance in force conducted during the preparatory period and just prior to the offensive had salutary effects on the Soviet offensive by deceiving the Germans regarding attack timing and location as well as by verifying the results of earlier *razvedka*. In 47th Army's sector north of Warsaw where the Soviets planned diversionary operations, the reconnaissance fulfilled both functions:

> The plan of operations foresaw the conduct in our sector of a reconnaissance in force which was timed to correspond with the beginning of the shock group's offensive from the Magnushev bridgehead. The mission—to disorient the enemy and at the same time feel out his force and secure prisoners. The *razvedka* was successful. The so-called Modlin junction, on which the Hitlerites placed great hopes, judging by all, was not as strong as it had been in October of the previous year. Our advanced battalions succeeded in penetrating the depth of the enemy defense almost a kilometer and seized several tens of prisoners.[118]

Elsewhere the reconnaissance in force succeeded, and in the 1st Ukrainian Front sector it had the added benefit of both confusing the enemy and permitting refinements in artillery fire plans. "Information obtained by reconnaissance in force allowed the front commander to make several changes in the artillery support of the offensive. In particular, the artillery preparation was planned with a pause for platoons to conduct demonstrative attacks."[119] The demonstrative action forced the Germans to "show their hands" and the subsequent artillery

preparation pulverized German defenses.

Thorough artillery *razvedka* simply added to the detailed picture composed by Soviet intelligence staffs. This was particularly true in main attack sectors where ninety percent of artillery intelligence-gathering assets were concentrated (for example, in 34 kilometers of 1st Belorussian Front's 230-kilometer sector).[120] Artillery instrumental *razvedka*, reconnaissance corrective aviation, and the dense network of artillery observation posts within rifle and artillery units provided an accurate picture of enemy defenses:

> As a result of these measures, in the penetration sector [of 1st Belorussian Front] artillery *razvedka* uncovered and determined the coordinates of 468 artillery and mortar and 57 antiaircraft batteries, 1,480 open firing points, 245 firing points with covers (pillboxes), 406 blindages and 154 observation posts".[121]

In addition, artillery *razvedka* assisted in analysis of forward enemy defenses and the identification of antitank and antipersonnel obstacles and other defensive structures. Engineer *razvedka* contributed to success in the preparatory period and during the reconnaissance in force as well. Joint artillery and engineer observation in 5th Guards Army's sector "illuminated" the enemy defensive system, located 36 105-mm artillery batteries, 15 75-mm batteries, 33 antiaircraft batteries, 12 81-mm mortar batteries, and 17 119.8-mm mortar batteries. In addition, *razvedka* revealed that German forces manned only the first and second positions of the main defensive belt. "All of this permitted the army command to have complete information about the enemy and make correct decisions."[122] A 60th Army critique of engineer *razvedka* noted the work of engineer observation posts and engineer reconnaissance parties dispatched deep into the enemy rear and concluded:

> Such organized [engineer] *razvedka* permitted us to determine the overall grouping of enemy force operations on our army's sector and ascertain the nature of his defensive structures which, in turn, provided the possibility of more exactly determining the missions of army formations.[123]

Engineer *razvedka* forces also played an important role in the reconnaissance phase just prior to the main attack. According to a senior engineer:

> By the start of the Vistula-Oder Operation of the 1st Belorussian and 1st Ukrainian fronts (January 1945), it had been possible to remove all our own minefields in the jump-off areas and make passages in the enemy minefields in front of the forward edge of its defenses. Here, just on the bridgeheads in front of the breakthrough of the defenses on the 1st Belorussian Front, the combat engineers removed 80,000 antipersonnel and about 42,000 antitank mines. As a total in this operation, in the zone of the 1st Belorussian Front, the engineer troops made 872 passages in the enemy minefields. Here 19,483 antitank and 14,201 antipersonnel mines were removed.[124]

Extensive Soviet *razvedka* prior to the offensive provided a basis for accurate Soviet assessments of German strength in Poland throughout both the tactical and operational depths. By the end of December 1944, the General Staff assessed that there were forty-nine German divisions including five panzer divisions, in the main sector of the front.[125] Assessments of German forces defending in individual Soviet army sectors were even more accurate in part because of efficient *razvedka* and in part due to the fewer number of German formations.

A 1st Belorussian Front order issued in early December to 5th Shock Army sketched out the concept of the upcoming operation and revealed the intelligence picture at that time *(See Figure 3)*

This assessment accurately plotted the tactical defenses of the 251st and 6th Infantry Divisions and the strength of fire support reinforcements. It was correct in assessing the location of 25th Panzer Division; and the second panzer division identified corresponded to 19th Panzer Division, which was also located in this sector. The grenadier division referred to either 10th or 20th Panzer Grenadier Division, operating between the Magnushev and Sandomierz bridgeheads. The reserve division identified replicated the German security division operating to the rear of German tactical defenses.

In late December intense *razvedka* activity enabled 47th Army north of Warsaw to determine accurately German tactical dispositions:

> On 29 and 30 December 1944, the Nazi Command regrouped its troops, having positioned two infantry regiments of the 73d Infantry Division in the first echelon and one regiment in the second. In the reserve was around 1.5 infantry battalions and up to 15 tanks. The basic portion of the enemy artillery was positioned in the forests to the west of Hotomow (around 16 batteries).[127]

Further south, in the Sandomierz bridgehead, Soviet forces likewise developed an accurate estimate of German force strength. By early January, 5th Guards Army also possessed an accurate picture of the dispositions and strength of defending German units:

> Before the army front, in the sector of the penetration defended units of the 168th, 304th, and 68th Infantry Divisions reinforced by tanks, artillery, and mortars. The strength of enemy divisions reached 60,000 men, and companies were 60-80 men strong, predominantly German but with small quantities of Austrians. The average density of artillery reached 10-12, and in some sectors up to 20-25 guns per kilometer of front, and up to 10 machine guns, 3 tanks, and 150-170 rifles per kilometer. In the Buska-Zdrui areas, the corps tank reserve was located—the 501st Separate Tank Battalion with 50 machines. Enemy operational reserves were located in the depth of the defense. In the army offensive sector we expected two infantry and one tank division to appear.[128]

To the Commander of 5th Shock Army

Copy: to Chief of the Red Army General Staff

1. Units of the enemy 251st and 6th Infantry Divisions, reinforced by six RGK [reserve of High Command] artillery battalions, two RGK antitank battalions, an RGK assault gun brigade, and one RGK mortar regiment, defend strongly fortified positions on the line: Varka, Grabuv, Zales'ny, Vyboruv, Grabuv Pilitsa, Bzhozuvka, Stzhizhina, Gelenuvek, Gelenuv, Lipa, Lezhenitse. The enemy has fortified these positions for more than four months and has developed them to a depth of from 10 to 15 kilometers. The most developed defense system and the densest enemy combat formation is in the sector Tsetsyliuvka-Lezhenitse.

The main artillery grouping are in the regions:

a) Up to four battalions—Zbyshkuv (5 kilometers south of Varka), Budy Boskovol'ske, Boska Volia:

b) Up to three battalions—Stanislavuv, Dutska, Volia, Male Bozhe.

Enemy reserves are in the regions: presumed 383d Infantry Division—M. Brone: tank division of an unknown number—Bialobzhegi, Charnotsin (22 kilometers west M. Edlinsk) (17 kilometers southwest of Varka): infantry division of unknown number—Nove Miasto, Tomashuv; presumed 25th Tank Division—Stanislavitse (4 kilometers southwest of Kozenitse), Pionki; grenadier division of unknown number and presumed 174th Reserve Division—Radom....

<div style="display:flex;justify-content:space-between">
<div>
Commander of
1st Belorussian Front Forces
Marshal of the Soviet Union
G. Zhukov
</div>
<div>
Member of the
Military Council
Lieutenant-General
Telegin
</div>
</div>

Chief of staff of 1st Belorussian Front
Colonel-General Malinin[126]

Figure 3

Soviet *razvedka* constructed a similarly accurate picture of German force dispositions across virtually the entire front. A critique of 1st Belorussian Front *razvedka* summarized the results achieved:

> As a result of the complex and purposeful use of forces and means of all types of *razvedka*, missions assigned by commanders to front *razvedka* during the preparatory period, were fully carried out: by the beginning of the offensive the 1st Belorussian Front staff possessed accurate information about the compositions, grouping, and the combat capabilities of formations and units of German-fascist forces operating in the sector of the forthcoming offensive. The enemy tactical defense zone on the direction of the front main attack was especially revealed in detail.[129]

Once in possession of this data, the front ensured it was put to good use:

> The front staff carried out great efforts to provide generalized data to the forces. In particular, they were sent detailed characteristics of enemy divisions defending the Vistula defensive line, schemes of defensive positions throughout the entire depth of the defense, maps of aviation unit basing and his aerodrome network and reconnaissance sketches of the main defense belt on a scale of 1:25,000 and 1:50,000, which during the ten days before the offensive were passed down to company and battery commanders.[130]

Soviet *razvedka* deprived German defenders of what little chance they had of successfully defending along the Vistula. The devastating nature of the ensuing assaults insured as well that Soviet forces would penetrate far beyond their ultimate objective of Poznan, in this case all the way to the Oder River.

Razvedka during the Operation

The conduct of *razvedka* during a prolonged static period prior to an offensive was a skill Soviet forces had learned well since the summer of 1943. It took considerably longer, however, for Soviet forces to develop a similar talent for *razvedka* on the march—during active operations. It is axiomatic to a marksman that it is far more difficult to strike a moving target rather than a stationary one. Moreover, the noise and confusion of active fluid operations naturally poses challenges to intelligence collection of all sorts.

By 1945 the Red Army relied primarily on air, radio, and mobile ground *razvedka* means during the course of an operation to determine enemy dispositions and intentions. Soviet performance during the Vistula-Oder operation vividly illustrated the strides Soviet commanders had made in this regard since the first tentative, partially successfully Soviet attempts to keep up with German force movements during the Stalingrad period.

Once an operation had commenced, a major portion of *razvedka* forces had to concentrate on carrying out preplanned missions in support of the ongoing attacks. Since, however, the situation was constantly changing, these missions often had to be adjusted, while some *razvedka* forces received entirely new missions suited to the changing situation. In addition, the rapid tempo of

development required some of these new missions be operational in nature as well as tactical.

The principal missions of *razvedka* during the offensive were:

—to determine the degree of suppression of the enemy defense,

—to specify the dispositions of firing means and obstacles hindering the forward movement of forces,

—to determine areas of concentration, combat composition, and the degree of combat readiness of close enemy reserves and monitor their movements,

—to establish the time and direction of enemy staff displacements,

—to detect the moment of enemy preparation for withdrawal.[131]

Fulfillment of these missions was principally the responsibility of ground *razvedka* including the actions of separate reconnaissance patrols, detachments and groups; raids, sweeps, ambushes, observation, officers' reconnaissance patrols, as well as artillery, engineer, and air *razvedka*. Separate reconnaissance groups and patrols from divisions and regiments usually consisted of a reinforced reconnaissance platoon or a rifle squad while battalions employed rifle squads. Reconnaissance groups and patrols received a direction or objective on which to orient their activity, while a reconnaissance detachment (normally of battalion size) operated along a direction [axis] or in a distinct sector.[132] Groups and patrols employed a wide variety of troop *razvedka* techniques (sweeps, ambushes, raids), while detachments normally led the exploitation and pursuit phase of an operation. To an increasing extent, by 1945 most reconnaissance detachments were fully motorized and had their own armor and antitank support. An average motorized reconnaissance detachment consisted of one or two automatic weapons platoon mounted on vehicles, a tank platoon, an antitank gun platoon, and one or two platoons of machine-gun motorcycles.[133] Detachments routinely employed their own subordinate reconnaissance patrols.

Soviet mobile corps (tank or mechanized) routinely led their advance with reconnaissance forces and combat-oriented forward detachments (*peredovoi otriad*). The former served as the eyes of the latter and of the main force. Every tank battalion in first echelon tank brigades of tank or mechanized corps on the march dispatched a combat reconnaissance patrol (BRD) forward. It also formed special mobile observation posts which were arrayed in front of and on the flanks of the main brigade force. Tank brigades formed their own separate reconnaissance patrols (ORD), and tank (mechanized) corps and armies designated reconnaissance detachments to lead the pursuit.[134] Because of the large number of water obstacles to be crossed in an offensive, mobile forces also often employed engineer reconnaissance groups or forward detachments reinforced with engineers to effect river crossings.[135] In few operations was Soviet ground *razvedka* as effective as it was in the Vistula-Oder operation. In part, this explains how the Soviets were able to sustain operations to such extraordinary depths.

On the mornings of January 12 and 14, respectively, the 1st Ukrainian and 1st Belorussian Fronts commenced combat operations. Within hours each front had devastated German tactical defenses and begun an operations exploitation. Ground *razvedka* measures employed by 1st Belorussian Front typified actions across the entire front. Following a twenty-five minute artillery preparation, front forces commenced reconnaissance in force by one or two rifle battalions from each first echelon rifle division reinforced by tanks and self-propelled artillery and supported by artillery fire and air strikes. Unable to halt the advanced battalions and thinking them to be the actual main attack, the Germans began withdrawing from the forward defensive positions to other prepared defenses in the rear. Soon the Soviets ordered a general advance and, by day's end on January 14, German defenses had been penetrated to a depth of from fifteen to twenty kilometers. The following day, after Soviet forces developed the offensive to a depth of twenty to fifty kilometers, 1st Belorussian Front's two tank armies began their exploitation.

While Soviet forces conducted the penetration and approached the enemy army rear defense lines, they employed aerial and ground observation, reconnaissance groups and detachments, and other techniques to gather intelligence information. Mobile observation posts (PHP) mounted on armored vehicles and intermingled with attacking infantry conducted the most effective observation and reported back through intelligence channels at division. Each division operating on a main attack axis employed one or two such groups while corps fielded two or three and armies three to seven.[136] The PHPs also served the purpose of keeping the commander informed concerning the location of his own forces.

Reconnaissance groups (RG) of regiments, usually in squad strength, operated on the boundaries of adjacent regiments and sought to penetrate one or two kilometers deep into the enemy formation in order to observe, seize prisoners, and determine the enemy defensive posture. Larger divisional reconnaissance groups, of up to platoon size, operated in similar fashion but with expanded missions, often to determine the disposition of close operational reserves.[137] For example, a reconnaissance group of 8th Guards Army received the mission of determining the location and status of the German 19th and 25th Panzer Divisions, the principal operational reserves in the 1st Belorussian Front sector, last known to be located near Radom:

> The inability to conduct air *razvedka* because of bad weather created a threat of German secret movement of these units and their commitment to a battle with all the resulting implications. A reconnaissance group of 8th Guards Army's 82d Guards Rifle Division, sent late on 14 January into the enemy rear, by means of observation and comparison of information obtained from prisoners ascertained movement of 19th Tank Division units to the penetration sector. This permitted the army commander to undertake necessary measures leading to piecemeal destruction of that division.[138]

Further north, a major Soviet intelligence concern was the nature of German defensive positions on the north bank of the Pilitsa River between Warka and Belobzhegi where the Soviets intended to commit 2d Guards Tank Army into the penetration. Troop *razvedka* also answered that question:

> On the night of 15 January a reconnaissance group of 5th Shock Army succeeded in penetrating into the cut off enemy position [along the Pilitsa] and determined that the positions were occupied only by withdrawing German forces. This data assisted 5th Shock Army in forcing the Pilitsa and protecting the subsequent introduction of 2d Guards Tank Army into the penetration.[139]

Once through the tactical defenses, Soviet mobile forces commenced the exploitation led by forward detachments and reconnaissance detachments. Combined arms armies then formed their own reconnaissance detachments which operated well forward in the gaps between the mobile forces and less mobile main force infantry. These reconnaissance detachments of reinforced tank or rifle battalion size ranged twenty to forty kilometers in advance of their parent forces while cooperating closely with aviation units as well. They reconnoitered enemy rear or intermediate defense lines and monitored the German withdrawal or the arrival of reserves. For example:

> Reconnaissance detachments of 2d Guards Tank Army, arriving in the Sokhachev area (50 kilometers west of Warsaw) determined that part of the rear [defensive] positions were occupied by the 391st Security Division and that enemy 46th Tank Corps formation were withdrawing westward from Warsaw. By decisive action of 2d Guards Tank Army forces, the 391st Security Division was crushed, and with the arrival of 2d Guards Tank Army at Sokhachev withdrawal routes of the Warsaw group westward were cut. As a result it [the Warsaw group] was forced to turn northwest where it crossed the Vistula under constant joint action of our aviation and ground forces and suffered great losses.[140]

Numerous examples exist of similar actions by reconnaissance groups and detachments late in the operation as Soviet mobile forces raced across central Poland. For example, on January 19, the reconnaissance detachment of 2d Guards Tank Army discovered that various specialized and reserve German units had established a fortified region in the Vrotslaveka region. The same day 5th Shock Army reconnaissance organs detected the presence of German Panzer Grenadier Division "Brandenburg" near Vlodavy, and 1st Guards Tank Army reconnaissance detachments took prisoner, west of Lodz, elements of the German 412th Security Division. Armed with this information, on January 19-20 Soviet forces breached the Warta River line along its entire length.

Several days later, from January 20-24, the same occurred in the Poznan area when reconnaissance organs detected the presence of elements of the German 196th Reserve Division, the 130th Border Regiment, and more than ten other battalions, some of which were *Volkssturm* [home guards]. Early detection of these units prevented German establishment of a new defense line, and most

of the units ended up encircled in Poznan.[141]

Further north Soviet *razvedka* organs detected the early stages of a German buildup in Pomerania:

> On 22 January in the Torun region, a prisoner was seized from the German 31st Infantry Division which had been located earlier in the Baltic. From *razvedka* organs, operating in the enemy rear, came information about the beginning of force transfers from Danzig to the southwest, that is to the front right flank. Simultaneously enemy opposition near Bromberg, Nakel, and Schneidemühl stiffened considerably.[142]

Subsequent identification by a reconnaissance detachment of 2d Guards Tank Army of the 15th SS Infantry Division near Nakel and knowledge that few German forces were south of Schneidemühl raised concerns for security on the right flank. As a consequence:

> That *razvedka* information predetermined the decision of the front commander to employ 3d Shock Army (the front second echelon) to cover the front right flank. Simultaneously, armies operating on the Kustrin and Frankfurt directions were ordered to increase the tempo of their offensive in order to rapidly overcome enemy fortifications and reach the Oder.[143]

Meanwhile to the south on 25 January, while 4th Tank Army was advancing toward the Oder River near Steinau, a reconnaissance detachment assisted in a preemptive river crossing. The 16th Guards Mechanized Brigade of 4th Tank Army's 6th Guards Mechanized Corps had the mission of seizing a crossing site for future use by the army. A reconnaissance group commanded by Lt. M. Ia. Radugin, consisting of a rifle company, a platoon of T-34 tanks, a heavy machine-gun platoon, two self-propelled guns, a radio squad, and three sappers, led the brigade. Its mission was "to determine the strength and composition of enemy reserves approaching the Oder, determine whether defenses along the river were manned, conduct terrain reconnaissance, and ascertain the trafficability of routes to the river."[144] Most important, it was to seize a bridge over the Oder near Steinau and hold it until the brigade's forward detachment arrived.

Traveling at a speed of 45 km an hour on the road to Steinau, the group met little resistance. At 1500 hours near Steinau the group captured a prisoner who reported the bridge was defended by four 105-mm artillery battalions, tanks, and panzerfausts [hand-held antitank weapons]. Having confirmed the prisoner's report, the group swept northward along the east bank of the Oder, occasionally exchanging fire with German units on the west bank of the river. That night near Liuben, 10 kilometers north of Steinau, the group found an undefended crossing site and conducted a night river crossing. The group held the crossing until the arrival the next day of 16th Guards Mechanized Brigade which solidified the bridgehead. Combining stealth, rapid movement, and skillful analysis of intelligence data, the group played a significant role in obtaining a key

bridgehead of the Oder.

In general, ground reconnaissance organs of combined arms and tank armies, operating flexibly well in advance of their parent forces, prevented German preparation of intermediate defense lines. They anticipated German movements and negated the impact on combat of newly arrived operational reserves. These actions were fully integrated with activities of higher-level *razvedka* organs such as radio and air.

Radio *razvedka* at front and army level [the four special designation radio battalions and numerous radio *razvedka* groups within armies] during the penetration operation concentrated on detecting changes in German dispositions and the arrival of new German formations:

> Radio *razvedka* on the first day of the offensive revealed the dislocation of staffs of not only formations [corps and divisions], but also many units [regiments] of the enemy first echelon, and in the course of the operation constantly tracked their movements. They discovered, in timely fashion, the location of operational reserves and determined the direction of withdrawal of German-fascist forces.[145]

Soviet critiques reserved special praise for army close communication *razvedka* groups, which

> assisted the commanders of divisions and corps to recognize the immediate plans of the enemy to counter the advance of our forces and to undertake necessary measures. Thanks to these, in the 61st Army sector in the course of the first two weeks of the offensive we disrupted five counterattacks by companies and battalions and detected the withdrawal of the enemy to the third [defensive] position in front of our army's left flank corps.[146]

Once the penetration operation had ended and weather improved, air *razvedka* began playing a key role in determining enemy intentions and dispositions. In fact, the deeper Soviet forces advanced, the more important was air *razvedka*. Frontal air forces began flying *razvedka* missions on January 16, after bad weather improved although earlier bomber and fighter flights had conducted minimal aerial observation. The priority missions of both 16th and 2d Air Armies were to monitor the movement of enemy reserves and continuously observe conditions on the field of battle. Soviet control of the skies facilitated accomplishment of both missions.

> Special attention was paid to the assault aircraft and ground forward detachment which cleared the path for all formations. Cooperation with this detachment in the operational depth meant that pilots had to conduct *razvedka* in its interest, discover enemy units, especially artillery and tank, and crush them from the air.[147]

Compared with earlier operations, the Soviets devoted a larger percentage of sorties to *razvedka*. For example, 2d Air Army supporting the 1st Ukrainian Front allocated eleven percent of its sorties to *razvedka*. This placed inordinate

demands on communication and staff procedures, especially in light of the rapidly changing conditions. Air *razvedchiki* [scouts] passed information about the enemy to the combined-arms army staffs, which, in turn, provided the aircraft new target information. To a greater extent than before, aviation commanders exercised considerable initiative required to deal with unexpectedly detected enemy reserves or withdrawing German units. As often as not, they operated on the basis of information received from their own *razvedka* rather than orders from front or air army commanders.[148]

Improved radio communications procedures and equipment also facilitated smoother operation of the system. According to 16th Air Army commander Rudenko:

> If air and ground crews were to communicate with one another through their staffs, this required considerable time. Therefore we decided to employ such a communications system which included the following aspects. Our aviation commanders had to be collocated with commanders of tank subunits and direct assault aircraft strikes on those targets, which were of the highest priority to destroy.[149]

Whenever possible, air *razvedka* used the same direct ground line. On numerous occasions close air-ground cooperation facilitated more effective ground operations. For example, when 11th Tank Corps approached German defenses at Radon on January 15, "Aviation conducted *razvedka* of enemy withdrawal routes, directed pursuing formations on their attack objectives, and supported forward detachment operations and operations of the main force."[150]

Almost immediately after the offensive had begun, some *razvedka* data flowed in from fighter and assault aircraft. On the morning of January 13, in 1st Ukrainian Front's sector, pilots of 2d Air Army reported movement and concentration of enemy forces on the flank of 4th Tank Army south of Keilce and north of Chmel'nik. Subsequent air strikes by 8th Bomber and 2d Assault Aviation Corps disorganized the planned German counterattack; and, by evening January 13, German forces began withdrawing to their third defense belt. "Air *razvedka* reported the movement of withdrawing enemy columns toward Czestochowa, Sosnovets and Krakow," and again air units struck at German columns.[151]

This scattered air activity on the first few days of the offensive helped rout German forces defending at Sandomierz. After weather had cleared, on January 16, across the entire front air *razvedka* expanded its activities. Opposite the Magnushev and Pulavy bridgeheads reconnaissance aircraft "determined the direction of withdrawal of German forces and the location of friendly forward detachments and main force formations."[152] Subsequently they directed bomber and fighter strikes on German columns along the Sokhachev-Lodz, Skernvitse-Tomachuv-Mazovetsky and Radom-Opochno roads and identified for destruction enemy concentrations and strong points at Rava-Mazovetska, Strudzianka, Inovludz' and at river crossing sites near Skernevitse where

German 2d Panzer Division forces defended.[153] During January 17, 16th Air Army aircraft few 2500 sorties. Photographic *razvedka* missions confirmed destruction of bridges at Seradz, Vyshorrud, and Kutno and the destruction of eight railroad trains.[154]

Most important, on January 17, 16th Air Army detected the arrival in sector of significant German reserves:

> Air *razvedka* determined that tanks were unloading in the Lodz region. This was tank corps "Grossdeutschland" transferred from Prussia. The commander of 16th Air Army assigned the 241st Bomber Division the mission of launching air strikes. Operating in eight groups, the crews in three passes destroyed the railroad railbed at the arrival and departure switches and almost fully knocked out the rail center. Bombing from various directions and various heights disorganized the German air defense. Tankers soon secured Lodz, seized 400 rail cars with military equipment and cargo and 28 repaired engines. Because of the blows of aviation and front mobile forces tank corps "Grossdeutschland" suffered considerable losses and was forced to withdraw, having failed to advance into battle.[155]

Shortly thereafter 16th Air Army *razvedka* detected German occupation of the "Warta defensive line with up to five infantry divisions."[156] These units subsequently also suffered heavily from air attacks.

Air *razvedka* contributed to detection and identification of German forces concentrated in the Silesian industrial region on the 1st Ukrainian Front's left flank. By January 19-20, resistance stiffened in the area forcing Konev to shift 3d Guards Tank Army from its axis of advance toward Breslau southward toward Oppeln and Ratibor. By January 23, air, radio, and combat *razvedka* had identified elements of the German force:

> In the evening of January 23, we worked out from our reconnaissance data the composition of the enemy group defending the Silesian industrial area. It consisted of nine infantry divisions, two panzer divisions, several so-called combat groups, two separate brigades, six separate regiments and 22 separate battalions, including several machinegun training battalions and an officers' penal battalion. Judging by appearance we could have expected the arrival of 2-3 more infantry divisions and one panzer division in the nearest future.[157]

By January 28, 3d Guards Tank Army and 21st, 59th, and 60th Armies had isolated the German forces; and, within days, they withdrew to escape destruction.

Late in the Vistula-Oder operation *razvedka* data influenced the Soviet decision to halt their forces along the Oder River and, instead of driving on Berlin, to mount operations to clear their flanks (in Pomerania and Lower Silesia). Stalin had already expressed doubts as to whether Soviet forces should attempt to breach German fortified positions along the old border west of Poznan (the Mezeritz line) in light of reported German concentrations in Pomerania, the separation of 1st Belorussian Front from its neighboring fronts, and German resistance in encircled cities (Poznan, Breslau).

Zhukov was able to convince Stalin to continue to advance to the Oder. Zhukov recalled:

> On January 26 the reconnaissance party of the 1st Guards Tank Army reached the Miedzyrzecz fortified line and captured a large group of men and officers. From prisoners' statements it appeared that in many places the line was not yet manned, that units were just moving out to fill in the gaps. The front command decided to step up the advance of the main forces towards the Oder and try and take bridgeheads on the western bank in stride.[158]

Subsequently, between January 30 and February 2, 1st Belorussian Front forces penetrated the heavily fortified region, reached the Oder River, and secured several small bridgeheads on its western bank. During this period Zhukov received ominous *razvedka* reports which reinforced earlier impressions of a growing threat from Pomerania. Rudenko commanding 16th Air Army, recalled:

> At the time it became well known; the Germans were urgently forming 11th Army under the command of Himmler . . . . For air *razvedka* over Pomerania we selected our best pilots and navigators. They were required to inspect in detail the vast region daily and not miss one column which could be moving east—the more so since the forested area and bad weather also assisted the hidden movements of the enemy.
>
> *Razvedchiki* flew in Pe-2 aircraft and photographed the territory. By the pictures we could exactly determine where the forces were going and how they were organized.[159]

However, bad weather and German security measures prevented continuous observation and Soviet aircraft were unable to detect any significant movements. Rudenko's air army persisted in its efforts:

> We continued intensively to conduct *razvedka* from the skies reporting in timely fashion to the front staff about all that the enemy did in the so-called "tent" hanging over us from the north. Finally all types of *razvedka* succeeded in determining that by the beginning of February between the Oder and the Vistula two fascist armies had concentrated: the 2d and the 11th possessing over twenty divisions. Our air searches discovered that the flow of forces to Eastern Pomerania was continuing. Actually the quantity of enemy divisions there, as was later revealed, rose to forty.[160]

These reports plus those received from ground *razvedka* units documenting the German buildup along the Oder River, caused the Soviet High Command to terminate the Vistula-Oder operation in early February.

Air *razvedka* during the course of the operation proved effective and beneficial for the development of deep ground operations. It "discovered enemy reserves moving toward the field of battle, ascertained the location and movement of enemy columns withdrawing to rear defensive lines, detected the weakest defensive sectors" and assisted combat aircraft in fulfilling their missions.[161] Most important, it functioned in close cooperation with other equally mature means of *razvedka*, in particular radio and mobile ground reconnaissance. Together those *razvedka* organs played a significant role in the

successful Soviet sustainment of continuous operations to depths of from 500 to 700 kilometers.

Razvedka and Deception

Throughout the planning phase of the operation, *razvedka* played a major role in the formulation and execution of Soviet deception plans. This pertained particularly to Soviet maintenance of a clear order of battle assessment of German forces in order to formulate the initial plan and then detect how well the plan was working.

Throughout September and October Soviet intelligence kept track of German troop movements to the south. Operations in the Carpathians at and south of the Dubla Pass drew away from Poland German 1st, 8th, and 24th Panzer Divisions and the 78th and 253d Infantry Divisions. Subsequent Soviet operations in Hungary drew 1st, 8th, and 24th Panzer Divisions further south to the Debrecen region. Later, in December, IV SS Panzer Corps shifted from the Warsaw area to Budapest. These movements set the stage for the elaborate Soviet deception plan. By posturing for assaults north of Warsaw and between the Vistula River and the Carpathian Mountains, the Soviets capitalized on previous attack patterns and German expectations.

Thereafter German operational reserves in central Poland remained relatively static. Soviet assessments in early December located the German 251st and 6th Infantry Divisions adjacent to the Magnushev bridgehead, one unknown panzer division southwest of Warka, 25th Panzer Division southeast of Radom, and a panzer grenadier division and reserve division at Radom.[162] These dispositions varied little to the date of the attack when the same two German infantry divisions defended the bridgehead; and 25th Panzer, 19th Panzer, and elements of 10th Panzer Grenadier Division remained in the operational rear.[163] Shtemenko reported a Soviet assessment that only forty-nine divisions defended along the Vistula front, only five of which were panzer. In reality, the Germans had four panzer and the equivalent of one panzer grenadier division in the area. The fact that these units were never reinforced confirmed Soviet judgment regarding the success of their deception plan as did German movement of infantry reinforcements to south of the Vistula River before the offensive (in particular, the 344th and 359th Infantry Divisions).[164]

In one of the clearest cases to date, the Soviets used their intelligence collection techniques to deceive the Germans. Fully understanding that German intelligence viewed Soviet agent and reconnaissance-diversionary operations as indicators as to where the main attack would occur, the Soviets concentrated those activities during December and January in the regions west of Warsaw and south of the Vistula River city of Krakow. There is strong evidence that front RUs employed planted line crossers and deserters to provide German intelligence with false information.

The Soviet deception plan succeeded to a considerable extent, in part, because of efficient intelligence work. German intelligence documents clearly indicated they expected an attack in the central sector of the Eastern Front. In fact, they had expected the attack to occur since late October and had continuously revised their estimates when the offensive did not occur. A January 5 assessment by the German Foreign Armies East stated:

> The large scale Soviet winter offensive, for which definite dates (26 Oct, 7 Nov, end of Nov, 10 Dec, 19 Dec, 1 Jan) were determined during recent months on the basis of reliable reports, was again postponed because of unfavorable weather conditions and also, apparently, for political reasons. At present, the middle of January can be considered the next possible date of attack.[165]

The repeated postponements and frustrated expectations naturally cast doubt on the January 5 prediction. The January 5 estimate also claimed:

> The main effort of the entire operation is still obviously in the sector of Army Group A. The directions of the main effort, which from previous reports led by way of Crakow into the Czech region, has apparently been transferred to the northwest into the Silesian area, by way of the Upper Silesian industrial region.[166]

German uncertainty regarding precisely where the main attack would occur forced them to recognize credible threats on every potential axis of Soviet advance. Annex 2 to the estimate assessed that Konev's 1st Ukrainian Front would make the main attack from the Baranov [Sandomierz] bridgehead toward the "Kattowitz-Tschenstochau region." Other strong forces would operate south of the Vistula toward Krakow.[167] This assessment was in direct response to Konev's deception plan. The estimate assessed 1st Belorussian would envelop Warsaw by advancing from the Warka [Magnushev] bridgehead to the southwest and then to the west and northwest.[168] This assessment recognized Zhukov's deception operation in 1st Belorussian Front's right flank sector north of Warsaw.

The Germans also recognized the adverse impact of earlier Soviet offensives in Hungary, which required the shifting of German reserves to the south:

> Since the enemy has been successful, through the development of the situation in Hungary, in forcing the withdrawal of strong German reserves from the main effort sector of Army Groups A and Center, it is necessary, from the standpoint of an estimate of the enemy, to point out the importance of corresponding German strategic reserves, which will make it possible to prevent great initial successes by the enemy, i.e., to defeat the enemy by not permitting him to retake the initiative.[169]

Soviet *razvedka* made this even more dangerous by successfully tracking German movements while the Germans failed to detect major Soviet regrouping.

German Army Group A assessed that it was opposed by two large Soviet groupings: Four rifle armies and six mobile (tank and mechanized) corps of the

1st Ukrainian Front, with one additional army and three more mobile corps available for reinforcement; and three rifle armies, one Polish army, and three tanks corps of the 1st Belorussian Front, with two rifle armies and three mobile corps available as reinforcements. At the time the 1st Ukrainian Front actually fielded nine rifle armies and three mobile corps; and the 1st Belorussian Front possessed eight rifle armies, five tank corps, and two mechanized corps.[170] The Germans missed the Soviet redeployment into Poland of 61st, 3d Shock, 33d, 52d, 21st, and 59th Armies from the *Stavka* reserve. They assessed that these armies were either in their former sectors up to a thousand kilometers distant or were deep in the Soviet rear area. The Germans detected the possible presence of 6th Army headquarters, but the Soviets probably intended the army to be detected as a part of their deception plan on the right wing of the 1st Ukrainian Front. The Germans detected 5th Shock Army but believed it was assembled east of the Vistula, when actually it was concentrated in the Magnushev bridgehead.

The Germans assessed the 2d Guards Tank Army was a hundred to a hundred fifty kilometers east of the Magnushev bridgehead when it was actually concentrated on the east bank of the river. The 1st Guards Tank Army was located on German intelligence documents to the southwest of L'vov, when, in fact, it had also moved to concentration areas east of the Vistula River opposite the Magnushev bridgehead. The 3d Guards Tank Army was depicted as being southeast of the Vistula River east of Debica, thus positioned to attack either toward Krakow or from the Sandomierz bridgehead. German intelligence was more accurate regarding the location of 4th Tank Army. It assessed one corps as being in the Sandomierz bridgehead and the second corps as preparing to cross the Vistula. The Germans correctly located the Soviet army mobile groups, the 9th, 11th, 25th, and 31st Tank Corps. They assessed, however, that 4th Guards Tank Corps was located south of the Vistula River and north of Debica in the precise area of the simulated Soviet concentration area which 4th Guards Tank Corps was located south of the Vistula River and north of Debica in the precise area of the simulated Soviet concentration area which 4th Guards Tank Corps was to animate.[171]

The net effect of this intelligence failure was staggering. In all three bridgeheads the Germans assessed they faced odds of about 3 to 1 or 3.5 to 1. Actually the Soviets created an operational superiority of between 5 to 1 and 7 to 1 in the bridgeheads. When Soviet concentration occurred, that translated into Soviet tactical superiorities of between 8 to 1 and 16 to 1. The effect of such superiority was predictable. German defenses crumbled almost instantly on day one of the Soviet offensive. German reserve panzer divisions, although at more than full strength (17th Panzer Division, for example, had 210 tanks, half of them heavy ones), were inundated and swept away in a Soviet advance that drove hundreds of kilometers into Poland.

The German Vistula-Oder disaster was a Soviet deception success.

Moreover, the deception success was conditioned in large measure by effective Soviet *razvedka* prior to the offensive.

Summary

Soviet *razvedka* proved to be one of the basic means for securing success in the Vistula-Oder operation. While Soviet numerical superiority remained the biggest factor in their achievement of victory, effective intelligence work contributed to the Soviet ability to generate that superiority without German knowledge. *Razvedka* contributed to the rapid development of the penetration operation by forming an accurate picture of German tactical dispositions. Once the operation had begun, sound intelligence insured the initiative would remain in Soviet hands until time and distance had taken its toll on advancing Soviet forces. This, in part, explained the extraordinary depth of the Soviet advance.

The Soviets drew upon over three years of war experience to employ imaginative intelligence techniques within both the operational plan and the deception plan. In the words of one Soviet critique:

> In the organization and conduct of [*razvedka*] earlier obtained war experience was widely exploited and creativity, initiative, and flexibility were displayed in the implementation of all *razvedka* measures. This was expressed in a sufficiently thought-out *razvedka* plan with the goal of continuously providing all staffs with full and trustworthy information, not only for making decisions on the operation, but also for refining them during combat operations.[172]

The Soviets effectively integrated all collection means, and when one means could not operate others carried the load. Thus, "In bad weather reconnaissance detachments of armies which, operating a great distance away from their own combat formation, secured for staffs information about enemy forces which should have been provided by aviation."[173]

The depth of Soviet *razvedka* was also noteworthy for it enabled them to detect and counter, by ground or air action, every German attempt to restore stability by erecting new defensive positions east of the Oder River. Ultimately, long-range *razvedka* led to a discontinuance of the operation and the Soviet decision to clear their flanks before concentrating for a future drive toward Berlin.

Soviet critiques of the operation accorded special praise to radio *razvedka*, which, until 1945, had been one of the weakest links in the intelligence-gathering chain. While long-range radio intercepts, in concert with agents and aviation, often detected movement of deep operational reserves earlier in the war, in the Vistula-Oder operation shorter-range radio eavesdropping, for the first time, proved extremely effective:

> Experience obtained in the use of close communications *razvedka* groups [within armies] deserves attention. In spite of the fact that radio-electric *razvedka* was then only in its infancy and a comparatively low-powered ultra-

short-wave and short-wave radio apparatus was used, in many cases it assisted
in disclosing the intentions of enemy subunits and units in his tactical depths.[174]

Although Soviet sources are reticent in describing agent and reconnaissance-
diversionary operations in great detail, German records eloquently attest to the
significance of this activity. Moreover, in addition to performing the accustomed
tasks of reconnaissance and diversionary activity, by 1945 the Soviets had a
mature enough appreciation of how German intelligence worked to employ
razvedka measures as an integral part of Soviet deception planning. As attested
to by the two air army commanders Rudenko and Krasovsky, and by numerous
other accounts and critiques, air *razvedka* continued to play a positive role in
preoffensive *razvedka*. More important, once the offensive had begun, air
reconnaissance, in close cooperation with mobile ground reconnaissance units,
effectively monitored movement of German reserves, thereby depriving the
Germans of the opportunity to regain the initiative in virtually any sector. In
large part, air and mobile ground *razvedka* conditioned successful Soviet
operations to extraordinarily great depths.

While all of this information taken together forms an impressive mosaic of
intelligence capabilities, it probably does not adequately detail the full extent of
Soviet *razvedka* efforts in 1945. The Soviets characteristically have left much
unsaid. Without German archival materials, one would have to rate Soviet
intelligence as good. When available German materials are taken into account,
that evaluation rises even higher. It is likely full Soviet disclosure of their own
archival materials will indicate an even greater Soviet capability. Until those
materials are available, analysts will have to satisfy themselves with this
assessment, which in itself should be a sobering reminder of what Soviet
intelligence could achieve in the waning months of the Second World War.

Notes

1. R. G. Simonian, "*Razvedka*" [Intelligence (reconnaissance)], *Sovetskaia voennaia entsiklopediia* [Soviet Military Encyclopedia], 8 vols., (Moscow: Voenizdat, 1976-1980), 7:32. Hereafter cited as *SVE* with appropriate volume. See also Raymond L. Garthoff, "The Soviet Intelligence Services," in *The Soviet Army*, (Suffolk, England: Richard Clay and Co. Ltd, 1956), 265-275; Victor Suvorov, *Inside the Red Army*, (New York: Macmillan Publishing Co., Inc., 1982), 92-99. Extensive wartime German documentation including "Die Organisation des sowjet. Nachrichtendienstes im Kriege, October 1943" [The Organization of the Soviet Intelligence Service in the War, October 1943], Abteilung Fremde Heere Ost H 3/1850, National Archives Microfilm, (NAM) T-78/677, provides details of the organization and structure of Soviet intelligence throughout the entire military structure and confirms both Garthoff's and Suvorov's general data.

2. For contents of the 1912 and 1917 Regulations, see, L. Korzun, "Razvedka v Russkoi armii v pervoi mirovoi voine" [*Razvedka* in the Russian Army in the First World War], *Voenno-istoricheskii zhurnal* [Military-historical Journal], No. 4 (April 1981), 60. Hereafter cited as *VIZh* with appropriate number and date.

3. "Staff, Intelligence," Combat Factor-Soviet Russia, From M.O.B.2 Memorandum No. 96 dated September 3, 1920, (Washington: Office of the Chief of Staff, Intelligence Division, October 18, 1920). Memorandum quotes from Bolshevik newspaper, *Voennoe Delo*, issue of May 31, 1920.

4. Polevoi ustav RKKA 1929 [Field service regulations of the Red Army, 1929], (Moscow: Voenizdat, 1929), 20. Translation by JPRS-UMA-85-019, 13 March 1985. See also, A. Pevnev, *Voiskovaia konnitsa i ee boevoe ispol'zovania* [Troop cavalry and its combat employment], (Moscow: Voenizdat, 1926); A. N. Lapchinsky, "Vozdushnaia razvedka" [Air *razvedka*], Voprosy taktiki v sovetskikh voennykh trudakh (1917-1940 gg). [Questions of Tactics in Soviet Military Works (1917-1940)], (Moscow: Voenizdat, 1970), 321. Quoting from Lapchinsky's 1926 work, *Taktika aviatsii* [Tactics of Aviation], hereafter cited as *Voprosy taktiki* with appropriate author; K. Monigetti, *Sovmestnye deistviia konnitsy i vozdushnogo flota* [Joint Actions of Cavalry and Air Fleets], (Leningrad: Gosudarstvennoi Izdatel'stvo otdel voennoi literatury, 1928), 7, 20.

5. Polevoi ustav krasnoi armii (PU-1936) (vremennyi) [Field Service Regulations of the Red Army (Pu-1936) (provisional)], Moscow: Voenizdat, 1936), 9. Translated by Translation Section, The Army War College, Washington, D. C., 1937.

6. See M. Lobanov, "K voprosu vozniknoveniia i razvetiia otechestvennoi radiolokatsii" [Concerning the Question of the Origin and Development of Native Radio Location], *VIZh*, No. 8 (August 1962), 13-29; V. Griankin, V. Zmievsky, "Iz istorii radioelektronnoi bor'by" [From the History of Radio-electronic Struggle], *VIZh*, No. 3 (March 1975), 83-84; N. I. Gapich, *Sluzhba sviazi v osnovnykh vidakh obshchevloiskovogo boia* (sd i sk) [The Signal Service in Basic Types of Combined Arms Battle (Rifle division-RD and Rifle corps-RC)], Moscow: Voenizdat, 1940); I. Kovalev, "Aviatsionaia razvedka" [Aviation *razvedka*], *Voennaia Mysl'* [Military Thought], No. 9 (September 1938), 57-81, hereafter cited as *VM* with appropriate number and date; B. L. Teplinsky, "Voprosy upravlenniia boevymi deistviiami aviatsii i raboty aviatsionnykh shtabov" [Questions of the Command and Control of Combat Actions of Aviation and the Work of Aviation Staffs], *Voprosy taktiki*; M. D. Smirnov, *Voiskovaia aviatsiia* [Troop aviation], (Moscow:

Voenizdat, 1940), 27.

7. Among the articles, see A. I. Starunin, "Operatovnaia vnezapnots'" [Operation Surprise], *VM,* No. 3 (March 1941), 27-35; A. Kononenko, "Boi v flandrii (Mai 1940 gg)" [The Battle in Flanders (May 1940)], *VIZh,* No. 3 (March 1941), 3-20.

8. Recent comments concerning *razvedka* on the eve of war found in A. G. Khar'kov, "Nakanune groznykh sobytii" [On the Eve of a Cruel Occurrence], *VIZh,* No. 5 (May 1988); V. I. Beliaev, "Usilenie okhrany zapadnoi granitsy SSSR nakanune Velikoi Otechestvennoi voiny" [Strengthening of Security of the Western Border of the USSR on the Eve of the Great Patriotic War], *VIZh,* No. 4 (May 1988).

9. See selected articles in *Sbornik materialov po izucheniiu opyta voina,* No. 6, aprel'mai 1943 g [Collection of Materials for the Study of War Experience, No. 6 April-May 1943], (Moscow: Voenizdat, 1943); *Sbornik materialov po izucheniiu opyta voina,* No. 8, avgust-oktiabr' 1943 g [A Collection of Materials for the Study of War Experience, No. 8, August-October 1943], (Moscow: Voenizdat, 1943). Both volumes classified "secret" and hereafter cited as *Sbornik materialov* with appropriate number, article, and pages. See also G. K. Zhukov, *Reminiscences and Reflections,* Vol. 2, (Moscow: Progress Publishers, 1985), 119-120, hereafter cited as *Reminiscences;* A. M. Vasilevsky, *A Lifelong Cause,* (Moscow: Progress Publishers, 1978), 193, a translation of *Delo vsei zhizni,* (Moscow: Izdatel'stva politicheskoi literatury, 1963); P. I. Batov, *V pokhodakh i boiakh* [On Marches and in Battles], (Moscow: Izdatel'stvo DDSAAF SSSR, 1984), 181.

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11. D. M. Glantz, *Soviet Operational Intelligence in the Kursk Operation,* (Ft. Leavenworth: Soviet Army Studies Office, 1988), 54-66.

12. *Ibid,* 66-200.

13. For Soviet *maskirovka* [deception] at Kursk, see D. M. Glantz, *Soviet Military Deception in the Second World War,* (London: Frank Cass and Co., Ltd., 1988).

14. *Ibid.*

15. G. K. Zhukov, *The Memoirs of Marshal Zhukov,* (New York: Delacorte Press, 1971), 556.

16. A. M. Shtemenko, *General'nyi shtab y gody voiny* [The General staff in the war years], (Moscow: Voenizdat, 1981), Vol. 1, 379.

17. Zhukov, *Memoirs,* 560.

18. Shtemenko, *General'ny shtab,* 381.

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27. Shtemenko, *General'nyi stab,* 378.

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29. N. N. Popel', V. F. Savel'ev, and P. V. Shemansky, *Upravlenie voiskami v gody Velikoi Otechestvennoi voiny* [Troop control in the Great Patriotic War] Moscow: Voenizdat, 1974), 81.

30. Shtemenko, *General'nyi Shtab,* 385-386.

31. R. Simonian, "Razvedka v interesakh podgotovki i vedeniia frontovoi nastupatel'noi operatsii" [*razvedka* in the Interests of Preparing and Conducting a Front Offensive Operation], *VIZh,* No. 12 (December 1977), 11.

32. *Ibid.*

33. *Ibid.*

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35. Zhukov, *Memoirs,* 559.

36. K. S. Moskalenko, *Na iugo-zapadnom napravlenii 1943-1945* [On the South-western Direction 1943-1945], (Moscow: Nauka, 1973), 506.

37. I. A. Samchuk, P. G. Skachko, Iu. N. Babikov, I. L. Gnedoi, *Ot Volgi do El'by i Pragi* [From the Volga to the Elbe and Prague], (Moscow: Voenizdat, 1970), 216-217.

38. S. E. Blinov, *Ot Visly do Odera* [From the Vistula to the Oder], (Moscow: Voenizdat, 1962), p 37.

39. M. M. Kir'ian, *S sandomirskogo platsdarma* [From the Sandomierz Bridgehead]. (Moscow: Voenizdat. 1960), 71.

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47. Rudenko, *Krylia pobedy,* 255.

48. *Ibid.*

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51. I. Korotchenko, "Razvedka [Intelligence]," *VIZh,* No. 3 (March 1982), 30.

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67. G. I. Khetagurov, *Ispolnenie dolga* [Fulfillment of Duties], (Moscow: Voenizdat, 1977), 157.

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73. Korotchenko, *"razvedka,"* 30.

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75. S. Alferov, "Iz opyta proryva oborony strelkovym korpusom" [From the Experience of Penetrating Defenses by a Rifle Corps], *VIZh*, No. 3 (March 1983), 51.

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82. V. Chikin, "Razvedka v operatsiiakh 61-i armii" [*Razvedka* in 61st Army operations], *VIZh*, No. 10, (October 1979), pp 55-56.

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146. *Ibid,* 16.

147. Rudenko, *Kryl'ia pobedy,* 258.

148. Krasovsky, "Sovetskayaaviatsiia v boiakh za ozvobozhdenie Pol'shi," 21.

149. Rudenko, *Kryl'ia pobedy*, 259.
150. V.Fedorenko, "Opyt presledovaniia protivnika soedineniiami bronetankovykh voisk" [Experience in the pursuit of the Enemy by Formations of Armored Forces], *VIZh*, No. 8 (August 1963), 33.
151. *Sovetskia voenno-vozdushnye sily v Velikoi Otechestvennoi voine 1941-1945 gg.* [The Soviet Air Force in the Great Patriotic War 1941-1945], (Moscow: Voenizdat, 1968), 369-370.
152. *Ibid*, 374.
153. *Ibid*, 375.
154. Fedorov, 92.
155. *Ibid.*
156. *Sovetskia voenno-vozdushnye*, 378.
157. Konev, *Year of Victory*, 34.
158. Zhukov, *Memoirs*, 565-566.
159. Rudenko, *Kryl'ia pobedy*, 300.
160. *Ibid*, 301.
161. *Sovetskia voenno-vozdushnye*, 382.
162. Antonov, *Put'k Berlinu,* 182-183.
163. OKH Lage Ost, Stand. 11-12.1.45 abds. (original).
164. *Ibid.*
165. "Fremde Heere Ost (I) No.81/45 SECRET, Estimate of the Overall Enemy Situation: 5 January 1945," The German G-2 Service in the Russian Campaign (Ic-Dienst Ost) (United States Army, 22 July 1945), Appendix A, 181. Hereafter cited as Fremde Heere Ost (I) No. 81/45.
166. *Ibid.*
167. *Ibid*, H. van Nes, "German Intelligence Appreciation—The Vistula-Oder Operation," A Transcript of Proceedings, 1986 Art of War Symposium, From the Vistula to the Oder: Soviet Offensive Operations—October 1944-March 1945, (Carlisle Barracks, PA: Center for Land Warfare, 1986), 42.
168. *Ibid.*
169. Fremde Heere Ost (I) No.81/45, 182-183.
170. O.K.H, Lage Ost, Stand:11-12.1.45 abds; Hgr A. Gen StdH/Op Abt lllb. Stand:11-12.1.45 abds. (original).
171. *Ibid.*
172. Simonian, "Razvedka v interesakh," 18.
173. *Ibid.*
174. *Ibid.*

The European Theater Comment

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While the use of intelligence in combat is presumably as old as war itself, and certainly the beginning of technological innovation gave intelligence during World War I a whole series of novel characteristics, it was during World War II that the new means of communication and information manipulation came into their own. The collection and transmission of information as well as the techniques for analyzing data were altered to such an extent that we can speak of a change in quality, not just quantity; and these papers illustrate aspects of this new reality of war. The change affected all belligerents and all theaters.

If in the organization of today's program we take up the European and Pacific theaters of war in separate sessions, this is purely a matter of convenience. Just as warships and airplanes were transferred back and forth between theaters, and army units were similarly shifted back and forth, even if more slowly, so information moved around the globe, and new insights gathered in one theater were often applied in another. The examples of Allied intelligence about German weapons gleaned from the interception of Japanese radio messages from Europe to Tokyo constitute only one example of a general phenomenon. Furthermore, whenever we make divisions into theater-focused discussions, we must be sure to remind ourselves constantly that the main actors and decisionmakers in the drama were confronting dangers and choices, difficulties and opportunities, in all portions of the globe simultaneously.

While Professor Rohwer's paper offers us a survey of World War II's longest battle with reference to the contribution of intelligence, primarily signals intelligence, at each stage of the action, Professor Andrew recounts aspects of the cooperation of the British and American intelligence agencies, again primarily in the field of signals intelligence. Professor Rohwer's survey of the Battle of the Atlantic, with its effort to show how the balance of intelligence advantage shifted or was almost irrelevant in its main stages, follows a periodization which is widely accepted. He touches on an issue which has hitherto generally been looked at from only one point of view: that of the delay in British introduction of a machine cypher system for the convoys. Two

comments seem to me in order on this. The first is that it was by their reading of German machine cypher messages that the code breakers at Bletchley were able to convince the Admiralty of the need to change; surely this was in itself a major contribution of Bletchley.[1]

In the second place, it will not do, in my judgement, to assume, as Lord Louis Mountbatten implies in his foreword to Patrick Beesly's book, *Very Special Intelligence*,[2] that all would have been so much better for the Allies if they had followed Mountbatten's recommendation of using a machine cypher system from the beginning. The Germans would then have been *forced* to try to break that type of cypher system, would surely have received from captured bits and pieces of equipment the sort of help which the Allies received from the German cryptologic materials they seized, and then had at least some success in breaking into the Allied cypher machines. Furthermore, once they had discovered that such machinery was not entirely secure, they might even have tumbled to the idea that their own machines were perhaps not as secure as they consistently reassured themselves they were. But then perhaps it would have made no difference; they repeatedly warned the Japanese about their machines not being secure, and they themselves rejected the warning of Admiral Darlan that German submarines gabbed too much.[3]

An important aspect of the use of ULTRA in 1941 in the months before the United States was drawn into the war is ignored by Professor Rohwer. As he has pointed out in his paper and elsewhere,[4] the information about German submarine dispositions was used by the American navy to avoid contacts between American merchant as well as naval vessels and the Germans. This fact, now beyond dispute, sheds some interesting light on the argument about Roosevelt's policy toward the war in 1941. Clearly the information could have been utilized relatively easily to insure that lots of incidents occurred; and if those who argued then and in some cases still believe that the president was trying to finagle the United States into the war were correct in their interpretation, this would have been the simplest way for him to have done it. The facts point in the opposite direction, namely that the President hoped until the last minute that this country could be kept out of general participation in the war. Security restrictions, however, prevented defenders of the administration from revealing this important argument for thirty years after the war.

There is, furthermore, one important way in which the utility of ULTRA to the Allies is often underestimated. The success of its use is very frequently measured in terms of German submarines sunk or convoys escorted through without heavy sinkings. I would like to suggest that in many cases the utilization of ULTRA led to the damaging of submarines which then had to break off their efforts, return to base, and undergo repairs, often very lengthy ones. In his recent book on naval operations in the Mediterranean in World War I, Paul Halpern has reminded us of the critical importance of the figure of tonnage sunk per day per U-boat on patrol as an index of U-boat success or failure.[5] Perhaps

at some point another measure will be developed which takes into account the number of days a commissioned boat was prevented from functioning by damage inflicted in naval operations.

I alluded to the use of information from MAGIC in the European as well as the Pacific theater. We should note that the allies learned from the interception of Japanese radio messages not only about the new types of submarines, as Professor Rohwer explains, but other important issues relevant to the Battle of the Atlantic as well. For example, the Japanese received information from the Germans about the German acoustic torpedo, the *Zaunkönig*, and proceeded to pass this knowledge on, unwittingly of course, to the Allies.

Finally, it does not appear to me to be at all reasonable to suggest that a delayed victory in the Battle of the Atlantic in 1943 would automatically have led to a postponement of the Normandy invasion. This assertion overlooks the interrelation of the theaters of war to which I alluded in my prefatory remarks. It was entirely possible to move ships and other resources from the Pacific to the Atlantic, and this was done repeatedly during the war. The assumption that the United States would not have reacted in any way to such a delay by reallocating ships from the Pacific to the Atlantic is certainly mistaken. Escort carriers, in particular, would have been transferred to the Atlantic in greater numbers. It is too often forgotten that Admiral King took personal charge of the Tenth Fleet, the American naval command directing the fight in the Atlantic, that he had himself been involved in the battle there in his assignment before becoming Chief of Naval Operations, and that he would hardly have watched a different outcome of the development in that battle in the spring and summer of 1943 with folded hands. Whatever anyone may have said about Admiral King, no one ever accused him of passivity. If a different development in the Atlantic in 1943 had caused any postponement of anything, that change in the time-table would have been felt in the Pacific, not the Atlantic, so that the first atomic bomb would have been dropped not after the battle for Okinawa but after that on Leyte or Luzon or Iwo Jima.

Professor Andrew has reminded us, entirely correctly, that Roosevelt, like most key figures of World War II, was greatly influenced by his experiences of World War I; and that in regard to intelligence as in so many other ways the second great conflict simply cannot be understood without reference to the way its leaders had digested what they considered the lessons of the prior war. No one who works in the materials of World War II can possibly remain unaware of the extent to which that great formative experience created a frame through which those who directed Britain and the United States saw events.

While the picture which Professor Andrew has drawn of a collaboration which was as unusual as it was fruitful is basically correct, I must disagree on one quite significant point. It is simply not correct to attribute the interest in total collaboration to Churchill. The British leader undoubtedly had an insatiable interest in the material being brought to him from Bletchley, and he

did indeed frequently insist that particular items be called to the attention of the President or of Joseph Stalin, but that is not the whole story. As we know, shortly before the outbreak of World War II, the Polish government shared with the British and French the product of their own extraordinary advances in breaking the German Enigma codes and thereby provided what was probably the single greatest contribution to the success of Allied code breaking.[6] In an age when one still occasionally hears derisive Polish jokes, it has always seemed to me that the best Polish joke of all is that the Germans, who were as sure of their racial superiority over Slavs as they were of the invulnerability of their code machines, should have been done in by their alleged inferiors. In an action similar to that of the Poles, before the United States was drawn into the war, the American government, as Professor Andrew correctly reminded us, shared with Great Britain its success in breaking the Japanese PURPLE code by sending one of its precious first machines to England early in 1941.

The British government, however, did not follow this precedent. As Professor Hinsley has made both explicit and clear in the second volume of the history of British intelligence, the Churchill government quite deliberately decided as a matter of policy to retain control of the work on Enigma and not provide the technical information it had available to the Americans right away, neither before the United States was at war nor immediately afterwards. Perhaps Professor Hinsley will enlighten us on this point further, but it is evident from the delicately worded section of his work that even in the desperate situation created by the so-called black-out when TRITON (SHARK) was introduced by the Germans, the British were reluctant to draw the Americans into the technical work of finding solutions, as opposed to sharing the products of their own successes.[7] It may be that the argument that this made little or no difference in the timing of the break into TRITON is correct—though I must voice my doubts—but the policy difference was there well into 1942.

A question which relates to the utilization rather than the sharing of ULTRA intelligence also leads me to a different conclusion from Professor Andrew's. This is the old argument over the wisdom of ANVIL-DRAGOON (the landing on the Mediterranean coast of France in August 1944). Perhaps here we are looking at two different sets of perceptions of World War I experience. Churchill was perhaps thinking of the Gallipoli campaign and the final breaking of Bulgaria in the Macedonian campaign of 1918. Were the Americans, ever more weary of the search for the "soft under-belly of Europe" up and down the mountains and valleys of Italy, perhaps remembering that there are some truly colossal mountains on Italy's northern borders, and that the Italian efforts in World War I to break through there had proved both bloody and futile? Anyone who has ever seen the steep slopes of the Dolomite Alps is likely to abandon the tired clichés about the inability of Italian soldiers to fight and will instead marvel at the fact that they managed to advance even a little in that terrain against an enemy entrenched higher up on the mountains.

In my final remarks on Professor Andrew's excellent paper, I would like to underline three points which he has made. First, regardless of the frictions, to which I have just added a further example, the basic reality remains that the Americans and the British did cooperate to an extraordinary degree in a field in which such cooperation is most unusual. Differences of opinion have a habit of leaving a more extensive, and sometimes more exciting, paper trail in the archives, but that ought not to distort our perspective. Closely related to this experience of working together in a time of enormous danger is its significance for the postwar period. There will, I imagine, be no disagreement on the point that the degree of cooperation which has taken place in the postwar years, whatever the troubles caused by incidents of treason and incompetence on both sides, would be inconceivable without the prior pattern developed during the war. It will, of course, be long after the thirtieth, as opposed to the thirteenth, military history symposium that the records on that postwar cooperation will be accessible to scholars. This brings me to Professor Andrew's reference to the still classified FLORADORA intercepts of German diplomatic correspondence.

There are three aspects of this issue to which I wish to refer. First, we should always remember that a substantial portion of the German World War II cryptologic records remains closed and classified under joint British-American control, and that we therefore cannot as yet be certain about German successes and failure in this field. Second, the FLORADORA materials are highly important for the knowledge they would give us of British and American understanding of Germany diplomacy in World War II analogous to our ability to read today the huge runs of Japanese documents intercepted by the MAGIC process. Thirdly, again as is true of the MAGIC materials, these intercepts are in many cases likely to be the only surviving copies of the documents themselves. That is, just as for many Japanese World War II documents, the American translations of intercepts are in fact the sole surviving texts; and as for many German military and naval documents, especially from the last two years of the war, the ULTRA texts are the only existing copies; so the FLORADORA intercepts are, in my opinion, very likely to include the only copies of many diplomatic documents to have survived the collapse of the Third Reich.

Colonel Glantz has called our attention to a highly significant aspect of World War II intelligence which was of enormous importance to the Western Allies as well as to the Soviet Union. Aerial photographic reconnaissance was carried out on a small scale in World War I, but like so many other techniques, really came into its own in World War II. The heavy reliance of the Red Army on photography, both still and movie, in connection with the January offensive was, of course, neither novel nor peculiar to this offensive. The Red Army had used it earlier, and the British and Americans had also made great use of this procedure. In some ways perhaps less glamorous than breaking codes and sending or catching secret agents, this would come to be in many ways one of the most significant elements of the intelligence revolution. Here is the origin of

the U–2 and of today's satellites, and it is good for us to be reminded of it. Perhaps some in the audience will disagree, but it is my impression that the Red Army's reliance on reconnaissance in force was, on the other hand, not shared to the same extent by the other armies of World War II.

A significant aspect of signals intelligence in the latter stages of the war both in Europe and the Pacific must be included in any discussion of an operation like that reviewed by Colonel Glantz. In the last months of the war the strategic bombing offensive had so disrupted the transportation and communications systems, first of Germany and later of Japan, that the authorities in both found themselves obliged to turn to radio communication for large numbers and types of messages that they would otherwise have transmitted by courier, cable, or the mail. As an unintended by-product of the strategic bombing offensive, this made large numbers of communications accessible to Allied intercept stations and hence to decoding operations. Obviously the Soviets were not the only ones who benefitted from this development, but it belongs in all reviews of intelligence operations during the last eight months of the war in Europe and the last six months of the war in the Pacific.

One final comment on intelligence on the Eastern Front. The Red Army was enormously assisted, unintentionally of course, by the truly outstanding stupidity of German intelligence. I know of no senior intelligence director in any other service of any power of World War II who could match General Reinhard Gehlen of German Eastern Army Intelligence for sheer incompetence. He was great at self-promotion, self-delusion, and self-advertising; if he had any other skills, they remain unknown. The deception operations and the related counterintelligence activities of the Red Army could, though perhaps they did not know it, always count on a ready victim, prepared to believe the preposterous and project the impossible.[8]

All three papers illustrate how the intelligence revolution altered the practice of war. Reconnaissance in force was, of course, not a new technique, but most of what we have heard really had changed, even if some sort of precedent—like sound-ranging—can be found in World War I. The heavy reliance on new communications and computational technology, on aerial reconnaissance and radar, transformed the craft of intelligence. But before we close by comparing the primitive though effective Polish *bombes* designed in the 1930's with the computers developed in the latter years of World War II, we ought to remind ourselves of a point which Professor Rohwer stressed at the end of his paper, and which the recent tragedy in the Persian Gulf underlined in deadly and dramatic fashion: it still all depends on the skills, the judgments, the courage, and the determination of individual human beings.

Notes

1. F. H. Hinsley *et al.*, *British Intelligence in the Second World War: Its Influence on Strategy and Operations*, Vol. 2 (New York: Cambridge University Press, 1981), p. 637.
2. Patrick Beesly, *Very Special Intelligence: The Story of the Admiralty's Operational Intelligence Centre, 1939–1945* (New York: Ballantine Books, 1977), p. ix.
3. Jürgen Rohwer, *Geleitzugschlachten im März 1942* (Stuttgart: Motorbuch Verlag, 1975), p. 311.
4. Jürgen Rohwer and Eberhard Jäckel (eds.), *Kriegswende Dezember 1941* (Koblenz: Bernard and Graefe, 1984), pp. 97, 99, 101.
5. Paul G. Halpern, *The Naval War in the Mediterranean, 1914-1918* (Annapolis, Md.: Naval Institute Press, 1987), pp. 396, 539.
6. Note the revised account of this question in Hinsley, *British Intelligence*, vol. 3, Part 2 (New York: Cambridge University Press, 1988), Appendix 30.
7. Hinsley, *British Intelligence*, Vol. 2, pp. 56–57, 748–51.
8. A preliminary survey of the colossal failures of Gehlen during World War II may be found in Hans-Heinrich Wilhelm, "Die Prognosen der Abteilung Fremde Heere Ost 1942–1945," in Wilhelm and Louis de Jong, *Zwei Legenden aus dem Dritten Reich* (Stuttgart: Deutsche Verlags-Anstalt, 1974). (Reinhard Gehlen directed Foreign Armies East, a sub-element of German Army intelligence dealing primarily with the Red Army, from 1942 until the end of the war.—Ed.)

Session III

The Intelligence Revolution
The Pacific Theater

Chair: Roger V. Dingman

Japanese Military Intelligence in the Pacific Theater: Its Non-Revolutionary Nature.

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The so-called Intelligence Revolution in World War II never did reach Japan. I, for one, am convinced that that feature of Japanese intelligence helps to explain why Japan lost the war. This is my case history illustrating the capabilities (or incapabilities) of Japanese intelligence, the decisive problem of dealing with the envisaged American ground invasion of the home islands in 1945-1946, on which would hinge the life or death of the Empire.

The subject has long attracted my interest. On the twentieth anniversary of the defeat of Japan, the *Marine Corps Gazette* teamed me with K. Jack Bauer to describe the Japan-invasion plans from the standpoint of the opposing belligerents. I examined "Operation Ketsu-go: Japanese Plans to Defend the Homeland, 1945–46." (*Marine Corps Gazette*, vol. 49 (8) (August 1965), pp. 32–44). Later I studied the same problem for the London-based *Purnell's History of the Second World War* vol. 6 (14), (July 1968), pp. 2620-2632), and for my full-length Ballantine Book, *Japan: The Final Agony* (New York, 1970). Still later, I looked at the problem in my capacity as consultant to David Westheimer at the time he was conducting research and visiting the projected landing beaches in connection with his book, *Lighter Than a Feather: A Novel of the Invasion of Japan, November 1945* (Boston: Little, Brown, 1971).

If there was one feature that commanded my attention in the course of carrying out my preceding research, it was the astonishing congruence between U.S. invasion planning and Japanese defensive countermeasures, to the extent of plotting the anticipated timings and the locations of the landing points in detail. When I pressed numerous Japanese military respondents for an explanation, the gist of their replies was "common sense" and "solid intelligence work." There I let the subject lie for years until, of late, a number of developments arose that at least warranted reopening the case. First, fuller and more detailed documentation has become available concerning General MacArthur's Strategic Plan (coded DOWNFALL) envisaging operations in the Japanese Archipelago. This material provides an authentic baseline for comparative analysis.

Second, a new generation of historians, especially Americans, is asking questions about the DOWNFALL plan. For example, had the operation been compromised well in advance? Did the Japanese intelligence operatives tap U.S. strategic planning, if not by espionage, then by means of electronic eavesdropping—an instance, perhaps, of the success of an Intelligence Revolution bearing upon the Japanese armed forces?

DOWNFALL was designed to "force the unconditional surrender of Japan by seizure of vital objectives" in the home islands. Phase 1, codenamed OLYMPIC and scheduled for November 1, 1945, would project land - based air forces into south Kyushu island "in order to support the second, a knock-out blow to the enemy's heart in the Tokyo area." Phase 2, coded CORONET and scheduled to go in March 1, 1946, would constitute "a major joint assault supported by the massed air and naval power in the Pacific to destroy hostile forces and seize the Tokyo-Yokohama Area." Subsequent operations would be continued and extended until organized resistance in Japan ceased. ("Brief of DOWNFALL," from Chief of Strategy Section, War Department General Staff, to Chief, S&P Group, 21 June 1945, declassified from Top Secret).

Operation OLYMPIC visualized "a joint overseas expeditionary operation culminating in the landing of powerful forces in and the rapid seizure of an area in southern Kyushu sufficient for establishment of overpowering land-based air forces, to cover a final decisive thrust into the industrial heart of Japan."

It was assumed that "the Japanese will continue the war to the utmost extent of their capabilities and will prepare to defend the main islands of Japan utilizing all available means." The landings would be "opposed not only by the available organized military forces of the Empire, but also by a fanatically hostile population." The Japanese would promptly reinforce the southern Kyushu defensive garrison with infantry divisions, tank regiments, depot units, and Naval ground troops from northern Kyushu. Without interference, the reinforcements could reach southern Kyushu at the equivalent rate of one division every two days from the outset of the landings. Other Japanese reinforcements would be staged from Honshu island via north Kyushu.

Specifically, the U.S. Main Attack Force would proceed to the objective area in southern Kyushu under cover of the Pacific Fleet and carrier- and land-based aviation, and would accomplish on X–Day "a three-pronged landing one Corps each in the Miyazaki, Ariake Wan, and Kushikino areas." Supported by air and naval units, the U.S. landing forces would "isolate the Southern Kyushu area, seize Kagoshima Wan by rapid overland advances, destroy hostile forces, and occupy the objective area to the general line Sendai-Tsuno."

Under cover of the fleet, a floating reserve (part of the Main Attack Force) would appear off eastern Shikoku island as a diversionary threat around X minus 2 to X–Day, and thence proceed to the Ryukyus "awaiting call for a contingent landing by a part or all of the force on the southern end of the peninsula westward of Kagoshima Wan or to reinforce any of the previous landings, as

dictated by developments." ("Brief of DOWNFALL," Appendices). Actual Japanese deployments at Miyazaki, Ariake, and Kushikino paralleled OLYMPIC planning to an extent that is admittedly eerie. My professional interest rekindled, I decided to try to peel the onion more deeply than before.

My first stop was to reinterview the last IJA Chief of Intelligence, Lt. Gen. Arisue Seizo. He clearly recalled two episodes of relevance that took place immediately after Japan's capitulation in 1945. An American intelligence colonel, an old Japan hand, compared maps of the beaches in southern Kyushu with Arisue and told the Japanese G–2, "That is precisely the spot where I would have been killed when we landed."

Secondly, General Charles Willoughby, MacArthur's own G–2 Chief, said to Arisue, "Let's check our war plans against each other's." "They jibed—by coincidence!" recalls Arisue. "I don't know why." Pressed for details, Arisue told me that Japanese intelligence was simply successful, relying mainly on the analysis of U.S. Navy message traffic. Lacking effective agents by that stage of the war, the Japanese drew on all available sources, including materials on U.S. public opinion. But about the specifics of the landing beaches themselves? I pressed Arisue. On the basis of careful analysis, he responded, it was "only natural" to be able to pinpoint the theoretical invasion sites in Kyushu.

I do not doubt General Arisue's willingness to be open with me, but I obviously had not advanced my state of knowledge very much. I had heard of a Japanese Army General Staff field-grade officer, Maj. Hori Eizo, who was reputedly so knowledgable and accurate in predicting American operations throughout the war that his colleagues dubbed him "MacArthur's staff officer." I did locate Hori and he graciously agreed to see me, so I took the Bullet Train down to the Kyoto area December 1987 and spent an entire afternoon interviewing him. Soon after the Pacific War ended, Hori was called to Tokyo by GHQ to answer the main question whether his uncannily accurate estimates of American offensive operations were based on the breaking of U.S. military codes. He replied to his questioners, in all honesty, in the negative, and he reiterates that answer today.

We delved into the matter of the landing beaches in enormous and compelling detail. In the midst of the Okinawa campaign in the spring of 1945, Hori inspected three prime target areas for enemy invasion: Shibushi in south Kyushu, Kochi on Shikoku, and Kujukuri in the Tokyo region on Honshu island. Which would be hit first?

Study of maps showed that every point on the shores of Japan is really exposed to invasion. But the U.S. side always needed air bases or terrain suitable for their construction. Southern Kyushu was excellent in both regards, especially since it was located near Okinawa, from which the Americans could easily bring up support. In addition, Kyushu was part of the Japanese homeland, and the United States could exert great psychological effect on the enemy and its own war effort by announcing that it had finally set foot on Japan itself. Kyushu

also possessed fine anchorages that could nicely accommodate huge convoys.

Hori had become an expert on MacArthur's leapfrogging tactics, and had quantified the distances entailed in each previous American leap forward. The next advance, Hori predicted, would be directed against Kyushu, not against Shikoku or Honshu. Tosa Bay, Hori found, was not suitable for a large anchorage on Shikoku, for the waters were too rough. Shibushi on Kyushu was therefore Hori's first call, and it coincided with MacArthur's plans for OLYMPIC; and Sagami on Honshu was his second call, and he thereby predicted the target for CORONET. Why Sagami instead of Kujukuri? Hori's reconnaissance revealed that the waters at the latter site were too rough and dangerous.

As for the timing of the anticipated invasions, Hori says that he was off by no more than a week in each case. He underestimated the strength of the American landing force scheduled for OLYMPIC by one division; and he overestimated U.S. troop strength to be committed to CORONET by one division too. When Hori learned these statistics after the war, he praised himself immodestly. "I certainly would have made Field Marshal," he grins, "if only we had won the war!"

More seriously, I asked whether all of his prognosticating was based on mere logic. Reflecting what General Arisue (his boss) had once told me, Hori replied, "Yes, it was strategic common sense all right." He had carefully analyzed U.S. air movements over the homeland—the number of overflights, whether air raids or not. They revealed the American emphasis and purpose, reconnaissance or survey. In his AGS section he had statistics for every part of Japan, and he could identify safe and unsafe areas from the standpoint of the defenders.

It is true that enemy deception was a possibility but Hori did not rely only on his wall charts; the history of MacArthur's movements and the like was another vital ingredient in assessing enemy intentions. Hori did not specifically know about U.S. plans to stage a feint off Shikoku, but diversions were always "intelligence common sense," and IJA intelligence did not overlook the possibility.

What about breaking the U.S. codes, as Hori had been asked by GHQ right after the war? "It certainly would have been a wonderful advantage," Hori told me, "but unfortunately it did not happen." As Arisue had assured me, Hori stated that only U.S. message-traffic analysis was conducted, his AGS section being fed by the intercept staff.

Did the Operations Bureau, which had a reputation for slighting intelligence, heed Hori's estimates? "Yes, Operations was listening now, because of my good reputation as 'MacArthur's staff officer' by then! When they needed authentic information, they came to me now." After the defeat at Saipan, the AGS Operations officers were fearful that MacArthur would bypass the Philippines and head directly for Japan—a very scary scenario for which Japan was unready. Hori soothed the nervous Operations staff, providing a wealth of

data, painstakingly collated, to justify his prediction that the Philippines would precede Japan on the American hit list. Summing up his predictive tasks, Hori said that he had three main objectives in view:

> the target of invasion: always limited by geography and oceanography
> the timing of invasion: the most difficult challenge
> the strength of enemy landings: once the timing was determined, the estimation of strength was facilitated.

"Yes, it was all done by hand!" admits Hori. "It was, for Japan, an 'abacus war'."

Major Hori's praecis, with the preceding support data adduced, aptly sums up my contention that the Intelligence Revolution never pervaded Japan in the Pacific War, even at a time when its very fate was about to be decided on the landing beaches of Kyushu and Honshu in 1945 and 1946.

A Case Study: Japanese Intelligence Estimates of China and the Chinese, 1931–1945

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When the *Chuo tokujobu* (Central Bureau of Signal Intelligence) picked up the Sidney broadcast announcing the Japanese government's formal acceptance of the Potsdam Declaration on August 11, 1945, its chief, Maj. Gen. Toshio Nishimura ordered the incineration of all the secret documents. In the yard of the Yokufuen Hotel in the suburbs of Tokyo, then the temporary refuge from intensified air raid, tons of documents were set on fire, belching forth clouds of smoke. Day and night the black smoke continued to cloud the summer skies, symbolizing the tragic end of the almost two-decade history of the *Tokujobu*. Another tragedy quickly befell the former *Tokujobu* men. The names of the leading officers were erased for good from the War Ministry's listings, and most of them went underground fearing arrest by the Occupation authorities.[1]

More than four decades later, any attempt to examine and reconstruct the clandestine operations of Imperial Japan is bound to run into almost unsurmountable difficulties. The lack of truly substantive evidence to support what little has been left by a handful of former intelligence officers, who felt it their last mission to mark their footprints on the pages of Japanese military history is keenly felt. In my effort to cope with the assigned topic for this session, I was able to obtain some highly valuable handwritten memoirs. What follows is not necessarily a scholarly work of the most rigorous kind, but rather spadework, or groundwork which needs much further substantiation.

A brief look at the historical origins of *tokujo* (which covered the fields of crypto-communication and signal intelligence, including cryptanalysis, translation, interception, and even direction finding) in Japan is in order to give a broader perspective of the topic under survey.

The beginning of signal intelligence in Japan based on scientific methods is fairly recent. World War I proved to be a testing ground for the cryptanalytical science of interception, decryption, and translation, as well as for the more general organizational know-how of handling such missions. The Germans showed their extraordinary skills in General Paul von Hindenburg's Tannenberg

Campaign of August 1914. Also, in the desultory fighting with Bolshevik forces along the frontier during the Finnish War of Independence, 1918–20, the Finns proved that they were more than a match for the Russians in the war of crypto-communications and signal intelligence. The lessons of World War I and the laudable achievements of the greatly outnumbered Finns left a deep impression on the Japanese cryptanalysts who were already acutely aware of their backwardness in signal intelligence.

In 1921, a small group was organized within the Foreign Ministry which marked the origin of signal intelligence in Japan. The group was represented by men from the War, Navy, Foreign, and Communications Ministries, who specifically studied the techniques of deciphering. They included such officers from the War Ministry as Maj. Haruyoshi Hyakutake and Capt. Katsuhiko Kudo. However, the Japanese pioneers in codes and ciphers had to wait for the arrival of a Polish teacher to learn even the basics of cryptography.

In those days, it was no small task for a handful of enlightened staff members to win their colleagues or senior officers at the Army General Staff (AGS) over to their way of thinking. General (then Maj.) Masataka Yamawaki upon returning to Tokyo after serving as military attaché in Poland, presented a proposal to invite this Polish cryptanalyst to Tokyo, but his senior, Intelligence (Second) Bureau Chief Maj. Gen. Matsuo Itami frowned on the idea by insisting, "How can a leading army (the Imperial Japanese Army) of the world ask for instruction from a third-class army?" The major had to exert every effort to obtain approval from his chief.[2]

Finally in January 1923, the AGS extended its formal invitation to Capt. Jan Kowalwski, formerly chief of code-breaking in the northern front during the Russo-Polish War of 1920. For about two months until the end of March, in a secluded room of the AGS, Captain Kowalwski presented a series of intensive lectures for four students specially selected from the Europe and America sections of the Intelligence Bureau, aided by interpreters of the Russian language. These students were Captains Haruyoshi Hyakutake from the Russia Office, Yoshisuke Inoue from the Britain Office, Naotomi Mikuni from the France Office, and Kaoru Takeda from the Germany Office.

Captain Kowalwski's lectures centered around the techniques to decipher the Red Army's repeating key system in general, periodic transposition, as well as the fundamentals of cryptography and decryption, then a common practice among European armies.[3] In the eyes of the Japanese students, the random number codes were a bolt from the blue.[4]

In June of the same year, a radio surveillance station was built on the premises of the AGS, and went into operation. However, since its reception was very poor, probably due to technical backwardness, the station did not bear much fruit and was soon closed down.[5]

Nevertheless, Captain Kowalwski's visit marked a breakthrough at this inchoate stage of signals intelligence. This was followed up by the dispatch of

Japanese officers to Poland. Their mission was to study cryptanalysis in general and enhance their expertise by working closely with Polish teachers at the Polish General Staff through on-the-spot training. In December 1925, Major Hyakutake and Captain Kudo were sent for a one-year study, followed by Maj. Naoji Sakai and Capt. Toshijiro Okubo four years later.

In September 1935, the AGS selected Captains Ei'ichi Fukai and Shinta Sakurai. Once in Warsaw, these young officers were placed directly under the supervision of General Yamawaki, then serving as military attaché for the second time at the Japanese Legation. At the Polish Army General Staff they exerted themselves to obtain an intimate knowledge of the structure of Soviet communication networks and to study Soviet codes and ciphers and their characteristics.[6]

In July 1927, immediately after his return to Japan, Major Hyakutake became chief of the newly created *Angohan* (Codes and Cyphers Office) of the Communications Section of the Third Bureau. Captain Kudo also joined the office. So did the other officers upon their return home. The office was quickly expanded and strengthened to include hardworking and highly qualified specialists in code-breaking, such as:

Capt. Toshijiro Okubo	(Soviet Union)
Capt. Narumi Tsuruta	(China)
Capt. Isamu Nakano	(Britain)

During the Sino-Japanese clash at Tsinan in May 1928 between Chiang Kai-shek's Northern Expeditionary Army and Japanese forces, the Imperial Japanese Army (IJA) obtained excellent results in intercepting and decoding Chinese codes. However, this remarkable success touched off an intense bureaucratic power struggle over proper jurisdiction of work and spheres of influence between the Intelligence Bureau and the Third Bureau, to which the Communications Section belonged. The ensuing result was an organizational reform, whereby in July 1930 the *Angohan* was made separate from the Communications Section, and placed under the jurisdiction of the China Section. Lt. Col. Haruyoshi Hyakutake was appointed chief, and both Europe and America Section and China Section sent out one member each to the new office, while the Communications Section sent two of its staff to fill in the new posts. Hereafter, the *Angohan* came to assume all the responsibilities over code messages, including encoding, interception, decryption, translation, and training in cryptanalysis.

The bureaucratic struggles between the Intelligence and Third Bureaus, and even within the Intelligence Bureau itself, lingered on, with a result that the reform proved to be short-lived. In July 1936, the *Angohan* became independent from the China Section, and, moreover, in May of the following year gave up encoding responsibilities to the Communications Section. From then on, in

almost all the high-level Army headquarters, whether in Tokyo or abroad, decoding and encoding were conducted by separate organizations, which created perennial problems of coordination and cooperation. In sharp contrast with the IJA, in the U.S. Army encoding and decoding practices have been traditionally treated like "Siamese twins."[7]

In March 1939, the *Angohan* went through another organizational change. Its name was changed. Now called the 18th Office, it came under the direct supervision of the Army Chief of Staff, and the post of its chief was held concurrently by the Intelligence Bureau Chief. This practice continued until 1940.

Immediately after the murder of Manchurian warlord Chang Tso-lin in June 1928, the *Angohan* in Tokyo succeeded in decoding "Young Marshal" Chang Hsüeh-liang's secret communications and made a substantial contribution to the understanding of subtle shiftings among warlord politics in Manchuria.

When the Manchurian Incident broke out in September 1931, the Kwantung Army had no formal *tokujo* organization. The AGS quickly dispatched Capt. Katushiko Kudo to the Kwantung Army's Headquarters in Fentien. The captain closely cooperated with the Kwantung Army's staff in decoding and translating the code messages intercepted by the local intercept stations. The fact that about seventy percent of secret communications by the warlords in Manchuria was broken and translated gave the Kwantung Army every advantage over its enemies in spite of its greatly outnumbered strength. So the Army could almost always take the initiative in its military operations, and at the same time secured diplomatic leverage. Captain Kudo was later awarded the Order of the Golden Kite for his outstanding service — a very rare thing for an intelligence officer of the Japanese military.[9]

According to interviews held with Maj. Gen. Tahei Hayashi, Col. Shinta Sakurai and other former intelligence officers, prior to the outbreak of the Manchurian Incident, Capt. Narumi Tsuruta and his associates at the *Angohan* office had already mastered the basics of the Chinese codes and ciphers. It was therefore not so demanding a task for them to break the Chinese diplomatic messages between the Nanking government and the Chinese Legation in Tokyo.[10]

On the other hand, during the Incident, a small group of cryptanalysts led by Capt. Michiya Furuichi in the Telegram Office of the China Garrison Army in Tientsin continued to maintain a close surveillance over the activities of the Chinese forces on their side of the Great Wall. In the meantime, the *Angohan* at Tokyo's High Command finally broke the code used by the Soviet border guards stationed along the Russo-Manchurian border. In the summer of 1932, a *tokujo* organization was founded in Ha-erh-pin, with Capt. Shinta Sakira as chief. This contibuted to a much better understanding of Moscow's move in response to the Japanese adventures in Manchuria.[11]

The *Angohan* of the Intelligence Bureau[8]

Dates of Service	Chief
October 1930-August 1931	Lieut. Col Haruyoshi Hyakutake
August 1931-August 1933	Lieut. Col Naoji Sakai
August 1933-December 1934	Maj. Tatsumi Amamiya
December 1934-August 1936	Lieut. Col Shigesaburo Miyazaki
August 1936-March 1939	Maj. Kyoku Horiuchi
March 1939-December 1939	Maj. Gen. Ki'ichiro Higuchi
December 1939-August 1940	Maj. Gen. Yuichi Tsuchihashi
August 1940-April 1941	Col. Tahei Hayashi
April 1941-August 1942	Maj. Gen. Kiyotomi Okamoto
August 1942-July 1943	Maj. Gen. Ryoji Nakano

By 1935, the China Garrison Army had established a *Tokujohan* office, with Maj. Narumi Tsuruta as chief. Their office had three sets of receivers. The number of personnel, including the Chief, was thirteen, six for interception, two for decryption, one for translation, and three for general affairs.

The Chinese system of codes in those days, called *mingma* was basically made up of four digit numbers, and was rather easy to break. Besides, the Chinese did not encode the name of sender or receiver, nor the date or the time of the message. The China Garrison Army's *Tokujohan* was thus able to disclose the composition, strength, and activities of Chiang Kai-shek's branch armies, such as those led by Sung Che-yuan and Chang Hsueh-liang. However, the object of its operation did not extend to the Chinese Communist forces, nor to the Chinese Air Force.[12]

In April 1936 when the size of the Garrison Army was doubled to approximately 5,000 men, with its commander directly appointed by the Emperor, the *Tokujohan* was also expanded, now equipped with six sets of receivers, and a staff of twenty-six men.

The China Garrison Army's Tokujohan

Chief	Maj. Katsuhiko Kudo
China Office	Four men incl. Capt. Nakauma
Britain and America Office	Three men incl. Capt. Nakada
Russia Office	Three men incl. Capt. Yamaoka
Interception Office	Fourteen men
Encoding Office	Three men incl. Capt. Tanabe
General Affairs Office	Three men incl. Lieut. Takahashi

The China Office successfully kept up with the shifting military situation of such forces as led by Shang Chen, Kao Kuei-tsu, and Chuan Tso-i. However, the Chinese Communist forces and Chiang Kai-shek's aviation activities still remained highly elusive.[13]

The Marco Polo Bridge Incident in July 1937 marked the beginning of a protracted war with China which was to terminate with Japan's unconditional surrender eight years later. In late August of 1937, the North China Area Army was quickly organized by absorbing and expanding the Garrison Army, with General Hisa'ichi Terauchi as commanding officer. The *Tokujohan* was subsequently strengthened and more than fifty men were added. In October 1939, the China Expeditionary Army headquarters was established in Nanking, with General Toshizo Nishio as commanding general. A *Tokujohan* was created, with Colonel Tsuruta as chief, which had branch offices in Shanghai and Hankow. At that time, the North China Area Army was maintaining its own *Tokujohan* in Peking. Its chief was Lt. Col. Katsujiro Akitomi, and it had branches in Houho, Taiyuan, and Tsinan. Another area army, the South China Area Army, had its own Tokujohan with Col. Ichiro Tauchi as chief.[14]

In July 1943, the High Command in Tokyo established a new central organization of signals intelligence, *Chuo Tokujobu*, which was an outgrowth from the 18th Office mentioned above. At the same time, the Tokyo Command reorganized and streamlined the existing *Tokujobu*'s sphere of activity to curtail bureaucratic problems and attain greater efficiency in operating the mission.

On the Chinese mainland, the North China Area Army's *Tokujohan* and that of the China Expeditionary Army were combined and upgraded into the *Tokujobu*. The total number of personnel was 547 men, plus 232 civilians, including 116 translators and translation trainees. As of February 15, 1944, the number of officers counted 600, while that of civilian employees, 280. On January 10, 1945, officers numbered 711, and civilians 280, a total of 991 men.[15]

By the time of the Sino-Japanese War of 1937, the Japanese cryptanalytical experts had been able to greatly expand their knowledge of the Chinese system of codes and cyphers, as well as to improve their decoding skills. By then, their average decoding score reached an impressive accuracy of around eighty to ninety percent. This figure applied both to the Chinese military and diplomatic code messages, with the single exception of the Communists. In the case of the diplomatic codes, about a year before the outbreak of the armed clashes the Japanese side was able to obtain an original copy of the Chinese code book by cribbing in Korea. This was the same book that the AGS had broken in 1934.

All of this cannot be considered a commendable feat of intelligence on the part of the Japanese, because the Chinese Nationalists were way behind the Japanese and were still at the incipient stage of development in the field of coded messages. For example, their codes were such that on receipt of orders from Chiang Kai-shek, the commanding general would repeat the same orders and at the same time convey his own orders and plans of action to his divisional

commanders; and they in turn repeated almost the same procedure down the hierarchy. So if the Japanese side could crack the easiest codes of the lowest level, that is, battalion level, they could go up the ladder and decode Chiang's original orders.[16]

In the meantime, the Nationalists upgraded their *mingma* codes, and in 1938 adopted a different system, called *tokushu daihon* (special code book) in Japanese which was further complicated by mixing compound words. By October 1940, Chiang Kai-shek's main forces had started to use the repeating key system for the first time. This had the Japanese cryptanalysts baffled only for the moment; they maintained an average of seventy to eighty percent of their decoding level throughout the war and continued to make great contributions to major military operations in China.[17]

The following case studies take a closer look at the roles Japanese signal intelligence played, and the influences it exerted on military planning and actual military campaigns. All documents available at this time pertain to the activities of the North China Area Army, and this discussion is restricted to intelligence in North China.

The first case is the Chugen (or Chungyuan in Chinese) Operation in which the Japanese broke the Kuomintang codes. To the Chinese it is known as the Chinnan (or Southern Shansi, or Chungt'iao Mountain) Campaign.[18] The operation took place during the period May 7–June 15, 1941, and was one of the major operations of the entire Sino-Japanese War. The whole operation was completely successful, and when seen from the perspectives of *tokujo*, it was an unbelievably easy victory with almost no mistakes. Maj. Yukio Yokoyama, then on the staff of the Intelligence Section of the North China Area Army and in charge of the *tokujo* information, proudly recollects:

> During the campaign, due to the great success of *tokujo,* the conditions, the nature, capabilities, and activities of the enemy were as clear as day to us. So, the direction of the entire campaign at the command post of the Area Army was just like directing both friendly and enemy forces in one of the great maneuver exercises. No fears or worries at all! As a former desk chief of intelligence, I will never forget such a great joy and happiness throughout the rest of my life.[19]

The vast area of the Chung'tiao mountains and the western T'aihang range in southern Shansi were then held by a large Kuomintang force led by General Wei Li-huang, commander of the First War Zone forces. His troops had a total of twenty-six divisions and their strength was estimated at about 180,000 men. They had been the object of fierce Japanese attacks in the spring of 1940, but had managed to defend heavily entrenched positions in the rugged mountains. In some areas they even counterattacked.[20]

The Area Army deployed its main force, the First Army, to eliminate all Kuomintang forces north of the Yellow River. The First Army had six divisions, two mixed brigades, and one cavalry brigade, for a total of about

300,000 men. In the course of the operation, the First Army was able to encircle the enemy's main force and deliver a crushing blow. According to Japanese sources, the enemy left about 35,000 men as prisoners of war, left about 42,000 corpses on the battle field, while the Japanese force suffered only 673 killed in action and 2,292 wounded.[21] On the other hand, the official Chinese source, although it does not mention the number of their own casualties, states only in passing that Japanese casualties reached more than 20,000 men.[22]

By then, the ever-quickening speed of Communist expansion in the vast, rugged terrain of northern China had become a constant threat for the intelligence experts of the Area Army. To them, the Hundred Regiments Offensive of August 1940 was indeed the hardest blow they ever received from the Chinese.

The intelligence officers wanted to eliminate the most imminent threats from the Chinese Communists first, rather than chase after the Kuomintang troops. However, the Communist codes and ciphers had long remained absolutely impregnable to the Japanese cryptanalysts. In February 1941, a portion of the Communist codes was finally solved. Although the results were meager, this partial success had temporarily created an optimistic atmosphere among the intelligence officers, and the main weight of their efforts was thrown into a nonstop assault on the codes. Significant penetration of Communist signal traffic was attained.[23]

On the other hand, the Operations Section of the Area Army started to consider seriously the elimination of Kuomintang forces north of the Yellow River. The subsequent meeting between the Operations and Intelligence Sections proved to be highly tense and stormy over the issue of the target of the coming operation: the Kuomintang or the Communists. To Captain Yamazaki, who was in charge of Communist intelligence[24] and other staff members of the Intelligence Section, it was not the KMT forces but the Communists who were posing the most ominous threat to the Japanese attempt to maintain peace and order in North China.

Yamazaki argued: "If you insist that this is not the right moment to hit the Communists, we should wait for at least one year to regroup and accumulate our strength." Major Yokoyama, an expert on KMT intelligence and supervisor of the *Tokujohan*, added: "If, after success in eliminating the KMT forces in southern Shansi, we do not have extra garrison units left over from that region, we will be eventually helping the Chinese Communists further to expand their territories."

On the other hand, the Operations Section staff did not take the Communists so seriously. They had always thought that their main enemy was Chiang Kai-shek and his forces. Operations Section Chief Colonel Yamamoto countered: "If you say so, are you confident in your own intelligence of the Communists?" To the intelligence officers, this was like rubbing salt in an open wound. Yokoyama responded rather emotionally: "Although we do not have a firm

conviction in our intelligence estimates of the Communists, we are determined
to do our best."

The meeting did not reach any consensus. However, the Operations Section
unilateral decision to attack the KMT forces by winning Deputy Chief of Staff

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The Main Composition of the North China Area Headquarters at the Time of the Chugen Operation[26]

Commanding General	Lt. Gen. Hayao Tada
Chief of Staff	Lt. Gen. Moritake Tanabe
Deputy Chief of Staff	Col. Seizo Arisue
Operations Section Chief	Col. Shigeichiro Yamamoto
Staff Officers	Lt. Col. Takeharu Shimanuki
	Capt. Takeshi Fukuda
Intelligence Section Chief	Col. Tadao Hongo
Staff Officers	Lt. Col. Hidekazu Shigekawa
	Maj. Yukio Yokoyama
	Capt. Juzaburo Yamazaki
Staff Members	Lt. Col. Tomiaki Hidaka
	Maj. Hachiro Watase
	Maj. Yukio Saito
	Maj. Eikichi Yamazaki
	Maj. Hisaichiro Urano
	1st Lt. Heiji Honchu
	1st Lt. Kaoru Kuwahara
Tokujohan Chief	Lt. Col. Katsujiro Akitomi
Staff Members	Maj. Tadashi Yamada
	Capt. Tadao Yamamura
	Capt. Shigejiro Fujii
	Capt. Isao Mizutani
	Capt. Akira Kumano
	1st Lt. Manpei Nakagawa
	1st Lt. Motoyoshi Deguchi
	1st Lt. Yoshio Kitamura
	1st Lt. Takahiko Sawamoto
	1st Lt. Tomekichi Ario
Translator	Takeshi Sato
Technician	Kihachiro Okawa

General Tanabe over to their side, and a few days later Colonel Yamamoto notified Intelligence Section Chief Hongo and Major Yokoyama of the decision. This was a shock to the intelligence experts. But once they learned from Colonel Yamamoto that General Tanabe strongly supported the decision and that the decision would be kept strictly secret among the three, and would not be disclosed to the other staff members of the headquarters until just before X-day, they backed down.[25]

The Intelligence Section then took every possible measure to maintain operations security: countersurveillance activities to protect the true status of friendly activities, the intentions of the entire operation, and above all else, the scope and the expected date of the operation. At the same time, deceptive measures were taken with utmost care to create a false picture of friendly activities and operations, as well as to mislead the enemy regarding friendly intentions and objectives. Such measures included the following:

> 1. Giving the enemy a false picture implying that the Mongolian Garrison Army would move toward the Ordos region by crossing the Yellow River, to attack Lanchow or even Yenan
> 2. Letting the First Army carry out diversionary activities near the upper reaches of the Yellow River and create rumors that they would attack Sian
> 3. Letting the Twelfth Army carry out a river-crossing exercise north of Kaifeng and spread rumors that they would attack Luoyang.[27]

As the old Japanese proverb says, "To deceive our enemy, we must first deceive our friends." When contacting the outside over the telephone, the Japanese colonists' jargon in Manchuria was used as a secret language. And even within the Intelligence Section, the assessment of enemy intelligence was carried out under strict security by only two people: Major Yokoyama and Capt. Kaoru Kuwahara. Furthermore, the true intentions of the coming operation were not even told to the division commanders, while reconnaissance activities by both air and ground in the neighborhood of the area of operations were strictly prohibited.

About one month before X–day, the surveillance post of the *Tokujohan* was established in Sinhsiang, which later became the command post of the operation. Captains Akira Kumano and Takahiko Sawamoto were dispatched to Sinhsiang, where they were later joined by Yokoyama. The results of the *tokujo* activities were simply amazing. Every move of General Wei Li-huang's troops was made clear, and throughout the intense cryptanalytical activities up to X–day the successful maintenance of operations security by the Japanese side as well as the subsequent confusion among the Chinese troops was colorfully substantiated by the Chinese signal traffic, much to the surprise of the *tokujo* people. However,

a distinguished American political scientist mentions that: "the way was cleared for the Communists to enter the area as soon as the ability of the Japanese Army to garrison such a region was reduced. One source indicates that by 1943 there were 59 pro-Communist local governments set up in the Chungt'iao range."[28]

The second case represents a tragic failure of *tokujo* operations against the North China Area Army and the almost impregnable Chinese Communist codes. The Hundred Regiments Offensive, the largest Communist campaign during the war, was launched on August 20, 1940, and while the battle continued for about three months until December 5, the Area Army was completely paralyzed. Some 400,000 troops of the Eighth Route Army simultaneously attacking the Japanese forces in five provinces of north China was indeed unprecedented in scale and duration. The attacks were mainly concentrated on the Japanese-held main lines of communication and transportation: the Chent'ai railroad, the Peking-Hankow railroad, the Tientsin–Pukow railroad, the Peking–Shanhaikuan railroad, the Peking–Suiyuan railroad, and several others.

The Japanese stood aghast, taken aback at the surprise attack by the Communists. Except for a very small group of cryptanalysts and such enlightened officers as Kanji Ishiwara, the average Japanese officer of the IJA's higher echelon had long continued to shut his eyes to the Chinese Communists and treated them with contempt.[29] The typical image that high-ranking Japanese officers had about the Communists was one of outlaws or a gang of bandits. The lack of adequate knowledge of and the least interest in Communist activities was the main cause of such a highly superficial response to the Communists.

This lack of knowledge was partly due to the absolutely insufficient information of the Chinese Communists on the part of Japanese intelligence. When in early August 1940, Major Yokoyama visited the AGS to bid farewell to 18th Office Chief Col. Tahei Hayashi before leaving for Peking to assume his new post at the Intelligence Section of the China Area Army, he was told by his former boss that his first and foremost mission upon arrival in Peking was the Communists' signal traffic.

When Yokoyama arrived in Peking, he found out that in spite of strenuous efforts by the *Tokujohan* people, they had not succeeded in locating the source of radio communication between Yenan and Moscow. *Tokujohan* Chief Lt. Col. Katsujiro Akitomi very frankly told Yokoyama that he had seriously doubted whether there any such signal traffic really existed. Among the *Tokujohan* people in Peking the prevailing mood then was that the Communists might not be equipped with modern radio communication equipment. Since the Japanese code-breakers could not catch the signal traffic by the Communists, decrypting their messages was out of the question.[30]

It was only after early August 1940 that the Intelligence Section of the Area Army was expanded and strengthened, and for the first time an expert on Chinese Communist affairs, Capt. Juzaburo Yamazaki was added to the rank of

staff officers. Also added was Lt. Col. Tadao Hongo to replace, a little later, Section Chief Col. Hitoshi Hamada. It was just at this time that the Communists hit the Japanese.

The Hundred Regiments Offensive was a great shock to the entire Area Army, and Chief of Staff Lt. Gen. Yukio Kasahara strongly encouraged Hongo and Yokoyama to do their best to strengthen the *tokujo* activities towards the Communist signals. However, for Yokoyama, an unforeseen stumbling block was within the *Tokujohan* itself. The "scientific" approach to the decryption of codes and cyphers Yokoyama had learned in Tokyo was not acceptable to some of the code specialists in Peking, and Yokoyama had to spend extra energies to convince these diehards of his new approach. In the meantime, Captain Yamazaki organized a small group, *Tai-Kyo Chosahan* (Office of Chinese Communist Affairs) to conduct research on politico-military and economic aspects of the Chinese Communists. This group was later expanded to include forty researchers, and was generally known as *Rokujo Kohan*, its name taken from the address of the office. His office published the monthly intelligence reports, which were distributed to the division headquarters of the Area Army, thereby greatly contributing to the further understanding of the most elusive Communists. However, even these serious reports were often called by the diehards "Communistphobia" or the "propaganda journal for the Chinese Communist Party."[31]

Yokoyama later succeeded in persuading the Chief of Staff to issue a directive to all troops ordering the acquisition of enemy documents. He also dispatched Maj. Tadashi Yamada to the Kwantung Army to study the Russian system of codes, while the High Command in Tokyo sent Maj. Masanori Inoue, an expert in the KMT codes, to Peking to assist the *Tokujohan*. In December, Capt. Tadao Yamamura came to the office. An extraordinarily enthusiastic, unflinching, and highly talented cryptanalyst, Yamamura had been studying the codes of the New Fourth Army for some time. In the meantime, Yokoyama gave intensive training to a select group of young messengers at the Area Army's headquarters. After the training, this group was able to collect more than one hundred pieces of Communist signals within ten days, much to the delight of Yokoyama, who originated the unique idea.

Captain Yamamura led a small group whose sole target was the Communist messages, and, in the middle of February 1941, after months of untiring exertion, his group finally achieved a break through by decoding the message from the 10th *fench'ü* (subdivision of the Military Area) headquarters to the lower echelon. This success opened the way for further understanding of Communist activities and their general trends, their political workings, economy and principles of party leadership in particular. However, this great achievement proved to be short-lived, and *tokujo* information of the Chinese Communists was soon shrouded in darkness.[32]

The Kichu (or Central Hopei) Operation of May 1 through June 20, 1942, was a rare case in which the Japanese traced the highly elusive Communists. Immediately after the "dazzling" success in the Chugen Operation, the North China Area Army carried out a series of mopping-up campaigns in the guerrilla areas of western Hopei, but these did not produce any impressive results. The Area Army could only witness the admirable performance of the Chinese Communist Party's handling of the peasants. The strength of party ties with the masses and the unfailing support the Chinese peasants gave the party in fighting against the Japanese showed political skills unmatched in the KMT.

From the fall through the winter of 1941, the *tokujo* efforts had yielded no significant results. Yokoyama recollected their "bloody but unbowed" devotion to the mission more than fifteen years later with poetic embellishment: "Depending solely on the dim light from afar, the *Tokujohan* people continued to grope their way in the labyrinth at a snail's pace. Their tools to open the doors, one by one, were the 'hammer' called 'effort' and the 'ax' called 'inspiration'."[33]

With no further discussion the Intelligence Section officers of the Area Army decided the primary target of military operations for the year 1942. Unlike the previous year, the impact of the Communists was felt so strongly at the headquarters that the intelligence staff did not have to spend extra time and efforts to convince their counterparts in the Operations Section. Now, for the first time, the controversial issue was not to attack KMT or CCP forces, but rather which CCP guerrilla base, how, and when. The Chin-Ch'a-Chi Border Region was at that time the most famous guerrilla base in the mountainous border area between Hopei and Shansi Provinces. This rugged stronghold was established by the Eighth Route Army; this was the rear base where mass associations were first developed and they subsequently became the model for other areas through which the Communist Army passed. This was where, in January 1938, the Chinese Communists created their first rear-area government, followed a little later by the setting up of *hsien* local governments.[34]

The border region depended heavily on the granary of central Hopei. So the decision reached by the Intelligence Section was to attack central Hopei before the crops grew tall, and to launch a series of mopping-up campaigns as thoroughly as possible after the time of barley harvest until the arrival of the winter season.

The central Hopei area is largely flat terrain, a rectangle defined by four railraods: the Peking–Tientsin railroad, the Tientsin–Pukow railroad, the Shihchiachuang–Techou railroad, and the Peking-Hankow railroad. The whole area was then guerrilla territory. Lu Cheng-ts'ao was the commanding general of the central Hopei *chunch'u* (Military Area). His troops numbered 15,000 regulars and 35,000 militia.

The North China Area Army deployed the following troops under its command for the Kichu Operation:

Six battalions from the 41st Division
Two battalions from the 9th Independent Mixed Brigade
Four battalions from the 110th Division
Two battalions from the 26th Division
The 13th Cavalry Regiment
The 7th Independent Mixed Brigade[35]

In the meantime, the *Tokujohan* had succeeded in partially solving the codes used by Lü's headquarters, and later found out that not only his own headquarters but also the headquarters of the 6th, 8th, and 9th *fench'ü* with their main force, were located in the narrow triangular area. However, the most perplexing problem for the *tokujo* people was that both *tokujo* information and human intelligence indicated that Lu's headquarters had always been moving its location.

Insufficient information on the Lü Cheng-ts'ao's troops prompted Major Yokoyama to make use of the *Kempeitai's* (Military Police) *Tokushuhan* (Special Intelligence Office) in order to supplement signal intelligence activities by the *Tokujohan*. The group was placed under the command of Tokujohan Chief Lieutenant Colonel Akitomi, and was divided into two sub-groups: one group specializing in interception, the other handling direction finding. The direction-finding group was made up of "fixed" and "mobile" units. The fixed units were stationed in Taiyuan, Peking, and Tsinan. At the same time, strict measures were taken to conceal the intentions, scope, and nature of the coming operation.

The Main Composition of the North China Area Army Headquarters at the Time of the Kichu Operation[36]

Commanding General	Gen. Yasuji Okamura
Chief of Staff	Lt. Gen. Hatazo Adachi
Deputy Chief of Staff	Maj. Gen. Seizo Arisue
The Operations Section Chief	Col. Shikanosuke Tokunaga
Staff Officers	Lt. Col. Takeharu Shimanuki
	Lt. Col.Kakuichi Oi
	Maj. Hideo Ono
	Maj. Kenko Li
The Intelligence Section Chief	Col. Yoshitane Haruke
Staff Officers	Maj. Yukio Yokoyama
	Maj. Juzaburo Yamazaki
	Lt. Col. Hidekazu Shigekawa

In the middle of April, the diversionary mop-up campaigns by various troops under the command of the Area Army were launched sporadically at different locations, seemingly in a most disorderly fashion. It must have been very difficult for the enemy to find any particular difference between these campaigns and the usual ones. Obviously, they were meant to camouflage the forthcoming campaign and distract the enemy's attention.

For a while, the *tokujo* information continued to indicate that the Chinese side was not aware of the true intentions of the friendly activities as well as the upcoming large-scale operation, while Lu's headquarters was continuously on the move. The reason for such constant shifting remained a mystery and baffled the *tokujo* experts. On the other hand, they were able to intercept the enemy's main radio traffic in spite of fluctuating results. Furthermore, their level of accuracy in radio direction finding had reached a point where, once the enemy made radio communications, the new location of the headquarters from *fench'ü* up was largely identified. But, the Chinese Communists again baffled the Japanese. All of a sudden, from the midnight of April 26 on, although for a very short while, the Japanese completely failed to intercept the Chinese radio communications of the whole *chunch'u*. The *tokujo* analysts for a short while seriously wondered if the Communists ordered radio silence upon knowing the Japanese intentions. By 1300 hours of the following day, a radio from the 9th *fench'ü* calling the *chunch'u* headquarters was finally intercepted, to the great relief of the Intelligence Section. However, a little after this happy news, an urgent message was sent by telephone from the *Tokujohan* to the same section that the Chinese message was impregnable. It was followed up by another urgent report that the latest coded message from the *chunch'u* headquarters was again insoluble, and that the enemy must have changed their code. The Intelligence Section staff was literally panicked at the most shocking prospect that the enemy main force might not be located in the triangular area.

On April 29, X–2 day, a telegram was rushed in from the 27th Division Headquarters in Tientsin to the effect that the enemy force in the triangular area had started to move and that it numbered approximately 10,000 men. The urgent telegram then added that the following morning their Staff Officer Omura would fly to Peking with an important proposal to change the operational plan.

Upon receipt of this embarassing message, Intelligence Section Chief Tokunaga reacted negatively and sided with Major Yokoyama to launch the operation as previously scheduled. Tokunaga even proposed to appeal to Chief of Staff General Adachi. However, Colonel Shimanuki intervened and persuaded them to wait until the next morning. The next morning, Staff Officer Omura from the 27th Division confronted Tokunaga and Yokoyama, his face reddened by rising emotions. Yokoyama started his counterattack by asking the source of such information. As expected, the 27th Division headquarters solely depended on highly unreliable agent intelligence. Moreover, when Yokoyama demanded from Omura the basis for calculation of the enemy strength still

remaining in the triangular area, it became obvious to those present in the Operations Section Office that it was not based on any confirmed evidence. Omura thus disclosed his ignorance of the Chinese Communists. This sort of ignorance was largely shared by a great majority of the IJA's high-ranking officers.[37]

The Kichu Operation was launched on May 1 in spite of many uncertainties due to the suddenly ineffective operation of *tokujo* activities at the last moment. However, Dame Fortune finally smiled on the Japanese in the course of their most desperate attempts to drive away the Communist guerrillas from North China. The results of the biggest operation ever conducted against the Communists in terms of casualties are simply astounding. According to the Japanese sources, in the total of 286 armed clashes where the Japanese were engaged against the enemy's estimated strength of 58,338 men, 9,098 Chinese were killed, and 5,197 were taken as prisoners.[38]

Now, I shall briefly present a more balanced view of signal intelligence in terms of its impact upon military operations in general as well as the relatively low status the intelligence officer was often given within the IJA.

First, as far as the IJA's military doctrines were concerned, there was no such concept as that which we know today as "strategic intelligence." When the *Jinchu yomurei* was thoroughly revised and a new field manual was officially accepted in the name of the emperor with a new name, *Sakusen yomurei* (Operational Fundamentals, an equivalent to the current U.S. Army's FM 100–5), in late September 1938, the IJA for the first time assigned a very small space for *joho* (information or intelligence) as an introduction to the next two chapters. In four pages, this introduction explains the basic principles of *joho*, before it turns to *sosaku* (reconnaissance) and *choho* (intelligence). However, no explanation or further analysis is made about the differences between *joho* and *choho*. Item 71 only states that the primary means for information collection are *sosaku* and *choho* activities.[39]

Items 72 and 73 clarify the procedures and the pitfalls of intelligence analysis. For example, Item 72 reads: "The collected information must be judged on its truth or falsehood as well as on values through appropriate investigation. To that end, due consideration must be given to the sources of information, the date and hour of reconnaissance, and the methods of reconnaissance, etc. before reaching a decision on the level of accuracy. Such decision must reflect due comparison with and sufficient consideration of other relevant sources of information . . ." This was the first time the over-all responsibilities of the intelligence officer were taken up and clarified, although insufficiently in terms of logic and the use of appropriate language.[40]

Second, in the IJA's overall tactical thinking, the concept of "alternatives" was often left out. In the IJA *sokusen sokketsu* (blitz tactics) and *sekkyoku kosei*

(all-out offensive) were always considered to be the highest virtues of *bushido* (Samurai) spirit. Japanese officers had a tendency to assume that their enemy would think and act almost the same way as they did. Therefore, they often did not consider any alternative response if and when their enemy did not act as anticipated.[41]

Third, the IJA did not have any institution or organization to teach intelligence or even train intelligence officers. Oftentimes the intelligence officers suffered from the shortage of qualified cryptanalytical experts.[42] The curriculum of the Military Academy or even of the War College did not include a single course on intelligence. *Sakusen*, or operations, were always in the forefront of both strategic and tactical thinking in the IJA. The Japanese for the first time learned from the Americans the scientific approach to intelligence only after the Self-Defense Forces were organized.

Fourth, the intelligence officer was often considered secondary in ranking. The cream of the IJA, that is, the graduates of the War College preferred the field of operations. To them *sakusen* was what they were born for as a military officer. Their dream was to command a large number of troops and fight out a great battle of encirclement in the most courageous manner: a Japanese replay of the Tannenberg Campaign. In fact, most of the young officers with honors upon their graduation of the War College were soon assigned to the Operations Bureau of the AGS, or to the important posts of the War Ministry, such as the Military Affairs Bureau. Only a few were attached to the Intelligence Bureau.[43]

Another long paper will be necessary to focus on the nature and characteristics of the China Section of the AGS's Intelligence Bureau, but here I shall deal with the China Section only briefly. The China Section was supposed to play the central role in formulating the IJA's China policy during the Sino-Japanese War, for it was the home ground of Japan's old China hands. But it did not. Col. (later Major General upon promotion to the Operations Bureau Chief in March 1937) Kanji Ishiwara, modern Japan's genius of military strategy, was so fed up with the outdated methods of intelligence activities and anachronistic perceptions of the world held by the Intelligence Bureau in general and the China Section officers in particular that he weakened the power and authority of the Intelligence Bureau through organizational reform.[44]

The China experts had a most conspicuous tendency to focus on the schisms and rifts of warlord politics, and paid their utmost attention to personalities and feuds in the ever-changing Chinese politico-military landscape. While they often despised the wickedness and corruption of Chinese leaders, they chose to take advantage of such nature whenever opportunities arose. Their intelligence activities largely through the *Tokumu Kikan* (Special Intelligence Organization) were always concerned with how to play the local politico-military leaders off against the others, including Chiang Kai-shek.[45] To them China was not a "nation," but it was simply a messy land mass inhabited by hundreds of millions of ignorant, uneducated, and politically highly submissive peasants living

merely on the subsistence level.[46]

To them, the Chinese soldiers were "stupid dolts, rustic hayseeds without a glimmer of knowledge or cultivation."[47] The Chinese soldiers were perceived by the Japanese as exemplifying the famous Chinese proverb, "Good iron does not make nails, good men do not make soldiers." It was very difficult for the Japanese China specialists to shake off the yoke of the warlord politics of the 1920's. As General Wu Te-chen once said, the Japanese thought they knew China too much.[48] Therefore, the Japanese military's myopic views of China did not leave room for a much larger historical perspective, and the Japanese officers stationed in China often concentrated only on the power game enveloping the Chinese.

Juzaburo Yamazaki still remembers a clever word of advice by Maj. Etsuo Kotani of the Russian Section: "If you want to study Chinese Communist affairs, you should study here. The China Section will be of no help to you! If you don't study the Comintern, you will never understand the Chinese Communists."[49]

When the Sian mutiny broke out and Chiang Kai-shek was kidnapped in December 1936, Maj. Gen. Rensuke Isogai, Chief of the powerful Military Affairs Bureau of the War Ministry beamed with joy, and invited a reporter to join the group by saying, "We are drinking a toast to the demise of Chiang. Oh, I am so glad! It's the greatest fun . . . Ha, Ha, Ha!!!" Isogai was then known as the leading China expert in the entire IJA. On the other hand Col. Kanji Ishiwara had an entirely different view. When the same reporter visited him on the same day, he deplored the incident by saying: "I feel very much sorry for the Republic of China . . . I fully sympathize with the Chinese people . . . It is a great pity for our neighboring country to go through such an unhappy incident when China is finally about to be united thanks to Chiang Kai-shek's efforts."[50]

When General Rihachiro Banzai spoke before a big crowd in January 1927, he painted the most gloomy picture of China, by saying that "China was doomed to collapse." He was also highly critical of the low standard of the Chinese soldiers. Banzai was the pioneer of the China field within the AGS, who had served in China for twenty-two long years. Banzai had once served Yuan Shikai as a military adviser.[51] Needless to say, such views were widely shared within the IJA, the Japanese mass media, and even in the academic world.

Thus the highly negative image held long by the Imperial Japanese Army's China specialists towards the Chinese must have greatly prejudiced their attitude towards intelligence estimates of China and the Chinese, which in turn adversely affected their operational thinking on China in general. As is shown above, this was acutely felt in the case of the Chinese Communists. Moreover, it will be no exaggeration to conclude here that such a contempt towards the Chinese must have greatly contributed to the opening of hostilities in 1937 and thereafter entrapping the Japanese in the protracted war — against their wishes.

Notes

1. Yukio Yokoyama, "Tokushu joho kaisoki," unpublished handwritten manuscript.
2. Yukio Nishihara, "Kantogun tai-So sakusenshi," vol 17, unpublished handwritten manuscript, National Institute for Defense Studies Military Archives, Tokyo (hereafter NIDS Archives).
3. Tsutau Ariga, *Kiso chosa: Nippon riku-kaigun no joho kiko to sonto katsudo*, The National Institute for Defense Studies Monograph Series, 1984, pp 135–136.
4. Yokoyama manuscript.
5. Fumio Nakamura, "Rikugun ni okeru COMINT no hoga to hatten," *The Journal of National Defense*, 16–1 (June 1988), p 85.
6. Ariga, *Kiso chosa*, p 139.
7. Nakamura, "Rikugun ni okeru COMINT no hoga to hatten," p 87.
8. Sanbohonbu, ed., "Sanbohonbu kotokan shokuinhyo," NIDS Archives; Toyama Misao, ed., *Riku-kaigun syoukan jinji soran: Rikugunhen*, (Tokyo: Fuyo Shobo, 1981); Nihon kindai shiryo kenkyukai, ed., *Nihon riku-kaigun no seido, soshiki, jinji*, (Tokyo: Tokyo Daigaku Shuppankai, 1971).
9. Yokoyama manuscript.
10. Ariga, *Kiso chosa*, p 138.
11. Yokoyama manuscript.
12. Hideo Kubota, "Zai-Shi dai-go kokugun tokushu joho senshi," unpublished handwritten manuscript.
13. *Ibid*
14. Yokoyama manuscript.
15. Ariga, *Kiso chosa*, p 157.
16. Ei'ichi Hirose, "Finland ni okeru tsushin joho," in *Showa gunji hiwa: Dodai kurabu koenshu*, vol 1, Dodai kurabu koenshu henshu iinkai, ed., (Toyko: Dodai keizai konwakai, 1987), pp 59–60.
17. Kubota manuscript.
18. Chungkuo Ti-erh Lishih Tangankuan, ed., *K'ang-Jih chengmien chanch'ang* (Chiangsu Kuchi Ch'upansheh, 1987), pp 993–1026.
19. Yokoyama manuscript.
20. Chalmers A. Johnson, *Peasant Nationalism and Communist Power: The Emergence of Revolutionary China, 1937–1945*, (Stanford University Press, 1962), p 108.
21. Boeicho Boei Kenshujo Senshishitsu, ed., *Senshi sosho: Hoku-Shi no chiansen*, vol 1, (Tokyo: Asagumo Shinbunsha, 1968), p 472.
22. Chungkuo Kuomintang Chungyang Weiyuanhui Tangshih Weiyuanhui, ed., *Chunghua mingkuo chungyao shihliao ch' u pien, Tui-Jih k'angchan shihch'i, ti-erhpien, tsuochan chingkuo, ti-erh*, (Taipei: Chungkuo Kuomintang Chungyang Weiyuanhui Tangshih Weiyuanhui, 1981), p 520.
23. Yokoyama manuscript.
24. Yokoyama Yukio interview, (September 12, 1988); Yamazaki Juzaburo interview, (September 18, 1988).
25. Yokoyama manuscript.
26. Kita-Shina Homengun Shireibu, "Tada Shun taisho kankei shiryo: Kita-Shina homengun kankei shokuinhyo tsuzuri, Showa 14-16," NIDS Archives.
27. Yokoyama manuscript.
28 Johnson, *Peasant Nationalism and Communist Power*, p 108.
29. Hisashi Takahashi, "Military Friction, Diplomatic Suasion in China, 1937–1938," *The Journal of International Studies* (Institute of International Relations, Sophia University, Tokyo), 19 (July 1987), pp 72–74.

30. Yokoyama manuscript.
31. Juzaburo Yamazaki interview, (September 20, 1988).
32. Yokoyama manuscript.
33. *Ibid.*
34. Johnson, *Peasant Nationalism and Communist Power*, pp 100–101.
35. Boeicho Boei Kenshujo Senshishitsu, ed., *Senshi sosho: Hoku-Shi no chiansen*, vol 2, (Tokyo: Asagumo Shinbunsha, 1971), pp 157-158.
36. *Ibid*, pp 125–126.
37. Yokoyama manuscript.
38. *Senshi sosho: Hoku-Shi no chiansen,* vol 2, p 171.
39. *Sakusen yomurei,* (October 20, 1938), NIDS Archives, pp 49–52.
40. *Ibid*, pp 50–51.
41. Toshio Morimatsu interview, (July 8, 1988). Also see Mazehara Toru, *Nihon rikugun no "kobo" ni kakawaru riron to kyogi*, The National Institute for Defense Studies Monograph Series, 1986, introduction and pp 256–257.
42. Hideo Kubota, Tokushu joho no jin'in kizai, unpublished handwritten manuscript.
43. Toshio Morimatsu inerview, (July 8, 1988).
44. Takahashi, "Military Friction,"pp 74–76.
45. Sumio Hatano, "Nihon rikugun no Chugoku ninshiki," *Rokokyo jiken goju shunen Nitchu gakujutsu toronkai hokokushu*, (Tokyo: Rokoyo jiken goju shunen Nitchu gakujutsu toronkai hokokushu junbi iinkai, June 30, 1987), pp 144–145.
46. See the work by one of Japan's the most highly respected Sinologists, Ni'ichi's Yano "Shina wa kuni ni arazaru ron," *Kindai Shina ron*, (Tokyo: Kobundo Shobo, 1923), pp 19–30. The idea that China was not a nation has been widely accepted in Japan.
47. Diana Lary, *Warlord Soldiers: Chinese Common Soldiers, 1911–1937*, (Cambridge University Press, 1985), p 83.
48. Theodore White and Annalee Jacoby, *Thunder Out of China*, (New York: William Sloane Associates, Inc., 1946), p 54.
49. Jazaburo Yamazaki, "Kahoku sokyo chiansen to joho kosaku," a handwritten manuscript for forthcoming publication.
50. Shinsaku Tamura, *Myohin kosaku*, (Tokyo: San'ei Shuppansha, 1953), pp 14–17.
51. Masato Yoshimi, *Banzai shogun koenshu: rinpo o kataru*, (Tokyo: Banzai Shogun Koenshu Kankokai, 1933), pp 23–25.

The Pacific Theater
Comments
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What role did intelligence play in the conduct of the Pacific war? To what degree can the "intelligence revolution" be said to have shaped the result of the struggle between Japan and her enemies? Was there a qualitative difference in the way the Pacific War's two principal belligerents, the United States and Japan, used intelligence?

Such questions are easily posed but not simply answered. While historians on both sides of the Pacific have raised them for nearly a half century, definitive answers to them remain elusive.

That our understanding of the role of intelligence in the Pacific War is as imperfect as it is can be explained in two ways. First, the task of establishing a link between what was or could have been known through intelligence and what occurs in battle is inherently complex. Only rarely, as for example in the case of the Battle of Midway, can the link be clearly seen.

Secondly, and perhaps more importantly, there is a yawning gap between our knowledge of Anglo-American intelligence and what is known about Imperial Japan's intelligence organization, its mode of operation, and its influence on the behavior of Japan's soldiers and statesmen. One has only to compare the flood of books and articles flowing from the release of the MAGIC intercepts by the U.S. National Archives with the trickle of information about Japanese military and naval intelligence to be found in print in any language.

This gap in understanding gives special significance to these papers. Our two authors have gone to unusual lengths — re-interviewing veterans of Japan's wartime intelligence endeavor; searching out previously unknown, handwritten memoirs and notes; and synthesizing for us the best of the massive Japanese-language literature on the Imperial Army and Navy — to reduce the gap between our knowledge of World War II intelligence in the West and in Japan.

Imperial Japan is perhaps the least known of the World War II belligerents who participated in the "intelligence revolution." If one sifts through what little has appeared in English on Japanese intelligence, it quickly becomes obvious that Tokyo has gotten a bad press. That was true at the end of the Pacific War, and it remains so more than forty years later. A 1945 American study of Japanese cryptanalytic activities called the Japanese intelligence system "naive;" labelled its reports "generally Allied codes."[1] A year later, the U.S. Strategic Bombing Survey pointed out weaknesses in the conception, organization, and dissemination of Japanese intelligence; it went so far as to say that Tokyo

officials so bent information to serve political ends as to become "blind to objective intelligence."[2] Nearly four decades later, in 1984, Michael Barnhart concluded that Imperial Japan had the weakest of prewar great powers' intelligence systems.[3]

Professors Coox and Takahashi's presentations suggest substantial revisions to this damning indictment of Imperial Japanese intelligence are in order. How does what they have said modify our picture of Japan's intelligence endeavor before and during the Pacific War? If, as they imply, Japan did not succeed in reaping the benefits of the "intelligence revolution" to the degree that its Anglo-American foes did, what explains that failure? And what do our two authors have to tell us about the broader character and significance of the "intelligence revolution" that came to fruition between 1939 and 1945?

In the broadest sense, these two studies suggest that Imperial Japan participated in, and enjoyed limited success in the more general "intelligence revolution" that occurred during the first third of this century. While Tokyo did not combine radio-traffic analysis with cryptographic breakthroughs equivalent to those that occurred in the West, the Japanese, nevertheless, did achieve significant, if selective, success in the newest and oldest forms of intelligence activity.

These successes deserve recognition. Let me mention but three apart from those discussed in the two papers. First, the Japanese appear to have broken American attaché codes used in China prior to Pearl Harbor.[4] They also appear to have developed electronic intelligence gathering skills sufficient to alert them to the fact that the USS *Panay* was the U.S. Navy's "most successful spy ship." That truth emerges from their zeal after its sinking to raise the ship and examine its electronic intelligence gathering and cryptological equipment. Not surprisingly, U.S. Navy authorities rejected Tokyo's requests.[5]

Secondly, Imperial Japanese Navy intelligence proved remarkably accurate, before Pearl Harbor, in forecasting U.S. fleet and personnel strengths; and in predicting force dispositions on the eve of war.[6] Thirdly, we should take note of the fact that by early 1945, Japanese intelligence had broken some U.S. Army Air Corps and U.S. Naval Air operational codes. By combining information derived from them with radio-traffic analysis, Japanese intelligence officers gained between six and seven hours advance warning on impending B–29 raids. Their success in analyzing the use of homing beacons for the B–29's was sufficient to force U.S. Army Air Corps officials to send out an investigating team in February 1945. It made changes in operational procedures which reduced the accuracy of Japanese predictions thereafter.[7]

These successes, together with those Professors Coox and Takahashi have mentioned, suggest a pattern of victory and defeat in Imperial Japan's intelligence endeavor. They pose an obvious question: Why did Tokyo succeed in some aspects of the "intelligence revolution" and fail in others? Why, in particular, were prewar successes in cryptanalysis not followed by additional

triumphs comparable to those enjoyed by America and Britain during the war?

One possible answer may be technological. It was simply more difficult to break American codes than Chinese ones because the encryption system used was more complex. Moreover, the Japanese were never able to capture intact or replicate Anglo-American cryptographic devices used for high-level communications.[8]

But I suspect the reason for Japan's failure to match her Western enemies' cryptanalytical successes go beyond technology. One key element of an explanation can be seen by comparing Tokyo's behavior in the race to build nuclear weapons with her inaction in this key area of the "intelligence revolution." Japanese physicists before 1941 were sufficiently current with basic developments in nuclear physics to suspect that others were working to achieve a nuclear fission-generated explosion. They could and did argue that Japan must compete in the race; they were given monetary and institutional support by the Imperial Army and Navy to pursue the necessary research.[9]

But this pattern did not recur in cryptanalysis. In May 1941, for example, Rear Adm. Kichisaburo Nomura was warned while in Washington that his negotiating partner, Secretary of State Cordell Hull, might be eavesdropping on his communications to Tokyo through cryptanalysis. Nomura refused to believe that that could be true.[10]

This instance of a failure to be warned, and perhaps others like it, probably have much to do with the Imperial Army and Navy's failure to allocate sufficient resources, recruit appropriate talent, and properly segment the tasks involved in trying to break Anglo-American enemies' codes. The magnitude and significance of these missteps becomes clear through even the most cursory of comparisons between Japan's cryptanalytical efforts and those going on in America, Australia, and Britain. In the West, the number of persons involved in cryptanalysis and radio-traffic analysis grew geometrically between 1941 and 1945.[11]

In Japan, however, while the numbers of field intelligence personnel in China grew steadily, the size of the cryptanalytical effort in Tokyo remained constant. At the time of Pearl Harbor, the Imperial Japanese Army Chief of Staff had but seventeen officers in its intelligence section; the Navy only twenty-nine. By early 1945, these numbers remained in two digits, and in the navy's case, only an influx of recently produced, untrained ensigns pushed them upwards.[12] The figures for the Naval General Staff's radio-intelligence organization responsible for code-breaking activities are even more revealing. In August 1945, Admiral Nomura had but nine regular naval officers, eleven reserve officers, thirty typists, a hundred and twenty communications technicians, and a varying number of student trainees for use in an emergency under his command.[13] Such numbers simply do not brook comparison with those at Bletchley Park, Arlington Hall, or General MacArthur's Intelligence Section.

The smallness of Tokyo's cryptanalytical effort may also have reflected societal tensions within the Japanese elite. We know that scientists from Tokyo Imperial University stood at the forefront of the effort to build nuclear weapons. Presently available evidence suggests that no such infusion of civilian mathematical talent occurred in the area of cryptanalysis. Precisely why physicists and not mathematicians were mobilized remains a mystery for Japanologists to resolve. Nor were musicians from the Tokyo Academy of Fine Arts put to code-breaking in the manner of the bandsmen of the USS *California*.[14] Perhaps a disaster such as that which occurred at Pearl Harbor was needed to shock military and naval intelligence organizations into the serendipitous discovery of a link between musical and cryptanalytical talent.

Finally, the Japanese failed to segment the tasks of cryptanalysis, as Americans eventually did, to allow each service to concentrate its code-breaking efforts upon a particular foe. Although Washington's June 1942 allocation of cryptographic responsibilities among Army, Navy, and FBI was late in coming and by no means eliminated interservice rivalries, it surely speeded success in breaking one after another of the Japanese codes.[15] While the Japanese Army and Navy did split cryptological and radio-traffic analytical responsibilities at field and fleet levels, and while there were instances of sharing of the fruits of that endeavor between the services, no one at or near the top in Tokyo imposed a clear-cut division of cryptanalytical responsibilities upon the two general staffs.[16] This failure to segment may well have led to duplication of effort by each service's understaffed communications and cryptological sections which hindered their efforts to break major enemy codes.

What, then, do the two papers tell us about the nature and significance of the "intelligence revolution" more generally? In my view, they offer us four important reminders about that revolution.

First, it was an international development, influenced by the hoariest of principles of international relations. As Professor Takahashi informs us, the Polish-Japanese connection was vital to Tokyo's cryptanalytical effort. That tie was established because both nations shared intense anti-Bolshevik, anti-Russian passions. The enemy of my enemy became my teacher.

Secondly, focused effort, tied directly to war planning against hypothetical enemies, was crucial to success in the "intelligence revolution." Professor Takahashi demonstrates that involvement in the warlord struggles of the 1920's and anticipated operational needs in China in the early 1930's led to Japanese army cryptographers' breaking of Chinese codes. Specific war-planning needs helped them overcome the negative effects of organizational in-fighting, professional disdain for their efforts, and budget limitations.[17] By contrast, as Professor Coox has suggested here and in his other writings,[18] when war-planning imperatives were less clear, as they were for the Imperial Army with regard to the United States, intelligence organizations devoted few human resources and cryptanalytical effort to a hypothetical foe.

Thirdly, what we have heard provides clues as to the relative importance of radio-traffic and cryptological analysis within the "intelligence revolution." Professor Coox reminds us with particular force that military intelligence is in its essence a broadly intellectual, not a narrowly technological, commodity. The major who became "MacArthur's staff officer" did so by force of reason rather than benefit of cryptanalysis. What he and General Arisue calculated as the probable sites and timing of American landings in the home islands was more plausible because radio-traffic analysis confirmed patterns of American behavior deduced from earlier operations. Their predictions would have carried even more weight if the Japanese had broken high-level American codes. But in this instance the absence of cryptanalysis did not alter the result. The traditional skills and pursuits of the intelligence officer—acquiring data; arranging it in systematic fashion; and deriving from it appropriate conclusions about enemy behavior and intentions—yielded the same success. The episode that Professor Coox has reconstructed appropriately cautions against overemphasizing the importance of cryptanalysis within the "intelligence revolution."

Finally, through his three very compelling examples, Professor Takahashi reminds us of the eternal gap between knowing and using knowledge. It was not easy for the Japanese army — nor is it easy for any military organization — to capitalize upon success in the "intelligence revolution." As he so shrewdly points out, human error on the part of field commanders, organizational conflicts between sub-units, and the prejudices of those who preferred to rely upon traditional "human intelligence" sources all reduced the value of what was obtained by code-breaking and traffic analysis. His reminder that even the temporary failure of signals intelligence to provide the necessary information about enemy tactical dispositions did not prevent a great victory in the Kichu operation of May and June 1942 was particularly instructive in this regard.

The two presentations we have heard today deserve only praise. As pioneering efforts, they naturally whet our appetites for more information about the Japanese intelligence endeavor and its impact on the conduct and outcome of the Pacific War. In my view, they point the way toward three kinds of studies that might fruitfully be undertaken in the future. We have learned much from Professors Coox and Takahashi about the Imperial Japanese Army intelligence effort; we must know more about its naval counterpart before our picture of Japanese intelligence can be said to be complete. We also need to reconsider those battles and campaigns in which the Japanese had advantages derived from the breaking of Chinese and lower-level American and British codes. In particular, the fighting in Burma and Operation ICHIGO cry out for re-examination.

Finally, these two papers suggest the need to consider with greater care the impact of this phase of the "intelligence revolution" upon the next. More particularly, they point to the need to examine how American knowledge of the breaking of Chinese Nationalist codes in World War II may have affected

American use of intelligence provided by Taipei during the Korean War and influenced Washington's efforts to penetrate Chinese Communist cryptological systems.

In conclusion, then, Professors Coox and Takahashi have greatly enlightened us about the successes as well as the failures of Imperial Japanese intelligence. In so doing, they have set us on the road to deeper understanding of the intelligence revolution more generally and the outcome of the Pacific War in particular.

Notes

1.   J.W. Bennett, W.A. Hobart, and J.B. Spitzer, *Intelligence and Cryptanalytical Activities of the Japanese During World War II: SRH 254, The Japanese Intelligence System, MIS/WDGS* (Laguna Hills, California: Aegean Park Press, reprint ed., 1986), p 132. This source will be cited hereafter as SRH 254.

2.   United States Strategic Bombing Survey (Pacific), *Japanese Military and Naval Intelligence Division, Japanese Intelligence Section, G–2, Report Number 97: Japanese Military and Naval Intelligence* (Washington: U.S. Government Printing Office, 1946), pp 1-3. This source will hereinafter be cited as USSBS.

3.   Michael A. Barnhart, "Japanese Intelligence before the Second World War: 'Best Case' Analysis" in Ernest R. May, ed., *Knowing One's Enemies* (Princeton, N.J.: Princeton University Press, 1984), p 424.

4.   Jeffrey M. Dorwart, *Conflict of Duty: The U.S. Navy's Intelligence Dilemma, 1919–1945* (Annapolis: Naval Institute Press, 1983), p 71.

5.   *Ibid*, p 93.

6.   USSBS, *Japanese Military and Naval Intelligence*, pp 45–51.

7.   SRH 254, pp 16–17; USSBS, *Japanese Military and Naval Intelligence*, p 31. It might also be noted that the Japanese had sufficient success in code-breaking to know the precise itinerary and flight schedules of Vice President Henry A. Wallace during his visit to China and the Soviet Union in 1944. But in contrast to the Americans who used similar data to shoot down the plane carrying Admiral Isoroku Yamamoto the preceding year, they lacked the capability to do anything in response to that information. SRH, p 14.

8.   *Ibid*, p 17, indicates that the Japanese may have gained possession of the M–209, converter and used it to decrypt lower-level traffic.

9.   Robert K. Wilcox, *Japan's Secret War* (New York: Morrow, 1985), pp 51–62, 74–79, 89–98, 118–123 detail the prewar and wartime links between civilian nuclear physicists and the Imperial Army and Navy's atomic bomb-building project.

10. Ronald Lewin, *The American Magic: Codes, Ciphers and the Defeat of Japan* (New York: Farrar Straus Giroux, 1982), p 55 indicates that Nomura investigated reports of American breaking of Japanese codes and concluded that some were compromised. But neither he nor his Tokyo superiors responded to this incident by taking significant actions to prevent further compromising of coded communications or by intensifying efforts to break Anglo-American codes.

11. Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York: Vintage Books, 1985), pp 454–455.

12. USSBS, *Japanese Military and Naval Intelligence,* pp 1–2.

13. *Ibid*, pp 2, 30.

14. Spector, *Eagle Against the Sun*, p 449.

15. Ibid, p 454.

16. SRH 54, pp 11–12; USSBS, *Japanese Military and Naval Intelligence,* pp 8, 28.

17. Barnhart, "Japanese Intelligence," pp 431, 441, briefly alludes to bureaucratic in-fighting as an obstacle to better intelligence; Sanematsu Yuzuru, *Joho senso* (The Intelligence War) (Tokyo: Tosho shuppan sha, 1972), pp 218–248 details examples of Imperial Japanese intelligence successes against the United States Navy in areas specifically linked to war planning.

18. Alvin D. Coox, "Imperial Japanese Army Assessments of America," unpublished paper presented at Western Association of Asian Studies Conference, Willamette University, June 20, 1987, details the weaknesses of army intelligence against the United States prior to Pearl Harbor.

The Legacy of the Intelligence Revolution

Chair: Walter Laqueur

Satellite Reconnaissance and the Establishment of a National Technical Intelligence Apparatus

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If there is a single period that can justifiably be called the most decisive in the history of the U.S. strategic reconnaissance program, it must surely be the summer of 1960, when technology and politics came together to establish a national intelligence capability in space and an infrastructure to support it. And the confluence of the two was not coincidental. By the end of August a system was in place that had been forged in the crucible of a long and bitter rivalry between the Air Force and the Central Intelligence Agency for control of a new and immense source of power: satellite reconnaissance.

On August 10th, following twelve unsuccessful attempts in a year and a half, a satellite named Discoverer 13 was successfully retrieved in the Pacific after completing seventeen near-polar orbits. Although spacecraft in the Discoverer series were publicly credited with belonging to the Air Force, which supposedly intended to use them for scientific experiments, they were in reality the first operational photo-reconnaissance satellites and functioned under the auspices of the CIA in a highly classified program called CORONA.

Eight days after Discoverer 13's successful deorbiting and splashdown, its successor, Discoverer 14, became the first satellite to be snatched in mid-air by an Air Force transport as it floated down under its orange and white parachute a few hundred miles northwest of Hawaii. And that, rather than fishing the spacecraft out of the water, had been the CIA's plan all along. After retrieval the small spacecraft were flown to Honolulu, where their spools of exposed film were removed and routed to processors and interpreters in Washington.[1] With the successful completion of the flight of Discoverer 14, the United States became the first nation to have an orbital reconnaissance capability. And that capability soon became "a milk run," in the words of Richard M. Bissell, Jr., who had directed U-2 operations over the Soviet Union for the CIA between 1956 and 1960 before running the CORONA operation.[2]

The other major element in the development of space reconnaissance to occur that August, the political one, took place at a special National Security

Council (NSC) briefing early on the morning of Thursday, the 25th. It was resolved at that meeting that space surveillance, which was clearly about to begin yielding an intelligence bonanza, would be jointly run by the Department of Defense and the Central Intelligence Agency — both of which were headed by civilians — and that a new organization with national responsibilities would be created to procure and operate the satellites. This arrangement, which had President Eisenhower's approval, effectively prevented the Air Force from controlling space reconnaissance and surveillance, which was precisely the idea.[3] The new body was called the National Reconnaissance Office (NRO). To this day the NRO remains so shrouded in secrecy that its name cannot be mentioned by anyone in an official position to know about its existence without the commission of a serious security violation. Officially, then, the National Reconnaissance Office does not exist.

Before considering the nature of the conflict over control of U.S. space reconnaissance and surveillance operations and how that conflict and other factors necessitated the creation of a national strategic reconnaissance apparatus, it is useful to briefly explain what there was about the operation that made it such an attractive prize in the first place.

The first official consideration regarding the use of satellites in an observation capacity appeared in a report, Preliminary Design of an Experimental World-Circling Spaceship, which the Army Air Force received in May 1946 from a group of engineers at the Douglas Aircraft Company who had formed a group eventually to be called the RAND Corporation. While admitting that the full military usefulness of earth satellites could not then be evaluated, the engineers who submitted the report did note that the platforms offered "an observation aircraft [sic] which cannot be brought down by an enemy who has not mastered similar techniques. In fact, a simple computation from the radar equation shows that such a satellite is virtually undetectable from the ground by means of present-day radar."[4]

In 1955 a Technological Capabilities Panel (TCP) headed by James R. Killian, Jr., submitted a report to Eisenhower that was entitled "Meeting the Threat of Surprise Attack," and which dealt with offensive, defensive, and intelligence requirements that were thought to be necessary because of the apparent danger posed by the Soviet Union's growing nuclear and long-range missile capability. The TCP's intelligence sub-panel, which was headed by Edwin H. Land of the Polaroid Corporation, strongly recommended the development of reconnaissance aircraft and satellites. "If intelligence can uncover a new military threat, we may take steps to meet it. If intelligence can reveal an opponent's specific weakness, we may prepare to exploit it. With good intelligence we can avoid wasting our resources by arming for the wrong danger at the wrong time," the TCP report explained. "Beyond this, in the broadest sense, *intelligence underlies our estimate of the enemy and thus helps*

to guide our political strategy." (italics added).[5]

Put another way, the Technological Capabilities Panel was saying that to a significant, if not decisive, extent the intelligence community shapes the way policy makers see the world. Specifically, it ranks threats both qualitatively and quantitatively, and in so doing it plays a crucial role in determining how the United States responds to those threats (if indeed it perceives a threat in the first place). Intelligence therefore goes right to the heart of military preparedness or lack of it, beginning with the allocation of funds for weapons systems and going through the order of battle itself. That is why "reconnaissance and its elements have become an immense source of power and control," in the view of Maj. Gen. George J. Keegan, Jr., a former head of Air Force intelligence who vigorously defended his service's technical intelligence capability in the face of what he saw to be dangerous, politically motivated CIA incursions that went back to the agency's founding in 1947.[6]

It should be noted that General Keegan was by no means alone in his sensitivity to encroachment by another organization within the government on what he understood to be the Air Force's just domain. Senior officers of General Keegan's generation were generally mindful of the fact that the Air Force — the youngest of the three armed services — has had to cope with subservience and predation from its birth. Throughout World Wars I and II the Air Service, Air Corps, and finally the Army Air Forces were for the most part relegated to the direct support of ground forces and were therefore treated as an appendage of the Army. The Navy concluded in the 1920s that combat and reconnaissance aircraft were destined to play an important role in war, but that they could best be used on aircraft carriers far from the shores of the United States, thereby using the oceans to keep hostilities away from the country itself. The air generals, typified by Billy Mitchell, Delos Emmons, and others were forced to stave off poaching by the admirals during the period between the wars in a series of clashes that are legendary. After the war the Army decided that ballistic missiles were really just long-range artillery rounds, and it therefore made a concerted attempt to corner the weapons for itself. It is understandable, then, that Air Force generals (Curtis LeMay being foremost among them) were vehement in their opposition to the CIA's effort, beginning with the development of the U–2 in 1955 and continuing with the space program, to wrest control of overhead reconnaissance, which they had dominated through World War II, from them. After failing to get its own long-range reconnaissance aircraft funded, in fact, the Air Force in the person of LeMay fought hard, but to no avail, for control of the first U–2s.[7]

But the Air Force's determination to control both airborne and spaceborne reconnaissance had a far more rational basis than the mere protection of turf for its own sake. The Air Force strategic reconnaissance requirement in the 1950s and the 1960s was driven by the needs of its own targeteers, as well as those officers on the air staff who were responsible for assessing the intentions of their

opposite numbers in the Warsaw Pact, and specifically as those intentions related to the numbers of Soviet military aircraft and their capabilities. It was the Strategic Air Command (SAC), not the CIA, that had the responsibility of destroying enemy targets, the reasoning went, and it therefore ought to be SAC that located them and determined what it would take to obliterate them. In an era when there was a real paucity of targeting information about the Soviet Union, and when reconnaissance time over target was precious because of its danger (in the case of U–2s) and expense (in the case of satellites), the Air Force was loathe to relinquish a decisive role in the planning and operation of the various systems that it needed to accomplish its mission. Equally important, the air staff was convinced that its photo interpreters, not those in another service, and certainly not in the CIA, were best suited to analyze other air forces. General Keegan has made the point this way:

> "Are they, or are they not, building submarines secretly? The judgment I want above all is that of the foremost submariner in the United States Navy. I want *that* Navy captain evaluating *that* photography and making the primary judgment. I *don't* want some GS-16 in CIA who's never been to war, never been to sea, never been on a submarine, and who knows nothing of the [military] operational arts. I don't want that guy to have a monopoly judgment going to the president that says the Soviets are not building submarines."[8]

Whatever the merits of the Air Force's position, however, it had to contend with a Central Intelligence Agency that felt equally strongly that "intelligence" was the operative word in overhead intelligence collection, not "overhead." (Since satellites do not fly in the air, "aerial reconnaissance" gave way to "overhead reconnaissance," which became an amalgam of both.) Allen Dulles, who headed the agency in the Eisenhower years, had first become intrigued by aerial photo intelligence when Clarence L. "Kelly" Johnson offered the CIA what was to become the U–2. Dulles had then persuaded Eisenhower that the U–2s, which were poised to begin penetration flights over the Soviet Union, ought to be operated by the agency, especially since should one be brought down, it would be important that its pilot be a civilian rather than a military officer.[9]

For his part, Eisenhower needed little convincing that overhead reconnaissance needed to be controlled by civilians. Civilian control of the military, not the other way around, was an implicit element in the federal structure. In addition, Eisenhower believed strongly that military organizations, working in conjunction with industry, tended to be self-serving to a point that was at best fiscally irresponsible and at worst risked conflagration. And as if he need better proof, Eisenhower had lived through a trumped-up "bomber gap" and, during that very summer of 1960, was in the throes of yet another crisis caused by an alleged "missile gap." Both of these situations occurred because of over-estimates of Soviet strength made by Air Force intelligence. And to make

matters even worse Ike was chagrined to see the Air Force's case, replete with carefully leaked data, being made in Congress by Stuart Symington, in Joseph Alsop's syndicated newspaper column, and elsewhere in the press. Alsop calculated that by 1963 the Soviet Union would have 2000 ICBMs to 130 in the United States.[10] Photographs of broad expanses of the Soviet Union taken during four years of CIA U-2 overflights had convinced Eisenhower and his closest advisors that no gap existed, but he could not make a convincing case without releasing information that had to be kept highly classified in order to protect other U-2 operations and the embryonic satellite reconnaissance program. The scare caused by the Air Force was doubly vexing to Eisenhower because, while unfounded, it nevertheless provided the Democrats with a potent issue for the approaching election.

By the summer of 1960 it was clear to virtually everyone in technical intelligence that satellites were going to cause profound changes in the scope of the collection process and the breadth of its "product." For the first time data would be accumulated on a truly global scale. The separate services had traditionally operated in their own limited spheres and for the most part collected information that they considered necessary to fulfill their own requirements. They were constrained by the limited "reach" of their platforms' cameras and antennas and, given such technical limitations, it was only natural that they wanted to take care of their own needs first. The air generals wanted to point their technologically myopic collection system at the MiGs their fighter pilots might have to engage should war come, not at destroyers and cruisers or tanks and armored personnel carriers, which would be the Navy's and the Army's problem, respectively.

But now, photo-reconnaissance satellites passing more than 100 miles above the earth and, some years later, their signals intelligence (SIGINT) counterparts, pointing electronic ears at the whole planet from as far out as geosynchronous orbit (22,300 miles), would create a truly global collection capability: a "Big Picture." The value of that picture could be expected to increase proportionate to its scope. Satellites, with the immense collecting ability and imperviousness to attack (at least at first) that their high vantage points afforded, ushered in true strategic reconnaissance on a global scale. But who would control the various elements in such a pervasive system? Who would decide what kind of satellites were to be built and in what numbers? Who would do the tasking, or assigning of targets, for those satellites? Who would process the imagery and signals intercepts they brought back, analyze them, and route the information to where it was needed (and in the process perhaps circumvent places where it was needed but where, for political reasons, it would not be allowed to go)? In March 1960, as the Air Force worked furiously on a reconnaissance satellite named SAMOS (for Satellite and Missile Observation System) and the CIA did the same with its photo-taking, problem-plagued Discoverers (that very month Number Nine's booster cut off prematurely and its successor abruptly veered off course and had

to be destroyed by the range safety officer), Secretary of Defense Thomas Gates suggested to Eisenhower that the entire military intelligence apparatus needed to be reviewed. The fragmented spy machine infrastructure had turned into a huge conglomerate, Gates asserted, which was spending $2 billion annually on some dubious enterprises that were resulting in waste and inefficiency. Eisenhower claimed to favor such a study but nothing came of it until Powers was shot down on May Day. That event, coupled with Gates's points and the increasingly bitter internecine warfare among the military intelligence organizations and between them and the CIA, finally led an exasperated Eisenhower to authorize the establishment of a panel to look into the problem and devise a solution.

The Joint Study Group (JSG) was composed of representatives of the Bureau of the Budget, the President's Board of Consultants on Foreign Intelligence Activities, the CIA, the National Security Council, and the departments of defense and state. It was chaired by Lyman D. Kirkpatrick, the inspector general of the CIA. After a few preliminary meetings, the JSG got down to business on July 10th, visiting SAC headquarters, CIA stations in Western Europe, and other related facilities. It met ninety times in the following five months and interviewed 320 individuals in fifty-one organizations. In its report the JSG noted, among many other things, that the United States Intelligence Board (USIB), which advised the National Security Council on matters relating to intelligence, had six military and only four civilian representatives and had failed to form a central management or a clearly-delineated mechanism for identifying intelligence requirements. The essence of the report's conclusion was a warning about military domination of the intelligence process.[11] This finding would not have displeased the President.

Nor was the JSG the only group that came into being to take a hard look at problems in overhead reconnaissance as a result of the U–2 incident and other difficulties. Shortly after the mishap, a three-man "SAMOS panel" was convened to undertake its own investigation of the management of the technical collection system. It was headed by George B. Kistiakowsky, the Harvard chemist who was Eisenhower's science advisor, and included Joseph Charyk, the Under Secretary of the Air Force, and John H. Rubel, the Deputy Director of the Defense Directorate of Research and Engineering.

By August of 1960, then, two groups charged with conducting critical examinations of the nation's technical intelligence management system for a president who distrusted the military were operating inside and outside the White House and moving inexorably toward a conclusion which the Air Force could only view with growing apprehension. That much can be deduced from Kistiakowsky's diary entry for Wednesday, August 3, 1960:

> The notable event of the day was a series of phone calls from such as Charyk and [Ivan] Getting [President of the Aerospace Corporation], the result of a rumor spreading in the Pentagon concerning the supposed recommendation of our SAMOS panel to transfer its management to CIA. I assured everybody of my innocence, but urged Charyk that the organization should have a clear line of authority and that on the top level the direction be of a *national* character, including OSD [Office of the Secretary of Defense] and CIA and *not the Air Force alone* (italics added). Quite obviously the Air Force is trying to freeze the organization so as to make a change more difficult by the time the NSC is briefed.[12]

At another point, the Special Assistant to the President for Science and Technology indicated that the Air Force was desperate to head off the recommendations it saw coming:

> Then a long phone call from Charyk, telling me about the plans of the Air Force in connection with the SAMOS satellite project. Clearly, they are trying hard to freeze the management of SAMOS in such a way that our briefing to NSC couldn't change it.[13]

"When we recommended that the line of command be directly from the Secretary of the Air Force to the officer in charge of the project," Kistiakowsky noted after the fateful NSC briefing of August 25th, "the president remarked that this was the way to do it" and approved the reorganization plan "without further ado."[14]

The key objective of the reorganization of the overhead intelligence infrastructure was the establishment of an organization that was national in scope. That is, a body was created that would perform an intelligence function for the government as a whole, rather than for a particular department or agency. This new organization was named the National Reconnaissance Office (NRO). It is the third national-level foreign intelligence body after the CIA (which was created in 1947 to coordinate overall intelligence operations and advise the National Security Council), and the National Security Agency (NSA), (which came into existence in 1952 for the purpose of providing master guidance for the nation's signals intelligence (SIGINT) operation).

The NRO is the smallest, most heavily financed, and most secret — the blackest — of the three organizations. It functions under the guise of the Under Secretary of the Air Force and the Air Force's Office of Space Systems in the Pentagon. The NRO's cover may be suitably ambiguous, but its mandate is explicit. It is responsible for the procurement and operation of all U.S. military intelligence satellites, including such imaging platforms as the KH-11 and KH-12, SIGINT types like RHYOLITE, MAGNUM, CHALET, and VORTEX, radar ferrets like JUMPSEAT, ocean reconnaissance satellites such as those in the Navy's WHITE CLOUD program, and the radar reconnaissance satellites that are planned for use in the near future. The NRO is also heavily involved in tasking the targets that are to be reconnoitered by the satellites, with participation on a

number of committees that set national technical intelligence policy, and with establishing security restrictions for its various programs.[15]

In its capacity as a procurer and operator of the extremely complicated and enormously expensive reconnaissance satellites, the NRO maintains a close working relationship with their manufacturers and major subcontractors in California, chiefly TRW, Hughes, and Lockheed's Missiles and Space Division. The NRO site procurement office is in fact the Air Force Special Projects Office, which is itself located in the Air Force Space Division at El Segundo, immediately south of Los Angeles. It is this office which works with the contractors, and also with the Aerospace Corporation, a think tank, in designing the spacecraft. The satellites are operated for the most part by those who build them, the contractors and subcontractors, from the Consolidated Satellite Test Center (CSTC) at Sunnyvale, which is in the heart of Silicon Valley, about an hour's drive south of San Francisco. The CSTC is part of Onizuka Air Force Base (named after Ellison S. Onizuka, the astronaut who was killed in the Challenger explosion) and is across the street from Lockheed Missiles and Space Division's sprawling satellite assembly facility, which is where the company's reconnaissance platforms and other spacecraft are built under extremely tight security. There is an NRO presence on both sides of the street.[16]

Beginning with Charyk in 1960, directors of the NRO have almost always been undersecretaries of the Air Force, while deputy directors have come from the CIA. This arrangement requires the participation of both the Office of the Secretary of Defense (OSD) and the Director of Central Intelligence (DCI) in the decisionmaking process. It is noteworthy that both the Secretary of Defense and the Under Secretary of the Air Force, who technically heads the NRO, are civilians who serve at the pleasure of the President. Obviously, the representative of the CIA is also civilian, thus effectively shutting out decisionmaking by career military officers at the organization's highest level. This, of course, is precisely as Eisenhower wished it to be and no subsequent president seems to have wanted to make alterations. What has changed in the NRO over the years is the composition of its middle- and upper-echelon management. Whereas loyalty in the formative years tended to be to the agency or the service from which the employee came, the organization has evolved over the course of nearly three decades to where it has established its own traditions and commands the loyalty of those who work for it.[17]

Nor are procurement and satellite operations the only facets of satellite reconnaissance that have been "nationalized." All basic decisions relating to spaceborne technical intelligence collection are made by four bodies: the National Foreign Intelligence Board (NFIB), which replaced the USIB, two of the NFIB's thirteen committees, and the National Reconnaissance Executive Committee (NREC).

The NFIB is the nation's top interagency intelligence organization and is responsible for creating national intelligence estimates, setting a common course

for specific intelligence priorities, and advising the National Security Council on matters relating to foreign intelligence. It is chaired by the Director of Central Intelligence, while its members are drawn from the NRO, the NSA, the State Department's Bureau of Intelligence and Research (INR), and representatives of the FBI, the Departments of Energy and the Treasury, and the CIA (since the Director of Central Intelligence acts in his capacity as the head of the entire intelligence community, the agency is represented by one of his deputies). The assistant chiefs of staff for the intelligence branches of the Army, Navy, and Air Force sit in at the NFIB's weekly meetings.

Two of the NFIB's committees set specific tasking requirements and determine which agencies or departments are allowed to see the collected intelligence (be it imagery or transcripts of signals intercepts). These are the Committee on Imagery Requirements and Exploitation (COMIREX), and the SIGINT Committee. COMIREX's members represent the same organizations as are on the NFIB, plus the Army's assistant chief of staff for intelligence, the director of naval intelligence, and the Air Force's assistant chief of staff, intelligence. It is in COMIREX that competing imaging collection requirements are thrashed out and set on a priority list that must be matched to the availability of KEYHOLE satellites to carry out the assignments. The SIGINT Committee does the same things where signals intercepts are concerned.

The National Reconnaissance Executive Committee (NREC), which was created in 1965 as a result of five years of bitter feuding between the Air Force and the CIA over control of the NRO, exercises executive control over the NRO itself. As is the case with the National Foreign Intelligence Board, the NREC is chaired by the Director of Central Intelligence, who reports to the Secretary of Defense. In addition to representatives of the usual intelligence agencies and departments, the president's national security advisor also sits in at meetings, thereby lending the weight of the chief executive to deliberations and injecting a modicum of impartiality. The NREC sets the NRO's budget which, combined with the Air Force's intelligence budget, is estimated to be approximately $5 billion a year, or roughly $50 billion for the decade of the 1980s.[18]

With the design, assembly, tasking, and operation of reconnaissance satellites being done under national auspices, it remained to consolidate the last part of the loop: interpretation of the product and its distribution. The interpretation of imagery is the part of the technical collection and analysis process that is most susceptible to political manipulation: what is in the eye of the beholder all too frequently tends to confirm what is in his interest. Analysts can be hard pressed to come to conclusions that are at variance with the wishes of superiors who have decisive influence on their careers. Further, even honest mistakes can easily go uncaught when there is an incestuous relationship between the intelligence collection process and those who interpret what is brought back. Accordingly, the Joint Study Group recommended in December 1960 that a service of common concern be created to interpret and distribute

satellite imagery.[19] National Security Council Intelligence Directive 8, issued the following year, established the National Photographic Interpretation Center (NPIC) to handle that task. NPIC itself evolved from a succession of CIA photo interpretation groups which started in 1953 as the Photographic Intelligence Division with a staff of thirteen.[20] Today NPIC is operated by the CIA in a mostly windowless former warehouse at the corner of First and M Streets in the southeast quadrant of Washington, adjacent to the Navy Yard and only eight blocks from the Capitol. Its director is from the agency, its deputy director is from the Air Force, and its staff of about 1,000 comes from both the CIA and the Department of Defense.

Owing to the heavily classified nature of the national strategic overhead reconnaissance program, the results of the nationalization process are difficult to assess by an outside observer. Nonetheless, some conclusions seem to be warranted.

The CIA and the Air Force were brought together in the procurement and operational aspects (respectively) of overhead reconnaissance in the form of the NRO. Nevertheless, the CIA, the Defense Intelligence Agency (DIA), and all three military services have through the ensuing years continued to maintain their own technical intelligence departments and, irrespective of NPIC, have kept their own interpreters and analysts. The CIA, for example, operates three of its own units — the Directorate of Science and Technology and two organizations, the Office of Development and Engineering, and the Office of SIGINT Operations, which are subordinate to it — to work on reconnaissance satellites that it favors.[21] Similarly, the Air Force Special Projects Office at El Segundo, while functioning as part of the NRO, is also responsible for assuring that Air Force engineering desiderata are reflected in new spacecraft. Navy satellites like the ocean-reconnaissance types that have operated in CLASSIC WIZARD'S WHITE CLOUD program are designed by the Navy Space Project, which is part of the Naval Electronics Systems Command (NAVALEX).[22]

It is the same where interpretation is concerned. The CIA's Directorate of Intelligence maintains its own Requirements and Evaluation Staff and an Office of Imagery Analysis (which oversees NPIC and conducts its own in-house imagery interpretation). The DIA runs its Defense Intelligence Analysis Center at Bolling Air Force Base in Washington, where aerospace and electronics engineers interpret intelligence concerning Soviet, Warsaw Pact, and Communist Chinese ballistic and cruise missile development, fighters and such related weapons systems as radar and air-to-air missiles, and space activities, irrespective of what happens within NPIC.[23] The Air Force Intelligence Service's (AFIS) Directorate of Operational Intelligence, which operates units that are responsible for special studies, intelligence research, photo research, and aerospace intelligence, performs similar functions, while the 544th Strategic Intelligence Wing at SAC headquarters at Offutt Air Force Base analyzes reconnaissance data for threat assessment, targeting, and the computation of

trajectories for U.S. ballistic missiles. There is also a Naval Intelligence Support Center (NISC) at Suitland, Maryland.[24]   NISC is charged with processing, analyzing, and disseminating scientific and technical intelligence about foreign naval systems, and it uses a great deal of satellite-derived intelligence to accomplish that mission.[25] In addition to thousands of other types of hardware, foreign naval systems include naval versions of the MiG–23 Flogger and the Su–27 Flanker fighter aircraft. This means that intelligence photographs of the two planes, to take only one example among countless others, have almost undoubtedly been scrutinized and reported on by interpreters at the Central Intelligence Agency, Defense Intelligence Agency, Air Force Intelligence Service, Naval Intelligence Support Center, and National Photographic Interpretation Center.

Such multiple effort is hardly in keeping with one of the most important reasons for consolidating satellite reconnaissance operations: the reduction of duplication. Yet it is the inevitable result of each agency's and service's determination not to relinquish its own technical intelligence operation for fear of being thwarted or ignored by what it sees as its competitors.

The competition, particularly during the first two decades of this most uneasy alliance, has often been rancorous. Reconnaissance wars, chiefly between the CIA and the Air Force, predate the U–2 program. But the ferocity of the conflict coincided with the expanded capability (and matching budgets) that came with the introduction of space-based platforms. The stakes, both politically and monetarily, simply became much bigger as the system expanded.

During the early 1960s, for example, Albert "Bud" Wheelon, who was the CIA's Deputy Director of Science and Technology, engaged in a series of heated exchanges with Brockway McMillan, the Under Secretary of the Air Force (and therefore the Director of the NRO), that have worked their way into the establishment's folklore. Wheelon felt that McMillan was favoring the Air Force in the division of space-based research and development projects and went to his own agency's defense with almost unbridled vigor. The late Herbert "Pete" Scoville, Jr., who preceded Wheelon at his job, has said that McMillan, unlike Charyk, was difficult to get along with because of his penchant for extending turf rather than trying to accommodate outside parties.[26] At any rate the dispute eventually became so venomous that John McCone, the Director of Central Intelligence, and Robert McNamara, the Secretary of Defense, agreed in 1965 to create the National Reconnaissance Executive Committee to provide an organization, modeled on the NRO itself, that would bring the feuding parties together in a formal structure that encouraged cooperation. Wheelon also got into a dispute with the National Security Agency over whether a satellite could monitor microwave communications and intercept missile telemetry from geosynchronous range. After being told by the NSA that such a capability was impossible, while his own Office of SIGINT Operations said that it was indeed possible, Wheelon went to TRW to produce a satellite that could perform such a

task. The result was RHYOLITE, one of the most successful reconnaissance platforms ever developed.[27]

Another battle over the development of a satellite concerned the KH–11, also known as Kennan, which was the first to have a so-called real-time imaging capability. The Six-Day War in 1967 convinced the CIA that an entire war could be fought without a single satellite photograph coming in that showed what was happening. This was because the KEYHOLE series satellites that came after Discoverer for the most part worked the way it had: they dropped their "take" in capsules, which had to be snared in mid-air over the Pacific and then delivered to Washington. But events in the Middle East in June 1967 convinced the CIA that it had to have a system which would collect and send intelligence almost instantly. Television could not do this with sufficient resolution. But the invention of the charged-couple device, or CCD, at Bell Laboratories in 1970 made an electro-optical real-time space reconnaissance possible. CCDs are silicon chips that capture photons in a way roughly similar to that of light meters; they act like mechanical retinas. The CIA concluded in the early 1970s that with a cluster of chips arranged in an array of 640,000, which is about the size of a postage stamp, a CCD attached to the sort of powerful telescope used in reconnaissance satellites could make high-resolution real-time imagery a reality. The problem, however, was that developing such a system would prove to be so expensive that funding would have to be squeezed out of the production of such on-line systems as the KH–8 close-look satellite and the huge KH–9, often referred to as "Big Bird." Furthermore, the financial squeeze would also limit the amount of time that satellites already in orbit could be allotted for intelligence collection, since that was enormously expensive as well. This meant that coverage of the Soviet Union, mainland China, and the rest of Communist Asia was going to have to be sharply reduced because of the KH–11, which was fixating the CIA's Directorate of Science and Technology. Here, the Air Force rebelled. What followed, according to General Keegan, was a period in which a protracted, "bloody" battle was fought between the agency and the Air Force because of the KH–11's development, which ultimately ran a half billion dollars over budget, according to Keegan. Meanwhile, anyone who wanted satellite-derived intelligence had to "stand in line" because of the diminished coverage.[28] The CIA won, however, and the first KH–11 was sent into orbit on December 19, 1976, returning its first real-time imagery on the day Jimmy Carter was inaugurated.[29]

In 1975, with the KH–11 virtually a *fait accompli,* the National Reconnaissance Executive Committee approved the development and deployment of a SIGINT satellite code-named ARGUS, which was supposed to replace RHYOLITE. The project had the blessings of William E. Colby, the Director of Central Intelligence, but Secretary of Defense James Schlesinger decided that the advanced system was unnecessary and ordered it killed. Colby reacted by appealing to President Ford, who ordered the National Security

Council to investigate the matter. The NSC responded favorably to ARGUS, and Ford approved it, but the satellite never made it off the drawing board because it was denied funding in congressional committee.[30] ARGUS very likely died, in fact, because Kennan lived. This means that an advanced eavesdropping system which would have provided one important type of coverage gave way to an advanced imaging system which provided an entirely different type of coverage. Since both could not be had, their respective advocates (plus the air generals who abhorred the reduced coverage necessitated by the KH–11) were forced into a conflict situation by a system that has elastic but finite political and economic boundaries.

    One other aspect of the reconnaissance war bears mentioning. That was the decision made in the early 1970s, subsequently reversed, that the National Aeronautics and Space Administration's Space Transportation System (STS) was to be the only means of getting Department of Defense spacecraft, including reconnaissance platforms, into orbit. That policy, which was promulgated after vigorous lobbying by NASA and over equally vigorous Air Force objections, affects technical intelligence collection today and will continue to do so for many years to come. Certainly there was nothing in the structure of the technical intelligence apparatus that provided for the settlement of disputes with outside agencies such as NASA. It was implicit in NASA's argument for STS that the agency itself might founder without such a vehicle and that there would be no STS unless it monopolized the launch process. In the end the Air Force could not prevail over so compelling an argument. The dependable Titan III class of Expendable Launch Vehicles (ELV), including the powerful Titan 34Ds that were used to get the 29,000-pound KH–11s to orbit, were ordered discontinued so they could not compete with the shuttle. As a result, the reconnaissance users' group was forced to depend upon a vehicle that the Air Force considered to be risky from a security standpoint and operationally unreliable. The loss of Challenger, followed by the destruction of a KH–11 and a KH–9 in the subsequent Titan 34D explosions, severely impaired U.S. imaging reconnaissance until another KH–11 finally made it to orbit in late October 1987.[31]

    But the damage to reconnaissance caused by the STS did not end with a twenty-one month hiatus in launches. The NRO was required to design the KH–12 so that it could be placed in its polar orbit by the STS at the Shuttle Launch Complex (SLC) at Vandenberg Air Force Base in California. Ideally, the heavy satellites would not only be carried to orbit by shuttles, they would be refueled by them, thereby making them far more maneuverable (and therefore less predictable and longer-lived) than their immediate predecessors, the KH–11s. But the abandonment of the Shuttle Launch Complex has left the Air Force in a quandary. The only way to get KH–12s into a polar orbit from Vandenberg is to use ELVs (most likely the Titan 4s), but that would mean their initial fuel load would probably have to be severely curtailed. In addition, they

would not be refuelable. Launching KH–12s from Cape Canaveral on shuttles would allow them to carry a full fuel load, and would also permit in-orbit refueling, but that orbit could not be polar because polar launches are not undertaken on the east coast. The highest inclination a Canaveral-launched KH–12 could achieve would therefore be on the order of fifty-five degrees or so, meaning that there would be no coverage north of Moscow, including the Kola Peninsula and Severomorsk, the home port of the Soviet Union's huge northern fleet, the ICBM complexes that stretch from Derazhnya to Verkhnyaya, the ballistic missile early warning and target-tracking radars at Mukachevo, Pechora, and elsewhere, the missile launch facility at Plesetsk, and much of the Kamchatka Peninsula. So have the reconnaissance wars impacted on the technical collection system.

The national technical intelligence apparatus as it has evolved since 1960 can be judged in two ways: according to whether it has worked as efficiently as was hoped at the outset and, ultimately, according to the quality of its product.

It was hoped in 1960 that bitter rivalries between the competing agencies and military services would be put to an end, that wasteful duplication of enormously expensive resources would cease, and that no service, and especially the Air Force, would control the collection and interpretation process.

Neither the creation of the NRO nor the creation of the NREC put an end to the rivalries, though they seem to have diminished in this decade, possibly because the reconnaissance users have made common cause against NASA. Competition in the interpretation of intelligence data continues. Disagreement between the CIA and the DIA over whether the Backfire bomber has intercontinental striking capability, for example, began before the SALT II treaty was concluded in 1979 and only ended when the DIA reassessed its position in 1985.[32] But competition among interpreters in the various intelligence organizations can be beneficial unless an excessive amount of time and resources are expended going over the same ground repeatedly. Conflicting analyses help to assure differing views in debatable areas, thereby precluding potentially harmful distortions by interpreters who either make honest mistakes or who are subtly pressured to see what their superiors want them to see. The multiplicity of facilities for processing and interpretation, however, reflects the insecurities of the various organizations and is needlessly costly in two ways: it wastes funds and it encourages the compartmentalization, rather than the sharing, of data. A single facility like NPIC, to which the entire community would have access, would probably be an improvement.

There is no wasteful duplication of overhead collection systems in the sense that the CIA, the Air Force, and the Navy (for example) operate satellites that perform the same tasks as other satellites. Yet there appears to be a great deal of waste in the designing of the spacecraft themselves and of their related systems. This may be inevitable because of the nature of the "cutting edge" technology,

but the buried budgets and the veil of secrecy that cover the design and assembly of the spacecraft encourages waste by failing to maintain close accountability; the NRO, including its contractors, has became "a playpen for engineers," in the words of John Pike of the Federation of American Scientists.[33] The secrecy, which many have called excessive given the fact the Soviet Union has its own highly successful space reconnaissance program, has led to charges that it is used to "shield past abuses and a history of major cost overruns." One former NRO official was quoted as saying that some of its projects had run as much as 100 percent over budget, while others asserted that costs associated with satellite development "had reached four or five times the projected totals."[34] On the other hand, a situation in which the pervasive rule is that contractors are free to come up with the world's most advanced technology almost regardless of the cost does not lend itself to judgment by the standards of ordinary accounting.

Excessive influence by the military, and by the Air Force in particular, does not seem to be a problem. Certainly no Air Force general who argued against the CIA's KH–11 or NASA's shuttle and manned space station would say that his service was exercising undue influence on the system. The excesses in interpretation that produced the bomber and missile gaps either no longer exist or else are effectively squelched within the loop before they can be made public. Space reconnaissance remains under the control of civilians.

The second way to judge whether the apparatus has performed as intended, by examining the quality of its product, is somewhat easier since we have the word of every administration since Eisenhower's, Republican and Democrat, as well as almost the farthest reaches of the congressional political spectrum and nearly everyone in the intelligence establishment itself who has been willing to speak for the record. The overwhelming consensus is that the national technical intelligence apparatus operates a system, including overhead reconnaissance, that is remarkably effective where collection is concerned. There has not been a single strategically important weapons or space development undertaken by the Soviet Union, the People's Republic of China, or our own allies, for that matter, that has surprised us since before Sputnik (which hardly surprised those who heard the Russians say repeatedly that they intended to launch such a vehicle in the International Geophysical Year). No ballistic missile test has gone unnoticed, no nuclear weapons explosion has gone unrecorded, no new submarine has gone undetected, and no space launch has gone unnoticed and unanalyzed by U.S. technical intelligence.

Every president with the exception of Reagan during his first six years in office has had confidence that U.S. reconnaissance and surveillance systems were up to the task of monitoring Soviet strategic missiles to a degree that guaranteed adequate verification of arms control treaties. And even the Reagan Administration attested to the quality of the system from the beginning, though it did so quite unintentionally. In publishing its annually updated compendium of Soviet weaponry, *Soviet Military Power,* by way of alerting the public to the

threat it saw, the Department of Defense simultaneously as much as conceded that the means by which it collected such elaborate information had to be very good indeed. Similarly, the frequently made charges, almost always quite specific, that the Russians were cheating at arms control clearly contradicted the Administration's parallel assertion that such treaties were not adequately verifiable. An alert observer was left to wonder how National Technical Means (NTM) of verification could be inadequate to assure compliance with the treaties on the one hand, while being adequate enough to spot all the supposed cheating on the other. Here, as elsewhere in the domain of satellite reconnaissance and the apparatus that controls it, politics at the highest level remains a decisive factor. Indeed, the series on *Soviet Military Power,* which in my view grossly distorts the opposition's capability across a wide spectrum of activity in terms relative to U.S. capability, and the stream of accusations regarding Soviet cheating on arms control (which all but ceased when the President decided he wanted his own treaty) amounted to a blatantly political distortion of the technical intelligence function. This is inevitable when the product is run through the public relations prism, as has occurred almost uninterruptedly since 1981.

What has been learned since the summer of 1960 on the command and operations levels is that engineering advances in technical intelligence collection for strategic planning, and particularly in overhead reconnaissance, have been easier to come by than commensurate political advances if the latter are defined as a set of common goals and mutual support within the intelligence establishment. Striking the elusive balance between mutually agreed upon operational goals and the right to dissent in the tasking and interpretation areas has been difficult to achieve. Yet the nationalization of satellite reconnaissance seems to have gradually taken hold as a generation of more independent professionals has acted to reduce, if not end, the excesses of the most parochial of the traditional adversaries. Extending that advance to the President and his national security advisors, however, is an as-yet unrealized (and perhaps unrealizable) goal.

Notes

1. CORONA and its antecedents are described in some detail in Jeffrey Richelson, *American Espionage and the Soviet Target* (New York: William Morrow and Co., 1987), pp 177–80.
2. Bissell's remark is from an interview with the author on May 23, 1984.
3. The creation of the NRO, which was not mentioned by name, is from George B. Kistiakowsky, *A Scientist at the White House* (Cambridge: Harvard University Press, 1976), p 382.
4. The Douglas (or RAND) report is *Preliminary Design of an Experimental World-Circling Spaceship*, Report No. SM–11827 (Santa Monica: Douglas Aircraft Co., May 2, 1946), pp 10–11.
5. The TCP report excerpt is from James R. Killian, Jr., *Sputnik, Scientists, and Eisenhower* (Cambridge: The MIT Press, 1977), p 80. Also from an interview with Killian on February 11, 1985.
6. Keegan's remarks are from two interviews with the author on September 16, 1981 and June 2, 1984.
7. Air Force contenders for the long-range reconnaissance aircraft are from Jay Miller, *Lockheed U–2* (Austin: Aerofax, 1983), pp 7-18. LeMay's role is from the interview with Bissell.
8. Keegan's remarks are from the second interview.
9. Allen Dulles's role is from the Bissell interview.
10. Alsop's figures are from Edgar M. Bottome, *The Missile Gap* (Rutherford: Fairleigh Dickinson University Press, 1971), p 80.
11. The JSG is from John Prados, *The Soviet Estimate* (New York: The Dial Press, 1982), pp 122-23.
12. Kistiakowsky's diary entry is from *A Scientist at the White House*, p 382.
13. *Ibid*, p 381.
14. *Ibid*, p 387.
15. The NRO's structure is in Jeffrey Richelson, *The U.S. Intelligence Community* (Cambridge: Ballinger Publishing Company, 1985), pp 12-15. One of the earliest public references to the NRO was contained in Victor Marchetti and John D. Marks, *The CIA and the Cult of Intelligence* (New York: Dell Publishing Co., 1974), p 79.
16. The NRO's El Segundo operation is in *The U.S. Intelligence Community*, pp 14–15. The Sunnyvale operation was described to the author by a knowledgeable source and has been seen by him from outside the fence.
17. The top NRO leadership is in *The U.S. Intelligence Community*, pp 12–13 Employee loyalty is from a private conversation.
18. Details on control of the NRO are from William E. Burrows, *Deep Black: Space Espionage and National Security* (New York: Random House, 1987), pp 210–13. The budget figure was estimated by John Pike of the Federation of American Scientists in an interview on June 27, 1983.
19. NPIC and the JSG are from *The Soviet Estimate*, p 123.
20. NSCID 8 and the Photographic Intelligence Division are from *The U.S. Intelligence Community*, p 29.
21. CIA satellite development groups are from *The U.S. Intelligence Community*, p 14.
22. *Ibid*.
23. DIA intelligence interpretation requirements were spelled out in a classified ad it took in *Aviation Week & Space Technology*, November 25, 1985, p 96.
24. *Ibid*, pp 51 and 62.

25. Three photographs taken by a KH–11 of a Soviet aircraft carrier under construction were sent to *Jane's Defence Weekly* during the summer of 1984 by a Navy analyst named Samuel Loring Morison, who worked at Suitland. The pictures were published by the magazine and subsequently received wide exposure. See: "Satellite pictures show Soviet CVN towering above Nikolaiev shipyard," *Jane's Defence Weekly,* August 11, 1984, pp 171–73. Morison was convicted of espionage and theft of government property.

26. The Wheelon-McMillan confrontation is from an interview with Herbert Scoville, Jr., on April 12, 1984.

27. The RHYOLITE dispute is from *American Espionage and the Soviet Target,* pp 223–24.

28. The war over the KH–11 is from the second interview with Keegan and has been confirmed by a highly knowledgeable source.

29. The first delivery of KH–11 real-time imagery was described by E. Henry Knoche in an interview on July 1, 1985.

30. ARGUS is in *The U.S. Intelligence Committee,* pp 298–99.

31. For details of the October 1987 launch, see "U.S. Air Force Titan Launch Restarts Heavy Booster Flights," *Aviation Week & Space Technology,* November 2, 1987, pp 24-25, and "2 Years of Failure End As U.S. Lofts Big Titan Rocket," *New York Times,* October 27, 1987.

32. The BACKFIRE debate is in "Pentagon Reassesses Soviet Bomber," *New York Times,* October 1, 1985.

33. Pike's remark is from an interview on June 27, 1983.

34. "Secrecy of U.S. Reconnaissance Office is Challenged," *New York Times,* March 1, 1981.

The Intelligence Revolution's Impact on Postwar Diplomacy

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We have learned a great deal over the past decade and a half about the impact of the "intelligence revolution" on World War II strategy.[1] That knowledge has led, in turn, to a reassessment of the role of intelligence in earlier periods, and to the emergence of intelligence "studies" as a distinct sub-discipline, complete with its own newsletters, journals, organizations, scholarly meetings, and university courses.[2] But this proliferation of scholarship stops abruptly with the conclusion of the war: it is as if the possibilities for serious research on intelligence end with September 1945, in a manner almost as decisive as President Harry S. Truman's when in that same month he abolished with the stroke of a pen the first full-scale intelligence organization the United States had ever had, the Office of Strategic Services (OSS).[3]

The two phenomena are not, of course, unrelated: the very fact that OSS did not survive into the postwar era has made possible the declassification of most of its records; there is little reason to expect comparable openness anytime soon for the records of the Central Intelligence Group, which Truman created only four months after dismantling OSS, or for those of its more famous successor, the Central Intelligence Agency (CIA), whose official existence dates from July 1947.[4] Nor does documentation on codebreaking activity in Great Britain and the United States—documentation that for the wartime years has largely sparked scholarly interest in intelligence matters—seem likely to be made available soon for the early postwar era.

We know that the "intelligence revolution"—by which I mean the open and clandestine collection of information, the organization and implementation of covert operations, and the systematic analysis of the intentions and capabilities of actual and potential adversaries—played an important role in the coming and subsequent evolution of the Cold War. But we know very little, as yet, about just what that role was. The historian of postwar intelligence activities is forced to rely upon a thin thread of evidence spun out in a bewildering array of mostly unverifiable writings and recollections by former officials (both disgruntled and not), defectors, journalists, parahistorians, and novelists. As the sheer volume—and marketability—of this kind of material suggests, the subject does not lack

fascination. What it is missing, however, is the basis for solid history.

Just when scholarly research on postwar intelligence matters will become possible is difficult to say: one of the peculiarities of the Cold War is that, because it has had no clearly-defined end, information about its more sensitive aspects is still, after more than four decades, hard to come by. But the writing of history begins with the framing of questions, even if one lacks the evidence to answer them. It is not too soon, therefore, to begin to assess what we know about the impact of the "intelligence revolution" on postwar diplomacy, and to begin to ask that most useful of the historian's interrogatories: what difference did it all make? From the answers, we may at least be able to perceive the boundaries of our ignorance with respect to this subject, and perhaps to identify an agenda for future research.

First, what do we know? It now seems clear that the United States and Great Britain directed their wartime intelligence activities almost entirely against their military adversaries. Although Soviet communications were routinely intercepted, no serious attempts were made to decypher them despite the impressive codebreaking capabilities both London and Washington had developed. To be sure, British and American cryptanalysts had their hands full in dealing just with German and Japanese intercepts: the price of "listening in" is, after all, inundation.[5] Soviet codes also were known to be harder to crack than those of the Germans and the Japanese, although as postwar developments would show, they were not unbreakable.[6] But it was not simply the codebreakers' workload and the difficulty of the task they would have faced that kept them from taking on Soviet material: the documentary evidence is elusive, but it seems likely that President Roosevelt and Prime Minister Churchill actively discouraged their codebreakers—and perhaps actually forbade them— from putting their formidable cryptoanalytic skills to use against the Russians.[7]

Nor, as far as we now know, did the Western allies take advantage of their expanded wartime contacts with the USSR to conduct espionage or to attempt to plant agents there. There were occasional amateurish efforts to gather information on Soviet military installations and other targets of interest;[8] but when opportunities for major intelligence coups arose, they do not appear to have been seized upon. For example, OSS Director William J. Donovan passed up the chance, in 1942, to exploit a Washington source close to Soviet Ambassador Maxim Litvinov. When Donovan raised the possibility, early in 1943, of cooperation with British intelligence to gather information on the USSR, the State Department vetoed the idea on the grounds that "if any undercover agent were disclosed, the repercussions could be serious both from a military point of view and politically."[9] The British Special Operations Executive, too, apparently lacked the authority to conduct covert operations within, or directed against, the Soviet Union.[10]

Nor were the Western allies hesitant about sharing sensitive information with the Soviet Union. Within two days after the German attack in June 1941,

Churchill ordered that ULTRA-derived military intelligence be made available to the Russians:[11] indeed Moscow almost certainly benefited from Enigma decrypts before Washington did.[12] Although the Roosevelt administration did balk at a 1944 plan to exchange OSS and NKVD missions, this happened for domestic political reasons—the fear that FBI Director J. Edgar Hoover might leak the information to hostile columnists—rather than from any reluctance on the Roosevelt administration's part to provide intelligence and counterintelligence data to the Russians. Despite the absence of a formal link between the two intelligence organizations a substantial amount of information went to Moscow: it apparently included the transfer of microdot and microfilm technology, information on German-organized anti-Soviet spy networks in Europe, and even, early in 1945, the return of some 1,500 pages of Soviet cypher material that the OSS had secretly purchased from the Finns. This sharing of information with the Russians—from both British and American sources—continued through the end of the war.[13]

The Russians were not, of course, told everything. Churchill stipulated they were not to know the means by which the British had obtained ULTRA information; nor were the Russians officially informed, at any point prior to the Potsdam Conference, of the joint Anglo-American project to develop the atomic bomb.[14] But, beyond that, the amount of information that was conveyed was remarkable when one considers the long history of Western suspicions about the Soviet Union prior to 1941, together with the impossibility of knowing what form postwar relations with that country were likely to take.

Did the Russians reciprocate? In the area of military intelligence, only grudgingly: neither the passage of time nor the opening of documents have called into question the essential accuracy of General John R. Deane's 1947 memoir, *The Strange Alliance*, which chronicled with great precision the difficulties Western military representatives in Moscow had in obtaining the information necessary for even the simplest forms of joint actions against the Germans and the Japanese.[15] If the Russians did manage to crack enemy codes—and there is some reason to think they might have[16]—there seems to be no evidence that they shared the information thereby gained with their allies.

When it came to espionage, the Russians did not in any way reciprocate Western restraint; indeed, the most striking disparity between Anglo-American and Soviet wartime behavior with respect to intelligence has to do with spying. It is now a matter of record that during the 1920s and 1930s the Russians had mounted an extraordinarily ambitious effort to recruit agents, chiefly in Great Britain but also in the United States, who might over time rise to positions of influence or even authority in those countries.[17] The sheer scope of this operation is astonishing in retrospect, as is the Russian's willingness to wait years for it to produce results. Whatever Stalin's suspicions may have been, neither the United States nor Great Britain was ever in a position to mount—or even to contemplate mounting—any remotely comparable operation against the

Soviet Union.[18]

Although by all accounts the British and Americans abruptly ceased whatever covert operations they may have been running against the Russians after June 1941, the Soviet Union, if anything, intensified its efforts to penetrate Western security. The bulk of this activity took place in Great Britain, the country in which the Russians had had their greatest success in placing agents, although it occurred in the United States as well.[19] It took two principal forms: infiltration of the secret Anglo-American project to construct the atomic bomb; and the activation of "moles" recruited during the 1930s who had now come to occupy positions of influence in London and Washington.

To be sure, the Russians did not recruit Klaus Fuchs: he recruited them. The German emigré scientist, then in Britain, offered information about bomb development as early as the fall of 1941, and the Russians immediately accepted.[20] This happened before anyone knew whether such a device could be made to work, and certainly prior to the 1944 Anglo-American agreement not to share atomic bomb information with "third parties"; indeed there is reason to think that latter decision may have been influenced by preliminary indications that the Russians had already penetrated MANHATTAN PROJECT security.[21] But what is even more important here is the contrast between the restraint the United States and Great Britain showed in exploiting intelligence targets of opportunity against their Soviet ally, and the eagerness with which the Russians seized upon this one.

That same appetite for surreptitiously obtained information is apparent when one considers how, during the war, the Russians used the "moles" they had earlier recruited in Britain and the United States. There was no order to "inactivate" these individuals after the British and Americans became allies in 1941, in the same way London and Washington refrained from using their codebreaking capabilities against the Russians. There is no evidence that Stalin saw any impropriety in spying upon his allies, or that he worried about the risks the exposure of such activity might pose. Although there is at present no way to know how extensive a volume of information the American and British spy rings transmitted to Moscow, it apparently continued to flow without significant interruption through the end of the war.[22]

Why did the Russians run such risks? One possible explanation is that they had some reason to think, if their spies were detected, that neither the Americans nor the British would make an issue of it. General Walter Krivitsky, the former chief of Soviet military intelligence for Western Europe, had defected to the United States in 1938, but little or nothing had been done about the information he provided. Whittaker Chambers had come forward in 1939 with what later proved to be accurate information about the American spy ring, but the response was much the same.[23] The British were known to be casual about vetting procedures for Secret Service and Foreign Office appointments, even for known communists and Soviet sympathizers.[24] Indeed, the general climate in the West

during the war was one of bending over backwards to trust the Russians; but far from reciprocating this treatment, it is now apparent that Moscow took full advantage of it. The result was to give the Soviet Union its own form of ULTRA and MAGIC, but in this case directed against its allies, not its adversaries.

The first evidence of Soviet espionage to be taken seriously in London and Washington came only three days after the Japanese surrender, with the defection of Soviet embassy code clerk Igor Gouzenko in Ottawa. Additional corroboration—although none of the documentary evidence Gouzenko had provided—emerged from the voluntary confession of former KGB courier Elizabeth Bentley two months later.[25] One can only speculate about what might have been done with this evidence had the war still been going on: it could hardly have been ignored, and yet public disclosure might have been ruled out because of its potential effect on the joint war effort.[26] As it happened, the Gouzenko case was not announced until February 1946; and although the Soviet agents named by Bentley were gradually eased out of the government in the months that followed, the information she provided did not become public knowledge until she appeared before the Un-American Activities Committee more than two years later. The delay in publicizing the Gouzenko-Bentley revelations was partly dictated by the need to verify the information they had provided,[27] but there was also very likely a reluctance within the Truman administration to accept the implications suggested about the future of Soviet-American relations.[28]

Nevertheless, the quiet "purge" that occurred in Washington was apparently effective in removing from positions of authority those officials now known to have been involved with Soviet espionage in the 1930s and early 1940s. The same was not true, of course, in London. With the exception of charges brought against atomic scientist Alan Nunn May, the Gouzenko affair, for whatever reason, produced no comparable purge within the British security establishment;[29] Soviet agents Kim Philby, Donald Maclean, and Guy Burgess presumably continued to send information of high quality to the Russians through the first six years of the Cold War.[30] The effect must have been to render largely useless efforts the Americans had made to counter Soviet espionage after the Gouzenko-Bentley defections of 1945, since so much sensitive information was routinely shared with the British during this period.[31] For practical purposes, Moscow's equivalent of ULTRA and MAGIC continued in operation until Burgess and Maclean finally fled to the Soviet Union in 1951.

This raises the question, then: did the Americans and the British have any equivalent capability that could be directed against the Russians? Apart from three instances about which we have anecdotal evidence, we know very little about postwar efforts to break Soviet codes. One involved the Army Security Agency's success, in 1949, in deciphering a KGB codebook that had been part of the material Donovan's OSS had obtained from the Finns five years earlier. (Although Roosevelt had ordered that these items be returned to the Russians, a

copy had quietly been retained.) This cryptanalytic breakthrough led directly to the identification as spies of Klaus Fuchs, Harry Gold, David Greenglass, Julius and Ethel Rosenberg, and a considerable number of lesser figures involved in Soviet espionage in the United States, although for security reasons the decyphered KGB messages could not be used in prosecuting them.[32] These decrypts were of little use in evaluating current Soviet intentions, however, because the Russians, who almost certainly knew their codes had been compromised, had long since changed them.[33] There is also less precise evidence that the the British managed to crack other encrypted Soviet communications that had been recorded, but not decyphered, during the war.[34] Finally, the CIA apparently achieved a successful interception of clear-text Soviet land-lines communications in Vienna in 1951: this appears to have provided some assurance that the Russians intended no military initiatives in Europe during the Korean War.[35] We also know that the United States had established listening posts around the periphery of the Soviet Union by the end of the 1940s and was regularly conducting reconnaissance flights—both by airplane and (much less usefully) balloon—over portions of its territory:[36] some of these activities would have permitted the interception of electronic information, but it is not yet clear what, if anything, it revealed.

From all that we know now, Anglo-American efforts to place agents and to conduct covert operations inside the Soviet Union and Eastern Europe in the early postwar years were thoroughly unsuccessful. Given the fact that the Central Intelligence Agency and its British counterpart, MI6, operated under the double disability of having to penetrate a closed society at a time when their own internal security had been severely compromised, this result is not surprising. Support for anti-Soviet forces in the Baltic States and the Ukraine got nowhere; the effort to organize a Polish resistance force was monitored by the Russians from the beginning; and in the most notorious example, Philby's treason not only wrecked repeated attempts to overthrow the communist government in Albania, but resulted in the deaths of several hundred participants in those operations.[37]

Outside the Soviet bloc, things went better. The CIA was reasonably successful in its efforts to supplement the Marshall Plan by influencing the 1948 Italian elections, weaning Western European labor unions and intellectual groups away from the communists, and making use of defector and emigre's to gain information on, and conduct propaganda against, the Soviet Union.[38] Early intelligence estimates on Soviet intentions and capabilities, although bland, were generally accurate in reflecting Stalin's reluctance to risk war and the poor condition of his armed forces; after 1949 the estimates did, however, become more alarmist than seems justified in retrospect.[39] The Agency did not anticipate Tito's 1948 expulsion from the Cominform, or the North Korean attack on South Korea in 1950; but it was able to balance these failures with its success in detecting the first Soviet atomic bomb test in 1949.[40]

On the whole, though, one would have to conclude that Soviet intelligence had the edge on its Western counterparts through the first half-decade of the Cold War. This achievement resulted in part from the Russians' "built-in" advantage of having relatively open societies as their target; but it also stemmed from their remarkable success in penetrating the MANHATTAN PROJECT, British intelligence, and through it, certain key activities of the CIA. Historians of postwar Soviet-American relations, this one included, have hesitated to incorporate this evidence into their scholarly work. The reason, almost certainly, is that the subject of espionage got so quickly caught up with the spread of McCarthyism that we refused to take it seriously: the fact that some cases were exaggerated led too easily to the assumption that all had been.[41] But within the past decade, the work of Allen Weinstein on the Alger Hiss case and of Ronald Radosh and Joyce Milton on that of the Rosenbergs has shown that these were not right-wing fabrications: espionage did go on in the United States in the 1930s and 1940s, and on a fairly extensive scale.[42] Because of more stringent secrecy rules, we lack this kind of precise corroborative evidence in studying the extent and nature of the British spy rings that operated during the same period; as a result, controversy still rages over them.[43] But whatever one's stand on Chapman Pincher, Peter Wright, and Sir Roger Hollis, no one would now question the seriousness of the penetration that took place, or the laxity of British authorities in failing to detect it.

Professor Robin Winks, in his book on Yale and the world of intelligence, very wisely reminds us of the importance of asking "so what?" questions: "So, what difference does it make that...Hitler had one testicle, that Sicilians still use sixteenth-century vulgarisms, that narrow-gauge track is not the same in New South Wales as in the Sudan?"[44] As great stacks of books that have been written about the history of espionage amply demonstrate, it is easy to get so caught up in the fascination of esoteric minutiae that one loses sight of what, if anything, it all meant. What difference did it make that the Russians spied on their Anglo-American allies throughout the war, that they knew much of what went on within the British and American government during the early postwar years, and that London and Washington failed to discover this until 1951? Is the world today—was the world then—discernibly different as a result?

The first reaction, when one discovers that one has been the victim of an intelligence coup, is that all secrets have been compromised: that the other side has been operating with complete knowledge of one's own intentions and capabilities.[45] It takes time to realize that even the most perfect of spy operations is likely to operate under severe limitations. For one thing, the clandestine collection of information, whether by human or electronic means, always involves filtration: someone must decide what information to obtain or intercept, what to transmit or decypher, and finally what to incorporate within the necessarily laconic analyses that go to those few at the top who have the authority to act.[46] For these reasons alone, an intelligence breakthrough is likely

to provide less accurate information than one might expect: one need only cite the ineffectiveness of MAGIC in anticipating Pearl Harbor, or of ULTRA in warning of Hitler's 1944 attack in the Ardennes, to make the point.

The difficulty is likely to be compounded when decisionmakers distrust the source of such information. We know, for example, that Stalin dismissed American and British reports warning of a German attack in June 1941, because he was convinced the West was trying to use disinformation to undermine Soviet-German relations.[47] There is little reason to think that his wariness regarding his wartime allies abated very much in the years that followed: his 1944 comment to Milovan Djilas about Churchill stealing kopecks from one's pocket but Roosevelt dipping his hand in only for "bigger coins" speaks volumes, both about Stalin's personality and about the failure of FDR's persistent efforts to overcome the Soviet leader's distrust.[48] We can get another glimpse into how Stalin's mind worked from a comment he made to Italian socialist Pietro Nennin in 1952: Cardinal Spellman, he claimed, had been present at the Yalta Conference in disguise; it had been he who, on orders from the Vatican, had turned Roosevelt against the Russians.[49]

Given that mentality, how much trust can we expect Stalin to have placed in the reports of Burgess, Maclean, or Philby, particularly if he had any inkling of the success the British had had during the war in turning German spies back against their masters?[50] Even in retrospect it is surprising that no Soviet "moles" were turned—at least as far as we know;[51] one wonders how long it would have taken Stalin to begin to give credence, if he ever did, to the belief that what he was getting was genuine information, not skillfully contrived deception?[52] Any comprehensive assessment of the impact of Soviet espionage on postwar diplomacy will have to give attention to the particular characteristics of its primary consumer, and to the question—fundamental to an understanding of Stalin—of whether he ever overcame the fear of being fooled sufficiently to be able to act on the basis of information conveyed to him through sources he could not completely control.[53]

But let us assume, for the sake of argument, that Stalin did take seriously the reports of his spies. What would he have learned from them that he would not already have known? There might well have been a fair amount during the period prior to the 1941 German attack, when relations with London and Washington were tense and little was voluntarily shared with the Russians.[54] But the flow of information increased exponentially after that: indeed, with the exceptions of ULTRA's source and the atomic bomb project, one is hard pressed to identify any major aspects of wartime strategy or postwar planning that Roosevelt and Churchill did not, in one form or another, share with the Soviet leader. It was, after all, they—not the spies—who indicated to Stalin that the West would contest an expansion of Russian influence into Eastern Europe; it was they who sought Soviet entry into the war against Japan and were prepared to pay for it; it was Roosevelt who raised the possibility that the United States

might not even keep troops in Europe after the war.[55] None of this was disinformation: it reflected what Roosevelt and Churchill really thought at the time. It was not that the Anglo-Americans surprised the Russians by deliberately misleading them during the war; rather, Western leaders surprised themselves by what they found it necessary to do to counter the Russians after the war had ended.

At lower levels within the American and British governments, it is again difficult to see how espionage could have given the Russians much information they would not otherwise have had. That would especially have been the case inside the Roosevelt administration, where the President's chaotic organizational arrangements created an effective, if unintended, compartmentalization: if Roosevelt's own subordinates did not know what his policies were—as they did not, much of the time[56]—then it is difficult to see how the Russians could have learned very much either. Administrative structures were more coherent in Britain, of course, and the extent of Soviet penetration there was more extensive. It seems probable, therefore, that the Russians had more complete information about the inner workings of the British than of the American government, but again—and apart from information on ULTRA and the atomic bomb—it is not clear how much Stalin would have learned from these sources that he would not already have known, or could have found out by more straightforward means.

One supports moles, though, not just to collect information; one hopes to be able to use them, as well, to influence the policies of the government within which they function. It is important to determine, then, whether the existence of Soviet moles in London or Washington gave Moscow the capacity to shape American or British policy at any point during the war. This is, of course, a very controversial question, dependent for its answer on the tricky business of distinguishing between "sufficient" and "necessary" causes for historical events: between things that would have happened in any event, and those that—in the absence of the critical variable—would not have. Several suggestions have been made as to how Soviet moles might have shaped Western policy; there is space here to examine them only briefly:

(1) The British failure to support an anti-Hitler resistance movement. Anthony Glees has recently argued that Kim Philby's major wartime achievement was to undermine efforts to create an exile resistance force that could have worked with Hitler's opposition inside Germany to overthrow him and negotiate peace.[57] There is a surface plausibility to this assertion: as Vojtech Mastny has pointed out, Stalin does appear to have followed a general pattern of undercutting anti-German resistance forces where he could not control them.[58] But, given the Anglo-American "unconditional surrender" policy, it is not at all clear what the British would have done with a successful anti-Hitler resistance movement had they been able to sustain one. Nor is it apparent that there was sufficient resistance to Hitler within Germany itself to have ensured success. There is, in short, enough reason for skepticism to regard Glees's argument as,

at best, unproven.

(2) The misreading of Soviet postwar intentions. Glees has also suggested that British security failed miserably in detecting Stalin's "plan" for the postwar domination of Europe.[59] But he appears here to confuse Stalin's general determination to expand postwar Soviet influence—something Roosevelt and Churchill were surely aware of, since they gave him reason to believe they would not resist it—and the existence of a detailed blueprint for dominating Europe. Soviet specialists are much less certain than Glees that Stalin had such a plan in the first place;[60] and it is also worth noting that even if he did, the Americans were no better at detecting it either, despite the absence in Washington of spies comparable in preeminence to those in London.[61]

(3) Harry Dexter White and the Morgenthau Plan. The most plausible instance in which an American mole might have sought to influence Roosevelt administration policy would appear to be the 1944 Morgenthau Plan for the "pastoralization" of postwar Germany. It is now generally accepted that a key architect of that plan, Harry Dexter White, assistant to Treasury Secretary Henry Morgenthau, Jr., had been a part of a Soviet spy ring in the 1930s.[62] But since the Russians themselves expressed opposition to the Morgenthau Plan when they learned of it, and since the strongly anti-German attitudes of both Morgenthau and Roosevelt himself provide a powerful alternative explanation for the plan, there is no reason to think that this particular American mole—if he was still functioning in that capacity—affected United States policy on this issue in any substantial way.[63]

(4) Alger Hiss and the Yalta Conference. Much was made, after Hiss was charged in 1948 with having been a Soviet agent, of the fact that he had been present at the Yalta conference where, it was alleged, an enfeebled Roosevelt had "sold out" both Eastern Europe and Nationalist China. Although Hiss's involvement with the Russians is no longer questioned (except by Hiss himself), the most thorough and critical examination of his career has turned up no evidence that he significantly influenced the Roosevelt administration, whether at Yalta or with respect to any other major foreign policy issues.[64]

In short, the case has yet to be made that either an American or British mole succeeded in altering in any identifiable way any wartime policy of the United States or British government. This is not to say that such a case cannot at some future point, and in the light of new evidence, be made. But that has not occurred to this date.

What about the early postwar years? Because the flow of information voluntarily supplied to the Russians was almost totally cut off soon after the war ended, there is little reason to doubt that Soviet moles—by that time, almost exclusively those operating in Britain—were in a position to supply valuable information the Russians would otherwise have found difficult to obtain. In addition to access to top-secret British codes, this would have included the reassessments of Soviet intentions that were going on within the American and

British governments, planning with respect to the British withdrawal from Greece and Turkey, the creation of the Marshall Plan, the discussion of options for dealing with the Berlin Blockade, the formation of the North Atlantic Treaty Organization, and, perhaps most significantly, through Maclean's position on the Combined Policy Committee, virtually all aspects of American, British, and Canadian cooperation on atomic energy matters.[65] Philby helped analyze American intelligence data on the first Soviet atomic bomb in 1949, and he would have known about the decyphered KGB codes that were later used to identify Fuchs, the Rosenbergs, and other Soviet agents charged with espionage in the United States, although he apparently made no effort to warn them.[66] The British spies would have been in a position, as well, to convey information about American efforts in 1949-50 to bring about a break between the Chinese Communists and the Russians,[67] and about plans—or the lack of them—for the defense of Korea. And once the Korean War began, of course, there would have been ample opportunities to inform the Russians of evolving Anglo-American strategy for countering North Korean and Chinese military operations.[68]

But so what? What difference did all this make? Again, it is useful to try to specify how, if at all, Soviet espionage appears to have altered the history of early postwar international relations:

(1) Compromising covert operations. The most obvious effect of the treason Philby and his compatriots committed appears to lie in the ease with which the Russians were able to detect and eliminate—or turn to their own purposes— certain clandestine Western intelligence operations. The pattern that emerged can be seen first in the so-called Volkhov affair of September 1945, an attempted defection by a Soviet intelligence officer in Istanbul that Philby apparently frustrated by reporting the matter to the Russians, who appear in turn to have abducted the individual in question and returned him to Moscow before British agents could reach him.[69] It seems safe to assume that subsequent British and American efforts to infiltrate agents and arms into the Soviet Union, Eastern Europe, and the Balkans came to grief at least in part because Philby betrayed them in much the same way;[70] although one must also ask what the chances would have been of these operations succeeding had Philby never existed. There is, of course, no sure way to answer that question, but it is worth pointing out that the history of Western efforts to shake Soviet authority by such means has been, until very recently in Afghanistan, unimpressive.

(2) The atomic bomb. The next clearest postwar effect of Soviet espionage is that it probably accelerated the date at which the Russians succeeded in testing their first atomic bomb. Fuchs himself estimated that the information he provided enabled Soviet scientists to speed up their atomic bomb project by "several years";[71] others have pointed out that the Russians could have obtained the most critical information they needed from what the overly generous Americans themselves revealed about their own achievement.[72] It seems safe to conclude that Fuchs—and, to a lesser extent, the Rosenbergs—saved the

Russians at least some time by suggesting short-cuts, but that they would have developed the weapon in any event not very much later than they did. Certainly there is no evidence that Fuchs or anyone else transmitted useful information on thermonuclear weapons technology.[73]

(3) Soviet risk-taking in Berlin and Korea. Maclean may well have known that the B-29 bombers Truman ordered to British bases at the time of the 1948 Berlin blockade carried no atomic weapons with them; he may also have been generally aware of the doubts American military planners had at that time as to whether the limited number of atomic weapons then available would be sufficient to defeat the Soviet Union if war came.[74] He was almost certainly in a position to inform the Russians of the critical Truman-Attlee talks that followed Chinese intervention in Korea in November 1950, at which the limits of the United Nations military response were agreed upon.[75] But what Stalin would have made of such information is not at all clear: he could conceivably have found it either reassuring or tempting. We know that he ran risks in initiating the Berlin blockade and in authorizing the North Korean attack; we also know that, once Western resolve had become firm in each of these situations, he behaved very cautiously.[76] What we do not know is what role, if any, the reports of his spies played in shaping this behavior.

(4) Anglo-Americans relations. The most easily documented effect of postwar Soviet espionage is one the Russians may not have intended, because it resulted from the exposure of these efforts: it is the very serious damage done to Anglo-American relations as for years afterwards recriminations flew back and forth across the Atlantic about who was to blame for what had happened. The arrest of Fuchs early in 1950 effectively ended whatever possibility there might have been for cooperation on nuclear matters;[77] and we can assume—certainly well-informed spy novelists have led us to believe—that the 1951 defection of Burgess and Maclean severely limited the willingness of American intelligence organizations to share information with their British counterparts.[78] The issue no longer figures so prominently in relations between London and Washington, but there are those who have suggested a certain satisfaction in Moscow with the highly publicized efforts of British "molehunters" that continue to this day.[79]

(5) Negotiations with the Russians. One might have expected Soviet agents to have used their influence in London and Washington to attempt to move the British and American governments toward a more accommodating diplomatic posture regarding the Soviet Union, especially in the light of the Russians' own persistent "peace offensive" of 1948-50.[80] There is, interestingly, no evidence that they did so; indeed, if anything, Philby appears to have gone out of his way to appear suspicious of Soviet intentions.[81] But, more important, revelations of Soviet espionage can only have reinforced the sense that was growing in the minds of Western statesmen that the Russians were not to be trusted, and that serious negotiations with them therefore were not to be risked. There is every reason to think that the Gouzenko-Bentley revelations of late 1945 helped

convince President Truman that he could not, as he had hoped he might, trust Stalin;[82] it is also interesting to consider the extent to which the Hiss, Fuchs, and Rosenberg cases may have contributed to the Americans' insistence, in dealing with the Russians after 1950, on "negotiation from strength," which meant, for all practical purposes, no negotiations at all.[83] It now seems clear that Stalin would like to have had negotiations, albeit on his terms.[84] But success in espionage can, in other areas of foreign policy, bring failure.

That point raises the more general question: was it all worth it, from the Russians' own standpoint? There is good reason to doubt whether the benefits Stalin gained from spying on his allies during and after the war counterbalanced the problems created for him once his indulgence in espionage became known. Roger Makins (later Lord Sherfield) has called attention to an important rule of statecraft: "You do not spy on your friends."[85] What is often forgotten about Stalin is that he wanted, in his way, to remain "friends" with the Americans and the British: his objective was to ensure the security of his regime and the state that it governed, not to bring about the long-awaited international proletarian revolution; he hoped to do this by means short of war, and preferably with Western cooperation.[86] The difficulty was that he defined "security" so expansively that it meant insecurity for much of the rest of Europe, Asia, and ultimately the United States as well; he also chose methods—espionage being one of them—that seemed at the time and still seem today inconsistent with the objective he was trying to achieve. Seeking security by dubious means, he managed only to alarm and as a consequence to rearm the West: the effect produced cannot have been what was intended.[87]

With this record, Vojtech Mastny has pointed out, Stalin in any parliamentary democracy would long since have been sacked for incompetence.[88] If Philby, Fuchs, Hiss, and their associates were to the Russians what ULTRA and MAGIC were to the British and the Americans, then it is worth asking why Soviet foreign policy in the early postwar years was as bad as it was. Intelligence coups are one thing; the uses of intelligence are something else again,[89] all of which suggests a relationship between forms of government, on the one hand, and intelligence successes and failures, on the other. Autocracies may be adept at penetrating other societies while resisting penetration themselves, but when it comes to the evaluation of intelligence, hierarchical organization is probably a liability: one tends to be told what it is thought one wants to hear.[90] Democracies may be gullible, lax about security, and ham-handed in conducting covert operations, but their relative absence of hierarchy makes more likely the critical scrutiny of intelligence and the decisions that are based upon it. The playing field in the "great game" of intelligence, therefore, may be more level than is often realized; that in turn may help to account for the fact that the game has gone on for as long as it has.

What should be the agenda for future research in this admittedly difficult field? What follows are nothing more than personal observations, based on my

own sporadic and mostly ineffective efforts to come to grips with this subject.

First, and most important, we need documents. Although a substantial quantity of end-product analysis from the CIA and other American intelligence organizations has been declassified for the post-1945, these only scratch the surface of what we need to know about the impact of intelligence on postwar diplomacy. We have no knowledge, at present, of the sources on which these analyses were based; nor are we in a position to track the process by which they were put together. Even worse, virtually no documents have been released on covert operations, despite the fact that we probably now know—in general terms—most of what occurred in this area during the early Cold War years. We are left, then, in the position roughly comparable to where historians of the OSS were a decade ago: of trying to derive solely from research and analysis reports the full scope of an intelligence organization's activity. It could not be done adequately for the OSS; nor can we expect to treat the early CIA with anything approaching scholarly responsibility until this situation is remedied.

The Agency's own response, of course, has been that it cannot officially acknowledge covert operations for fear of compromising "sources and methods," but that argument carries less and less plausibility as time passes: given what the Russians knew four decades ago about Anglo-American intelligence activities—not to mention what has been unofficially revealed since—it is difficult to accept the argument that there could be much in the Agency's early postwar archives that would, if declassified, significantly compromise current "sources and methods." Another less frequently voiced justification for keeping these documents secret is that the Agency has never formally acknowledged covert activities of any kind: one Agency official explained to me several years ago, "We have never admitted even to having agents stationed overseas, except in Saigon between 1965 and 1975."[91] But this is simply not true: if there were innocent souls either in this country or abroad actually who believed that the CIA refrained from covert operations, that innocence was surely lost when the Agency itself put its most secret "family jewels" on display before the Senate Select Committee on Intelligence in 1975. If this did not constitute acknowledgement of covert activities, one wonders what would.

It is also the case that the withholding of documents, although bureaucratically an easy thing to do, extracts a price: one generally appears to have been more sinister—and often less bright—than one actually was. It would be difficult to think of an instance in which the systematic declassification of documents, as opposed to sensational selective revelations, actually harmed a nation's interests; the more frequent situation is that opening the archives either makes no difference at all or, as in the 1955 release of the State Department's Yalta papers, actually enhances official reputations. Things imagined are generally worse than things actually are. One need only look at the continuing search, in Great Britain, for the "fifth" man—perhaps it would be more accurate

to say for the "*n*th" man—to see how official silence feeds, more than it restrains, conspiracy theories.

Second, we need to begin systematically to interview, and to cross-check interviews, with retired intelligence officials. Perhaps because of their frustration over the slow process of declassification, a number of these individuals are now willing to talk at least in general terms about their activities. But the memory of events long past is notoriously unreliable; when the events in question were shrouded in secrecy, the possibility for error is very much compounded. The only corrective to this, apart from the actual release of documents, is careful cross-checking of what these people say, perhaps even by bringing them together—as has been done successfully in the field of nuclear history—for "memory jogging" conferences. Historians and participants in historical events are always trying to set each other straight: why not use this creative tension more systematically to illuminate those areas where documents are not yet available to us?

Third, we would do well to incorporate more of what we already know about psychology into the study of intelligence. We all know that intelligence is not better than the degree of receptivity its primary consumers bring to it. But we know very little about what determines a policymaker's receptivity to certain kinds of information and not to others. It is not that we lack the means of finding out: the field of cognitive psychology does exist, and its insights have been fruitfully applied in other areas.[92] Why not to the world of intelligence? A closely related area of considerable importance—and one almost totally ignored by students of the subject—has to do with comparative morality. How does a policymaker decide what kind of behavior is appropriate in conditions of crisis? To what extent does the promise of concealment encourage latitude in choosing means? Is there such a thing as "national style" in intelligence that causes some nations to worry more about this sort of thing than others do, and, if so, from what does it stem?

Fourth, we probably do not need a great many more studies of how intelligence is organized. Precisely because it does not require access to classified materials, a good deal of work has already been done in the United States on the relation of the intelligence agencies to one another, to the Congress, and to the Executive. Much of it, while solid, begins with organizational charts, and ends with conclusions drawn therefrom. But anyone who has worked with historical materials would know that organizational structure is only part of the story: it can be important in certain instances,[93] but it is also worth noting Ernest May's observation, in his study of pre-World War I and II intelligence assessment, that the "type of organization appears to have had little effect on the quality of assessment."[94] It may well be that in this field, as in most others, what particular individuals do to, within, and apart from bureaucracies is generally more important than the structure of the bureaucracies themselves.

Finally, and most important, we need to try to begin to make the linkage between intelligence and the policy it is supposed to inform. The field of intelligence studies, like the history of the American Civil War, lends itself too easily to "buffism," which is to say, to a preoccupation with details and a neglect of context. This is not at all surprising, since the subject carries with it the fascination of dealing with what was once surreptitious, sneaky, and sly. But just as good military history is more than the sum of available "war stories," so good intelligence history will have to be more than an accumulation of "spy stories": it will have to try to answer Robin Winks's "so what?" question; it will have to try to distinguish between "necessary" and "sufficient" causation; and it will have to show how what governments actually did relates to what they did, or did not, actually know. It is a tall order, but it is not too soon to begin to think about how we might fill it.

Notes

I should like to acknowledge the valuable assistance of Professor Alan R. Booth, of the Ohio University History Department, in the preparation of this paper.

1. See—by no means an exhaustive list—Sir John Masterman, *The Double-Cross System in the War of 1939-1945* (New Haven: Yale University Press, 1972); F. W. Winterbotham, *The Ultra Secret* (New York: Harper and Row, 1974); *William Stephenson, A Man Called Intrepid: The Secret War* (New York: Harcourt, Brace, Jovanovich, 1976); R. V. Jones, *The Wizard War: British Scientific Intelligence, 1939-1945* (New York: Coward, McCann and Geoghegan, 1978); Ralph F. Bennett, *Ultra in the West: The Normandy Campaign* (London: Hutchinson, 1979); Ronald Lewin, *Ultra Goes to War: The First Account of World War II's Greatest Secret Based on Official Documents* (New York: McGraw-Hill, 1979); F. H. Hinsley, et al., *British Intelligence in the Second World War: Its Influence on Strategy and Operations*, 4 volumes, (London: H. M. S. O., 1979-); Peter Calvocoressi, *Top Secret Ultra* (New York: Pantheon, 1980); Stephen E. Ambrose and Richard H. Immerman, *Ike's Spies: Eisenhower and the Espionage Establishment* (Garden City, New York: Doubleday, 1981); Anthony Cave Brown, *The Last Hero: Wild Bill Donovan* (New York: Random House, 1982) and *Bodyguard of Lies* (New York: Harper and Row, 1975); Ronald Lewin, *The American Magic: Codes, Ciphers, and the Defeat of Japan* , New York: Farrar Straus Giroux, 1982); Bradley F. Smith, T*he Shadow Warriors: OSS and the Origins of the CIA* (New York: Basic Books, 1983); and Edwin T. Layton, with Roger Pineau and John Costello, *"And I Was There": Pearl Harbor and Midway—Breaking the Secrets* (New York: Morrow, 1985); also special issues on "Intelligence Services During the Second World War," *Journal of Contemporary History*, XXII (April and October 1987).

2. For example, Ernest R. May, ed., *Knowing One's Enemies: Intelligence Assessment Before the Two World Wars* (Princeton: Princeton University Press, 1984); Christopher Andrew, *Her Majesty's Secret Service: The Making of the British Intelligence Community* (New York: Viking, 1985); Phillip J. Knightley, *The Second Oldest Profession* (New York: Norton, 1987). Nor should one neglect a classic book on this subject whose appearance anticipated the upsurge of interest in intelligence studies, David Kahn, *The Codebreakers: The Story of Secret Writing* (New York: Macmillan, 1967). Among the journals now exclusively devoted to this field are the *Foreign Intelligence Literary Scene, Intelligence and National Security, Intelligence Quarterly,* and the *Intelligence Journal of Intelligence and Counterintelligence*. My colleague Professor Alan Booth of the Ohio University History Department has offered a well-subscribed course, "Espionage and History," since 1983.

3. Smith, *The Shadow Warriors*, pp 402-7.

4. The Central Intelligence Agency does now have a Historical Review Program charged with the task of reviewing for declassification historically significant records. It is not yet clear, though, whether the guidelines under which this program operates will allow the release of material that will substantially enhance our present understanding of how the Agency operated during its early years.

5. A point made with great force by Roberta Wohlstetter in her pioneering work, *Pearl Harbor: Warning and Decision* (Stanford: Stanford University Press, 1962).

6. Kahn, *The Codebreakers*, pp 650-54.

7. See Brown, *The Last Hero*, pp 417-18; and Anthony Glees, *The Secrets of the Service: A Story of Soviet Subversion of Western Intelligence* (New York: Carroll and Graf, 1987), pp 247-52. It is interesting to note that where information about the Russians could be gleaned from ULTRA or MAGIC—in the form of intercepted German or Japanese reports

about the Soviet Union—these were carefully decyphered. See Lewin, *The American Magic,* p 238.

8. Jeffrey Richelson, *American Espionage and the Soviet Target* (New York: William Morrow, 1987), pp 43-45, 196.

9. Brown, *The Last Hero,* pp 417, 419.

10. Glees, *The Secrets of the Service,* p 246.

11. Martin Gilbert, *Winston Churchill: Finest Hour, 1939-1941* (Boston: Houghton Mifflin, 1983), p 1209. See also Robert Chadwell Williams, *Klaus Fuchs, Atom Spy* (Cambridge, Massachusetts: Harvard University Press, 1987), p 56-59. As Williams points out, the Russians would, of course, through their spy, Kim Phiby (Philby?) have had some idea about the source of this information.

12. See Bradley F. Smith, "Sharing Ultra in World War II," *International Journal of Intelligence and Counterintelligence,* II (Spring 1988), 59-72).

13. Brown, *The Last Hero,* p 422-25; Smith, *The Shadow Warriors,* pp 330-59. See also Smith, "Sharing Ultra in World War II," 61; and John Ranelagh, *The Agency: The Rise and Decline of the CIA* (New York: Simon and Schuster, 1986), 71.

14. Glees, *Secrets of the Service,* 294; Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986), pp 525-38.

15. John R. Deane, *The Strange Alliance: The Story of Our Efforts at Wartime Co-operation with Russia* (New York: Viking, 1947). See also John Lewis Gaddis, *The United States and the Origins of the Cold War, 1941-1947* (New York: Columbia University Press, 1972), pp 80-85.

16. See Geoff Jukes, "The Soviets and Ultra," *Intelligence and National Security,* III (April 1988), pp 233-47.

17. The most comprehensive account, on the British side, is Andrew Boyle, *The Fourth Man: The Definitive Account of Kim Philby, Guy Burgess, and Donald Maclean and Who Recruited Them to Spy for Russia* (New York: Dial/James Wade, 1979). For the American side, see Allen Weinstein, *Perjury: The Hiss-Chambers Case* (New York: Knopf, 1978), especially pp 112-57.

18. See Andrew, *Her Majesty's Secret Service,* p 408. For such rudimentary efforts as the British did attempt prior to June 1941, see ibid., pp 355-57; and Glees, *Secrets of the Service,* pp 92-94, 280. Jonathan Haslam, *The Soviet Union and the Struggle for Collective Security in Europe, 1933-39* (New York: St. Martin's, 1984), p 155, points out that, whatever the truth was, the Soviet government must have assumed foreign embassies in Moscow were running spies.

19. For speculation as to why the Russians enjoyed such success in Great Britain, see Glees, *Secrets of the Service,* pp 132-33.

20. Williams, *Klaus Fuchs,* pp 47, 60.

21. *Ibid.,* pp 65-69. Roosevelt and Churchill had agreed in August 1943, not to communicate information about the bomb "to third parties except by mutual consent." But it was not until September 1944, that Roosevelt and Churchill, in rejecting a proposal from Niels Bohr, explicitly ruled out sharing information about the bomb with the Russians. [Rhodes, *The Making of the Atomic Bomb,* pp 523-38]. For concern about Soviet espionage, see Martin J. Sherwin, *A World Destroyed: The Atomic Bomb and the Grand Alliance* (New York: Knopf, 1975), pp 62-63, 82-83, 100-102, 112.

22. David C. Martin, *Wilderness of Mirrors* (New York: Harper and Row, 1980), pp 29-30, reports that the Russians abruptly contracted their North American espionage activities after the September 1945 defection in Ottawa of Soviet embassy code clerk Igor Gouzenko. The flow of information from British sources apparently continued until the defection of Guy Burgess and Donald Maclean in 1951.

23. *Ibid.,* pp 1-9; Weinstein, *Perjury,* pp 328-31.

24. Glees, *Secrets of the Service*, pp 279-88.

25. J. Edgar Hoover to Harry Vaughan, October 19 and November 8, 1945, Harry S. Truman Papers, PSF [President's Secretary's file], Box 167 "FBI - C" and Box 169, "FBI - S", Harry S. Truman Library. See also Robert J. Lamphere and Tom Schachtman, *The FBI-KGB War: A Special Agent's Story* (New York: Random House, 1986), pp 32-41; Weinstein, *Perjury,* pp 356-57; and Ronald Radosh and Joyce Milton, *The Rosenberg File: A Search for the Truth* (New York: Holt, Rinehart, and Winston, 1983), pp 224-34.

26. Canadian Prime Minister William L. Mackenzie King's first reaction, on learning of Gouzenko's defection, was that "we should be extremely careful in becoming a party to any course of action which would link the Government of Canada up with this matter in a manner which might cause Russia to feel that we had performed an unfriendly act...For us to come into possession of a secret code book—of a Russian secret code book—would be a source of major complications." J. W. Pickersgill and D. F. Foster, *The Mackenzie King Record: Volume 3, 1945-1946,* (Toronto: University of Toronto Press, 1970), pp 8, 10).

27. Lamphere and Schachtman, *The FBI-KGB War*, pp 40-41; Weinstein, *Perjury*, pp 357-59.

28. As late as September 1946, Truman could order that a report on Soviet intentions prepared by his aide, Clark Clifford, not be circulated within the government even on a top-secret basis for fear of what the consequences of a leak might be. See John Lewis Gaddis, *The Long Peace: Inquiries into the History of the Cold War* (New York: Oxford University Press, 1987), p 33.

29. Glees, *Secrets of the Service*, pp 309-313; Anthony Cave Brown, *"C": The Secret Life of Sir Stewart Graham Menzies, Spymaster to Winston Churchill* (New York: Macmillan, 1987), pp 692-94. Speculation about why nothing was done can be found in Chapman Pincher, *Too Secret Too Long* (New York: St. Martin's, 1984), and Peter Wright with Paul Greenglass, *Spycatcher: The Candid Autobiography of a Senior Intelligence Officer* (New York: Viking Penguin, 1987). For a critical evaluation of this argument, see Glees, *Secrets of the Service*, pp 318-99.

30. An ironic incident occurred in connection with a September 20, 1946, dispatch from the British Embassy in Washington to the Foreign Office on the subject of President Truman's firing of Henry Wallace. The dispatch, which among other things referred to "the President, the frail barque of whose judgment has been tossed hither and yon by the swirling eddies of circumstance," was sent by mistake *en clair*. T. A. D. Wilson-Young of the North American Department alerted the Embassy to this gaffe, noting: "We were rather worried at the possible uses to which the Russian and perhaps French Governments might have put your telegram. But we have since been relieved to learn that the telegram was not...automatically repeated *en clair*. As the result of the commendable initiative of the duty officer in charge of the Communications Department, it was encyphered before onward despatch." "We were indeed aghast when we saw what had happened," Embassy First Secretary D. D. Maclean contritely replied. [Foreign Office General Correspondence, FO 371, 51626/AN2886, Public Record Office, London]. Hereafter FO 371, with appropriate file designation.

31. The Congress did, in 1946, severely restrict the extent to which information on the production of atomic weapons could be shared with the British, and the Truman administration acquiesced in these restrictions. This was done, though, largely for domestic political reasons: there is no evidence that concern over lax British security practices had anything to do with it. See Timothy J. Botti, *The Long Wait: The Forging of the Anglo-American Nuclear Alliance, 1945-1958* (Westport, Connecticut: 1987), pp 17-24.

32. Martin, *Wilderness of Mirrors*, pp 39-43; Lamphere and Schachtman, *The FBI-KGB*

War, pp 126-227; Radosh and Milton, *The Rosenberg File*, pp 7-9, 140-41; Williams, *Klaus Fuchs*, p 6.

33. William Weisband, an employee of the Armed Forces Security Agency, apparently informed the Russians in 1948 that the United States was in the process of breaking these Soviet codes; moreover in 1949 Kim Philby was given access to the information derived from them. [Martin, *Wilderness of Mirrors*, pp 43-44; Lamphere and Schachtman, *The FBI-KGB War*, pp 130-31].

34. Glees, *Secrets of the Service*, p 307.

35. Martin, *Wilderness of Mirrors*, pp 72-75; Ranelagh, *The Agency*, pp 138-42.

36. William E. Burrows, *Deep Black: Space Espionage and National Security* (New York: Random House, 1986), pp 55-69. See also John Prados, *The Soviet Estimate: U. S. Intelligence Analysis and Russian Military Strength* (New York: Dial Press, 1982), pp 26-30; and Richelson, *American Espionage and the Soviet Target*, pp 73-126.

37. Ranelagh, *The Agency*, pp 137, 156-57, 226-28. See also John Prados, *Presidents' Secret Wars: CIA and Pentagon Covert Operations Since World War II* (New York: William Morrow, 1986), pp 30-60; and, on Albania, Nicholas Bethell, *Betrayed* (New York: Times Books, 1984). Vojtech Mastny has pointed out, though, that Stalin's 1949-50 purges of his own loyal supporters in Eastern Europe on false charges of treason may have been an indirect response to American covert operations there. See Mastny, "Europe in US-USSR Relations: A Topical Legacy," *Problems of Communism*, XXXVII (January-February 1988), 27-28.

38. See James Edward Miller, *The United States and Italy, 1940-1950: The Politics and Diplomacy of Stabilization* (Chapel Hill: University of North Carolina Press, 1986), pp 243-49; Ranelagh, *The Agency*, pp 137-38, 216, 248-52.

39. Early CIA intelligence assessments can most easily be sampled in the Harry S. Truman Papers, PSF, Boxes 255-257, but many have also been published in the U. S. Department of State series, *Foreign Relations of the United States*. Walter Laqueur, *A World of Secrets: The Uses and Limits of Intelligence* (New York: Basic Books, 1985), pp 110-22, provides the most comprehensive overall evaluation of this material; see also Matthew A. Evangelista, "Stalin's Postwar Army Reappraised," *International Security* VII (Winter 1982/1983), 110-138. For the early estimate-making process, see Prados, *The Soviet Estimate*, pp 4-14; and Lawrence Freedman, *U.S. Intelligence and the Soviet Strategic Threat*, 2d ed. (Princeton: Princeton University Press, 1986), pp 30-32.

40. Ranelagh, *The Agency*, pp 186-88; Prados, *The Soviet Estimate*, pp 19-20; Robert M. Blum, "Surprised by Tito: The Anatomy of an Intelligence Failure," *Diplomatic History*, XII (Winter 1988), 39-57.

41. The point is made, in a more general way, by former FBI agent Robert Lamphere in his useful memoir, *The FBI-KGB War*, pp 136-37, 201.

42. Weinstein, *Perjury*, *passim.*; Radosh and Milton, *The Rosenberg File*, *passim*.

43. See note 29.

44. Robin W. Winks, *Cloak and Gown: Scholars in the Secret War, 1939-1961* (New York: William Morrow, 1987), p 63. Recent research suggests that the rumor about Hitler was Soviet disinformation, the purpose of which remains unclear. See Glees, *Secrets of the Service*, p 292.

45. One can get some sense of the unease that comes with such a revelation by examining the agitated marginal markings someone in the White House—it is not clear who—made on F.B.I. Director J. Edgar Hoover's initial report on what Donald Maclean and Guy Burgess might have known. [Hoover to Sidney W. Souers, June 18, 1951, Truman Papers, Box 169, "FBI - S."]

46. Laqueur, *A World of Secrets*, pp 99-100. For an interesting example of what the report of a "mole" to his "handlers" might look like—one that suggests something of the

difficulties an analyst might encounter in making sense of such information—see Weinstein, *Perjury*, p 239.

47. Roy A. Medvedev, *Let History Judge: The Origins and Consequences of Stalinism,* translated by Colleen Taylor (New York: Knopf, 1971), pp 446-54; Adam Ulam, *Stalin: The Man and His Era* (New York: Viking, 1973), pp 532-38. See also Kahn, *The Codebreakers*, pp 655, 659; and John Erickson, "Threat Identification and Strategic Appraisal by the Soviet Union, 1930-1941," in May, ed., *Knowing One's Enemies*, p 420.

48. Milovan Djilas, *Conversations with Stalin*, translated by Michael B. Petrovich (New York: Harcourt, Brace and World, 1962), p 73. William Taubman has commented, with regard to Stalin's view of his wartime allies, that "[t]o one accustomed to Kremlin politics, apparent generosity meant either deviousness or infirmity or both." See his *Stalin's American Policy: From Entente to Detente to Cold War* (New York: Norton, 1982), p 32.

49. John Russell to Paul Mason, October 2, 1952, Foreign Office Records, FO 371, 100826/NS1023/29. See also H. A. F. Hohler to P F. Grey, December 15, 1952, *Ibid.*, FO 371, 100826/NS1023/34.

50. Masterman, *The Double-Cross System*, passim.

51. But see Brown, *"C"*, pp 694-712, for speculation that Philby may have been run as an unwitting double-agent.

52. The possibility is made at least plausible by fragmentary evidence that the Americans, at least, by 1949, were in fact funneling disinformation to the Russians. See Alan Kirk to Dean Acheson, *Foreign Relations of the United States,* Washington: US Government Printing Office, 1949, V. 147.

53. It is interesting to note that, even with the very full information Klaus Fuchs provided on the atomic bomb, Stalin did not order full-scale bomb development until Truman had informed him of the successful Trinity Test in July 1945. See David Holloway, *The Soviet Union and the Arms Race* (New Haven: Yale University Press, 1983), pp 19-20.

54. Kahn, *The Codebreakers*, p 638; Weinstein, *Perjury,* pp 132-55. Allegations have also been made that some documents compromised in 1940 by a code clerk in the American Embassy in London may have found their way to the Russians. See Warren F. Kimball, "Roosevelt and Prewar Commitments to Churchill: The Tyler Kent Affair," *Diplomatic History*, V (Fall, 1981), 296n.

55. For a quick overview, see John Lewis Gaddis, *Russia, the Soviet Union, and the United States: An Interpretative History* (New York: Knopf, 1978), pp 160-68. Roosevelt's statement about withdrawing troops from Europe is in *Foreign Relations of the United States: The Conferences at Malta and Yalta, 1945* (Washington: Government Printing Office, 1955), p 617. It has become increasingly evident with the passage of time that Churchill's hopes for postwar cooperation with the Russians were much greater than he implies in his wartime memoirs. See, for example, John Colville, *The Fringes of Power: 10 Downing Street Diaries, 1939-1955* (New York: Norton, 1985), p 593.

56. For Roosevelt's particular approach to management, see William E. Leuchtenberg, "Franklin D. Roosevelt: The First Modern President," in Fred I. Greenstein, ed., *Leadership in the Modern Presidency* (Cambridge, Massachusetts: Harvard University Press, 1988), pp 28-30.

57. Glees, *The Secrets of the Service*, pp 200-3.

58. Vojtech Mastny, *Russia's Road to the Cold War: Diplomacy, Warfare, and the Politics of Communism, 1941-1945* (New York: Columbia University Press, 1979), p 194.

59. Glees, *The Secrets of the Service*, pp 43-44, 58, 62, 180-81.

60. See Mastny, *Russia's Road to the Cold War*, especially pp 43, 71-72. Taubman, *Stalin's American Policy*, especially pp 7-8, 10, 74, 78, acknowledges that Stalin's long-

term objective was to dominate Europe, but like Mastny sees no clearly worked-out plan for accomplishing this. For Glees's defense of his argument, which leaves me unconvinced, see *The Secrets of the Service*, pp 181-91.

61. See Gaddis, *The Long Peace*, pp 25-29.

62. Weinstein, *Perjury*, pp 237-40.

63. See Warren F. Kimball, *Swords or Ploughshares? The Morgenthau Plan for Defeated Nazi Germany, 1943-1946* (Philadelphia: Lippincott, 1976), pp 25-26; also Gaddis, *The United States and the Origins of the Cold War*, p 128.

64. Weinstein, *Perjury*, pp 351-64, 510. See also the most recent assessment of the Yalta Conference, Russell D. Buhite, *Decisions at Yalta: An Appraisal of Summit Diplomacy* (Wilmington, Delaware: Scholarly Resources, 1986), pp 129-30.

65. Hoover to Souers, June 18, 1951, Truman Papers, PSF, Box 169, "FBI - S". See also Lamphere and Schachtman, *The FBI-KGB War*, pp 234-35. Both Maclean and Klaus Fuchs represented the British in top secret discussions with the Americans on nuclear cooperation in 1949; there is some reason to believe, though, that neither man, by this time, was telling the Russians everything they knew about nuclear matters. See Williams, *Klaus Fuchs*, pp 101-2; Glees, *Secrets of the Service*, pp 354. The Anglo-American negotiations are discussed in Botti, *The Long Wait*, pp 47-64.

66. Williams, *Klaus Fuchs*, pp 148-49; Lamphere and Schachtman, *The FBI-KGB War*, pp 237-38; Ranelagh, *The Agency*, p 149.

67. See, for example, Burgess's comment on the February 1950 Sino-Soviet Friendship Treaty, quoted in Gaddis, *The Long Peace*, p 166n.

68. Lamphere and Schachtman, *The FBI-KGB War*, pp 238-39. See also, on the general question of what the British spies knew, Peter Hennessy and Kathleen Townsend, "The Documentary Spoor of Burgess and Maclean," *Intelligence and National Security*, II (April 1987), 291-301.

69. Martin, *Wilderness of Mirrors*, pp 21-23.

70. Such is the major argument of Bethell's account of the Albanian operation, *Betrayed*, especially pp 191-92, although Bethell considers the entire initiative ill-conceived and is careful not to blame its demise entirely on Philby.

71. Lamphere and Schachtman, *The FBI-KGB War*, p 157

72. See Rhodes, *The Making of the Atomic Bomb*, p 750.

73. Hoover to Sidney W. Souers, February 21, 1950, Truman Papers, PSF Box 168, "FBI - F. See also, Williams, *Klaus Fuchs*, pp 7, 131; Radosh and Milton, *The Rosenberg File*, pp 20-21.

74. See, on these points, Gaddis, *The Long Peace*, pp 110-12.

75. Ranelagh, *The Agency*, pp 154-55.

76. See, on Stalin's behavior during the Berlin crisis, Hannes Adomeit, *Soviet Risk-Taking and Crisis Behavior: A Theoretical and Empirical Analysis* (London: International Institute for Strategic Studies, 1982), p 143.

77. Botti, *The Long Wait*, pp 65-70; Williams, *Klaus Fuchs*, pp 100, 138.

78. The lofty contempt for British intelligence of its American "cousins" is a recurring theme in John leCarre's "Smiley" novels. See also Ranelagh, *The Agency*, pp 157-58.

79. Glees, *Secrets of the Service*, pp 398-99.

80. See J. Samuel Walker, "'No More Cold War': American Foreign Policy and the 1948 Soviet Peace Offensive," *Diplomatic History*, V (Winter 1981), 75-91.

81. Glees, *Secrets of the Service*, pp 214-16.

82. See Robert Messer, *The End of an Alliance: James F. Byrnes, Roosevelt, Truman and the Origins of the Cold War* (Chapel Hill: University of North Carolina Press, 1982), pp 185-86. Truman may also have suffered from a certain amount of "information overload" on this subject, given the extent to which FBI Director Hoover by 1946 had begun to

inundate him with wildly inaccurate information on Soviet activities. This included, among other things, a November 1945 report alleging that Stalin had been deposed, and a May 1946 report that linked Dean Acheson and John J. McCloy to a Soviet spy ring. Hoover also warned the State Department in May 1947, that the Soviet government had never recognized the purchase of Alaska, and was contemplating holding a plebiscite within the USSR to determine whether it should be returned. [Hoover to Vaughan, November 19, 1945, and to George E. Allen, May 29, 1946. Truman Papers, PSF, Box 169 "FBI-S" and Box 167, "FBI - Atomic Bomb"; Hoover to Jack D. Neal, March 18, 1947, Department of State General Records, RG59 Box 3429, 711.61/3-1847, National Archives. See also Richard Gid Powers, *Secrecy and Power: The Life of J. Edgar Hoover* (New York: Macmillan, 1987), pp 280-82].

83. "No one who has lived through these postwar years can be sanguine about reaching agreements in which reliance can be placed and which will be observed by the Soviet leaders in good faith. We must not, in our yearning for peace, allow ourselves to be betrayed by vague generalities or beguiling proffers of peace which are unsubstantiated by good faith solidly demonstrated in daily behavior. We are always ready to discuss, to negotiate, to agree, but we are understandably loath to play the role of international sucker." Dean Acheson speech at Berkeley, California, 16 March 1950, Department of State, *Bulletin 22* (27 March 1950): 477. See also John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy* (New York, 1982), 104–6; and Coral Bell, *Negotiation from Strength: A Study in the Politics of Power* (New York, 1963).

84. See Marshall D. Shulman, *Stalin's Foreign Policy Reappraised* (Cambridge, Massachusetts: Harvard University Press, 1963).

85. Quoted in Glees, *Secrets of the Service*, p 252.

86. See Taubman, *Stalin's American Policy*, p 8-9.

87. William Yandell Elliott told students at the Naval War College in 1949: "If you had been playing the Russian line after this war, would you have made the incredible mistakes that the Politburo and the Kremlin have? You might have had the world on a silver platter if your manners had been good. Roosevelt had dished it all out to them. It was theirs for the taking. All that they had to do was to avoid showing this offensive, aggressive and uproarious kind of condemnation of all the outside world that Mr. Vishinsky and Molotov have treated us to ever since, and that Stalin has underlined from his base back home...It is natural, I think, that the rulers who are educated and chosen this way have a stupid set of responses...They are victims of their own lines and of their own method of propaganda." [Elliott lecture, "Vital U.S. Commercial and Economic Problems," September 22, 1949, Naval War College Archives, Record Group 15]. The point is also nicely made by Vojtech Mastny, "Stalin and the Militarization of the Cold War," *International Security*, IX (Winter, 1984-85), 109-29.

88. This was the theme of a presentation Mastny made at a conference of Soviet and American historians and political scientists on "Soviet-American Relations: 1945-1950," held in Moscow in June 1987.

89. See Laqueur, *A World of Secrets*, pp 11-12.

90. *Ibid.*, pp 42-43. This proposition seems confirmed by a report that reached the State Department in May 1948, on the contents of a Soviet diplomatic pouch intercepted— under circumstances not specified—by Canadian authorities. Francis B. Stevens of the Department noted that "the pouch contained coverage of the Canadian press which consisted exclusively of quotations from extreme and obscure Party line newspapers and violent and slanderous conservative editorials. While this evidence is by no means conclusive, it is a straw in the wind to support the thesis we have long held that the press reporting received by the Soviet Foreign Office from its missions abroad is anything but

objective." [Stevens to Llewellyn Thompson, George F. Kennan, and Charles E. Bohlen, May 7, 1948, Department of State Records, Box 6463, 861.00/5-748]. Ambassador Alan Kirk reported after meeting Stalin in August 1949 that "he certainly dominates the situation here, and Vyshinski was hopping around like a pea on a hot griddle to do his slightest wish." [Kirk to Acheson, August 23, 1949, *Foreign Relations of the United States: 1949*, V, 654].

91. It has been simultaneously a source of pleasure and—because of the lack of progress on declassification—some frustration for me to have served, since 1985, on the Central Intelligence Agency's ad hoc Advisory Committee on Historical Declassification.

92. See Robert Jervis, *Perception and Misperception in International Politics* (Princeton University Press, 1976); Richard Ned Lebow, *Between War and Peace: The Nature of International Crisis* (Baltimore: Johns Hopkins University Press, 1981); Deborah Welch Larson, *Origins of Containment* (Princeton University Press, 1985); Robert Jervis, Richard Ned Lebow, and Janice Gross Stein, *Psychology and Deterrence* (Baltimore: Johns Hopkins University Press, 1985). See also Robert Jervis, "Intelligence and Foreign Policy: A Review Essay," *International Security*, XI (Winter, 1986-87), 141-161.

93. I have in mind here the examples of Roosevelt's and Stalin's "administrative" styles, cited in the text.

94. Ernest R. May, "Conclusions: Capabilities and Proclivities," in May, ed., *Knowing One's Enemies*, p 532. May does add, though, that continuity in organizational structure—whatever its faults—appears to correlate with successful assessment.

A Case Study: USAF Intelligence in the Korean War

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The purpose of this essay is to provide a caveat to a prevailing theme that there was a revolution in intelligence capabilities during World War II. Although there may have been such a revolution in capabilities, the Korean experience will show as many fumbles in military intelligence as we know took place in earlier wars. "An outstanding facet of the Korean war," wrote Far East Air Forces Commander, General O. P. Weyland, "was the number of old lessons that had to be relearned...It appears that these lessons either were forgotten or never were documented—or if documented, were never disseminated."[1] In another paper on "U.S. Army Air Forces Intelligence in World War II," I have attempted to show that excessive secrecy, particularly concerning signal intelligence (SIGINT) prevented a needful understanding in the military of the role of air intelligence in air warfare.[2] This same thought sets the stage for an appreciation of air intelligence in the Korean war.

The principles of military intelligence inherited by the AAF and the USAF emerged at least in codified form after the Spanish-American War. The U.S. Army then and afterwards was most deeply concerned with frontal field combat intelligence. For indications of the enemy, the Army Field Service Regulations on 1910 stated: "The number of camp fires and the area over which they are spread afford an estimate of the strength and position of the enemy." Further, "A thick and low cloud of dust indicates infantry; a high and thin cloud, cavalry; a broken cloud, artillery or wagon trains."[3] In 1926 the Army taught that intelligence must reveal an enemy's intentions, particularly: "The facts concerning the enemy are of little value to the commander unless the intentions of the enemy have been determined."[4] In the early 1930's, however, the Army Command and Staff School began to teach that probable enemy actions should be projected from "capabilities" rather than possible "intentions."[5] In 1938 an Army field manual projected the importance of intelligence to command decisions, explaining that a commander's decisions must be based upon (1) his mission as affected by the enemy to be dealt with, (2) the terrain over which the operation was to be conducted, (3) the means available for the execution of the mission. The field manual opted for intelligence evaluations based upon an

enemy's capabilities rather than his probable intentions: "The main object of the continuing study of the enemy is to determine his capabilities and, if possible, the line of action he has adopted."[6]

During World War II U.S. Army Air Forces operations raised the threshold of combat intelligence from the enemy's front lines to deep inside enemy nations. Air intelligence had to search out and target enemy objectives for air campaigns not specifically related to friendly front lines. In the words of Maj. Gen. George C. McDonald, head of air intelligence in principal AAF commands in Europe and first USAF director of intelligence: "Air Intelligence . . . was at once an operating agency, a training school, and a proving ground—it had to be for intelligence had to produce—if one method didn't work, another was tried, and still another if necessary, in order that requirements would be fulfilled." "I may add," McDonald continued, "that in its progress it [air intelligence] contributed in a major way to making Generals Carl Spaatz and George Kenney the outstanding air strategists of the United States."[7]

In World War II the principal sources of combat air intelligence were: (1) photographic reconnaissance, (2) radio and radar intelligence, (3) prisoner-of-war interrogations, (4) reports from secret agents, collaborators, expatriates, and friendly neutrals, (5) captured matériel and documents, (6) diplomatic and attaché sources in neutral countries, and (7) visual reports and observations of air crews and tactical reconnaissance pilots.[8] During World War II signal intelligence was counted to be second in importance only to photographic intelligence, but this fact got hidden by a tight veil of "Green Door" secrecy as the war ended.

In 1946 when the AAF was reorganizing for the postwar period, the shadow of nuclear weapons loomed over air intelligence. In the new era, General George C. Marshall reportedly told the Senate Military Affairs Committee, "We should know as much as possible about the intent, as well as military capabilities of every country in the world. We must know the facts for our own defense."[9] The mission of Air Force intelligence was precisely defined as being to collect, produce, and disseminate air intelligence to:

   a. Prevent strategic, tactical, or technological surprise from any source.
   b. Provide a sound basis for counsel upon air preparedness,
   c. Support the planning and conduct of air operations."[10]

In addition to this emphasis upon intelligence for strategic warning, the prospective power of nuclear weapons in some measure reduced the need for specific economic and political information. Some target planners asked: "What is a city but a collection of industry?" Others remarked that the air targeting function might as well be in air plans as in air intelligence.[11]

During World War II nearly all AAF intelligence officers were former civilians who were either recruited or drafted and given a short course in some intelligence specialty, such as photo interpretation. After V-J day very few of

these men remained in the AAF and efforts made to reshape intelligence had few people available for service. On old military principle had it that intelligence was a commander's responsibility, that "All command echelons and departments, civil or military, must maintain and operate their own intelligence service."[12] Whether or not there should be a separate Army intelligence corps came up, and the AAF position was that this was not advisable since "officers on intelligence duty with the Army Air Forces primarily should be air officers."[13] In its early time, AAF intelligence had become a convenient lodgment for many disparate functions such as intelligence training, public relations, history, internal security, motion picture services, maps and charts, all functions that McDonald described as "a type of fungus growth which tends to smother the real job of getting on with the Air Combat Intelligence in developing and . . . servicing the Commanding General and his Staff."[14]

In the immediate postwar AAF, the Office of Assistant Chief of Air Staff-2, Intelligence, was streamlined, dropping history, motion pictures, and intelligence training, the last passing to a new Air Training Command. Public relations had been taken away as a separate function earlier. When the new USAF organization was being set up, General McDonald urged that intelligence should be coequal with operations because intelligence was clearly growing in importance. This position was not accepted, and in the Deputy Chief of Staff Operations, the Directorate of Intelligence joined the Directorates of Training and Requirements, Plans and Operations, and Communications.[15] In 1948 an Office of Special Investigations (OSI) under the Inspector General took over counterintelligence and internal security. Where the Army Security Agency had been monitoring communications for defense purposes, the Air Force established its own Air Force Security Group and soon expanded it into the Air Force Security Service. Technical intelligence was thought to be more closely related to matériel than to intelligence. In June 1950 full responsibility for air technical intelligence was transferred to the Air Materiel Command but this decision was recalled when the Air Research and Development Command was set up. In June 1951, Headquarters USAF reassumed full responsibility for air-technical intelligence, now to function as a major division of the Directorate of Intelligence with an Air Technical Intelligence Center at Wright-Patterson Air Force Base, Ohio.[16]

After the start of the Korean war, Maj. Gen. Earle Partridge, who as Fifth Air Force commander was the air commander in Korea, wrote his friend Brig. Gen. N. B. Harbold, who Partridge knew had been the Deputy AC/AS-2 and had then served several years as a key officer in the Directorate of Intelligence. "Having been in Intelligence," Partridge wrote, "I am sure you will realize that the Air Force Intelligence Organization is the weakest part of our system . . . Before the next go-round, it is mandatory for the Air Force to do something to rework its intelligence branch . . . Perhaps it will be possible to combine intelligence with some other function, the latter to be discontinued at the

outbreak of hostilities."[17] In response Harbold recalled some of the difficulties met in starting up air intelligence.

> ... it is a difficult problem, [he wrote], to maintain a real Intelligence activity down the line in peace time. We made the endeavor by delegating specific responsibilities to the major Commands which we felt were appropriate. I made a selling trip to all the Commands which was relatively successful in selling but not necessarily productive in results. It took two trips to the training command with Uncle Joe [Lt Gen John] Cannon. He finally admitted that if it had anything to do with training it should be his. Then he wanted people from Washington who were in the business since he had not one. The thing was, we had no one either. SAC efforts have apparently been rather productive, but HQ USAF had little to do with the intelligence organizations and functions in the theaters.

Harbold did not see how the intelligence function could be combined in time of peace with something else. In the old Army, he recalled the counterintelligence corps had overlapped both intelligence and security, but he insisted "Security is not Intelligence."[18]

In the Far East, General Douglas MacArthur's intelligence chief from 1941 onward had been Maj. Gen. Charles Willoughby, who in his own words was dedicated to "strenuous efforts to maintain and defend basic staff principles, particularly the absolute centralization of intelligence and the operational control of GHQ intelligence agencies." During World War II, MacArthur and Willoughby had refused to allow the Office of Strategic Services (OSS) to operate in the Southwest Pacific. There were reports that they refused to allow the Central Intelligence Agency to come into the Far East Command area following World War II, but MacArthur would describe these reports as "pure bunkum." A news article incorporated in Willoughby's secret intelligence history said that CIA had not attempted to come into Japan until 1949 and that on June 25, 1950—the day the North Koreans invaded the Republic of Korea— the CIA had only four agents in North Korea while Willoughby had sixteen.[19] In the late 1940s Far East Command intelligence was an active participant in the worldwide intelligence collection activity called WRINGER, which interrogated repatriates from Soviet captivity. This program as of 1950 was providing USAF with over 50 percent of all basic intelligence on the Soviet Union, and it also was a principal source of information for the Army, Navy, State, CIA, and the Atomic Energy Commission.[20]

The Far East Air Forces was the air component command of the Far East Command and was also a major command of the USAF. With the Fifth Air Force in Japan, FEAF thus had intelligence responsibilities to both Tokyo and Washington. The relationship to the FEC G-2 was not a happy one. In theory GHQ FEC was a joint headquarters, but under General MacArthur it had always been an Army headquarters. Only one Air Force officer served in the G-2, and he on a rotational exchange basis. The G-2 funneled larger numbers of WRINGER

reports to FEAF, but these reports from repatriated prisoners of war comprised information usually as much as six months old and limited to what could have been seen by a prisoner in confinement. After the Soviet nuclear explosion in September 1949, FEAF wanted to establish an air defense-related informant network in peripheral areas of the Far East. General Willoughby was not immediately sympathetic but USAF pressed from above and in 1949 FEAF got intelligence allocations to pursue its own WRINGER program and also to line up with the CIA to spread an informant net in the Far East. It was planned that this activity would be working within a year. In common with other USAF commands, FEAF separated OSI from intelligence but left intelligence a voice in managing security policy.[21]

Before 1949 the principal concern of intelligence in occupied Japan was one of keeping watch against internal subversion. The Fifth Air Force's director of intelligence was a highly regarded lieutenant colonel who was a qualified security officer with no experience in combat intelligence. Of the ninety-eight intelligence officers in FEAF about one-third (30.7 percent) had formal intelligence training and another third (33.6 percent) had neither training nor as much as a year of on-the-job experience. A command intelligence maneuver in 1949 demonstrated that reporting of enemy activities was unnecessarily slow and often incorrect. A new FEAF regulation was issued in 1949 that prohibited any assignment or reassignment of an intelligence officer without approval of the A-2 of the next higher echelon, but of the forty-nine intelligence officers assigned to the Fifth Air Force in 1950 all but four had additional duties and one had seven additional assignments. Especially in fighter squadrons, intelligence officers were often operational pilots.[22] The expansion authorized for the FEAF WRINGER activity amounted to two officers, twenty civilian interrogators, and five civilian typists.[23]

In World War II photographic reconnaissance had been the primary source of intelligence information. During the Army-Air Force separation it was agreed that the Army would handle its own photo interpretation and mass reproduction of photography flown by the Air Force.[24] During the financial stress of 1949 USAF sacrificed tactical air units, cutting back tactical reconnaissance to the equivalent of one group worldwide, this including one squadron in the Fifth Air Force. In addition to this squadron with RF-80A photo planes, FEAF mustered the 31st Strategic Reconnaissance Squadron with RB-29s, and the 6204th Photo Mapping Flight with two old RB-17s in the Philippines.[25] In World War II signal intelligence had possibly been the most important source of intelligence concerning the Japanese military effort. As a part of the activity, the 138th Signal Radio Intelligence Company had been activated in Australia. Redesignated as the 1st Radio Squadron Mobile (RSM) in 1944, the squadron had seen service in New Guinea and the Philippines and had ended up after the war at Johnson Air Base, just outside Tokyo. It was transferred to the Air Force Security Service in February 1949, and in June 1949 it established liaison with

the FEAF A-2. In September 1949 the 1st RSM opened a special section in the sub-basement of FEAF headquarters in the Meiji Building with a door sign reading "Special Research." In Washington in June 1949 a conference agreed to give the 1st RMS a cryptanalysis function but meanwhile its principal duty was that of monitoring Far East radio transmissions and performing traffic analysis. The squadron had its main operating location at Johnson Air Base and a direction finder useful for traffic analysis at Misawa Air Base in northern Japan.[26]

After the withdrawal of American military forces from Korea, the Far East Command had no mission there other than to be prepared to evacuate U.S. nationals in an emergency. Despite some recriminations it was later evident that both the CIA and FEC G-2 had accurately described the buildup of North Korean military forces beyond the 38th Parallel. Willoughby's history included a paper reprinting periodic rumors of North Korean invasion plans from routine daily intelligence summaries. All of these reports were discounted since G-2 did not conceive that North Korea would invade without Russian approval, which was unlikely.[27] General MacArthur would say that there had been no way to determine North Korean intentions as opposed to recognized capabilities. He said, "I don't see how it would have been possible for any group of men to predict such an attack as that, any more than you could predict such an attack at Pearl Harbor. There is nothing, no means or methods, except the accidental spy methods—if you can get somebody to betray the enemy's highest circles—that you can get such information as that."[28] General J. Lawton Collins, chief of staff of the U.S. Army, could agree that there were some mitigating circumstances concerning the failure of intelligence to take the imminence of a North Korean invasion seriously, but he found it "difficult to understand the woeful underestimating . . . of the leadership and fighting qualities of the North Korean Army."[29]

When the U.S. military forces left Korea, District 8, Office of Special Investigations (OSI), remained behind in Seoul, headed by Warrant Officer Donald Nichols, with mostly Korean operatives. Especially in the first days of the Korean invasion, and later as well, this OSI function proved a strong adjunct to Air Force intelligence. Nichols had lived in Korea for several years and was able periodically to forward to FEAF reports drawn from ROK political, military, and police informants. On the morning of the North Korean attack he telephoned the first report of the invasion to FEAF, and during the next several weeks Nichols marked maps and sent air targets to Tokyo. Following the United Nations retreat, Nichols took a party back through the enemy lines and destroyed air matériel hurriedly abandoned at Suwon Air Base, earning the gratification of Lt. Gen. George E. Stratemeyer, FEAF commander. In September, Stratemeyer promoted Nichols to captain, simultaneously remarking: "This fellow is a one-man army in Korea." On two occasions in September and October 1950, General Willoughby attempted to get Partridge to

detail Nichols to one of Willoughby's activities. Each time Partridge demurred for one reason or another but privately observing, "Nichols...is concerned especially with the Air Force's side of the picture, while the others are concerned with the Army's side."[30]

At the beginning of the war, all elements of FEAF required attention and augmentation, but the plight of intelligence was an especial concern. As it happened, Brig. Gen. C. Y. Banfill, an old-line intelligence officer, was en route to Okinawa to take a command post and he was directed instead to come to Tokyo as FEAF deputy for intelligence. One immediate task was to generate targets for B-29s including four groups from Strategic Air Command that were coming to the Far East. This task was made even more urgent when a GHQ targeting effort assigned FEAF B-29s a mission against bridges on a rail line that did not exist but appeared on a Korean map. This was the first of many occasions when old maps of Korea would prove inaccurate.[31] As a part of a USAF Target Dossier project, FEAF had been responsible for marking objectives within a thousand mile circle around Tokyo, but Siberia had gotten first priority and Korea was not in the coverage as of June 1950. In World War II, however, Target Illustration Folders had been prepared on 159 objectives in South Korea and fifty-three in North Korea. On the way to the Far East, the SAC intelligence officer for the FEAF Bomber Command (Provisional) got a complete set of the older folders from storage in Guam. The FEAF Targets Directorate soon prepared new dossier targets covering North Korea, but Bomber Command crews nevertheless preferred to use the old folders because their annotated photographs were better than lithographs used in the new dossier format.[32] The strategic attack plan laid on in 1950 went well, but it would be seen later that many additional strategic targets had been overlooked. Had these objectives been neutralized early in the war it would have benefited the United Nations cause.[33]

Another problem in Bomber Command stemmed from small allotments of intelligence personnel in the SAC mobility plans. At first intelligence was included as a small function under operations but within a month it was made coequal with operations and matériel on the staff organization. This increased the influence of intelligence on target planning but did nothing for manpower. The B-29 groups took men from other duties and pressed them into intelligence without any training. Since Bomber Command could not handle its own target generation, FEAF undertook to do this work. This would later be seen to have been a mistake since it diverted the FEAF Targets Directorate from its proper overall supervisory duties and at best could make only a partial contribution to Bomber Command. Had Bomber Command been provided with its own function it could have generated many targets by exploiting information that became available as the war progressed.[34]

In the Fifth Air Force organization, intelligence was regarded as a major staff section not to be subordinated to other activities. As already seen, however,

attention had been focused on air defense and counter-subversion and had to be redirected. After several weeks of agitation, Partridge was able to get his choice to fill his A-2 job from the United States. Meanwhile, intelligence was saddled with duties of reporting friendly activities and missions flown that should have been the task of the comptroller or operations. Since the Fifth Air Forces was flying three to four hundred sorties a day, demands for as many as five reports for each sortie left little time for relatively untrained intelligence people to collect and disseminate intelligence about the enemy. In the tactical combat units people trained in briefing, interrogation, and like functions had to be mustered from other activities. An Air Evaluation Board reported: "It is the old story of failure, in time of peace, to maintain within the units Intelligence personnel sufficient in numbers and in training to serve the needs of those units should they be thrown suddenly into combat operations."[35]

By October 1950 General Partridge thought that Fifth Air Force intelligence was "doing better," but he added: "We still are a far cry from the splendid system we had in Africa and Europe."[36] Actually it would shortly become evident that the FEAF photo-intelligence capability was in serious trouble. The Fifth Air Force's 8th Tactical Reconnaissance Squadron had acquitted itself well, and USAF had been able to increase its strength from seventeen to thirty RF–80As. Early in July USAF had also begun to try to ready the 162d Tactical Reconnaissance Squadron (Night Photography) for overseas movement but this action dragged. With ten of its sixteen RB-26s equipped for night work this squadron was not ready for operations until August 26. The 31st Strategic Reconnaissance Squadron moved its thirteen RB-29s to Japan. The 6204th Photo Mapping Flight brought its two RB-17s to Japan and began photo-mapping runs. But it became evident that this mapping work could not be completed before snowfall and accordingly RB-29s were added to the activity, thus taking away a substantial part of Bomber Command's reconnaissance. At this same time, USAF demanded that FEAF make a series of photographs of air-ground support strikes for possible use in Congress. Partridge was directed to commit four RF-80s and four RB-26s to this project each day, a diversion he calculated to be something between 25 to 60 percent of his photo capability. All during the summer the Eighth Army had not been able to provide its own photo interpretation or any quantity reproduction of photos for its units. The Fifth Air Force had handled these tasks as best as it was able. This situation was going to be dramatized by the defeat of the United Nations at the Yalu River.[37]

All summer long in 1950 it was well known in Washington and Tokyo that Communist China was shifting large forces into Manchuria. There was a clear capability for China to intervene in the war in Korea, but General MacArthur, like almost everyone else, did not believe that China would intervene. MacArthur's belief was predicated upon the idea that China would be deterred by a threat of massive U.S. retaliation. "If nothing else," Harry Howe Ransome has pointed out, "this incident points up the fact that intelligence estimates of

this sort cannot be made in a vacuum. There must be a closer link between national intelligence and United States policy, but the ultimate fusion of all factors—including value judgments as well as pure intelligence—would take place beyond the boundaries of the intelligence community."[38]

Unknown to American intelligence, Chinese Communist forces had entered North Korea, moving part way by rail, and were poised in Korea's central mountains to hit the flanks of the Eighth Army on the west coast and the U.S. X Corps on the east coast. In the crisis of November 26, the only intelligence came from interrogations of Chinese prisoners who readily revealed the units to which they said they were assigned. When the Eighth Army added up this order of battle, it appeared to be facing between 400,000 and 500,000 Chinese during the first week of December. The POW reports could not be verified and consequently the Eighth Army had to fall back as quickly as possible to escape annihilation. At the same time the X Corps pulled back to a beachhead on the east coast. In the rapid withdrawal United Nations ground forces lost all contact with the Chinese and the location of enemy concentrations became uncertain. The Chinese liked to outflank rather than to attack head-on. Advance combat elements filtered forward over secondary roads and trails, were well trained in camouflage and concealment, and had very little motor transport or heavy equipment to give away their positions. Consequently aerial photography promised only partial confirmations of visual sightings from the air and of other reports from covert sources.[39]

On December 16 General Partridge sent a personal message to General Banfill in Tokyo stating his deep concern regarding the location of the Chinese army and asking for any information available at higher echelons. Banfill immediately telephoned that he had no information. Partridge also asked Stratemeyer to relieve him from the commitment of the tactical reconnaissance aircraft to the public relations detail. He ordered tactical air controllers who flew T-6 planes to keep a sharp watch up the roads leading down to the 38th Parallel both by day and night. He alerted OSI to maintain a sharp watch for Korean refugees who might have information.[40] The message to Banfill evidently stirred up Tokyo. Stratemeyer ordered Banfill to go all out "with every possible effort, both day and night, on recon in order to determine where the Chinese Communist armies are."[41] On a visit to Kimpo Airfield at Seoul on December 19, Stratemeyer discussed the reconnaissance problem with Partridge, released the eight photo planes, and agreed to do all he could to insure that G-2 FEC and G-2 Eighth Army would obtain the photo interpreters that the Army was pledged to provide for its forces. Until this could happen Stratemeyer promised that FEAF would do "everything within its power to perform this photo interpretation for the Army as well as the Air Force."[42]

Back in Tokyo on December 21, Stratemeyer discussed with General Willoughby the responsibility that the Army had to provide a photo-interpretation and production unit to both FEC and Eighth Army. Stratemeyer

thought that Willoughby appeared surprised to learn that the Army was responsible for interpretation of its photos but quickly recovered his poise and said that he had requested such capability and possibly had been turned down in Washington. "I told him," Stratemeyer wrote, "he would have to go after high-powered civilians, just like we were doing." Willoughby then remarked that in order to find the Chinese, CIA, OSI, and G-2, and Captain Nichols should all get "on the same team." Stratemeyer assured that "we will play ball one hundred percent and were back of the utilization of the different services interested in this problem."[43]

On December 26, Lt. Gen. Matthew B. Ridgway arrived to assume command of the Eighth Army, replacing Lt. Gen. Walton Walker, who had been killed in an automobile accident while laying out defense lines just north of the 38th Parallel. Ridgway asked about the location of the Chinese and was shown a "big red goose egg" on the situation map representing all that was known about them. Patrols had all but stopped, and he ordered them to get going again.[44] Answering an immediate action redline message from Stratemeyer, General Hoyt S. Vandenberg, USAF Chief of Staff, sent Col. Karl L. ("Pop") Polifka, the Air Force's number-one man in tactical reconnaissance to put together what was going to become the 67th Tactical Reconnaissance Wing at Taegu Airfield in southern Korea.[45] Meanwhile, in ten days of unspared effort Fifth Air Force reconnaissance crews each day photographed a 40-mile deep zone behind the Eighth Army's lines along the 38th Parallel. Photo interpreters brought from Washington and other places examined the stack of 27,643 photos, but this all-out effort showed little results simply because photo interpreters are chiefly useful to confirm, deny, or enlarge upon existing intelligence rather than to work in isolation from any other information, as the interpreters were doing at Taegu.[46] In February 1951, eighty-six U.S. Army technicians and interpreters joined what was called a joint photo center. The 67th Wing was well in operation as a going concern well before July 1, 1951, when Colonel Polifka was shot down flying a visual reconnaissance mission at the front lines.[47]

By January 8, 1951, General Ridgway had special intelligence that convinced him that the Chinese were concentrating in central Korea north of the mountain town of Wonju. In a visit to Partridge he asked that the majority of Fifth Air Force strikes be concentrated in this area, adding critical comments on the way intelligence was being handled in Korea. The Red offensive occurred rather much as predicted in January and February and in heavy fighting the Eighth Army rolled back southward and then commenced to reattack. In this same period, FEAF and the Fifth Air Force reworked the air intelligence organization, forming the 6004th Intelligence Service Squadron in Tokyo, with detachments in Korea on March 2, 1951.[48]

The new air intelligence organization recognized old problems and rationalized air technical intelligence collection, human intelligence interrogations, and escape and evasion for downed airmen. At the beginning of

the Korea war, the USAF Air Materiel Command had sent an air technical liaison officer to FEAF and he had mobilized field collection teams. With help from OSI District 8, these teams found significant amounts of Russian air materiel, which was sent to the Far East Air Logistics Force in Japan. Before the collapse in North Korea, an estimated 120 tons of captured materiel had gone to Japan, and fully as much more was left behind in North Korea during the hurried withdrawal. When the front stabilized in South Korea possibilities of capturing enemy equipment were greatly reduced.[49] In this same period, unimaginative escape and evasion procedures for aircrews had troubled Bomber Command. B-29 crews, for example, did not like the United Nations blood chits advertising that they were downed flyers since they thought that this might result in their immediate execution in some circumstances. In December 1950 General Partridge was completely disgusted by the many diverse activities that were expected to be involved in uncoordinated E&E programs.[50]

The Far East Air Forces used persons from the WRINGER program to provide a nucleus for the 6004th Air Intelligence Service Squadron. Where the old WRINGER program had given some good results it had dried up since Russia had stopped releases of Japanese prisoners. Functional detachments were put under operational control of Fifth Air Force. Detachment 1 included teams to collect air technical information, to exploit technical sources on operational air bases, and to conduct preliminary interrogations of prisoners at corps headquarters about air matters. Detachment 2 (headed by now Major Nichols) interrogated prisoners and refugees, translated enemy documents, and conducted a program of covert-agent activity in North Korea. This detachment used principally Koreans for both translations and operations. Detachment 3 coordinated and supported escape and evasion activities for recovery of downed airmen. In addition, a Detachment 4 was in the Philippines and Detachment 5 participated in joint interrogations. OSI District 5 continued to function primarily as an investigative agency but one that forwarded any pertinent information to the Fifth Air Force director of intelligence.[51]

During February 1951 the United Nations forces weathered the Communist offensive, and General Ridgway immediately shifted to limited counterattacks that drove the Chinese backward. A Chinese staff officer captured in February told interrogators that China's Fourth Field Army had been promised air support for an all-out spring offensive that was going to sweep United Nations forces out of Korea. Through most of 1950 the Fifth Air Force had not given much attention to air defenses since the North Korean air force had been easily destroyed. In March 1951 there was a significant buildup of Communist airpower behind the Yalu, not only of MiG-15 jet fighters but also twin-engine bombers. From bases in Manchuria the bombers could reach any part of Korea.[52] From monitoring voice transmissions, signal intelligence had already established that "quite a large number" of Russian pilots were flying MiG-15 aircraft in combat.[53]

The 1st Radio Squadron Mobile had been monitoring Communist radio transmissions from operating locations in Japan, and at the end of March the squadron made what it described as one of "the most important contributions to Air Force Intelligence in its history." What was intercepted was not disclosed but General Omar Bradley later revealed that intelligence had indicated that the Soviet Union intended to make a major move, probably in Korea, but possibly in Europe. Remarks by Speaker Sam Rayburn on the floor of the House of Representatives revealed that he had been briefed. Rayburn said: "I can say to this House in all earnestness and all seriousness that it is my firm belief that we are in greater danger of an expanded war today than we have been at any time since the close of World War II in 1945." Rayburn spoke of the massing of aircraft and troops in Manchuria "not all of them Communist Chinese by a great extent."[54] Rayburn's remarks came on April 4 and on this same day (April 5 in the Far East) General Partridge received a wire from FEAF "stating that from a good source it was learned that the enemy was acquiring 1400 aircraft and that it seemed inevitable that he would use them to support the coming ground operations."[55] Also on April 5 in Tokyo General Stratemeyer told the press that General MacArthur had been authorized to attack the enemy's "protected sanctuary" in Manchuria if and when the Communists employed major air strength against the United Nations forces in Korea. The final decision, of course, would be made by the highest authority. At about this same time, the U.S. delegation at the United Nations quietly informed delegates from member nations whose troops were in Korea of this contemplated retaliation.[56] When the attacks came in April and May 1951 the Communist ground armies received no air support and the offensives met decisive defeat.

According to Chinese Communist documents the Soviet Union was fearful of the threat against Manchuria. On the other hand, if the Chinese could repair some operating air bases inside Korea the air attacks could be mounted from these bases into South Korea without hazard to bases north of Korea's borders. Not very long after truce talks began in June 1951 the enemy began to make a determined effort to establish air supremacy over the area south from the Yalu to the Chongchon River that Fifth Air Force pilots had come to call "MiG Alley." In this circumstance as well as in the continuing conflict during the truce talks it was fortunate that FEAF-Fifth Air Force intelligence had been put on a sound footing. Photo reconnaissance allowed FEAF to keep check on the status of airfield repairs and to schedule them for attack just when they were almost ready for use by Communist aircraft.[57] The 1st RSM sent teams to Korea to serve with the Fifth Air Force with locations at Pyongtaek and at Seoul.[58] In recognition of the importance of electronic intelligence the Fifth Air Force added an Electronics Intelligence Section in its directorate of intelligence in 1952. By February 1952 it was operating a search radar at Cho-do and this was expanded into a full-scale tactical air direction center that could control friendly F-86s in combat with MiGs. By May 1952 the Fifth Air Force was pointing out that:

"There is a requirement in a tactical air force for electronic intelligence and the means to obtain this intelligence. . . . It may further be concluded that the enemy radar system is as important to his making a bid for air superiority as are his aircraft."[59]

As the battle line stabilized just north of the 38th Parallel, the United Nations continued to hold islands behind the Communist front from Yang-do on the east coast around to Cho-do on the west coast. These islands provided convenient bases for Detachment 2, 6004th AISS, which in December 1952 was manning eighteen districts and fifty detachments with some 900 Koreans. These locations also conveniently received refugees from North Korea and served as infiltration points for covert forays. In one instance on April 17, 1951, Major Nichols and five or six Koreans were lifted by helicopter from Cho-do and flown with fighter cover to the site of a crashed MiG southeast of Anju. They stayed on the ground there for about forty minutes and brought out a cargo of vital parts from the planes.[60] Cho-do was also a safe haven for crash boats and rescue helicopters which picked up F-86 pilots forced to parachute into nearby waters.[61]

At the same time that the Fifth Air Force recognized that Red airmen were attempting to cover a rebuilding of airfields in MiG Alley it was also apparent that the MiGs were limited to fighting under their ground control within a defense environment that was roughly encompassed by northwestern Korea. According to General O. P. Weyland, who became FEAF commander in mid-1951 when Stratemeyer was incapacitated by a heart attack, signal intelligence showed that the MiG force was dominated by Soviet pilots, at least two groups of whom were employed. These MiGs were limited to fighting inside the Red defense environment and were apparently forbidden to fly over water where they might be shot down and captured. On one occasion an unfortunate MiG pilot bailed out over the Yellow Sea. Americans were about to reach him with a crash boat when his fellow MiG pilots strafed him in the water, obviously to prevent him from being taken alive.[62]

In April 1952 General Mark Wayne Clark became CINC United Nations Command/Far East Command and brought with him a mandate for more forceful action to break the stalled peace negotiations. General Clark authorized U.N. air attacks against North Korean hydroelectric plants, successfully diminishing Manchuria's power supply. After this, there were those who said that there were no more air targets left for destruction. In fact in August 1952, General Banfill flatly stated that "Fifth Air Force and Bom Com's earlier work, coupled with the recent destruction of the enemy's power system, has left Korea almost devoid of targets that are suitable in a strategic or economic sense."[63] But now a new target strategy was to attack objectives that would be politically and economically costly to China and Russia, and when they set their minds to the task target planners were surprised. In Korea, Detachment 2, 6004th AISS was the single most important collector of air intelligence information, turning in 600

to 900 reports from agents, prisoners, and refugees each month. The Fifth Air Force processed these reports and added aerial reconnaissance to prepare them for attack.[64]

Two episodes illustrate shrewd intelligence at work. FEAF target officers had noted that Red security troops customarily moved into rice-producing areas of northwestern Korea and took over rice as it was harvested, obviously for military use. Further study revealed that the entire rice production could be destroyed by breaching dams at 20 large reservoirs. General Clark did not think that it would be politically acceptable to attack food, but he authorized attacks at four dams where released flood waters would cut rail and road lines. Fifth Air Force tactical fighters successfully severed two of the dams, and the vitriolic Red propaganda blasts that ensued left little doubt that this was a profitable undertaking for the United Nations cause.[65] In early 1953 someone came up with an idea that it would be psychologically advantageous for the United Nations to offer a substantial monetary award for the delivery of a flyable MiG-15 airplane to Kimpo. This became known as Project MOOLAH and in April 1953 Russian, Chinese, and Korean language broadcasts made the offer of reward to a first defector with a MiG-15. It was found that the Russian MiGs stood down, and in May and June 1953 record numbers of MiGs evidently flown by Chinese and Korean pilots were shot down in combat.[66] Looking back at the remarkable success of air targeting in the last year of the war, Brig. Gen. Don Z. Zimmerman, who had become FEAF deputy for intelligence, stated: "A dynamic and constant expansion of the target horizon...will always reveal that an efficient employment of airpower can be made regardless of the circumstances of the operation, the geographical location, the composition, deployment, and tactics of the enemy forces. It is the mission of the targets people to research and reveal the most effective way of employing all our combat air strength."[67] Maj. Gen. Donald Putt, USAF Director of Research and Development, had written another evaluation in January 1951. "Not too many months ago, Intelligence was just another staff function. Except to those whose assignment it was to practice it, it was ordinarily considered to be a minor one. What happened in Korea on the 25th of last June changed all this." Putt built a strong case for the importance of technical air intelligence, saying that it and research and development were the inseparable parts of a whole.[68]

During the Korean war, USAF and FEAF insisted upon the maintenance of air intelligence capabilities unique for the support of air missions. As such the activities of Detachment 2, AISS, were essential to independent air operations, but, on the contrary, U.S. Army doctrine held that partisan activities should be controlled at theater headquarters level. To this end in November 1951, the Combined Command Reconnaissance Activities in Korea (CCRAK) was formed to serve as the single theater headquarters to control of all covert, clandestine, and related activities in Korea. CCRAK wanted more control over Detachment 2, but FEAF won USAF backing for its position that operational control over

this detachment must remain with the Fifth Air Force commander in order that he might meet his intelligence responsibilities. A further development occurred at the time of the top-level UNC/FEC headquarters reorganization into a joint staff in January 1953. At this time, the commanding general Army Forces Far East (AFFE) was made the executive agent for CINCFE for joint matters pertaining to theater clandestine and covert operations. FEAF now insisted that this was p'lacins CCRAK under unilateral Army control which was inadmissible. This controversy outlasted the end of the Korean war and lingered into 1954 when a new CINCFE agreed that the Air Force had a need to engage in unconventional warfare, particularly to support escape and evasion. Similarly other theater force component commanders would need to engage in covert activities to support their missions. Since it would be unwise for the component commands to interfere with each other's covert actions the Far East Command would have a small joint planning staff in its headquarters to monitor and coordinate the component activities.[69]

After the Korean war experience, technical air intelligence became a going activity in the United States Air Force, but it is nevertheless fair to say that the other air intelligence experiences of Korea had few lasting effects upon Air Force institutional intelligence. The concept of the 1950s was that the Korean conflict reflected air intelligence requirements for a tactical air war reminiscent of World War II, whereas the major threat to the United States would be nuclear war. The defined mission of air intelligence continued to be (a) preventing strategic, tactical, or technological surprise, (b) providing a sound basis for counsel on air preparedness, and, finally (c) supporting the planning and conduct of air operations. At the USAF level, the major function of air staff intelligence became national-level warning and threat indications assessment, an indication being defined as "any betraying activity or manifestation on the part of an enemy that may point toward his intended course of action."[70] As for intelligence for the support of air operations, the USAF continued to teach that the principal concern was that: "Intelligence is a function of command and must be in specific response to command missions." Thus intelligence missions in the Strategic Air Command, Air Defense Command, and Tactical Air Command were said to be "in essence a restatement of their command responsibilities."[71] By 1956, however, an experienced staff air intelligence officer was reporting that air intelligence officers at all command levels generally agreed that commanders "looked upon intelligence as a type of 'necessary evil' (which higher headquarters expected them to handle in addition to already heavy workloads)."[72] Effective on July 1, 1957, Maj. Gen. Millard Lewis, then heading the Directorate of Intelligence under the Deputy Chief of Staff, Operations, became Assistant Chief of Staff, Intelligence, directly responsible to the USAF Chief of Staff. Later in 1957, Maj. Gen. James H. Walsh, who had been commander of the Strategic Air Command's 7th Air Division in the United Kingdom, was brought to Washington as Assistant Chief of Staff, Intelligence.

Shortly after this Walsh described the gap he had found to exist between intelligence and the operator, planner, and decisionmaker, and he put the blame on intelligence. "I believe," he wrote, "it is not unfair to state that as professional intelligence people we have been disappointingly slow in understanding the nature of the pressing problems that are confronting us."[73] But before this old problem of how to relate air intelligence to air operations had been resolved a new Secretary of Defense in August 1961 established the Defense Intelligence Agency (DIA) and the history of air intelligence thereupon moved to a new plateau.[74]

Notes

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The Legacy
Comments
Mr. Walter Laqueur

Having acted as the timekeeper and hatchetman, I would like to don my other hat, namely that of commentator. We heard three excellent papers, two case studies and another of a more general character. Each of these papers had a basic lesson for intelligence. Mr. Futrell told us about Korea, and in the case of Korea of course, it wasn't such a surprise. In listening to his paper, it occurred to me that the element of surprise was probably greater in Korea than in the Second World War. So, the lessons, if ever they had been learned, had been forgotten by that time. Maybe it had to do with that we were dealing with an enemy who was not using high technology and maybe that's a lesson of that war for these days. Mr. Burrows dealt with one of the turning points in contemporary intelligence, in fact, he's probably closest to the topic of this meeting on a revolution in intelligence. His paper, I think, points to the well known fact, and this is nothing profound, that from 1960 on we did get much more intelligence, but more intelligence does not necessarily mean more unanimity, on the contrary. Last was Mr. Gaddis, and he was asking the central question, how important is intelligence? He came out if not as a skeptic then certainly as an agnostic. And I must say my impression when I was writing in this field was something similar. However, I would like to make a distinction. While doing my research, I tried to interview all former Secretaries of Defense and Secretaries of State. Most of them agreed to talk to me. I wouldn't argue for a moment that these were interviews in depth, but getting a general impression was important for me. I asked them one question, "How important for you was intelligence?" And the interesting thing for me was that all the people in State said "Well, ah, it wasn't very important." And that the military people were more positive. When I pressed the people at the State Department, they said, "Well, it was of certain importance at some times." And there may be two reasons. One is for technical reasons, namely that the customers of intelligence are not only and perhaps not even mainly the people on top, but the people in the middle echelons. They should be kept informed. But of course the other reason is, again not very profound or new, but I think still very true, that military intelligence deals mainly with capability — with the order of battle of your enemy, deals with the deployment of missiles, whereas the kind of intelligence the diplomats are

interested in are intentions. And intentions cannot be measured, they cannot be quantified, they cannot be found by the most modern means of high technology. So, here we have a certain difference, not a total difference, but a certain difference between military and diplomatic intelligence. We heard three excellent papers, but I still feel it would be a little artificial to find a common denominator among them because they are dealing with different aspects of intelligence, each one with a very important aspect. And for that reason, I may use or abuse my privilege as chairman of this meeting, and talk about yet another subject. I want to take as my starting point both last night's lecture, *glasnost,* and also the last part of Mr. Gaddis' paper, namely the agenda for the future.

As a student of military history, a student of intelligence, he finds a great deal of unfinished business. One of these cases of unfinished business was Soviet intelligence in Switzerland during the war, and I very much regret that Mr. Rzheshevsky is not here. While working in Bern, I happened to stumble on what I think is the identity of the people who supplied this kind of intelligence. I'm not certain and for that reason I cannot publish. When I asked the Swiss, "Why do you keep it a secret?", they gave me two answers. One was that they don't want to hurt the families, and certainly in one case the son of the man in question was a general in the Bundeswehr. And the second answer, and of course it was the most important answer was, "It is not in our national interest to disclose this." So here I feel the key to the Swiss connection is not in Moscow, it is in Bern. How great an impact does this information have is a different question altogether.

Let me talk a few minutes on *glasnost,* or rather the impact of *glasnost* on intelligence history. On one hand it's tremendous. I've been following for the last few years Soviet publications, and the day is not long enough to read all the interesting stuff which is coming out, and to talk to people. To give you an example, the television program on how the Soviet Union built its nuclear bomb. It's called "Risk." In connection to that program there was a public discussion, how important was Mr. [Klaus] Fuchs, and how important were certain other gentlemen? Admittedly, this discussion, the minute it came to details, stopped. But the very fact that such a discussion could be held in the Soviet Union was of course, something totally new. On one hand there is a tremendous interest in the history of intelligence in the Soviet Union; on the other hand, so far the results to put mildly, are mixed. The only important revelation which has come out to my knowledge, came out from Poland. This concerns the famous Khrushchev speech of 1956, which, as you know, was transmitted to the West. During the last years of life of the troubled James Angleton, I pestered him just a bit and told him, well, its a long time now and why don't you tell us. He was a gracious host, but his basic attitude, — he didn't put it in so many words, but his basic attitude was, "I didn't tell my own boss, why should I tell you?" I mentioned a certain name to Jim Angleton, and told him, "Look, I think this man did it," and

he said, "I can't comment." And then later he died, and a few weeks later I did receive a book from a friend, a book in Polish, a very interesting book by a lady journalist who interviewed people, members of the Polish Politburo in the 1950s, and, lo and behold, one of them said in black and white, "Well, in 1956 I decided to give the text of the Khrushchev speech to three western journalists." Number one was the man whose name I had mentioned, a correspondent of *LeMonde* in Warsaw, and for good measure he also mentioned two other names, Americans. The most amazing part of this story is that no one paid attention. I have a good friend who always tells me, "Look, everything important to somebody is published, you only have to know where." And I have another friend who tells me there is no better way to keep a secret than to publish it.

I'm afraid this belongs to the kind of history about which Mr. Gaddis talked with some disdain and I agree with him — the anecdotal kind of history. But I can tell you it sets better than the other history. In the Soviet Union, as I mentioned, there's a tremendous interest in the history of the NKVD. And much of it of course has been negative. In order to counteract this, they have been a little more forthcoming. For instance, the fact has been mentioned in print for the first time that not less than twenty-thousand members of the organs of state security were killed, executed, in the 1930s. To give you a few other examples, earlier this year an old interview was published with the late Kim Philby. And here the Soviet journalists were up in arms — why does the Sunday *Times* in London publish it, why don't we get the right of first refusal. Well, in order to appease them, they let them interview Blake. But Blake by now wasn't that interesting. And other journalists and others in print complained, they said, "Look, why do you let Carlucci enter this plane and yet we are not even permitted to photograph the plane, even from afar. What kind of business is this?" Now, again to counteract this negative criticism, two agents have received a great deal of publicity. One of them is Lansdale, who was arrested in London, the other one is Rudolph Abel. And in recent months, dozens of pages have been written about these characters in several Soviet publications. It was very interesting that to the extent that I as an outsider can judge it, it has more to do with James Bond than with what really happened. And this goes so far as falsifying two identity of these people. You may recall that Rudolf Abel was arrested in New York in the 1950s. He was later exchanged, I believe, for [Gary Francis] Powers. And we have known for a long time that Rudolph Abel wasn't his real name, that his real name was William Fisher, that he was born in England, the son of a Russian-German emigre, a friend of Lenin, in fact, his father appears in the *Soviet Encyclopedia*, not exactly an unknown family. However, to this day, the Russians are not willing, despite all this publicity about the great exploits of these two wonderful Chekhisti, to reveal their true identity. And this, despite the fact, if you happen to be in Moscow, and if you take the bus from Red Square to Novodinsk Moniter Cemetery, you will find a statue which says, Rudolph Abel, which is William Fisher, and so on, and so

forth. And very near is the grave of Gordon Lansdale. So here we see on one hand a new readiness to talk about certain subjects, but limits are still very narrow.

From this kind of anecdotal history let me go on to another topic: It's been fifty years since Munich. And the events before and after Munich have preoccupied Soviet historians and historians of intelligence. And there was a long article by Mr. Rzheshevsky in Pravda about four weeks ago, in which he argued that given the intentions of the imperialist powers, Stalin had no alternative but to go with Hitler in August of 1939. The new factor in this situation is of course that other historians who take a different line, who argue there were alternatives, it was not necessary, and maybe the Second World War wouldn't have broken out but for this pact. Here, an interesting intelligence aspect has come in. And this is mentioned for the first time by some Soviet historians. Namely, the Red Army was held in the West and in Germany, in the middle thirties in fairly high esteem, both as far as quantity and quality was concerned. But then of course in 1937 they held a purge, in which eighty to ninety percent of all the senior military personnel from the rank of colonel and above were executed. And this of course had a great effect, both on the Soviet Union and on its enemies. Because Hitler, rightly or wrongly, reached the conclusion that a decapitated Red Army wasn't a very serious enemy. On the other hand, the western powers had reasoned about the value of the Soviet Union as an ally. And I wouldn't argue that this was the only factor, but it was certainly a very important contributory factor which led to Munich and the outbreak of the Second World War. Where does intelligence come in? There is a tendency to create new myth in the Soviet Union. They say yes, it was a horrible thing to decapitate the Red Army, but of course it was the fault of the Germans. Why? Because the fabrication of all that forged material showed that Tukhachevski and others were really German agents. It's highly unlikely that Stalin was naive enough to believe that material. It wasn't used anywhere then. However, and revelations are now gradually coming out, it has been suspected for a long time but I think for the first time we know with some certainty that during 1935, 1936, and 1937, the NKVD was systematically spreading such material in Western capitals particularly in Prague and Paris, that Tukhachevski and other Soviet generals and marshals were plotting and were really enemy agents. In other words, Stalin was fabricating the material which he was later on intending to use in that famous show trial of 1937. This is just one of the fascinating issues which may have been known in general outline but which is now becoming known in greater detail and which belong to that general chapter of unfinished business which will preoccupy us in the years to come.

Summary Session

Impact of the Intelligence Revolution on Current Military Posture

Chair: Ray S. Cline

An Approach to the History of Military Intelligence

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The history of modern, coordinated national intelligence in the United States is mainly encompassed in the past five decades, remarkably enough spanning only my own professional lifetime. I date the emergence of America into the harsh realities of 20th century geopolitical conflict from the August 1939 Soviet-Nazi Germany non-aggression pact, the beginning of World War II in Europe. The Japanese attack on Pearl Harbor, 7 December 1941, simply proved that the United States could not secede from global troubles by declaring neutrality.

From the time of Pearl Harbor on the urgency of acquiring and understanding reliable information about foreign situations has been evident. The Congress, the President, and the citizens of the United States ought to be able to see that an open society in particular must have an operating intelligence system to penetrate facts being hidden from American decision-makers. This policy information base is the key to survival and prosperity in the volatile, often dangerous world of the end of this century.

The value of secret intelligence in wartime has been clearly appreciated by American political leaders since the time of George Washington, who personally directed espionage operations during the Revolutionary War, but the concept of a central, coordinated intelligence system to support national decision-making did not become clearly articulated until World War II. The wartime OSS (Office of Strategic Services), the prototype of a central system and the precursor agency of the CIA, was promptly abolished when hostilities ended in 1945.

The embodiment of a peacetime central, coordinated system in law and bureaucratic reality dates only from 1947, when the National Security Council (NSC) for strategic decision-making and the Central Intelligence Agency (CIA) were established.

The literature and doctrine of U.S. intelligence is only beginning to crystallize in forms adequate to provide the foundation for a consensus on what kind of intelligence machinery is needed and how it should operate within our free political process. The American people, endlessly preoccupied with the state of their psyches and their health, are generally content to derive their knowledge about intelligence from the fantasy fiction of James Bond cloak-and-

dagger violence rather than serious historical research.

In his pioneer historical analysis *Strategic Intelligence for American World Policy*, veteran OSS and CIA officer Sherman Kent pointed out:

> Although there is a good deal of understandable mystery about it, intelligence is a simple and self-evident thing. As an activity it is the pursuit of a certain kind of knowledge; as a phenomenon it is the resultant knowledge....and strategic intelligence, we might call the knowledge upon which our nation's foreign relations, in war and peace, must rest. If foreign policy is the shield of the republic, as Walter Lippmann has called it, then strategic intelligence is the thing that gets the shield to the right place at the right time. It is also the thing that stands ready to guide the sword.

In this sense, the overwhelming importance of intelligence activity, the actor or agency, and the "resultant knowledge" seems self-evident. The United States, nevertheless, was almost totally unprepared for the dangers and stresses of the 1940s in the field of intelligence as in so many others.

It is almost a miracle that this country could have survived the disaster and humiliation of the Pearl Harbor surprise attack and then during the 1950s and 1960s developed under CIA's leadership what I consider the best intelligence system in the world. The United States has had its ups and downs in the 1970s and 1980s, and a great deal of damage was done to the whole coordinated intelligence machine in the mid-1970s when CIA's flaws and abuses became a news media and political circus. The flaws and abuses had largely been corrected internally before the public flap began, but the solid achievements that vastly outweighed the mistakes have been less noted and have not been consistently sustained under the onslaught of criticism. President Carter and his DCI, Admiral Stansfield Turner, allowed the machinery to run down in terms of both strength and morale. President Reagan and William J. Casey restored CIA and built up cooperation with other intelligence agencies, only to run into strenuous criticism and Congressional obstruction at the end of the Reagan term.

In its narrowest context, intelligence is simply information. It may be collected in some clandestine manner, that is, secretly and often at some personal risk because the facts sought are being deliberately withheld. In a broader sense, intelligence on foreign affairs includes such additional categories as press reports, foreign radio broadcasts, foreign publications, and—in the government—reports from our Foreign Service officers and military attachés. During the past few decades these sources have been materially supplemented by technical data gathered by photographic satellites and electronic signals sensors.

In the world of international affairs, intelligence is only useful if it is subjected to evaluation and analysis to put it into the context of ongoing U.S. national security and foreign policy concerns. It must be evaluated for accuracy and credibility in the light of its source or its collection method, for the validity and significance of the content, after being collated with other available data, and for its impact on U.S. interests, operations, or objectives. The result of this

total intelligence process is a report intended to assist policy and operation officers in making decisions.

Such analytical findings can suggest the pattern of future development in foreign affairs and provide the evidential base for making estimates about these developments, including estimates of the probability of particular scenarios of foreign actions. The future estimate is the subtlest and most difficult kind of intelligence. If objectively and imaginatively worked out, it builds an indispensable floor under prudent policy-making.

The collection of intelligence and its evaluation or analysis is seldom any longer questioned as a legitimate and essential part of the Washington bureaucratic process. Sometimes scruples are expressed about stooping to clandestine and illegal or immoral techniques of getting information, but generally Americans feel it is only a fair game to try secretly to get data that other nations are hiding from us—on the assumption it is very likely to affect our relations with those nations and might indeed affect the security of American institutions or lives. Similarly, although it is often overlooked as a result of fascination with the detail of espionage and technical collection of electronic signals or photographic images, the need for analytical research to reduce raw data to meaningful ideas is usually regarded as a normal function of government. If national decisions are to be made, national efforts to provide a sound, understandable, and carefully articulated data base are clearly worthwhile.

CIA's birth reflects a national commitment to establish a procedure for orderly deliberation and decision on military and diplomatic policy. It is linked with the setting up of the National Security Council under the chairmanship of the President, with the Secretary of State and the Secretary of Defense as key members. A crucial element in this structure was that both the CIA and the Joint Chiefs of Staff reported directly to the NSC on foreign situations, trends, threats, and opportunities. Thus an objective intelligence data base was available to the President along with a technical evaluation of military risks and requirements. On this foundation the NSC could blend foreign policy aims and defense policy programs into a realistic, coherent national strategy.

While CIA's clandestine intelligence collection and intelligence analysis were definitively authorized in the National Security Act, the function of covert psychological and political action was only elliptically referred to in the elastic catch-all clause about "duties related to intelligence affecting the national security."

The responsibility for covert action was fated to play a crucial role in coloring perceptions of CIA. CIA entered into covert action operations under pressure from leading U.S. officials of the day to support basic U.S. foreign policy. In the light of Josef Stalin's activities in Central Europe and Berlin in 1947 and 1948, there was great pressure by many thoughtful, patriotic men to find ways to forestall Soviet use of local communist or nearby military forces to

intimidate and dominate the governments of Western Europe.

The officials who argued that the United States had to fight back covertly against widespread political subversive efforts sponsored by the Soviet Union in Germany, France, and Italy in 1947 and 1948 included Secretary of State George C. Marshall, Secretary of War Robert Patterson, Secretary of Defense James Forrestal, and George Kennan, then Director of the State Department's Policy Planning Staff. President Truman concurred in their recommendations. Their geopolitical philosophy, embracing covert assistance to anti-Communist resistance forces, was the basis of CIA's forays into covert action abroad.

As a result in 1948 the NSC issued a directive sanctioning CIA's continued conduct of covert activities as worked out in a consultation and review procedure with State and Defense officials. CIA was to be an instrument of policy, not an instigator. It was instructed to propose specific information programs and other political action that would negate communist efforts to expand Soviet political influence. Paramilitary action entered into the picture only a few years later.

State and Defense guidance was indeed very general, and the responsibility appeared to belong to CIA for meeting the Soviet challenge in secret back alley battles. The operations themselves, or at least the foreign policy program within which they were carried out, were in the early days remarkably successful. CIA got a lot of credit, which it only partly deserved, and much later was to get most of the blame when covert action programs got out of hand—blame that also largely belonged to the policymakers, not to the instrument of covert action, CIA.

The covert action issue surfaced with a bang some twenty-five years later. It is the controversial element of intelligence activity that is most difficult to explain openly and defend persuasively. Reasonable men differ as to whether it is right for the United States to intervene secretly to influence the course of events in other countries to American advantage—even if it appears also to be the advantage of the people of the country concerned. Many critics of CIA consider covert political action of a subtle, non-violent kind to be legitimate, but draw the line at paramilitary operations and believe CIA simply overdid the covert role. Some observers support covert intervention in Western European democratic, parliamentary societies, but not in the politically less mature developing nations; others argue exactly the opposite. It was probably foreordained that a major public hue and cry over secret activities of this kind would cause alarm and tend to inhibit the activities and damage the morale and effectiveness of the agencies responsible for carrying them out.

When all the evidence is reviewed, it appeared that CIA was mainly guilty of vigorously pursuing espionage and counterespionage targets leading to foreign agents or information on foreign activity needed for U.S. security. In most of these cases, it was following White House orders, perhaps too obediently, but not irresponsibly.

I bring up all of this recent history because the issues have not been definitively resolved. The multiple investigations have brought to the surface numerous questions pertaining to lines of authority, chain of command, constitutional responsibility, and appropriate kinds of response to geopolitical dangers. What has seemed in the past to be exclusively a function of the executive branch, along with foreign policy and the prosecution of war, is now perceived as rightfully responsive to congressional needs and even to the public at large. The authority to be assigned to the director of the national intelligence entity and the place his agency ought to occupy in the national structure have been brought into question, and yet no other agency of government exists to conduct clandestine or covert operations.

All of these issues need to be settled, and the capabilities of the intelligence system urgently need to be restored to the highest level U.S. resources and talents permit. It is crucial to examine objectively whether the intelligence world of the past five decades is changed by circumstances and facing new and different challenges, or whether the fundamental characteristics of the U.S. intelligence system of the 1950s and 1960s will continue to serve American national security interest well.

To each member of this distinguished panel of veterans of the intelligence wars — all of whom have shared much of the historical experience I have described — I am now putting a series of questions. I suggest that we can sharpen an appreciation of the intelligence revolution by addressing these questions in turn.

Dr. Cline's questions for Richard Helms: Is classical espionage still valuable in comparison with other intelligence methods in pinpointing the probability, nature, and timing of military conflicts? How feasible is agent penetration of foreign societies in view of the existence of the "counterintelligence state" in various models derived from the Soviet Union? Is the information age submerging us in data, rendering virtually obsolete the human factor of analytical and estimative reasoning?

Richard Helms: Pay heed to what Dr. Cline just said, because he has, in my opinion, accurately described the intelligence revolution. And he has pointed out something that I was intending to point out as well; that this isn't only a revolution, it's an evolutionary process. I have no doubt that there are some real surprises in store about intelligence collection methods as the years go by. The revolution is not putting us into a calm sea.

I have one piece of allergy that I have developed over the last few years and I want to get it off my chest. The advent of technical intelligence terms like SIGINT and PHOTINT and so forth, have brought into style the word HUMINT, which I find really distasteful. It sounds much too much like a type of fertilizer. And what's more it's sadly imprecise. I wish that the intelligence community

would apply its very considerable brains to find a better term.

As you know, classical espionage has been termed the second oldest profession, and I want to predict that it will no more go out of business in the future than the first oldest profession will go out of business. And let me tell you why. Military conflict. Intentions. In 1973 the Israeli intelligence service apparently had no spies in Egypt worthy of the name. What happened? The Egyptians jumped across the Bar-Lev Line, a line which was said to have been impregnable. A line which I visited on one occasion and thought was impregnable. So, when you consider that the Israelis had a first-class line of defense, that they had a base in the Sinai that had in it all of the fanciest equipment that the United States could give them, and they didn't predict an Egyptian attack; the only thing lacking was a spy.

Weapons design and technology. The [Central Intelligence] Agency, and it's been publicized, lost, as a result of the treason of a fellow named Howard, an excellent engineer source in Moscow who was passing out month after month all the details of Soviet stealth technology. That information was saving the United States government hundreds of millions of dollars a year so that we weren't going up the wrong alleys in the design of our own stealth aircraft.

In the world of drugs and particularly of terrorism and its connected low-intensity warfare, how can you obtain information without spies? How is the Central Intelligence Agency, or the Defense Intelligence Agency, or the British Secret Service, or anybody else going to know about the creation of a small terrorist cell in a large European city? The best possibility of knowledge comes from the local police force. Maybe a liaison with that police force would acquire the information. But they also have to run a few spies or a few penetrations, if you like, to get this information.

Arms control verification. Arms control is one of the popular issues in the United States today. Everybody agrees that these treaties have to be verified. We do this through national-technical means. But there has to be in any verification process a wild card, an unpredictable element. And that's where espionage comes in. The other side is never going to know whether we've got a spy in just the right place to inform our government that the treaty is being violated in some significant way. And they will never know whether one of their good officers or engineers may suddenly defect and you have the information that you were looking for. I would hate to be asked to verify any arms control treaty without the knowledge that we were doing our best to plant spies in the other society. The counterintelligence state. Offense is always being countered by defense, then defense is countering offense. This is true in the world as it is true in sports. I have no doubt that the security services in the world get better every day. They should. Even the Egyptians have a good security service these days, as I believe the American Embassy found out not long ago. But that doesn't make any difference. Spies can always be run against the toughest kind of police state. We know that because we've done it.

Estimates. How important this process is, and how extraordinarily difficult it is. I think it's probably just as important as anything we have. God did not give man the gift of prescience. The estimator is attempting to reckon, to see to it that that vulnerability is taken care of. And immediately he gets into a very difficult area. Let me just give you one example of this. That Bar-Lev Line I mentioned a few minutes ago was supposed to be impregnable. If an estimate had come out of the CIA stating that the Egyptians were going to attack on such-and-such date across the Bar-Lev Line, the intelligence community would have lost its credibility with its masters in Washington. Obviously, no estimate was made like that. But I just want to tell you that the irrational move in the world of military operations is the most difficult thing to contend with, and that's where a spy may be even better than an estimator.

Dr. Cline's questions for Maj. Gen. Jack Thomas: Are electronic and communication intelligence along with remote-sensing imagery going to absorb such huge resources for military intelligence as they have for the past several decades and pay off as much as in the past? Are these technologies so well known that targets can be hidden from them so that from time to time skillful deception operations can be mounted to blur or destroy evidence of military buildup? How can we correlate the evidence from human sources effectively with technical intelligence data and with policy requirements?

Maj. Gen. Jack Thomas: I don't often disagree with Dick Helms, but he said something that I thoroughly disagree with. He said intelligence is the second oldest profession — that's not true, it's the oldest. You had to know where those other professionals were, and that took intelligence!

Ray Cline asked me two basic questions: are we going to continue to put very, very expensive investments into SIGINT and imagery? and is that going to be worthwhile, or can it be countered? The answer to the first question is yes; the answer to the second question is I think so.

The fact of the matter is that we have built at great costs, and I don't want to minimize the costs, some very, very capable SIGINT and imagery systems — no question about that. I don't think that you could have listened to the discussions about ULTRA and the other ramifications of SIGINT without recognizing that SIGINT has proved so important when it was needed that you'd be a little silly not to continue to take advantage of what it can do. But we've got something like a horse race here. Those who encrypt competing with those who decrypt. Most of the time the encrypters are ahead. Some of the time the decrypters almost catch up; sometimes they do catch up. And it's going to be that kind of a race, and that's why SIGINT today is getting much more difficult to utilize profitably. Lightning-fast computers help both sides of the house. They help the encrypters, but they also are key on the decrypters side of the house. It's no secret how much investment we have put into it. If you've ever visited Ft

Meade and seen that National Security Agency complex, if you've travelled around the world and seen the antenna farms, the SIGINT stations that turn up in odd places, you'd have to be impressed. The United States has put a lot of effort into this side of the house. I don't think there's any doubt in the world that we're going to continue to do that. And one of the things that makes me encouraged on that is that I have detected absolutely no suggestion in the Congress or in the White House that anyone's thinking about cutting back on our SIGINT effort.

On the imagery side of the house, again, we've developed some very, very good capabilities. They don't come cheaply, but we've got them. But the problem here keeps getting difficult and keeps changing. The addition of mobile missiles in the Soviet inventory provides an entirely new element to the overhead imagery problem. Keeping track of missiles which can be moved considerable distances rapidly. This is the reason why, even though we do have a good system, we are focusing on better systems. We are pushing the state of the art. Fortunately, with the INF [intra-theater nuclear force] treaty coming along this year, we found a considerable amount of sentiment in the Congress that wants us to spend more than we are spending on our imagery systems. But we have problems. We are all aware that the defense budget is flattened out. I trust you are aware that our imagery systems are paid for in the Defense Department budget. They compete with weapons systems for money. We have a real problem coming up and that is to prove that what value we will get out of new imaging systems is worth putting the billions of dollars into that rather than into something else, such as a new weapon system. We're going to have to be able to demonstrate very, very clearly that what we expect to get from a new imaging system is going to be worth in improved capabilities every cent of what it's going to cost us. I think we're going to do it. Some mention was made about commercial imaging. SPOT, Landsat is available now, except that they won't sell pictures of the Soviet Union and some other parts of the world. As of today, commercial imaging is not a national security threat. It has nothing like prompt reporting capability; it does not have high resolution. But the technology is available, all that is needed is the identification of a market that will pay for it. There are people out there now trying to raise venture capital to put Media-Sat in the air, in space. I think it's coming. I think we have to assume it's coming, and one of the things that the Defense Department and the intelligence community has to accept is that they have to be prepared to cope with the national security problems that a high-quality Media-Sat would provide; it's not going to be easy, I'm not sure we can win. But I think we can.

Part of my question has to do with security. There is no question that our adversary puts a tremendous amount of effort into security, into what we call a CC&D (Cover, Concealment, and Deception). Probably the best in the world. One of the problems in this area is you never know how well you're doing. If you don't uncover something that the other side has attempted to conceal, you

don't know that he tried to conceal it. If you don't uncover a deception, you don't know that a deception has been accomplished. We do uncover enough to convince us that there is a high level of effort out there on the other side. But I'm confident that we're doing reasonably well; as I say, you can't be sure how well you're doing it, but I think we're doing well enough to justify continuing to work both sides of the house: one side is improving our SIGINT and Imaging capability and the other is our HUMINT capability. The latter is an essential part of the triad, as far as our collection is concerned, particularly in Third World areas, in terrorism areas, in specialized problems like that and particularly in trying to penetrate the thought processes of your adversary. We're going to have to use all of those, but at the same time we are going to have to continue what I think has been a very encouraging development over the last several years. We have had markedly increased counterintelligence effort in this country. We've had a marked rise in the level of attention that's being devoted to security. I think that there is a higher sensitivity to security among us. I may sound optimistic. I've only done this for forty-seven years. You don't stay in a profession unless you feel it's worthwhile and unless you're optimistic that results can be achieved. It helps to be an optimist if you're an intelligence officer, but optimism aside and trying to be as realistic as possible, we're doing pretty good.

Dr. Cline's questions for Admiral Pierre Lacoste: Will Soviet-model "wars of national liberation" continue in the Gorbachev era? Can counterinsurgency and other covert warfare techniques provide answers that France and the United States failed to find in Indochina? Is greater release of public information based on solid intelligence research and analysis indispensable to sustain national will in low-intensity conflicts?

Admiral Pierre Lacoste: I am really interested with the question you asked — will Soviet modern wars of national liberation continue in the Gorbachev era? My country, as you know, has been involved for forty years in the colonization wars, low-intensity conflicts, out-of-our-area conflicts. Sometimes, like in Lebanon, in close friendship with and co-responsibility with U.S. forces. For the last year in the Gulf area our naval forces have been working very closely with your naval forces and it was a very good collaboration. So to answer that delicate question, I choose to deliver a provocative statement, and I must confirm that I am speaking only on my personal behalf, and from the perspective of strategic affairs rather than intelligence studies by themselves.

I would say that the time of previous liberation wars is over. Occidental countries are no longer occupying colonial territories. With the exceptions of Israel and South Africa it is not seriously possible for Marxists to argue that capitalist-oriented colonialist regimes still impose their rule to enslave nations. On the contrary, I observe, that in the 1988 world, several liberation wars are

waged by nationalist minorities against Marxist-Leninist regimes. Contras in Nicaragua, UNITA in Angola, Eritrea and Ethiopia, mujahadeen in Afghanistan, Cambodian patriots against Vietnamese occupation troops in Cambodia and so on. The communist leaders of those countries are in the same position as were colonial authorities thirty years ago, with a difference. They enjoy much better political conditions to counter and fight the rebels. The very characteristics of the totalitarian communist regimes allow them to be fully secret, tightly closed from investigations from outside, completely controlled through perfectly efficient police and repressive structures. When the old freedom fighters were fighting against occidental European countries, they were supported all over the world by the powerful trumpets of our press system and consequently, by our own occidental public opinions. Unfortunately, anti-communist freedom fighters of today do not receive this same support from the press. That is one of the most striking contradictions of the contemporary world in my view.

Our answer to low-intensity wars is politically and technically very difficult. There are many examples, and let me choose just one. Politically, it is not easy for the United States in Central America to foster American national interests against the Sandinista regime in Nicaragua, even if this regime is clearly a threat to the stability of the area, and if the cause of the Contra is a good one. Unfortunately, in the history of Nicaragua, American interventions of the colonial style are too recent to be fully forgotten. The remembrance of Somoza's days is still a powerful political anti-American argument, so that U.S. public opinion itself is not supportive of involvement on the side of the Contras. Technically, on the other side, the Sandinistas demonstrate their knowledge of Marxist-Leninist techniques. Their ability to keep strong control of police, army, and repressive organizations, as well as to deceive occidental public opinions is great. What could be the role of intelligence in such a situation? We have observed the failure of clandestine actions in favor of the Contras because of the opposition of the majority in the American Congress. It has proved once again that in our democracy the executive cannot for long disregard the trends of public opinion, and that's a good thing. But the same scenarios occurred in France for the Algerian and Vietnamese conflicts before, and in the U.S. for the Vietnam War. However, good intelligence remains absolutely necessary to provide a better knowledge of what is going on in low-intensity conflicts such as the new anti-communist liberation wars. My opinion is that better than being directly involved in military support to those freedom fighters, the West could adopt a strategy aimed at world public opinion and, first of all, at our own public opinion. The objective should be to show them the truth. Then our military target becomes the thick cloak of secrecy that covers Marxist-Leninist regimes. Our soldiers are our informants. Clearly, in all modern, local, original, low-intensity conflicts good intelligence is an absolute necessity for occidental countries. It is not so much a matter of covert intelligence than of clear political understanding. Objective appreciation of each political situation, especially

where military forces are directly involved, is essential. Then military and political intelligence are to be very closely controlled to support the difficult processes of decision-making in that specific sort of crisis management.

Dr. Cline's questions for General James Williams: Are order of battle analysis, costing of military forces, and traditional battle field reconnaissance crucial elements of military intelligence today? Is political and low-intensity conflict so much more likely than general hostilities that analytical skills of a sociological, psychological, and historical character rather than military principles will be the key inputs to military planning and decision-making?

General James Williams: Well, Jack Thomas said he was an optimist by nature and he was looking forward to what was going to happen in the future. And Dick Helms said he didn't like the term HUMINT; I'm a counterintelligence and HUMINT intelligence specialist and I'm naturally a skeptic and a cynic. I'm also the clean-up on this panel. But I get tired of having the intelligence analysts held at the mercy of the intelligence collector. We are going to face a situation in the world that is going to be worse and worse for those who have to cope with the information explosion. They are going to have to cope with the continuation of the traditional kinds of intelligence, because our adversaries are not going to disappear. They're going to have to do order of battle; they're going to have to do costing estimates on foreign military forces. Arms control and the START negotiations will cause them to expend extraordinary amounts of time in new analytical approaches, if they can be thought up, estimating where foreign conventional and strategic forces are likely to go and doing so out twenty to twenty-five years because that corresponds to the life-cycle of a weapons system. If you don't acquire and design a weapon against a threat you expect, then you wasted your money. You have to have the intelligence and there has to be an estimate of what the enemy's situation and capability is going to be or you don't build the systems.

    At the same time we can expect incidents to break out that we never thought of. Who would have ever expected that Central America, in our own backyard, would cause such a huge problem, or that on a Thursday the Joint Chiefs would decide that Grenada had to be taken care of by Sunday. We didn't spend a lot of time looking over the shoulders of the Grenadans figuring out every little nit of what was going on. Sure we were concerned about certain things, but how do you follow those areas, and how do you decide where you are going to place your priorities, where you are going to spend your money?

    How do you cope with the tremendous flow of unclassified data? LANDSAT and SPOT are already of value to us in conjunction with the other systems at our disposal. Just what comes out of the Soviet press and what's available in the on-line computer sources and what's available from the multitude of sources that are springing up will cause us to have to decide what

we need, what we can use and what we can throw away. An intelligence analyst doesn't like to throw anything away. But believe me, we will never be able to cope with it all.

In the analytical community at DIA we use the traditional approach, starting new analysts off with order of battle because they have to do a lot of pick and shovel work — keeping track of the beans as we call it — finding out how many weapons systems, how many people, and how they're organized. That establishes a certain logic; that establishes a certain discipline. We put them in Indications and Warning; what's going to happen, what are the indicators around the world. Where is a conflict likely to break out? Then they move on to become estimators, and use the accumulated expertise and training they have built up over the years to try and figure out what is likely to happen in the future.

But how do you do this in the Third World? We've been doing it with our traditional adversaries; but our analysts are going to have to become experts in the history, the sociology, the economies, even the terrain and the climate of some places we never thought about. And we just don't have those kind of people. Even if we could hire them, the labor force isn't going to be that big; if we had a building to put them in we would have to double its size. These are some of the choices to be confronted.

We have touched on collection — you can't afford to fly the U.S. Air Force's latest reconnaissance airplane in some places in the Third World because if you're trying to look for a guerrilla force right away they know that airplane is looking for them. It makes a lot of noise and if it's too high it doesn't see anything. So what do you do? You have to figure out whether a HUMINT source is better. Can a human get into the organization or into the area or do you fly an unattended aerial vehicle in there? Do you fly some little low-powered, very quiet instrument in there? These kinds of things have to be considered.

But you cannot ever throw away any entire category of intelligence. I liken intelligence analysis to a three-legged stool; usually you have human intelligence, signal intelligence, and imagery intelligence. And if you cut off one leg of the stool, you're not serving your master, because he is not going to sit on that stool. The policymaker needs the very best intelligence and we are moving into an era of fusion that you wouldn't believe. How do you put it together, how do you analyze it, and does it meet the need of the policymaker. Having said that, I guess the answer to both questions with which I was charged is, yes.

Banquet Address

Intelligence, Counterintelligence and Glasnost

Lt. Gen. Samuel Wilson, U.S. Army, Retired

Former Director, Defense Intelligence Agency

They say fairy tales begin—"once upon a time," sea stories—"now this is no lie;" and war stories—"and there I was..." Tonight I will be doing—"and there I was..." Telling war stories and trying to extrapolate some meaning from them. It would be pointless for me to apologize for using the first person singular and to try to explain away to appearance of an ego trip. Maybe the anecdotal approach works for me because the listener can draw his own conclusions. Anyway, my talks simply seem to go better when I act as my own primary source.

My association with *Mat' Rodnaya,* the Russian motherland, begins in the dark days of World War II, behind the Japanese lines in North Burma. On occasion in late evenings, especially when we were high up in the hills, we could pick up Russian language broadcasts on our mule-packed radio when we oriented the antenna a certain way. One of the men in my intelligence and reconnaissance detachment was of Russian ancestry, and he would translate for me what was being said. It was then that I vowed that, after the war, I would study Russian and go as an attaché to the Soviet Union to learn why they fought so stubbornly at places like Stalingrad on the Volga in late 1942 and early 1943.

My studies of the Russian language and of matters Soviet began in September 1947 and have continued ever since—over 41 years. They have involved, off and on, many years of intense relationships with the Soviet people, primarily their soldiery and—in recent years—with key figures in the Soviet military high command. My last fulltime assignment in the USSR was as the US Defense Attaché during the peak of the detente period, 1971-73. In fact, I returned to Washington the end of February 1973.

Eight months later, at the height of the 1973 Arab-Israeli conflict, I went back to Moscow on a temporary official visit. I would like to talk briefly about that return to the scene of my earlier crimes.

It was a clear, crisp, golden sun October afternoon in Northern Virginia as I drove the parkway out to Dulles International Airport. Wine autumn. The sky a

vivid, eggshell blue; the grass and evergreen foliage lush green; and the exploding panoply of fall leaves hit every note on the color spectrum from a creamy off-white to a dark purple. The effects were so brilliant I had to blink my eyes from time to time to keep them from watering.

As my flight reservation was already confirmed, I checked my baggage at curbside and, avoiding the long line in front of the Pan Am counter, went straight to the Clipper Club where I enjoyed a mild libation. (Mild libation, hell! I had a couple of stiff belts.)

Pan Am Flight 116 departed on schedule and flew northeast up the coast before swinging out to sea just before Martha's Vinyard and Cape Cod. Aboard, I settled back in my easy chair with another "mild libation," savored my chateaubriand, had a shapely stewardess tuck my pillow under my head and hug my blanket around me. Ah, bliss. Sweet sleep. Who needs a Mid-East war?

The early sun was burning away the wisps of morning fog as we landed at Heathrow International. I got myself a cup of hot tea, a copy of the London *Times,* read it, dozed, then browsed through the international gift shop before boarding Japan Air Lines Flight 357, which left its blocks promptly on schedule at 1030 hours local.

As we reached eastward for cruising altitude over the English Channel and the Lowlands, I noticed that weather was building up over the Continent. Heavy, cottony-white clouds below us, a clear blue sky around and above, and dazzling white sunshine. On and on we floated...Lunch—delicious Japanese cuisine. Calculating by my watch, I marked when we were probably passing over Warsaw. The clouds below were rising higher and were becoming tinged with grays and browns. And then there was the largest, darkest cloud mass of them all, right over the witches' house, and we began to descend through it, down from the brilliant sunlight of day and into the early evening gloom of Moscow's Sheremetyevo International Airport.

Down at ground level a bitter cold wind was blowing a heavy snow shower, and snow plows with their lights on were operating to keep the runways clear. We disembarked away from the terminal and boarded a passenger bus to take us to Soviet customs. People around us shuffled through the snow in big boots and long coats, heavily muffled and scarved, with only a portion of their faces showing, breath turning into white vapor.

Inside the terminal, I was struck by the familiar sounds and smells, the impassive faces of the customs officials and border guards, the slowly moving line. Then I spotted my former Soviet driver, Nikolai Petrovich, standing and waiting, along with one of our attachés. (It is passing strange that I remember my former driver, clearly a KGB informant of some distinction, and cannot recall which of our attachés was with him to meet me. An interesting commentary on your speaker?) I shook hands with the attaché, and Nikolai Petrovich gripped me in a bonecrushing bear hug. We piled into the Defense Attaché's black Impala, luggage and all, and headed for the city along the 10-

lane Leningradsky Prospekt. It was still snowing and the road was icy.

I was initially startled that Nikolai Petrovich was driving with parking lights only. Then I quickly recalled—that's the way they drive at night in Soviet cities, only parking lights. Up ahead, another was signaling a lefthand turn by opening his left front door, and I realized I had forgotten that practice as well. There was practically no traffic; the broad boulevard was almost deserted; the city was dark; lighted street lamps were few and far between; there was only an occasional pedestrian, a moving shadow, bending against the snow-laden wind. We turned right at the end of Leningradsky onto the Inner Ring Road— Tchaikovsky. Minutes later, the American Embassy, all lit up, came in sight. The two Soviet guards saluted as we turned right through the Embassy gate and into the inner courtyard, where we skidded slightly on the icy cobblestones before coming to a halt.

The Soviet driver opened the car door. *"Dobro poshalovat' yeshcho raz v Mockvu,"* he said. "Welcome back to Moscow." I got out and stretched to straighten out the kinks in my back and legs. The air was damp and bitter cold, and the snow was wet on my face. I looked around at the familiar surroundings and then glanced way up topside in the direction of my old apartment. The light was on in my bathroom the way I had always left it whenever I went on trips.

And then it hit me: "My God, my God. I never left this place. I have never left this place. Out there, out where I have been, is unreality. Here is the ultimate reality!"

Now, why did I tell this story, especially in such stretched-out, somewhat hyperbolic fashion? Mainly for two reasons: to suggest to you, or if you needed no such suggestion, to reaffirm to you that there are profoundly fundamental differences between the Soviet world and our world, differences that even the most casual observer can perceive. This means, among other things, that the universe looks vastly different from Moscow than it does from Washington, D.C. Secondly, I am demonstrating to you that *Mat' Rodnaya,* Mother Russia, exercises an almost fatal attraction to those of us who spend a major part of our lives getting to know her. She can become an addiction, especially to Western students of Russian and Soviet history. And your speaker for tonight majored in Russian and Soviet military history, with special focus on the Great Fatherland War, World War II, on the Eastern Front. You should also know that people like myself tend to develop pet themes and theses, which we discourse upon in great detail at the slightest opportunity. You have provided me such an opportunity tonight.

Intelligence. Counterintelligence and Glasnost: A pretentious title for a presentation such as this? Of course! Furthermore, I have only enough time remaining to offer you a series of provocative assertions and then escape.

In 1848, Karl Marx wrote in his *Communist Manifesto:* "...A specter is

stalking Europe—the specter of Communism." Today, 1988, we might consider paraphrasing Marx to say: "...A specter is stalking the Soviet Union and Western Europe—the specter of the Gorbachev Revolution. Its effects may shortly be worldwide." The twin geni's of glasnost' and perestroika are out of the bottle. They can never be put back again, and therefore—regardless of what happens next, things can never be the same as they were before these three short years of Gorbachev.

In a far narrower sense, Gorbachev's revolution poses one of the most significant challenges for the U.S. Intelligence Community that it has yet experienced. Yet, at the same time, I believe we should (on balance) want Gorbachev to succeed. There is the promise of a relatively safer world, but only if... and that "only if" introduces the remainder of my remarks.

At this juncture, it is critical for us to pause and to recognize that fundamental Soviet foreign policy goals have not changed—at least there is no evidence of any change. Quite the contrary. Some Americans at senior policy making levels seem to feel that we may be entering a new era of peace and tranquility, and a number of West European governmental officials seem even more taken in than we. Nonetheless, lacking credible evidence, it is imprudent to be engaging in such illusory presumptions. Indeed, I would like to assert to you that, for whatever reasons—and there are a number of them which we do not have time to get into, the Soviet Union remains an expansionist nation-state, like Tsarist Russia before it. I would note only that on-going Soviet endeavors to extend and enhance Soviet influence world-wide go far beyond their stated goal of simply defending the homeland. To me, they are as imperialist in their design as the founders of yesteryear's British Empire could ever have hoped to be.

Thus, infected with the desire for conquest and controlling the modern world's most massive and multi-faceted foreign intelligence institutions, the KGB and the GRU, the Soviet leadership watches constantly for opportunities, indeed works to create opportunities to strengthen the Soviet Union's world position politically, economically, and militarily relative to the other super power, the United States.

In this connection, it is important to note that the Soviets seek to attain their foreign policy goals with consummate caution. I think it is quite clear to all of us today that there is little likelihood of a strategic nuclear confrontation between the US and the USSR. And as long as we maintain something approaching strategic parity, I believe that situation will hold for a long time. It is almost as unlikely that the Soviet Warsaw Pact forces will come tearing through the Fulda Gap in a conventional thrust. But we live today with conflict of a different sort down at the lower, less violent end of the spectrum and with the reality of a resource war, declared to us first by Khrushchev on January 6, 1961.

The Soviets are fully aware, of course, that we are no longer self-sufficient in those strategic mineral resources and raw materials required to support our way of life. They recognize us as a maritime nation, depending on those things

that come to us in ships' bottoms to sustain our quality of life as the world's leading modern industrial society. Our growing need for strategic mineral resources from overseas functions to heighten Soviet strategic interest in the world's major shipping lanes especially in the vital choke points that control access to those lanes. Thus, the proximity of a given Third World country to a key choke point on a major shipping lane (Ethiopia and South Yemen near the Horn of Africa and the entrance to the Red Sea from the Indian Ocean) or the possession by a Third World country of a critically scarce strategic mineral resource (Zaire, Angola) greatly accentuates Soviet interest in eventually developing a client-state relationship with that country.

No, Soviet foreign policy goals have not changed. The Soviets have become shrewder, more sophisticated, gentler in tone, but they have not changed.

That leads me to another intelligence judgment. In the future, we will see significantly increased Soviet and Soviet surrogate activity among selected nations of the developing world, undertakings designed to nudge these nations towards Soviet client-state status. This prognosis particularly applies if Gorbachev succeeds even marginally in improving the Soviet socio-economic model and making it more attractive for export. In other words, the world trend in the Low Intensity Conflict arena is likely to be rising, for all that should connote in terms of U.S. intelligence priorities, among other things.

What else should we be saying about the intelligence environment, intelligence issues, intelligence priorities during an era of Glasnost and Perestroika? Were I in my former position as Director, Defense Intelligence Agency, or in the job before that as Deputy to the Director Central Intelligence for the Intelligence Community, what kind of input would I be making in the form of recommended national intelligence policy guidance as it concerns Gorbachev's Soviet Union? A sanitized and summary version of that input would include the following:

A. Never relax the priority attention we continue to give to Indications and Warning intelligence, both for nuclear and for conventional attack. While they are highly unlikely, the ingredients for each are in place.

B. Continue to track, to pay close attention to the possibility of a radical breakthrough in Soviet technology. Such an event can radically alter the balance of power ("correlation of forces.")

C. Pay assiduous attention to Soviet compliance with agreements in the arms reduction arena. This is one area where the Soviets can prove their sincere dedication to the peace process, if they are serious about it.

D. Carefully monitor on all fronts the continuing saga of Glasnost and Perestroika, the Gorbachev revolution. Developments in this area can have fundamental, global significance.

E. Recognize that expanding social and political intercourse between the Soviet Union and the United States means increased opportunities for positive intelligence collection opportunities, for both sides—especially in the arena of human intelligence operations as opposed to SIGINT and PHOTINT.

F. Increase and improve our counterintelligence efforts. An acute requirement

is emerging for better, more sophisticated counterintelligence capabilities. And the Soviets are better manned, more experienced, more effective in this area than we.

G. Then there is the sensitive requirement for greater discretion in US intelligence operations, lest we damage a possible warming trend in Soviet-American relations. The cynical back side of this coin pertains to possible criticism of the US Intelligence Community by senior U.S. policy makers who might see our intelligence efforts as sabotaging the peace process—a version of the old "rogue elephant" charge.

Clearly there is much more to be said about the U.S. Intelligence Community's response to Gorbachev's revolution, but these suggestions represent at least a beginning.

To conclude, I would like to read an extract from a formerly classified end-of-tour briefing given to my superiors when I came back from my last Moscow assignment over fifteen years ago. I include it in its original form just to show that some things have not changed on the Soviet-American axis:

The Soviets have profound respect for the U.S., especially for our ability to produce in an economic sense. They have been pursuing Stalin's will-o-the-wisp goal of 'catching up with and surpassing the United States' in productivity ever since the 1930's and still have not attained it. On the other hand, we should not lose sight of the fact that the Soviets distrust the U.S. and are basically afraid of us. They picture us as killing our presidents, assassinating our minority political leaders, demonstrating in the streets, criticizing ourselves and slashing at each other without mercy. As one senior Soviet military figure put it to me: 'You Americans are crazier n' hell! You are a temperamental and immature society. No one can predict how you may react on a give occasion.' Historically, they did guess us wrong during the Cuban missile crisis. They also mis-guessed us in Indo-China and feel we vastly over-reacted to the problems posed for us there. In a sense, although this if very dangerous, our very unpredictability may act as a certain deterrent for them.

The Soviets seem to believe their own propaganda that we are disintegrating as a society, and they worry about what we may do in our death throes. Will we pull a 'Samson-in-the-temple act,' a sort of Götterdämmerung? At the same time, they will not hesitate to do whatever they can discreetly to hasten our demise. Their strategy is to press us politically, economically, psychologically wherever we appear weak and where the risks are slight, particularly in the Low Intensity Conflict arena in the underdeveloped world; to bleed us and to embarrass us, while maintaining across-the-board military superiority, especially in strategic weapons systems. What I am predicting—in essence—is ultimately increasing Soviet activity in the Low Intensity Conflict arena.

In summary, there is a definite dichotomy—if not trichotomy—in Soviet attitudes towards us, as one perceives these attitudes from a close-up position in Moscow.

A. In face-to-face contacts, the Soviets profess a desire for our friendship, want the benefits of trade with us, are sensitive regarding our relationships with the Chinese. Leading Soviet military figures have stated openly to me in private

conversations, 'If we could only get together and reach a true common understanding, we could take care of all the world's problems. Together we could decide everything.' (Needless to say, our allies do not enjoy that kind of talk.)

B. The Soviets respect us but are deathly afraid of us. They further are inclined to over-estimate our military capability and to worry that we could be reckless in employing it.

C. Finally, they still view us as the ideological enemy of long-standing, which means that an adversary relationship between the US and the USSR continues to exist and is not likely soon to go away.

End of briefing extract.

Several years ago, I went back to Moscow during their annual celebration of the October Revolution and was able once again to witness the spectacular November 7 military parade across Red Square. When the military part of the parade was over, I came down out of the stand where all the foreign diplomats had been assembled and sought to greet some of my old acquaintances from the Soviet military high command who were in attendance. For the most part, they reacted to my appearance openly and with relative warmth.

As I approached one senior Soviet officer, I used the traditional: "How are you...what's new?" He responded with the idiomatic: "There is nothing new. Everything is as it was."

At the risk of offending him and spoiling the conversation, I ventured the remark: "Well, really, comrade general, is that not an impossibility in terms of your Marxian dialectic? How can everything remain as it was?"

With a peculiar gleam in his eye, he answered me in deliberate Russian: "Well, Samuel, son of Jasper, I will tell you. According to Marx they say, 'Everything is in motion; everything is in the process of change. But, in actuality, here in Moscow, everything is in motion, but nothing ever changes."

And that underscores the quintessential intelligence challenge of the Gorbachev revolution for us: To perceive clearly what has actually changed and what has remained the same.

Symposium Retrospect

A Retrospect on the Symposium

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When General Gustave Bertrand in 1973 drew the veil from ULTRA with his *Enigma ou la plus grande enigme de la guerre 1939-1945*, it gave rise to no immediate sensation among students of the World War II period. Anglo-Saxon parochialism with respect to language prevented much impact either across the Channel or the Atlantic. British intelligence quarters seem to have given more heed. Perhaps, the beans concerning ULTRA now having been spilled, this played a role in permitting, however grudgingly, the publication of F.W. Winterbotham's *The Ultra Secret* in the following year. This time the effect on the historical community in Britain and the United States was no less than explosive.

Thus the prolonged silence on the vast role of SIGINT (signals intelligence) in World War II was broken and gave rise to a new appreciation of the vital role of intelligence in the course and outcome of that conflict. Winterbotham's flawed memory had also given rise to so many errors and misconceptions as to help stimulate British official quarters to major efforts to set the record straight. The upshot has been the release of floods of previously classified documents into British and American archives accessible to scholars. In addition, Her Majesty's Government decided to sponsor the writing and publication of four massive tomes depicting the wartime story of British intelligence.

On the American side, some of the secrets of MAGIC, the parallel enterprise in SIGINT in the Pacific, had been revealed soon after the war in the Pearl Harbor investigations. This sufficed for a time to satisfy curiosity; neither scholars nor the general public raised any particular clamor for more detailed information. The hubbub about ULTRA in the seventies, however, stimulated both a demand for further revelations and an inclination to accommodate it. New and continuing floods of light on intelligence in the Pacific war have since then been forthcoming.

All in all the new and often startling insights on the course of World War II resulting from revelations about the frequently central role of intelligence have stimulated both the concept of a modern intelligence revolution and of that era as its climax or a revolution by itself. They have also led to a revolution in

intelligence studies generally. One can only underline the formulation of John Lewis Gaddis that these have been elevated to the status of a distinct sub-discipline. He cites such manifestations as newsletters, journals, scholarly meetings, and a proliferation of university courses. It might be added that this vastly expanded interest is further reflected in the fascination with spy fiction and films as well as considerable preoccupation of the media with all that smacks of intelligence past and present. Thus this attention tends to concentrate on the World War II experience, but many a look is cast back to events in earlier periods.

As Dennis E. Showalter eloquently demonstrates, this vastly intensified interest in the role of intelligence has encouraged the review and reassessment of its character, scope, and impact during modern times generally. He traces little-explored ways in which it and its variant, counterintelligence, have progressed from stumbling beginnings to a point where they might bear significantly on the fate of nations. He subscribes to an earlier assertion of Ernest May that the most frequent tendency is to get little things right and big ones wrong. And almost always developments in intelligence have failed to keep pace with the changing character of war, notably of protracted conflict or something approaching total war. He makes the important point, however, that until recently intelligence has not in the first instance been charged with responsibilities that have since become commonplace. One could add to this that political leaders, including those with reputations as statesmen, have generally failed to master or even to recognize challenges with which long wars have confronted them.

Intelligence before the twentieth century conflicts tended to operate within limits that world wars have tended to break down. There were no such demands on it as those which obliged Bletchley Park in World War II to seek the services of scholars, scientists, and technological specialists. The implications of Showalter's wide-ranging analysis of the growing pains of modern intelligence may in fact be taken as a form of apology for such ingenuous comments as that of straight-laced Secretary of State Henry Stimson that gentlemen did not read each other's mail. Many, perhaps most, political leaders of that epoch still lived mentally in an age of innocence.

Such observations bring us to an aspect of the intelligence game that has not been much explored in this symposium. This is the tendency, perhaps better the drift, of intelligence chiefs to move on a track that may or may not diverge from that of the political leaders for whom they are at least nominally working. The agencies they administer tend to take on a life of their own. In fact, such a trend may extend itself downward and lead to departments and even individual agents to engage in a *pas seul* of one type or another. Such a course, indeed, has on occasion been motivated by a loyal determination to spare one's superiors painful decisions and the burdensome responsibilities that go with them.

A development of this type may be much facilitated by the demands of secrecy and the excesses of "security" that have become chronic in many

governmental systems. One's very superiors may not have been "cleared" for certain types of information or denied access on the basis of a narrowly defined "need to know." As for parliaments and the general public, the latter is excluded as a matter of course and the supposed supervisory powers of legislative bodies are more nominal than real. The parliaments themselves, in fact, though occasionally needled into outbursts of concern, share with high civil authorities a dread, or at least misgivings, about inside knowledge of such "sensitive" matters. Too clear an insight subjects them to a painful dilemma: shouldering co-responsibility or taking action that is as difficult to define as it may be questionable in result.

Parliaments have thus ordinarily tolerated what amounts to an exclusion from intelligence matters that approximates a hands-off policy. In the United States, Congress has usually been at best half-hearted in claiming or exercising a supposed supervisory function, either in relation to the CIA (intelligence) or the FBI (counter-intelligence). Even Congressional investigations into such affairs as Iran-Contra suggest that any serious attempt at legislative remedy is at best questionable.

It is small wonder that intelligence chiefs, agencies, and agents all-too-frequently tend to act on the principle that ends, whatever they may be, justify means. Stimson was far from alone in the distaste that clings doggedly to many HUMINT activities. Those who play in this game often enough feel compelled to appeal to the worst in men and women. Showalter cites the famed dictum of Prussian War Minister Karl von Arnim that officers forced to associate regularly with spies, traitors, and similarly tainted ilk are likely to have some of this taint rub off on them. Corrupters, in other words, are themselves likely to become corrupted. It should not surprise that, whether deserving it or not, among a wide public, spymasters tend to be condemned out of hand.

The repugnance millions of Americans feel for the CIA and not a few British for MI5 and MI6 evidences such feeling. And one can scarcely quarrel with the proposition that, no matter how good the general record of an intelligence agency may be with respect to HUMINT operations, sooner or later excesses creep in. Torture and assassination have not been the monopoly of much more sinister agencies as Himmler's Gestapo and SS (Security Service) or Stalin's MVD (Ministry of Internal Affairs) and its various predecessors. Hitler's forcible removal was proposed to London by the British attaché in Berlin, Mason McFarlane, and something like an international consortium dedicated to that purpose is claimed to have been formed under America's Admiral Byrd. The murder of Fidel Castro was at least considered in the CIA and possibly in the White House. CIA director William Casey concerted with the Saudi ambassador the assassination of a major figure in the terrorist Hezbolah, an enterprise so badly botched in execution that it took the lives of 80 innocent persons. Yet William Colby, an earlier CIA director, has stated categorically that, whatever the misdeeds of the CIA, they were as nothing when

compared to those of foreign intelligence agencies. The title of Phillip Knightley's *The Second Oldest Profession,* cited by Showalter in another connection, carries for many the implication that, with respect to moral standing, it ranks only a shade above that regarded as the oldest.

The more finicky among spymasters have been keenly aware of and sensitive to the stigma widely attached to their calling and have sought to cleanse it of this taint. Germany's Wilhelm Canaris was so appalled by the reported excesses of Himmler's people in the course of interrogations, that he directed his own Abwehrmen to get up and leave if such methods were attempted in their presence. The extent to which these instructions were actually observed in occupied territories in wartime remains to be determined.

A further aspect of intelligence operations touched on by Showalter that is often overlooked concerns both peace and wartime projects aimed to foster subversion in an opposing state's territory or to set up a defense against it in one's own. Expectations with respect to such enterprises and their actual launching have tended to be inhibited by the assumption that, if war came, it was likely to be too brief for such programs to mature. Only after hostilities had proceeded for years were intelligence quarters inclined to "play the card of rebellion." Showalter believes that even then they by and large did it poorly. He cites the most sensationally successful example of such an undertaking, the trainload (actually there were two of them) of Bolshevik agitators spilled by the Germans into the revolutionized Russian Empire. Even this, he feels, was something of a shot in the dark.

Interviews by the writer with the man who engineered all this strongly confirm this opinion. This was the German military intelligence chief, the G-2 of the Imperial General Staff, Col. Walter Nicolai. As he relates it, he had at the time only the vaguest notion of the political plague he was launching not only on Russia but on the world. He had heard about them as wild-eyed radicals on whom one could count to do all they could to exacerbate the turmoil then accelerating in the fallen empire.

In view of the limitations of space, Showalter's coverage of the more essential aspects of the elaborating intelligence picture of the eighteenth and nineteenth centuries is extraordinary. Its role both in public affairs generally and in the transition from more traditional to modern warfare is delineated with sure strokes. One would like to see a string of papers devoted to developments in each of the major conflicts, notably for the period 1815 to 1914. Having to be selective to the point of a single choice, there is much to recommend that of the American Civil War, an area in which Peter Maslowski is thoroughly at home. In concluding his commentary, Ernest May raised the key question whether that war is truly typical of the trends identified by Showalter or whether it represents more of a transitional phase. May noted that the war fell midway within the 1815-1914 period and was a good testing ground for developments that in times of peace or shorter war were difficult to identify or evaluate. Was it reflective of

world-wide trends or more innovational and portentous with respect to what came half a century later?

There is much that speaks for the latter interpretation. The American Civil War was very different from the Crimean or Austro-French wars and even from the later ones of German unification. It was not only the *most* protracted conflict of the 1815-1914 period but really the *only* protracted one. In this conflict, there was time for intelligence specialists to become true professionals—Maslowski speaks especially of the performance of the Union's Col. George H. Sharpe.

Ernest May also notes but does not spell out that the United States provided a very different theater of war than the familiar ones in Europe. Much of the fighting took place in regions of divided loyalties. It swayed back and forth over wide areas and was really the first war reflecting strongly the impact of such fields of technological advance as were represented by railways and the telegraph. Maslowski indicates how such factors found reflection in the field of intelligence.

While recognizing the larger context of intelligence methodology, organization, and application during the Civil War, Maslowski appropriately concentrated on combat intelligence, and it was here that he discovered the impressive emergence of SIGINT. The frequently shifting situations in the various front areas lent itself to the interception of messages. There was, however, a vast difference between the two sides in performance when it came to decryption, with the Union side enjoying an enormous lead over the Confederates. The Union could draw upon a far larger pool of men with some training in science, engineering, and technological and managerial experience. Can we say that the Union experience here was something of a precursor of the later one at Bletchley Park?

Sir Harry Hinsley, the principal author of the stupendous British intelligence history of the Second World War and Harmon lecturer of 1988, laid the emphasis of his remarks on the centrality of SIGINT in that climax of the modern intelligence revolution. In response to a query after his lecture, he in fact expressed his conviction that, with the pervasive impact of this medium, it would not be appropriate to refer to that epoch as more than a single important phase of that revolution. Certainly one would have hesitated to refer to it as a revolution in itself. As things were, it was at least a fitting climax to the process that ended the "age of innocence" in the field of intelligence. For the first time in history, he avers, SIGINT emerged as the "most reliable and most prolific" source of information in the waging of a major conflict. We could recall here that, though Maslowski had heralded the virtual birth of SIGINT during the Civil War, he placed it definitely below prisoner and deserter interrogation as such a source. In World War II it had no real rival.

Though pointing out the absurdity of the occasional claim that superiority in SIGINT won the war in Europe for the Allies, Sir Harry vigorously contended that it shortened the conflict astronomically. Coming from the historian who has

made the most intensive study on the influence of intelligence on the war in Europe, this appraisal of the role of SIGINT, notably ULTRA, has particular force. Yet his view that the return of the Western Allies to the western continent in 1944 shortened a war that might otherwise have endured until 1948 with victory in 1949 is a somewhat startling one. Particularly as he calls this estimate "conservative," it appears to imply a somewhat low estimate of the share of the Soviet Union in bringing down Hitler's Germany. Or could it perhaps even be taken as an assumption that the boost given Soviet performance by British information derived from ULTRA was a sufficiently significant factor in Soviet successes to play a vital part in the shift of military fortunes in the East?

Further, if one bears in mind General Marshall's pessimistic prognosis concerning the staying power of the American public (he put it at five years) there appears to be legitimate doubt whether the Anglo-Americans would have lasted a course that extended until 1948 or 1949, especially as British manpower resources began to fade alarmingly late in 1944, compelling the breakup of some divisions and the amalgamation of others. It is hard, also, to suppress a shiver at the thought of (1) the Germans being an eye's blink away from launching a new submarine campaign with U-Boats of awesome potential; (2) the steady growth of the threat of the Messerschmitt 262 in aerial combat; and (3) an approaching production of more than a thousand V-2s per month (about the number of V-1s and V-2s together that had thus far landed in Britain).

In sum, if one is to look at the total picture here delineated, ULTRA must be appraised as even more decisive in Allied victory than Sir Harry is prepared to assess it. Without it the role of intelligence in World War II might have had no more than episodic character. Are then the implications of Sir Harry's estimates really that, without ULTRA, the war would have gone on for three or four more years, that an earlier ending would have meant defeat or at best a draw? Apparently yes, but he did omit some consideration of one vital contradictory factor—the atomic bomb!

Though Sir Harry allows that SIGINT did much to maximize the benefits and minimize the defects of other sources of intelligence, this aspect of its influence on the total intelligence picture probably deserves even greater emphasis. The continued unavailability of British Secret Service files of the World War II period has inhibited proper appraisal of the measure to which HUMINT operations were sanitized, straightened out, and facilitated by SIGINT's contributions. Here is probably the largest and most difficult gap to fill in any appraisal of the role of SIGINT and especially of ULTRA. The one major exception, and even here many significant details are lacking, is the light that has been thrown on the Double X system, certainly by far the most consequential of what we might call "the children of ULTRA."

In his introductory remarks for the first of the two sessions of the symposium devoted to World War II as the climactic phase of the intelligence revolution, Gerhard Weinberg underlined the speed-up that had already taken

place through the technological advances of the First World War. But only during World War II did this become fully visible in the new means of communication and information manipulation. He further stressed that the organizational device of separating the European and Pacific theaters was purely a matter of convenience. Army and navy units and their weapons were switched back and forth and insights gathered in one theater would soon find observance in the other. This, he averred, was notably the case in the sphere of intelligence.

No one in the profession can be more fruitfully provocative than Gerhard Weinberg and many of the viewpoints here cited confirm this verdict. No historian as yet has accomplished a completely satisfactory job of interlacing developments in the European and Pacific theaters and no one could have done this better than Weinberg. After all, the war in the Pacific was in essence an appendage to that in Europe. In view of the manifest superiority of American power, Japan would scarcely have ventured upon a conflict except for (1) the virtual elimination of Britain, France, and the Netherlands as power factors in that area, and (2) the considerable American preoccupation with affairs in Europe after 1939.

Jürgen Rohwer introduces his discussion of radio intelligence in the Battle of the Atlantic with the bold but not easily challenged statement that it was probably the most fruitful example of its effect on decisionmaking processes during World War II. In fact, the "probably" could well be erased as a courtesy extended to colleagues whose historical bailiwicks are elsewhere in the intelligence picture. What other phase of the war can be called as crucial for so long a period? And for the historian, if not for the contestants, no other phase witnesses so clearly and evenly-fought a contest until ULTRA itself struck its principal cryptanalytical weapon from the baffled German navy's hands.[1]

The only conceivable parallel, though not from the standpoint of its influence on the course of the war, may be the SIGINT contest in North Africa until Rommel's superb Seebohm company was annihilated by Australian raiders on July 19, 1942. With this single exception, only in the Atlantic can one trace day-in and day-out and at times hourly the blows struck by the contending forces in the intercept war. No one has approached the problem with such mastery of all its facets as Jürgen Rohwer.

The situation was dominated by the fact that the contending naval forces could communicate only by radio signals. The role of SIGINT in the course of events as it can be traced in history is thus ever in the foreground. Perhaps too much so. It was not Rohwer's mission to estimate the relative factors that contributed to the course of the Atlantic war. So he makes no attempt to do so, though reminding us in his conclusion to keep these in perspective. Here, as in other instances as we define the role of ULTRA, there is a continual temptation to yield to a historical myopia that loses sight of other often vital contributing factors. What makes things difficult in dealing historically with the Atlantic war is that the primary factors all seem to come to fullest fruition at almost the same

time. None, therefore, can be considered by itself without the danger of going astray in our estimates. Thus it needs to be kept in mind that ULTRA's great contribution to victory here was seasonally coincident with the coming to fullest effectiveness of the high frequency direction finder (HF/DF) and the decimeter radar in airplane searches for submarine victims.

A brief reference of Rohwer's brings home once more the role of accident in the affairs of nations. He alludes to the fact that only a machinery defect in the pocket-battleship *Admiral Scheer* prevented a scheduled excursion to the Denmark Strait. This had been revealed by ULTRA and Washington had dispatched a squadron of seven ships to intercept the raider. If the cruise had not been cancelled, it might have brought the United States and Germany to the verge of war.

This apparent willingness to take chances on a possible German-American confrontation adds interest but not probability to a point raised by Weinberg concerning the Roosevelt policies previous to the American entry. The reference is to information gained from ULTRA regarding submarine dispositions. Weinberg argues forcefully that it was utilized by the President to avoid contact between them and American merchant and naval vessels. If he had aimed at finagling the country into the war in Europe he would, the argument runs, have followed the exactly opposite course.

Just to illustrate the range of discussion such an assumption could unleash, one can counter with the reasoning that this would have been far too blatant a procedure, that our naval authorities would probably have been up in arms, and that somehow the entire dodge would soon have become clear to the American public.

Another point where Weinberg expresses doubt about one of Rohwer's comments concerns the latter's contention that delay in the Allied victory in the Battle of the Atlantic would have forced a corresponding postponement of the Normandy invasion. Most students of the period would agree that it would at least have drastically affected its timing if not the invasion itself. A close analysis of this problem would assuredly become deeply enmeshed in the realm of relativity. Just when would the assumed defeat or delayed victory in the Atlantic battle have become evident and what would the extent of either have been? At what point would a suitable appraisal have been reached and how long would it have taken to shift additional forces from the Pacific? Assuming that ULTRA was out of the picture, would direction finder, decimeter radar, etc. have won the battle anyhow though no doubt somewhat later? Rohwer notes that the convoy operations of the U-Boats had already been broken off before ULTRA imposed the blackout upon the B-Dienst. It appears evident that the problem deserves minute analysis with close attention to timing.

Weinberg also believes that, to stem the tide of a losing conflict in the Atlantic, naval forces could and would have been shifted from the Pacific. A corollary to this is his assumption that it would also have been important to drop

the atomic bomb at an earlier date. This raises a number of further questions on how much sooner the bomb could have been made ready and the measure of available naval forces. Wheels within wheels!

Weinberg raises one final important point of the U-Boat war that I find novel but highly impressive. This refers to his suggestion that we should calculate with as much assurance as possible the number of days submarines were prevented from functioning because of damage inflicted by Allied vessels (we should add aircraft). The lack to date of reliable estimates illustrates how often a seemingly obvious factor can be overlooked by the historical profession.

Much that characterized the Anglo-American alliance of World War II stands by itself in the history of coalition warfare. George Marshall could well laud it as virtually unique in military history. Christopher Andrew spells out some of the ways in which the collaboration of the two intelligence communities often exceeded in their exceptional harmony that of the armed forces. Having lived (in OSS) on the fringes of this collaboration in London, Paris and Germany in 1944-1945, I can note that my own observations accord entirely with this verdict. I subscribe strongly (and leaving out Andrew's "probably") to his dictum that whatever frictions there were between the national services, they were usually less than those within the agencies that composed them. No Anglo-American differences in the conduct of SIGINT, for example, remotely approximated those dividing the corresponding agencies of the American army and navy. It is notorious that British intelligence representatives in Washington at times felt compelled to mediate between American army and navy quarters or pass surreptitiously (as it were, under the table) information to one or the other that they would not exchange among themselves. My own experience as chief of the OSS Political Division in London bears occasional witness to such in-house American exclusiveness. I recall how an opposite number in the British Political Warfare Executive (PWE), assuming that I must be initiated, gave me unsolicited insights on intelligence problems of plan OVERLORD and the associated FORTITUDE operation to deceive the Germans.

Personal experience also illuminates other angles of cooperation alluded to by Andrew. He stresses the close concert that was established between British agencies and such OSS branches as Special Intelligence (SI), Counter-Intelligence (X-2), and Special Operations (SO). A real team was formed between British and American specialists who worked at Shriveham putting together the famous but ill-fated Handbook for the occupation of Germany.

Contacts with British intelligence were less intimate in Paris, where we established the R&A Branch on September 6, 1944. On the other hand, they sometimes extended into the field. I recall vividly a trip to Brussels with fellow branch chiefs of SI (William Casey) and X-2 three days before the Battle of the Bulge. Most memorable, highlighting the staggering surprise awaiting us all, was our meeting with the able Brigadier Williams, G-2 of Montgomery's 21st Army Group. Replying to one of Casey's questions, he stated emphatically that

there was no need for worry about any possible German initiative, Hitler's forces being in an advanced state of erosion. My colleagues received the same impression when they raised the subject once more at U.S. First Army headquarters at Spa. It was fated to be overrun just two days later!

Andrew notes that the World War I experience of cooperation between the British and Americans left important psychological impressions. This was notably the case with Undersecretary of the Navy Franklin D. Roosevelt and helped in the establishment of the World War II collaboration which, even before the American entry, went to extraordinary lengths. Weinberg finds the picture somewhat too rosy in that here and there (as in the First World War) the British held back vital information. They were long reluctant to share the technological side of their assault on the Enigma, confining themselves to delivering the end product or, as the more suspicious Americans opined, whatever portion they saw fit. Such doubts went so far with the somewhat Anglophobic American G-2, Major General George V. Strong, that he felt justified in transgressing the supposedly strict dichotomy that allotted the major SIGINT assignment in Europe to the British, in the Pacific to the Americans. London was justifiably exercised on discovering his intrusion but it turned out to mutual advantage. The independent American attack on the Enigma yielded top quality, high-speed *bombes* to which Rohwer alludes repeatedly as carrying the main burden in the later stages of the war.

Where Andrew and Weinberg differ considerably is in assessment of the role of Winston Churchill in furthering both ULTRA and the wide-ranging Anglo-American cooperation in intelligence matters. Andrew stressed how Churchill, from the first moments of his prime ministership, was determined to gear intelligence more closely into the war effort, seeking to advance this in conjunction with the special relationship he was fostering with the United States. Weinberg feels this is too exclusive in assigning so much credit to Churchill in promoting ULTRA. He feels that Andrew should have digressed somewhat to provide perspective regarding the truly magnificent contribution of the Poles. It was they who furnished the Government Code and Cipher School (GC and CS) with its first model of the Enigma. Some of the more generous British operators at Bletchley Park indeed did speak later of a two-year lift in the development of ULTRA.

Giving deserved credit to the Poles should not divert us too greatly from recognizing Churchill's enormous contribution. Indeed, it can be carried well beyond Andrew's laudation. One can scarcely overstate the central importance of the priority which Churchill, in the face of much suppressed grumbling, granted to Bletchley. The thousands (estimated up to ten) who strove there would neither in number nor talent have approximated what they became without his support, drive, and encouragement. At least as important and not adequately appreciated is the threat that he hung over the heads of British commanders, some of them close to antediluvian in their prejudice against

intelligence. Foot-dragging or failing to observe closely what ULTRA had to offer could be fatal to careers. How could they ignore or thrust aside too cavalierly messages that they knew had also gone to the prime minister. Churchill further deserves an accolade for the vigorous boost he gave ULTRA with American generals.

Although restrained in expression, Andrew is clearly disturbed about the continued, and in many ways senseless, reticence of Her Majesty's Government with respect to releasing many of the most important documents bearing on ULTRA. This reticence, he might have added, has been accentuated during the long prime ministership of Margaret Thatcher. It is scarcely likely that even the united voice of the American historical profession could carry much weight when added to the protests of British colleagues. Indeed, efforts to remove such impediments to scholarship should be stepped up nearer home. World War II scholars do not appear to be fully aware that duplicates or major excerpts of many of the most vital ULTRA documents lie in the vaults of the National Security Agency.

This is, for example, largely the case with the FLORADORA material cited by both Andrew and Weinberg. It consists of Bletchley's invasion of the privacy of German Foreign Office communications with embassies and locations. The American records bearing on FLORADORA, as Andrew tells us, are derived from daily cables from our London embassy. By a badly outdated agreement, no documentation of British or common Anglo-American origin may be released without British approval. Much speaks for drastic review of this arrangement. In view of the centrality of ULTRA-MAGIC data for World War II study, this should be a priority item in the program of any historical group concerned with that period or with intelligence study generally. Weinberg, who has worked prodigiously in breaking loose unreasonably retained official source materials, will be sure to welcome widest support in this matter.

Among the innumerable "What ifs?" that dot the history of the Second World War era, many of the most intriguing concern intelligence issues. Among his many stimulating and provocative suggestions, Weinberg notes that some of the most persuasive proposals on improving Allied communications security may have boomeranged. He cites the preface of Patrick Beesly's *Very Special Intelligence* on Lord Mountbatten's argument that the Allies would have done so much better if his suggestion regarding a machine cipher system had been adopted at an early date. The cogency of such a step may appear obvious until one is brought up short by Weinberg's counter that, obliging the Germans to launch their own attack on Allied cipher machines might have found them scoring "at least some success." The greater their progress, he argues, the more doubts they must have entertained concerning the security of their own machines. The resulting refinements of the Enigma could have made ULTRA more difficult or even impossible.

But perhaps Weinberg's speculation can be carried a step farther. As is often

the case, one "What if?" tends to generate others. Recalling the generosity of the Poles, who shared their rich experience with the Enigma with the French and British, it must have been brought home to the latter that cipher machines were not invulnerable. Without blunders in transmissions they were virtually invulnerable and solutions had to be based almost entirely on "cribs" due to sloppiness in the sending of messages. Aware of this from their own experience with the Enigma, may one not assume that the British would have monitored their own machine transmissions in a fashion the Germans never troubled to do? Would not then the baffled Germans, making no headway with British machines, feel confirmed in the conviction of Enigma's inviolability? The fact that they made no headway later with the American SIGABA or the British SPEED WRITER must have helped to supply the reassurance needed to keep the Enigma in service. Once again, wheels within wheels!

David M. Glantz's paper stands out as another demonstration of his penetrating study of an area where data available to non-Soviets has often been both sketchy and misleading. Glasnost has thus far done little to open Moscow's archives to foreigners or, for that matter, to Soviet citizens not charged with officially approved assignments; yet here and there, even with such highly sensitive topics as the Ribbentrop-Molotov Pact and the Katyn massacre there have been some astonishing repudiations of the former official line. So far as intelligence records are concerned, basic files remain closed. One can hardly expect the Soviets to be more liberal in this area than are the democracies. So there appears meager chance of curiosity being satisfied on such key questions as the actual utilization of whatever information derived from ULTRA was passed on by the British. One would especially like to know how much was believed or utilized in decisions, how much duplicated or contradicted information from other sources, and how much Soviet "moles" in British intelligence agencies managed to communicate to Moscow about the ULTRA story — also, of course, how far the Soviets progressed with their own efforts to solve the Enigma.

Glantz appears to be regarded in Moscow as exceptionally open-minded and neutral among foreign scholars on the problems of the war in the East. In the event of some relaxation of restrictions on the use of their military archives, he seems likely to be among the first to benefit. Like other Western military historians, he has so far been obliged to confine himself largely to published materials and contacts with Soviet specialists. As Moscow in recent years has been less restrictive with respect to its own historians, laying less stress on an official "line," Western scholars also have more solid material to work with. In perusing the massive tomes, Glantz and his staff at the Soviet Army Study Center are producing a staggering array of significant topics; one quickly gathers that the authors are able to write with increasing confidence in their sources.

The story of Soviet intelligence operations in the Second World War impresses one with how, from modest and often crude beginnings, the

experience of a protracted conflict can make accomplished professionals of those who survive and are willing to learn. There appears a certain parallel here with Maslowski's story of Union intelligence in the Civil War. Rigid self-examination, improvisation, and readiness to adopt tough measures paid off. If anything, the constant pressure for improvement and adjustment made for a measure of flexibility with which the Soviets are not customarily credited. One wonders, insofar as intelligence is concerned, whether here was not one area where the youth of the heavily purged military leadership corps proved a major advantage in abandoning beaten paths and surmounting deficiencies. Glantz traces expertly how by the late summer of 1943 the principal failings had largely been mastered. Thereafter Soviet intelligence was a match and more than a match for that of the Germans.

The two excellent and significant papers on Japanese intelligence could deal only peripherally with the broader aspects of the intelligence war in the Pacific. We learn little about how the intelligence revolution helped shape it and there is nothing added to the American side from the standpoint of system or performance. In view of the near-blank on the pages of history concerning the story on the other side of the hill, it is of course highly welcome that attention was concentrated on Japan's efforts in the area of SIGINT. But even here much was not covered that will be ever harder to deal with in future. The sweeping destruction of Japanese intelligence files at the time of surrender has long discouraged systematic attack on this side of Japan's war effort. It is necessary to rely almost entirely on the testimony of surviving specialists, whether taken orally or set down by them in handwritten notes or memoirs.

Alvin D. Coox and Hisashi Takahashi have done World War II history yeoman service in ferreting out key figures and persuading them to reveal their insights and experience. They agreed that the intelligence revolution had never reached Japan and this helped explain why she lost the war. The topics on which they report provide some clues as to this but do so largely by inference. Coox confines himself to Japanese expectations regarding the anticipated American invasion of 1945-1946; Takahashi to Japanese intelligence during the long war with China. Neither delves into the course and character of the Pacific intelligence war. We do learn about developments concerning that form of the intelligence revolution that reached its apogee in the Second World War, SIGINT. This had never gained much attention in Japan and the interviews Coox conducted with surviving specialists fully confirmed him in that conviction. Even then, little progress was made in cryptanalytical activity. On the other hand, the Japanese did score some significant successes in the field of traffic analysis.

Readers of Coox's paper will discover there is a veritable romance in the sphere of intelligence labors. Reference is to the extraordinary role of Maj. Eizo Hori and his fantastically accurate guesses of American moves in the final phase of the Pacific war. Deprived of any mentionable SIGINT resources, this ingenious

officer by intuition and logic predicted the American landing plans for Kyushu. So close did he come that American intelligence quarters in their postwar studies wondered for a time whether there had been an unguessed Japanese intelligence coup, most probably in the SIGINT area. Small wonder that Hori had among his fellows the nickname of "MacArthur's staff officer."

Takahashi's contribution uncovers aspects of the intelligence picture that have hitherto been gaps in the history of the period. His paper helps to clarify the handicaps that make comprehensible the deficiencies of Japanese intelligence in the war with the United States. Additional bits of information may come to light here and there but his study appears as nearly definitive as appears possible within the compass of his presentation. He has scored a significant success in uncovering previously unknown personal notations. He has further been able to find and persuade their authors, whose names had been erased from War Ministry listings before the landing of the occupation forces, to amplify their testimony.

At first glance, the contrast between the earlier performance of Japanese radio intelligence and that during the Pacific war is difficult to comprehend. One would anticipate that practice apparently perfected during a decade before Pearl Harbor would have assured a measure of sophistication in the use of SIGINT that would meet the new challenge. It is too often forgotten that quality of performance in the military art must be judged largely in terms of the defensive capacities of one's opponent.

Takahashi demonstrates a marked contrast between Japanese SIGINT achievements in dealing with the blunderings of the Chinese Nationalists and the somewhat more sophisticated Communists. Except for a brief period in 1941, there were no breakthroughs of consequence against the latter. Conceivably the Communists had themselves dealt so successfully with Nationalist codes that they observed extra cautions with respect to their own.

In numerous ways Japanese performance against Chinese opponents do demonstrate failings that lived to plague them in the Pacific war. The traditional worldwide inclination to shortchange intelligence was particularly accentuated and persistent in the case of Japan. Promising officers were habitually assigned to combat units. Intelligence staffs got the leavings and also were chronically undermanned. In the Japanese army prejudice and preconception played an even worse role than was common in armed forces almost everywhere. And military snobbery toward civilians made Japan almost the only World War II belligerent that failed to draw heavily upon civilian talent.

Lessons derived from the two papers were fitted into the larger framework of the Pacific war by Roger V. Dingman. In his view the record of Japanese performance in intelligence operations is less uniformly negative than is commonly supposed. He very properly stresses that Coox and Takahashi were dealing only with army programs and that the role of the navy was a more balanced and positive one. Some American Army Air Corps codes were broken

and the information assembled on the facilities and conditions at Pearl Harbor turned out to be generally accurate. Dingman reminds us also that things at first went too well for Japan with no disaster, such as we suffered at Pearl Harbor, to shake complacency or welcome reform and innovation. He might have cited also the example of the British, whose expulsion from the continent and narrow escape in the Battle of Britain gave rise to inclinations to "try anything." In the case of Japan, as Dingman points out, the anxieties of Admiral Nomura concerning cipher security and the far more specific warnings of the Germans later on that of the PURPLE cipher machine had no more than a temporary effect.

These papers addressed the badly neglected Japanese side of the intelligence war. We still need a searching analysis of MacArthur's intelligence concerns, something perhaps resembling Stephen Ambrose's *Ike's Spies*. Why did American army and navy SIGINT, scandalously remiss with respect to collaboration on the Atlantic side of the war, work together even less effectively in the Pacific? Also, other than the field of SIGINT and such dramatic local stories as that of the coast watchers in the South Pacific, there is much else to be learned about the American side of the intelligence confrontation.

Postwar problems, though often in the center of public controversy, have been touched on more gingerly by the historian. William E. Burrows contributes many insights on issues that spring from the sudden appearance of satellite reconnaissance as a crucial factor in international intelligence rivalry. Except for the clash between army and navy interests with respect to SIGINT and sensitiveness about the intrusion of OSS into the intelligence picture, the traditional military departments were content to work largely by themselves. Vested and newer interests then sprang to action in the "reconnaissance wars" of the fifties. They resulted in scandalous duplication and waste and were only curbed by what Burrows calls the "nationalization" of controls. Significant is his verdict that, while a more independent generation of professionals has helped to curb the excesses of parochialism of agency and service adversaries, the top level of the executive branch is now largely responsible for a "blatant distortion" of the technical intelligence function. All too often during the eighties it is said to have run the product through the "public relations prism."

In an essay that sparkles with challenging thrusts, John Lewis Gaddis takes critical issue with widely held assumptions that Stalinist "moles" within the British and American governments had significant influence on Anglo-American affairs and world positions. A veritable swarm of highly controversial issues are confronted with the startling query, "So what?" Of course the two governments during the war and early postwar period were spied upon by the Soviets. But is the world today, he asks, discernibly different? He follows with a generally persuasive examination of the principal questions related to this problem and climaxes with the verdict that what Stalin learned through his "moles" was trivial both during the war and the years that followed. The argument is marshalled with such force that at first hearing and reading there

appears little room for caveats.

Broadly speaking, however, Gaddis's line of reasoning would be less open to debate if he attended more to a necessary conjunction between "So what?" and "What if?" The contention of "So what?" cannot be considered only in terms of the actual course of events. Under different and entirely conceivable circumstances, to cite only a few extreme cases, the query could be greeted with a resoundingly positive answer. If there had been a not entirely inconceivable separate peace between the Soviets and Germany in 1943 or if there had been a somewhat more crass confrontation between Moscow and the West after the war the consequences of the "mole" activities could have been more serious. As things were, once or twice in the period 1946-1951 the guns might well have gone off almost by themselves. Spelling this out adequately would demand far more space than is available here but the point should not be ignored.

Gaddis shows convincingly that, quite aside from the question of whether Stalin believed all his "moles" told him, what they reported could only confirm what Churchill and Roosevelt were already telling him. Basically all but the fact of ULTRA and the project for the construction of an atomic bomb were revealed to him. And Gaddis might have added that there was not real secrecy about the former, that despite the pro forma British assertion that the information came from London's own "mole" in high German circles, Moscow could only assume that it was a matter of SIGINT. It must have been equally clear that it came from attacks on the Enigma of whose existence the Soviets must have known. All that was really kept from them were the processes by which these attacks were implemented.

Gaddis goes on to say what Stalin can have learned from the intelligence efforts he directed against his allies, with the stated exceptions, was already revealed to him voluntarily; it had little influence upon his decisions. It may be argued, however, that this can have helped to keep Stalin in the war when, annoyed by the lack of an adequate second front, he extended vague feelers to Berlin in 1943. Despite his obsessive and fundamentally unquestionable distrusts, he may have been just enough reassured by his "moles" about a true Western commitment as to hold such sideswings to a minimum.

A particularly interesting and intensive study of the subject compels me to take issue with Gaddis' contentions that (1) given the unconditional surrender policy, the British could hardly have done anything with a successful anti-Hitler coup, and that (2) there was probably not enough resistance to Hitler to have "ensured" such a takeover. To deal first with the latter argument, it is not difficult to agree that such a success could not have been "ensured." But even a substantially greater support for overthrowing Hitler could have made a great difference. Hundreds of thousands of lives were at stake. At the very least, one could have been certain of turmoil in Germany.

Space for argument is limited, but some major points should be advanced. The failure of the British to respond in any positive way to numerous opposition

overtures after 1940 was profoundly discouraging to anti-Nazi leaders. Even so staunch a conspiratorial figure as Field Marshal von Witzleben, a major planner of coup attempts as early as 1938, at one point was inclined to throw in the sponge when disheartening news came from London. Only a deeply moving appeal from General Beck brought him back into line.[2] In conversations with key military figures who repulsed conspiratorial recruiters, such as Heinz Guderian, I was again and again told that it was the unconditional surrender policy that dictated their negative response.[3]

With respect to that policy tying British hands with regard to giving assurances to German oppositionists, Gaddis correctly assigns to this an inhibiting influence. There is more room to quarrel with his evident assumption that the policy was impervious to softening or amendment. Churchill's uneasiness with regard to it is well known. Fear that he might seek to weaken it explains why Foreign Minister Anthony Eden did not apprise Churchill of the major opposition overtures. To cover his tracks, Eden on leaving office, took away with him the Foreign Office file that dealt with them.[4] Churchill himself contended in 1948 that he had been kept in ignorance of many or all of these messages and stated that he would have reacted positively if he had known of them.

Just what could Churchill conceivably have done? Assuredly, so far as the Hitler regime was concerned unconditional surrender would (and should) have remained rock-solid. But it is not unthinkable that Churchill would have advocated something like a corollary statement, though making no commitment, that the Allies would deal with any successor government on its perceived merits.[5] The conspirators could have wished for no more. They could logically hope that a government headed by Ludwig Beck and Carl Goerdeler, both known in London, Paris, and Washington since 1938 as conspiratorial figures, would not receive the same treatment as Hitler's![6]

Could Churchill have induced Roosevelt, would he even have ventured to attempt it, to go along with such a statement? Perhaps not. On the other hand, it would have made a difference if he could privately have assured the conspirators of his good will.

Much that Gaddis says about Harry Dexter White in relation to the Morgenthau Plan is convincing. Morgenthau certainly was sufficiently bitter against Nazi Germany to require no prod to severity. However, though the President at first went along, he soon had second thoughts and proved open to contrary advice. Gaddis states correctly that the Soviets expressed opposition to the plan but this cannot be taken to be regret that Washington had launched it. The Soviets can only have been delighted with tough Western policies toward prostrate Germany and sought to counteract it with their own attitude. Despite the barbarity of their troops in seized territories, they put on some show of friendship for the German people. In contrast to Western non-fraternization, they promoted human contacts. Within six weeks after the German surrender they

were playing soccer with a German team in Berlin. When Americans were finally admitted to Berlin in July 1945, we were met by giant streamers across main avenues quoting Stalin's propaganda appeals, such as, "The Hitlers come and go but the German people go on forever."

In commenting on Robert F. Futrell's paper on "Intelligence in the Korean War," Walter Laqueur noted that its basic message seemed to be that the element of surprise in that war was even more pronounced than in the second world conflict. In support of this statement, it could be stressed that each of the four major offensive surges fall into that category: the original North Korean invasion of the South, the Inchon landing, the massive Chinese intervention, and the near-miraculous restoration of American morale and offensive power by Matthew Ridgway. If any lessons had been learned about surprise during World War II, they seemed to have gone out of the window.

Futrell is unsparing in recounting the manner in which American intelligence, most specifically that of the Air Forces with which he is most familiar, had become the victim of dry-rot when the war was scarcely over. The demobilization which by the end of 1945 had virtually destroyed the fighting capacities of every army unit made a particular sweep of intelligence. Specialists who before the war had been civilians left almost in a body. In the words of General O.P. Weyland, what had been learned in the war was forgotten and not even documented. Small wonder that during the Korean War we experienced debacles just when the challenges were greatest and the stakes highest. It is noteworthy that it was more the utilization of intelligence that broke down rather than lack of basic information.

In both major disasters, American failure at the highest level is related to the preconceptions of the decisionmaking authority itself. It is true that vital information was blocked in moving up the chain of command. But if a mind-set prevails at the top, data that conflicts with it is bound to be ignored or side-tracked by timorous or time-serving subordinates.

Omar Bradley once said that within a year after a man becomes a general he will have lost 80 percent of his sources of information. He might well have added that this is likely to prove progressive with each further advance in rank and as the stars become more fixed in the eyes of the recipient. It need hardly be stressed how much more serious this process can be if the individual concerned has the charisma, overwhelming presence, and authority of a Douglas MacArthur. The intimidation or bedazzlement of subordinates may then be expected to reach their apogee. Then, if the principal lieutenant in the field of intelligence is a worshipful toady, as in the case of Maj. Gen. Charles Willoughby, the hazards of the situation are further augmented. Sufficient examples in the Pacific war illustrate this point. But why go back when these failings were so much more pronounced in the Korean conflict? In the two American disasters among those enumerated it is due to an almost deliberate misreading of the message of intelligence at or near the top that things went

awry.

As Futrell relates it, the CIA had four agents in North Korea; Willoughby no less than sixteen before the invasion. Their reports about the buildup, he says, lacked neither clarity nor substance. But they encountered a blank wall with Willoughby, who, parroting MacArthur, insisted that no attack would take place. The commander-in-chief had proclaimed that the North Koreans would not act without Soviet approval and that was assumed to be withheld. So events proceeded on their fatal path.

Futrell could find no documentation with respect to a similar situation on the Chinese buildup in the north. One must wonder whether the intelligence record has been altered or kept under lock and key for "security" reasons. Willoughby is known to have falsified it during the Pacific war when MacArthur's image or version of affairs were at stake.[7] The actual and so far unpublished story is told by Colonel Svendsen, who directed counter-intelligence under Willoughby. Svendsen had concrete evidence of a huge Chinese buildup south of the Yalu but his reports were persistently sidetracked by his chief who refused to pass upward anything that might disturb MacArthur's strongly expressed conviction that no Chinese intervention was to be expected. As is well known, he had just told President Truman as much and had said that, if they did come, it would mean "the greatest slaughter" (of Chinese, not Americans).

The agonized Svendsen discussed with his staff a desperate ploy he was considering to get to MacArthur past the Willoughby barrier. After concluding a day's activities, MacArthur was accustomed to stalking out of the building through cleared halls and front steps. Svendsen thought of hiding in one of the recessed doorways and suddenly leaping out with raised hands before the general shouting, "They are coming." To his everlasting regret, he was not able to summon the courage for an act that would almost certainly have spelled finis to his career.[8]

The final set of papers — really commentaries — come from prominent veterans of the American intelligence community. Ray S. Cline and colleagues brought their rich experience and seasoned perspectives to the task at hand. Representing different agencies and different responsibilities at different times, these former "operatives" addressed the current and future intelligence scene. Cline's own reasoned, cogent discussion of the developing role of the CIA cleared away many cobwebs that over the years have gathered in controversy and speculation about that agency.

We know too little about the inner life of opposite members in other democratic societies to judge the degree to which the CIA may be thought representative. There is much about its aspect that no doubt derives from particular facets of its structure and place in the American scene. No other agency of this type has been so frequently and at times glaringly exposed to the public gaze. This particularly contrasts with Britain, where, as noted earlier, the very existence of the Secret Service was not publicly acknowledged. And rarely,

if ever, has there been anywhere else anything like the way in which at times it was made something of a scapegoat to cover sins higher up. Cline, of course, does not put it that baldly. To document this more exactly, he would have had to get down to cases which, even if time had permitted, would have been a difficult task for a former top-level official of the agency.

A feature of this situation little sensed by either American or outside observers is Cline's point concerning the original involvement of the CIA in covert operations, notoriously the area where abuses most often develop. As he has it, the CIA was largely pushed in this direction by higher government quarters. Troubles often arose from being "too obedient" rather than acting irresponsibly.

Cline did not deal with a related feature, though he may well have had it in mind. This refers to situations in which the Director of Intelligence or other high quarters within the agency operate on an assumption that what they are doing conforms with the unvoiced wishes of the President. If one put it up to him for decision he would be obliged to react negatively. So loyalty demands acting without formally referring the matter to him, a situation that is as old as history.[9] The President would be free of responsibility and could repudiate the operation if it misfired or came unfavorably to public knowledge. A probably prime example, though much remains to be clarified, is William Casey's role, probably in conjunction with Oliver North in the Iran-Contra affair. Whether such a procedure on Casey's part could be labelled "responsible" is of course questionable.

General Sam Wilson reflected upon a contemporary setting that has since then been in extraordinary flux. Indeed, nothing in the history of the world since the Second World War can remotely compare with it in this regard. His graphic description of glasnost and perestroika being two genie that can never be returned to the bottle from which they have emerged is very much in place. And we can hardly quarrel with the claim that the Gorbachev revolution confronts American intelligence with one of the major challenges of our time, indeed of this century. But so much water has passed over the political dams that the implications of this challenge have undergone great changes.

General Wilson's remarks were made when one could still argue that "fundamental Soviet policy goals have not changed." At least he could not as yet perceive evidence that major changes had occurred. Since then the Brezhnev doctrine of a right, indeed a duty, of intervening in areas of perceived counter-revolution has not only been formally repudiated but been shoved aside in case after case. Not only has Moscow permitted the most basic departures from the communist political and economic order, at times they have been positively encouraged. The Soviet Empire in Central and Eastern Europe has been allowed to disintegrate and the process is continuing. How, then, can one still speak of the Soviet Union as an "expansionist state"? Not when it is barely holding on to areas seized during and after World War II that were actually integrated into the

"motherland."

It is, in fact, assumed by many observers that Gorbachev, however grudgingly, is reconciled to the eventual departure of the Baltic territories, though an infinity of complications still stand in the way. Who would now say that Soviet policy is "merely gentler in tone"? Or that is may be preparing a program of nudging third world nations toward "client-state status"?

Many, however, would support General Wilson in averring that the challenge to American intelligence has lost little or nothing in importance. It is as essential as ever to assess accurately the nature and extent of the changes taking place. General Wilson's injunction to keep close track of alteration in the Soviet scene, of technological breakthroughs that could have military implications, of Soviet compliance with arms reduction agreements, and of new intelligence opportunities is much in order. It should be fervently hoped, as he says, that all will be done to avoid intelligence blunders that could reverse the warming trend in Soviet-American relations.

Assuredly the symposium has touched on the problem of preconception in the utilization of intelligence by those in high command. This deserves more intensive analysis than it has yet been given. There is plenty of material for case studies. Figures like Montgomery and MacArthur come quickly to mind, prone as they were to wishful thinking at the most critical times.

We should give more attention to methodology and the appraisal of sources. We have never made adequate use of living witnesses and, with time running short as they depart from this earth, it is now a "last call" situation. So, though we are doing infinitely better than our predecessors did with the surviving figures of the World War I era, the missed opportunities regarding the World War II generation keep piling up.

The picture for intelligence history is a mixture of light and dark. Severe restrictions on the testimony of both active and retired figures in the intelligence community have kept many doors closed. The undreamed flood of information about ULTRA and MAGIC has loosened some tongues. Why be finicky about lesser matters in the intelligence field when the supreme secrets had been disclosed?

There is one more particular challenge: the collective memories of the American Special Service Officers (SSOs) have not been nearly enough tapped. They were the men who serviced the ULTRA operation at the headquarters of armies and army groups. All were young officers who in civil life had gathered experience that fitted them superbly for their duties. The process of recruitment was a model for bringing together an elite company. And having been young at the time of their service (mostly thirtyish) most of them are still alive. What they have to tell is particularly important because it is precisely in this field of ULTRA's connection with high commands that the declassification and release of documents has faltered. It is the same story as has been told in this symposium about FLORADORA.[10]

So much has been learned, rather precipitately, about the performance of SIGINT on the Allied side, that we have neglected the yawning gap that represents the picture on the German one. Compared to what we now know of its value to British and American commanders, there is a virtual blank when it comes to German leaders. The one exception seems to be Rommel.[11] This vacuum is the more lamented because, though many records were apparently destroyed in the final days of the war, massive stores of German SIGINT material were captured and remain in American hands. Their utilization is a task that is much overdue.

Most important but not dealt with lightly is whether the ULTRA revelations and the more complete story as it emerges will compel massive revision of earlier writings on World War II history, whether military, economic, or diplomatic. The problem is so formidable that no history has yet summoned the hardihood to go to the mat with it. It seems one of the surest ways of losing friends.

A related but less touchy question concerns whether anything can be done to cleanse the memoirs of Anglo-American military, political, and other figures who had access to ULTRA. Except for Omar Bradley's second book, they were all published before 1973 and none could include references to the medium. In fact, in view of anxieties about some slip that might carry even a hint about ULTRA, it was best to skip or soft pedal any mention of SIGINT whatever and as little as possible about intelligence generally, a course that presumably has not caused many tears to flow. Credit which with full disclosure would have to go to ULTRA, thus almost automatically accrued to the judgment and intuition of the commander in question.

A further somewhat associated problem to those of sanitizing the writings of historians or memoirs relates to doing the same for military and other archives. Here, at least, there is no fear of stepping on professional toes. It is not widely enough held in mind that ULTRA could not be alluded to in any conclave where non-initiates were present. Even when that was not the case, minutes, if any, could make no reference in any but the most disguised form to information derived from ULTRA. There might be a not very clear reference to the general message of intelligence. Often intelligence was not even mentioned and other reasons for a decision would be stressed.

Orders of any kind not only had to avoid all allusions to ULTRA but were likely to soft pedal the role of intelligence itself. It should also be held in mind but is often forgotten that the vast majority of workers in intelligence, no matter how highly "cleared," knew nothing of this latest marvel of SIGINT. It is difficult to imagine a more perfect illustration of the dictum quoted by Takahashi Hisashi, "To deceive one's enemies, one must first deceive one's friends."

Just what can one recommend to clean up hundreds, probably thousands, of documents meant to be misleading for those to whom they were in the first instance directed? It will take much thought and may turn out to be an

impossible task. There will also have to be more detailed studies on specific phases of the war, such as Ralph Bennett's fine volumes on the part played by ULTRA in the West and in the Mediterranean. Here and there, meanwhile, it should be possible to deal at least with critical situations.

There is thus much that should be added to the "agenda for the future" as Walter Laqueur labelled it. The basic feature of the World War II era, as emphasized from time to time, was not merely that it represented the climax of the broader intelligence revolution but was a revolution by itself. The massive intrusion into the intelligence picture of civilians and civilian agencies was one of its two major characteristics. We need think only of the GS/CS, the OSS, Goering's *Forschungsamt,* Himmler's Gestapo and SD, and the succession of Soviet agencies climaxing in the KGB to note the fundamental change. The other guarantor of a new age in the intelligence field was the closely linked intrusion of science and technology: radio communication on an undreamed of scale, the airplane, the computer, in short the general mobilization of civilian facilities for war. They all affected the primary facets of the intelligence scene.

Notes

1. Reference is to ULTRA's exposure of the excellent German naval B-Dienst's success in reading the code employed in communication with convoys. The revelation came in a German message to the U-Boats that spoke of having certain information "from an intercept." No one in the Admiralty could further argue that the code was inviolate.

2. An attestation by a participant in this gathering of oppositionists, Baron von Lueninck, is in the possession of the writer.

3. Three interrogations of Guderian by the writer in September - October 1945.

4. Information from Lord Richie-Calder, April 1976. He related what had been told him by Ian Colvin, who discovered the file by accident among the papers of Lord Avon on which he was working.

5. As reported to the writer by German Supreme Court Justice Fabian von Schlabrendorff in April 1970.

6. The numerous appeals to Britain during the Munich crisis of September 1938 to resist Hitler's demands are well known. These communications were coupled with revelation of military plans for toppling the Hitler regime. Not previously recorded at the time of this writing are a message to the French government by General Beck, then still formally chief of the General Staff, and another addressed to Washington via Jacob Beam of the U.S. Embassy in Berlin. Interview with Ambassador Beam, Dec. 16, 1974.

7. In laying the groundwork for what was to be the official history of the Pacific war, which Willoughby expected to name "MacArthur in the Pacific," it was his practice to give directions for his staff in such form as, "Find a Jap who will say so and so." Information from a member of the historical staff in Tokyo.

8. As told the writer by Col. Donald Shaw when director of the Military History Institute at the U.S. Army War College. Shaw had the information in Ankara from a Colonel Casey who had been a member of the counterintelligence staff. It was confirmed by then Brigadier General Svendson, director of the U.S. Military Mission in Turkey.

9. A celebrated example deals with Sextus Pompeius who, while entertaining Antony and Octavian on his flagship was asked by a subordinate whether he should slip the cables and thus make prisoners of the masters of the Roman world. The reply was that this should have been done without reference to Sextus.

10. One historian who has made extensive use of the experience of the SSOs is Thomas Parrish in his *The Ultra Americans: The U.S. Role in Breaking the Nazi Codes* (Stein and Day: New York, 1986).

11. Rommel is one of nine generals whose utilization of intelligence is analyzed by the writer in, "Commanding Generals and the Uses of Intelligence," in Michael J. Handel ed., *Leaders and Intelligence* (Frank Cass: London, 1989), pp. 194-260.

Conference
Participants

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WILLIAM E. BURROWS

After earning degrees from Columbia University, William E. Burrows began a career in journalism. During 1962-1971, he worked as a reporter for a number of the nation's leading newspapers, including The New York *Times*, The Richmond *Times-Dispatch*, The Washington *Post*, and The *Wall Street Journal*. In 1974 Burrows joined the faculty of New York University. Interested in science and aeronautics, he is a member of the American Association for the Advancement of Science, the American Institute of Aeronautics and Astronautics, the British Interplanetary Society, the National Association of Science Writers, the New York Academy of Sciences, and the Planetary Society. His many books include *Richthofen: A True History of the Red Baron* (1969), *Vigilante* (1976), and *Deep Black: Space Espionage and National Security* (1987).

RAY S. CLINE

As Chairman of the U.S. Global Strategy Council, Ray S. Cline continues his active involvement with intelligence and strategic affairs. He began a thirty-one year career in intelligence during World War II, working for the U.S. Navy and the Office of Strategic Services. During the Cuban Missile Crisis, Cline served in the Central Intelligence Agency as Deputy Director for Intelligence. From 1969 until his retirement in 1973, he was Director of the State Department's Bureau of Intelligence and Research. For his dedicated service, he received both the CIA Distinguished Intelligence Medal and the CIA Career Intelligence Medal. Cline is a member of the Board of Visitors of the U.S. Defense Intelligence College and the Senior Advisor at the Center for Strategic and International Studies. His books include: *World Power Trends and U.S. Foreign Policy for the 1980s* (1980), *Terrorism: The Soviet Connection (1984)*, and *Secrets, Spies, and Scholars: The CIA from Roosevelt to Reagan* (1986).

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Alvin D. Coox is an expert on modern Japanese military history. After receiving advanced degrees from Harvard University, Coox spent ten years teaching in Japan as a Visiting Professor of Modern History at Shiga National University and as a lecturer with the Far East Division of the University of Maryland. During 1957-1963, he served as Military/Political Analyst at Headquarters, Fifth Air Force, near Tokyo. In 1964 Coox moved to San Diego State University, where he directed the Center of Asian Studies and the Japan Studies Institute. During nearly forty years as an educator, he has received many awards, including the California University System's Outstanding Professor Award and the American Military Institute's Samuel Eliot Morison Prize for *Nomonhan: The Soviet-Japanese War of 1939* (1986). His earlier books include: *Year of the Tiger* (1964), *Tojo* (1975), *and Anatomy of a Small War: The Soviet-Japanese Struggle for Changfukeng-Khasan 1938* (1978).

HAROLD C. DEUTSCH

Harold C. Deutsch earned his Ph.D. from Harvard in 1929 and then joined the faculty of the University of Minnesota, where he taught until 1972. During World War II, Deutsch served on the Board of Economic Warfare and with the Office of Strategic Services in London and Paris. He became Chairman of the History Department at Minnesota in 1960 and directed the university's Program for International Relations and Area Studies for ten years. In 1972 he began teaching at the National War College, and from 1974 until 1985 he held the Brigadier General John McAuley Palmer Chair of Military History at the U.S. Army War College. Deutsch was the Air Force Academy's twenty-sixth Harmon Memorial Lecturer in 1984. His publications include *America's Stake in Western Europe* (1959), *The Changing Structure of Europe* (1970), and *Hitler and His Generals: The Hidden Crisis of January to June 1938* (1974).

ROGER V. DINGMAN

Roger V. Dingman earned his Ph.D. from Harvard University in 1969, and taught there as an instructor and lecturer from 1968 to 1971. He then became an Associate Professor at the University of Southern California, and served as a Distinguished Visiting Professor in the Air Force Academy's Department of History from 1988-1989. He has also served as Professor of Strategy at the U.S. Naval War College and as a Visiting Professor in the School of Modern Asian Studies at Griffith University, Australia. During his career as an educator, Dingman has won numerous awards, including the 1970 Harvard Canaday Award, the 1977 Bernath Prize for his book *Power in the Pacific* (1976), and the 1978 Naval War College Center for Advanced Research Award.

ROBERT F. FUTRELL

Robert F. Futrell, an expert on the history of the United States Air Force, served as a communications and historical officer for the Army Air Forces during World War II. He earned his Ph.D. from Vanderbilt University in 1950

and then began teaching at Air University. From 1951 until 1971, he served as Professor at the Aerospace Studies Institute, Air University; from 1971-1974, he was Professor of Military History and Senior Historian at the U.S. Air Force Historical Research Center. He also served as a professional advisor during the Vietnam War for the Air Force's Project CORONA HARVEST, the evaluation of air operations in Southeast Asia. In 1974 Futrell became Professor Emeritus in Military History at Air University. His publications include *United States Air Forces in Korea* (1961, 1983) and *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1984* (1988).

JOHN L. GADDIS

A specialist in modern American diplomatic history, John Lewis Gaddis earned his Ph.D. from the University of Texas in 1968. He taught at Indiana University-Southeast before moving to Ohio University, where he is a Distinguished Professor of History. Gaddis has also served as a Visiting Professor of Strategy at the U.S. Naval War College, Bicentennial Professor of American History at the University of Helsinki, and a Visiting Professor of Politics at Princeton University. His many awards include the 1973 Bancroft Prize and the Stuart L. Bernath Prize, awarded by the Society of Historians of American Foreign Relations for *The United States and the Origins of the Cold War* (1972). His more recent books continue to explore the Cold War: *Russia, the Soviet Union, and the United States: An Interpretive History* (1978), *Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy* (1982), and *The Long Peace: Inquiries into the History of the Cold War* (1987).

COL. DAVID GLANTZ, USA

Col. David M. Glantz is the Chief of Research, Soviet Army Studies Office, U.S. Army Combined Arms Center. A graduate of the Virginia Military Institute, Colonel Glantz served in Germany and Vietnam before teaching European history at West Point. He then studied Russian at the Defense Language Institute and the U.S. Army Institute for Advanced Russian and East European Studies, before becoming an intelligence analyst in Heidelberg, Germany. Since 1979, Colonel Glantz has examined Soviet military operations and tactics at the U.S. Army Command and General Staff College, the U.S. Army War College, and the U.S. Army Combined Arms Center. His publications include *August Storm: The Soviet Strategic Offensive in Manchuria, August 1945* (1983), *The Soviet Airborne Experience* (1984), and *The Red Mask: The Nature and Legacy of Soviet Military Deception in the Second World War* (1988).

RICHARD HELMS

Richard Helms graduated Phi Beta Kappa from Williams College in 1935. He then served as a European correspondent for United Press, interviewing Adolf Hitler in 1937. Helms joined the U.S. Naval Reserve in 1942 and

transferred to the Office of Strategic Services the next year. Upon his discharge in 1946 as a lieutenant commander, he became a staff member in the Strategic Services Unit of the Central Intelligence Group. Appointed Deputy to the Chief of Plans in 1952, Helms advanced to Deputy Director of Intelligence in 1965, and succeeded Vice Admiral William F. Raborn as Director of Central Intelligence on 30 June 1966. In 1973 he became U.S. Ambassador to Iran. He retired from government service in 1976 and currently serves as President of the Safeer Company in Washington, D.C. His many awards include the National Service League's Career Service Award, the Distinguished Intelligence Medal, and the National Security Medal.

SIR HARRY HINSLEY

Professor Sir Harry Hinsley studied at St. John's College, Cambridge, from 1937-39 and 1944-46, receiving his master's degree in 1946. During World War II, Hinsley served in the British Foreign Office, for which he was awarded the Order of the British Empire. After the war, he lectured in history at Cambridge until 1969, when he became a Professor of the History of International Relations. Hinsley was the United Kingdom's Representative to the Provisional Academic Committee for European University Institutions during the mid-1970's. In 1981 he became Vice-Chancellor of Cambridge University. He currently serves as the Master of St. John's College, Cambridge, and as a Trustee of the British Museum. His publications include *Command of the Sea* (1950), *Hitler's Strategy* (1951), *Power and the Pursuit of Peace* (1963), and *British Intelligence in the Second World War: Its Influences on Strategy and Operations*, 4 volumes (1979-88). Queen Elizabeth knighted him in 1985.

ADMIRAL PIERRE LACOSTE, Retraite

Admiral Pierre Lacoste fought in World War II's Mediterranean Theater after his admission to the French Naval Academy in 1944. From 1947 to 1972 he served in various staff and operational assignments, including participation in the first Indochina War. After attending the French Center for High Military Studies and National War College, he became Deputy Military Executive Officer of the Secretary of Defense (1972-76), Commander of the Naval War College (1976-82), and Head of the Foreign Intelligence Service (1982-85). On July 1, 1986 Lacoste began service as President of the Foundation for the Studies of National Defense. He is the author of *Naval Strategies of the Present Time* (1981, 1986) and several works on naval policy and intelligence. His decorations include: High Officer of the Legion of Honor, Military Cross (Foreign Operations), Colonial Cross (Far East), and High Officer of the Maritime Merit.

WALTER LAQUEUR

Currently Chairman of the International Research Council at Georgetown's Center for Strategic & International Studies, Walter Laqueur has a professional career that spans many areas. Following his graduation in 1938 from

Johannesgymnasium in Breslau, Germany, Laqueur studied at Hebrew University and farmed in Palestine. From 1944 to 1955, he worked as a newspaper correspondent and free-lance author. In 1955, he founded *Survey*, a quarterly journal, in London. Nine years later, Laqueur served as the Director of London's Institute of Contemporary History. In 1966 he founded the highly acclaimed *Journal of Contemporary History*. Since 1967, Walter Laqueur has been a Professor of History at Brandeis University and the University of Tel Aviv, and a Professor of Government at Georgetown University. His many books include *Russia and Germany* (1965), *A History of Zionism* (1972), Weimar (1975), *Terrorism* (1977), and *A World of Secrets* (1985). In recognition of his many professional accomplishments, the Federal Republic of Germany awarded him the Grand Cross of Merit in 1986.

PETER MASLOWSKI

Born in Cincinnati, Ohio, Peter Maslowski attended Miami University before earning his Ph.D. From Ohio State University in 1972. Since then, Maslowski has taught at the University of Nebraska-Lincoln, where he won the Amoco Foundation Award for Distinguished Undergraduate Teaching. His primary academic interest lies in the American Civil War, as reflected by his *Treason Must Be Made Odious: Military Occupation and Wartime Reconstruction in Nashville, Tennessee* 1862-1865, (1978). The highly acclaimed *For the Common Defense: A Military History of the United States of America* (1984), was co-authored with Allan Millett. In 1986, Maslowski served as the John F. Morrison Professor Military History at the U.S. Army Command and General Staff College.

ERNEST R. MAY

Ernest R. May serves as the Charles Warren Professor of History at Harvard University. After earning his Ph.D. at the University of California, Los Angeles, May joined the Harvard faculty in 1954. From 1969 to 1972, he was Dean of Harvard College. He won the American Historical Association's prestigious George Louis Beer Prize in 1959 for *The World War and American Isolation, 1914-1917*. In 1981 he won the Robert H. Lord Award for Excellence in Historical Studies, and in 1986, he joined the Board of Visitors at the U.S. Defense Intelligence College. His publications include *Imperial Democracy: The Emergence of America as a Great Power* (1961), *The Truman Administration and China: 1945-49* (1975), *Knowing One's Enemies: Intelligence Assessment Before the Two World Wars* (1984), and *Thinking in Time: The Use of History for Decision-Makers* (co-author, 1986).

JÜRGEN ROHWER

Professor Jürgen Rohwer serves as the Director of the Library for Contemporary History in Stuttgart, Germany. Born in Friedrichroda, Thüringen, Germany in 1924, he served in the German navy during the Second World War, experiencing firsthand destroyer, minesweeper, and U-boat operations. After the

war, Rohwer studied history, international law, and geography at Hamburg University from 1948 to 1954, where he earned a Ph.D. He served as Secretary of the Arbeitskreis für Wehrforschung from 1954 to 1959, and became Director of the Library for Contemporary History in 1959. His many publications include "The U-Boat War Against Allied Supply Lines," in *Decisive Battles of World War II: The German View* (1960, 1965), *World War II German Military Studies: A Collection of 213 Special Reports on the Second World War Prepared by Former Officers of the Wehrmacht for the United States Army* (co.ed., 1979), and *Die U-Boot Erfolge der Achsenmächte 1939-1945.*

DENNIS E. SHOWALTER

Dennis E. Showalter obtained his bachelor's degree from St. John's University, and his master's degree and Ph.D. from the University of Minnesota. He was an Instructor of Humanities at Minnesota from 1968-69, and an Associate Professor from 1969-77. Since 1977, he has served as both Associate Professor of History, Colorado College, and Associate Editor of *Doctoral Dissertations in Military Affairs.* Showalter became an Alexander von Humboldt Fellow in 1979. His publications include *Railroads and Rifles: Soldiers, Technology, and the Unification of Germany* (1975), *German Military History Since 1648: A Critical Bibliography* (1982), *Little Man, What Now?: Der Stürmer in the Weimar Republic* (1982), *Sieg Heil!: War Letters of Tank Gunner Karl Fuchs, 1937-1941* (1987), *Voices From the Third Reich: An Oral History* (co-author, 1989).

HISASHI TAKAHASHI

Currently teaching in the Military History Department of Japan's National Institute for Defense Studies, Hisashi Takahashi is an authority on World War II's Sino-Japanese struggle. He earned a bachelor's degree from Seattle University in 1973 and a master's degree from the University of Washington in 1976. From 1980 until 1985, Takahashi served as a lecturer for the Faculty of Foreign Languages at Dokkyo University and Sophia University, Japan. In 1984, he was Visiting Professor of Japanese History at De La Salle University and Ateneo De Manila University in the Philippines. He joined the faculty of Japan's National Institute for Defense Studies in 1982. In 1987 Takahashi became a member of the Editorial Board of *Gunji-shigaku* (The Journal of Military History).

MAJ. GEN. JACK E. THOMAS, USAF, Retired

Major General Jack E. Thomas has spent more than 45 years in intelligence assignments in the United States Air Force, the Office of the Director of Central Intelligence, and the Office of the Secretary of Defense. From March 1963 until May 1969 he was the Assistant Chief of Staff, Intelligence at USAF Headquarters. Earlier he had been the Chief Intelligence Officer, United States European Command, and had served at Supreme Headquarters, Allied Powers Europe. General Thomas is now a consultant to the Assistant Secretary of

Defense for Command, Control, Communications, and Intelligence and also an Adjunct Professor at the Defense Intelligence College. He has served as Chairman of the Board of Directors, Association of Former Intelligence Officers, and is a member of the National Military Intelligence Association. His decorations include the USAF Distinguished Service Medal, the National Intelligence Distinguished Service Medal, the Legion of Merit for World War II service in Italy, and several foreign awards.

GERHARD L. WEINBERG

Gerhard L. Weinberg is a leading authority on Soviet-German foreign relations during the 1930's. His book, *The Foreign Policy of Hitler's Germany, 1933-1936*, won the American Historical Association's George Louis Beer Prize in 1971. Weinberg earned his Ph.D. at the University of Chicago in 1951 and then worked as a research analyst on Columbia University's war documentation project. In 1954 he began teaching at the University of Chicago. His career in education spans over three decades at the University of Kentucky, the University of Michigan, and the University of North Carolina at Chapel Hill, where he serves as the William Rand Kennan, Jr. Professor of History. Recently, Weinberg joined the Secretary of the Air Force's advisory board on the Air Force History Program. His publications include: *Germany and the Soviet Union* (1954), *The Foreign Policy of Hitler's Germany, 1937-39* (1970), and *World War II in the Balance: Behind the Scenes of World War II* (1981).

LT. GEN. JAMES A. WILLIAMS, USA, Retired

A 1954 graduate of West Point, Lt. Gen. James A. Williams attended Artillery and Missile School before entering the intelligence field. In 1965 he received a master's degree in Latin American Studies from the University of New Mexico. Following a tour in Vietnam as Battalion Commander of the 525th Military Intelligence Group, he worked in the Office of the Deputy Chief of Staff of Operations at the Pentagon. Over the next decade, he served in a number of intelligence positions, including: Deputy Assistant Chief of Staff for Intelligence, Headquarters, U.S. Army European Command; and Director, Defense Intelligence Agency. General Williams' decorations include the Distinguished Service Medal, Legion of Merit with one Oak Leaf Cluster, National Intelligence Distinguished Service Medal, and the French Legion of Honor.

LT. GEN. SAMUEL V. WILSON, USA, Retired

Lt. Gen. Samuel V. Wilson was commissioned a 2nd Lieutenant, United States Army, after working his way up from private to rifle company first sergeant in World War II. During the war, he fought with "Merrill's Marauders" and developed a course in military leadership at the Army Infantry School. His assignments have included: Consultant on Soviet Affairs to the Secretary of Defense (1953-56), service with the Central Intelligence Agency (1956-59), Director of Instruction, U.S. Army Center for Special Warfare (1959-61),

Deputy Assistant for Special Operations to the Secretary of Defense (1961-64), Commanding General, 6th Special Forces Group (1967-68), U.S. Defense Attaché to Moscow (1971-73), Deputy to the Director, Central Intelligence Agency (1974-75), and Director, Defense Intelligence Agency (1976-77). He is currently a consultant to Department of Defense contractors. His decorations include the Defense Distinguished Service Medal, National Intelligence Award, CIA Outstanding Leadership Award, Silver Star with Oak Leaf Cluster, Legion of Merit, Bronze Star for Valor, and Purple Heart.

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