United States Cryptologic History

SECRET MESSENGERS

Disseminating SIGINT in the Second World War:

The Story of the British SLUs and American SSOs

GCHQ

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Front Cover: SLU mobile units being prepared in 1944 for the Normandy landings on D-Day (Operation OVERLORD) at Whaddon Hall in Buckinghamshire, England. Provided to Dr. David Abrutat by Geoffrey Pigeon.

Back Cover: SCU8 ZETA team attached to US Third Army near Black Forest May 17, 1945, including RAF and Royal Corps of Signals members. Courtesy of Dr. David Abrutat.

UNITED STATES CRYPTOLOGIC HISTORY

SECRET MESSENGERS

Disseminating SIGINT in the Second World War: The Story of the British SLUs (Special Liaison Units) and American SSOs (Special Security Officers)

Dr. David Abrutat, GCHQ Departmental Historian

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National Security Agency
Center for Cryptologic History

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GCHQ Foreword

It is a privilege to be asked to write the foreword of this first-ever joint publication between the history departments of GCHQ and NSA. As a soldier, I have seen firsthand the significant impact that has been made by SIGINT in multiple operational theaters, and indeed without it I probably would not be here to tell the tale. In my current role as GCHQ's Deputy Director Military Support, I am fortunate enough to be able to survey some of the contributions made by SIGINT operators across the world, but recognize that all which I see is still only the tip of the iceberg.

The story of how SIGINT enabled Allied success in World War II is increasingly well-known. However, whereas many will be aware of the work at Bletchley Park, few will know of the role played by the British Special Liaison Units and US Special Security Officers in the transmission of the intelligence deciphered there. Thanks to this publication, their story can now be told more widely.

Too often we see SIGINT as an impersonal object and lose sight of the remarkable courage and ingenuity of the people charged with its collection and dissemination. Both David Hatch and David Abrutat bring these people to life, who all too often operated in harm's way, whose true role was known by very few, and whose vital contributions were known by even fewer. As I write this today, I note how little has changed.

Finally, I note that the Anglo-American SIGINT partnership is not just a matter of past history but present fact. The term "special relationship" might seem to some a political cliché, but to those of us who know, it fittingly describes the close bond between our respective agencies. It is this bond that has helped safeguard our mutual security for almost a century, and I remain confident that it will do so for many more years to come.

Deputy Director Military Support

NSA Foreword

In the nearly 80 years since the end of World War II, Allied SIGINT success has become the topic of many books and is at least touched on in probably thousands more. Most historians agree that the war was shortened considerably by these achievements—perhaps by a year or more—thus saving an untold number of lives. *Secret Messengers* fills a gap in this seemingly well-known history. Prior books generally include only a section on the SIGINT distribution system but do not concentrate on it.

SIGINT distribution in World War II is often criticized as too restrictive. This new work describes how the United States and the United Kingdom built—and changed on the fly—a system to ensure that vital intelligence got to the proper decision-makers in a timely and secure way. For historians and practitioners alike, the book outlines the first steps in developing the system that both countries would use during the Cold War.

Additionally, *Secret Messengers* identifies previously unknown or little-known individuals whose actions and contributions greatly affected the Allies' victory in the intelligence war. Drs. Abrutat and Hatch expertly weave together the technical with the personal, and the result is a compelling and important story.

It has been over a century since cryptologic cooperation began between the United States and Great Britain, and that relationship has indeed been special even before the American entry into World War II. The closeness of that bond extends to our respective history programs: the Center for Cryptologic History at NSA and the Departmental History office at GCHQ. *Secret Messengers* represents a key milestone. It is the first instance where we have joined hands to formally publish any aspect of our combined history. I believe that it is the first of many more to come.

John A. Tokar
Chief, Center for Cryptologic History

Timeline

August 15, 1939	Government Code & Cypher School (GC&CS) moved into Bletchley Park (BP) in Buckinghamshire, England.
Summer 1940	Mobile BQ unit that would act as a conduit for localized cryptanalysis and dissemination formed at BP.
February 1941	First US delegation visited GC&CS at BP. This became known as the Sinkov mission.
April 1941	Special Signals Unit No.1 (SSU1) formed.
June 1941	SSU1 deployed to Cairo, Egypt.
September 1941	Special Communications Unit (SCU) and Special Liaison Unit (SLU) in Egypt delivered Hut 3 ULTRA to service commands.
August 1942	SCU1 deployed to Portsdown Hill to support the August 19, 1942 attack on Dieppe (Operation JUBILEE).
October 1942	SLU team under the command of Major Smith-Wright arrived in Gibraltar and was located on the grounds of the governor's palace. They directly fed ULTRA to General Dwight D. Eisenhower, who had his headquarters in the Gibraltar tunnels.
April 1943	Colonel Alfred McCormack, accompanied by William Friedman and Lieutenant Colonel Telford Taylor, visited Britain for a tour of various GC&CS sites. Formal regulations for the handling of ULTRA were first issued to British military customers.
July 13, 1943	First SLU station landed with General Montgomery on Sicily's southern tip and quickly moved up to Syracuse in support of Operation HUSKY.
December 1943	Lieutenant Colonel Robert Gore-Browne, who had extensive experience with SLUs in the Middle East and North Africa, was recalled back to Britain to build SLU8 for Operation OVERLORD.
December 7, 1943	First senior SSO, Major Huddleson, arrived in the Pacific Theater.
April 1944	SCU and SLU teams' trucks and vehicles prepared at Whaddon Hall for Normandy campaign.

Timeline

April–May 1944	SCU9 established for 21st Army Group, Normandy campaign.
June 1944	SCU8 established for Normandy campaign.
August 12–19, 1944	During the invasion of southern France (Operation DRAGOON, formerly ANVIL), a special SLU station was established to handle ULTRA traffic for Prime Minister Winston Churchill and General Terence Airey, who were on the island of Corsica for the invasion.
September 10, 1944	6th Army Group relocated to Saint-Tropez, moving from Corsica with a large Special Liaison Unit Typex station and two SCU teams.
April 1945	Gore-Browne took control of all SLUs from Group Captain Frederick Winterbotham.

Glossary

BP: Bletchley Park. Secret processing site for ULTRA reporting.

CBB: Central Bureau Brisbane. Joint US-Australian cryptanalytic unit for Southwest Pacific.

CBI: China Burma India. During World War II, the British referred to this theater as Southeast Asia.

GC&CS: Government Code & Cypher School. Forerunner to Government Communications Headquarters (GCHQ).

IWM: Imperial War Museums.

MAGIC: American codeword for diplomatic decrypts. It originally had been coined in the 1930s to cover decrypts from the communications of the Japanese Foreign Ministry. During the war itself, Japanese diplomatic decrypts still comprised the bulk of this report (issued at least weekly), but it also included decrypts from the diplomatic communications of other countries.

MIS: Military Intelligence Service (American), designated G-2. Since the origins of the General Staff system, G-2 has been the designation both for the intelligence function and the senior intelligence officer in a command.

OC: Officer Commanding.

Purple: American army's codename for Japanese diplomatic encryption system.

RAF: Royal Air Force.

SCU: Special Communications Unit (British).

SHAEF: Supreme Headquarters Allied Expeditionary Forces.

SIGINT: Signals intelligence.

SIS: Secret Intelligence Service, under which the British SLU teams were established.

SIS Section VIII: Clandestine communications component of MI6 (Britain's foreign intelligence service), which provided secure communications as well as personnel training and equipment for the SCU and SLU teams.

SLU: Special Liaison Unit (British). Responsible for dissemination of ULTRA to operational command. This was the equivalent of the American SSO.

SSA: Signal Security Agency. The US Army's SIGINT organization began as the Signal Intelligence Agency in 1930. In 1943 it was renamed the Signal Security Agency. At the end of World War II, it was reorganized and renamed the Army Security Agency. This organization was a direct predecessor to today's NSA and INSCOM (US Army Intelligence and Security Command).

SSO: Special Security Officer (American), known collectively as the General Liaison and Special Reports Section of the intelligence staff. Responsible for dissemination of ULTRA to operational command. Sometimes called ULTRA officers or representatives by indoctrinated personnel. This was the equivalent of the British SLU.

Typex: British cipher device. Alternate spellings include Type X or TypeX.

ULTRA: All intelligence derived from cryptanalysis of high-grade cryptosystems used by the Axis powers. High-grade decrypted intelligence was referred to as ULTRA reporting (British and American).

Wireless: British term. In this publication, *radio* is the American equivalent.

Authors' Introduction

Intelligence—information required both for military and civilian decision-making—is neither hocus-pocus nor guesswork. The successful practice of intelligence is a deliberate process or cycle that begins with a specific requirement and concludes with the delivery of pertinent information to those who need it. Between those two bookends is a series of steps conducted rigorously and artfully to acquire, analyze, and validate data.

This study is concerned with the bookend at the conclusion of the process, as observed in Great Britain's famous ULTRA system of World War II. ULTRA was the designation for all intelligence derived from cryptanalysis of high-grade cryptosystems used by the Axis powers: Germany, Italy, and Japan.

In 1940 the secret processing site Bletchley Park (BP) began to issue high-grade decrypted intelligence—ULTRA reporting—to various British government ministries and departments. As the war developed, there was a pressing need to make this information available to overseas commands. This entailed a clear risk that the source might be exposed, so a measure of control over its use was necessary. A significant lesson had been learned during the Battle of France in May–June 1940, when attempts had been made to disseminate ULTRA traffic to general headquarters via the services' usual signals channels: this resulted in an unreliable feed and a waste of valuable intelligence. Soon after, leadership decided future campaigns would form small, highly trained special cipher units responsible to and in direct contact with BP.

The establishment of the British Special Liaison Unit (SLU) teams was entrusted to the Secret Intelligence Service (SIS) Controller of Special Communications, Brigadier Richard Gambier-Parry, who oversaw SIS Section VIII, which had quickly deployed mobile units to France to fill the void left by the inadequacies of the services' feed of ULTRA intelligence. Section VIII was a clandestine communications component of MI6, which provided secure communications for the Service as well as personnel training and equipment for the Special Communications Units (SCU) and Special Liaison Units (SLU) teams. Their organization would grow to such an extent that at the height of the battle for Europe, over forty separate units were formed to cover the campaigns in Europe, the Middle East, North Africa, and Asia.

ULTRA gave Great Britain and the United States access to a very wide range of enemy communications, often including the enemy's highest government and military levels. This exploitation of communications was conducted worldwide and

was sustained through a five-year time span. We now know ULTRA intelligence had an effect on almost every major battle, as well as many tactical combat actions. Almost as amazing as the intelligence was the fact that the system was kept secret from the enemy for the entire war (and decades beyond). Had the enemy found credible evidence of the ULTRA system's capabilities, it would have taken immediate steps to improve its communications security and end the Allies' significant intelligence insights.

But good intelligence is only effective when it gets to the decision-maker in a secure and timely fashion, the last stage in the intelligence process. This was the purpose of the Anglo-American deployed teams working in operational theaters commonly known as the SLUs (Special Liaison Units) to the British or the SSOs (Special Security Officers) to the Americans. They were responsible for the dissemination to operational commands of the tightly controlled and highly sensitive intelligence product. Their consistent success was a critical link in ULTRA dissemination. Without this distribution capability, ULTRA would not have been effective.

Most books about the Second World War that include information about ULTRA, or focus on ULTRA itself, concentrate either on how the material was produced or the decisions it affected during combat operations. The authors of this study join previous writers in great admiration for the intercept operators, cryptanalysts, and linguists who made ULTRA what it was. Our purpose is to give public recognition to those who ensured the vital ULTRA product got to those who needed it.

It was also critical to the success of the ULTRA system that distribution be made to the right officers worldwide, be made quickly, and be shared in a way that protected the secrecy of this vital tool—a delicate balance of availability and security.

SLU1 personnel at Whaddon Hall. IWM (HU 74817).

ULTRA was typically made available to staff at the level of army or equivalent air force formations with the exceptions of lower formations if they were operating independently and with strict handling controls. ULTRA was disseminated in a headquarters authorized to receive ULTRA—it was made available to officers holding the following posts:

- Commander and his Deputy
- Chief of Staff and his Deputy
- Senior Intelligence Staff Officer
- Senior Operations Staff Officer
- Senior Planning Officer (at army group or higher level)
- Senior Signals Officer (at army group or higher level)
- Senior Signals Intelligence Officer (at army group or higher level)

The US Navy in the prewar period developed invaluable information through signals intelligence (SIGINT) on the Japanese Navy, primarily from monitoring Japanese training maneuvers. Japan's navy used special, more vulnerable, ciphers in training, but mainline Japanese Navy operational cryptosystems remained unsolved until 1942, shortly after the United States entered the war.

At this same time, the US Army had a major success against a Japanese diplomatic cryptosystem, one that would continue to have a significant effect on Allied operations in World War II. The American army at that time used rainbow colors as codenames for various plans and projects. Legendary cryptologist William F. Friedman and his colleagues designated the Japanese diplomatic system Purple. To facilitate rapid solution of actual messages on Purple, an engineer working with the cryptanalysts invented a machine processor that greatly reduced analytic time; it was dubbed the "Purple analog." Allies did not solve Japanese Army mainline cryptosystems until 1942, due to limited access to Japanese Army communications.

Exploitation of a diplomatic cryptosystem held great importance for managing US-Japanese negotiations. The system became truly priceless, however, in late 1938, when Lieutenant General Ōshima Hiroshi was appointed Japan's ambassador to Berlin, and his diplomatic reports included copious details about the German military and its operations—from 1938 all the way to May 1945. The decrypts of Japanese diplomatic material were placed in a restricted distribution compartment and codenamed MAGIC. (Allegedly, Friedman, the US Army's senior cryptologist, liked to joke to his superiors that the army cryptanalysts were magicians.)

Perhaps the major problems of the 1930s in the US SIGINT systems were those of analysis and distribution. The number of decrypts was relatively small and the number of cleared government officials authorized to read them was also small (roughly just a dozen senior officials in Washington, DC). Distribution was by officer courier at that stage. SIGINT readers did not retain reference copies of SIGINT product. This meant prewar distribution for SIGINT was severely limited in scope. Because there was no distribution outside the capital area, no US officials stationed overseas, military or civilian—even those deployed in vulnerable areas like Hawaii, Panama, or the Philippines—were able to read it.

The distribution system also was for verbatim translation of decrypts. There was no analytic or background material to guide the officials who had access to them. Each senior official had to be his own intelligence analyst. Thus, the MAGIC decrypts provided insights into Japanese diplomatic policy and actions at a time of major tensions across the Pacific before 1941, but their effect was significantly dissipated because of the inefficient processing and distribution systems.

From our perspective today, it is clear that ULTRA had a significant role in Allied decision-making in all theaters of war, and often was vital to combat success in those theaters. But, for that to occur, commanders and decision-makers required access to the secret intelligence.

The following is how that happened.

Chapter 1

UK-US Cooperation: Initial Steps

In the buildup to the Second World War, President Franklin D. Roosevelt understood the United States would not be able to maintain its position of neutrality. However, he could not immediately join the conflict against the Axis powers for a number of reasons.

Foremost, the United States was unprepared for modern warfare. The country had one of the smallest standing armies in the industrial world and was ill-equipped for any sustained struggle against a modern land military power. The US Navy, primarily deployed in the Pacific, had inadequate forces for the job it would be expected to do in a two-ocean war.

The possibility of cooperating with Great Britain in cryptologic matters surfaced during a binational conference (one of a series) through which the Roosevelt administration sought to aid Britain in its war against Nazi Germany—short of joining the war. Involving as it did an activity of the utmost secrecy in both countries, this was an issue that could only be settled at the top, so the idea was presented to President Roosevelt and Prime Minister Winston Churchill. Both leaders authorized limited contacts that would enable them to evaluate the situation and consider concrete steps forward.

Thus, in February 1941, four American military cryptologists, two each from the army and navy, sailed on a British convoy across the Atlantic. After an encounter with a German bomber that made the war more real for the Americans, this group was welcomed at Bletchley Park (BP).

For the next few weeks, the British showed their American guests much about their efforts against German encrypted communications. The Americans toured intercept sites and visited workspaces at BP. In turn, the Americans described in detail the US effort against Japanese cryptosystems and presented their hosts with an invaluable gift: a copy of the American machine known as the Purple analog, which facilitated decryption of Japanese diplomatic communications.

As the visit went on, both sides recognized the professionalism of the other; the Americans were especially impressed with British cryptanalytic prowess. The British, who had at first feared the Americans would be unable to keep secrets, became convinced that increased cooperation across the Atlantic was possible and would benefit both sides.

The British, with colonial interests, were hopeful that American support against Japanese communications would bolster their efforts in areas of cryptologic endeavor for which they lacked personnel and experience.

Toward the end of the visit, officials at BP, with agreement from their superiors, recommended steps to share Britain's deepest cryptanalytic secret with the Americans—the use of the special-purpose device, the *bombe*, to facilitate solutions of German messages enciphered on the Enigma machine. This reveal was authorized by Churchill.

The four Americans returned home, again by British convoy, and recommended that deeper ties be established with the British. This would not only augment Britain's ability to stand up against the Axis but would further American interests in the long term.[1]

Over the succeeding months, senior intelligence officials from both countries held discussions on the extent of future cooperation in signals intelligence (SIGINT), and signed agreements containing specific commitments and mandating specific procedures for both nations. The British insisted, and the Americans agreed, on the strict British procedures for granting access to SIGINT and for the distribution of decrypts.

The basic working principle of the US-UK SIGINT agreement was a division of effort. Britain's Government Code & Cypher School (GC&CS) would take the lead on producing ULTRA reports about the German military; the United States would take the lead in production about Japan. Over the course of the war, both countries produced decrypts relating to all three of the major Axis powers, but the agreement recognized that at the outset of the war, the United States had the most experience against Japanese communications, and the same was true for the British vis-á-vis German communications.

The US Army and Navy, as traditionally separate services, negotiated and signed individual agreements with their British counterparts. As the relationship unfolded, this did not greatly hamper sharing in either direction, but it did require two separate staffs for effective management—an expensive organizational luxury in wartime.

The US Navy, which had nearly a decade's experience distributing SIGINT product around the Pacific, by and large maintained its own existing distribution system for SIGINT, with some modifications to meet British standards.

With the US entry into the war in December 1941, the US Army, which considered MAGIC decrypts as strategic intelligence and therefore distributed them only to a limited group of readers in the Washington, DC, area, now had to create a worldwide distribution system virtually from scratch. Quite naturally, they followed the British model in creating this system.

Next is the story of how that system was established and how it operated.

Notes

1. The American group's visit to Bletchley Park is detailed in David Sherman, *The First Americans* (Center for Cryptologic History, 2016). This publication is available online at www.nsa.gov.

Chapter 2

Establishing the Wartime System

United Kingdom: Early Experiences

The Government Code & Cypher School (GC&CS), the forerunner to Government Communications Headquarters (GCHQ), moved from London to Bletchley Park (BP) in August 1939 just prior to the beginning of the Second World War. The first break into the German Enigma cipher system was not achieved at the site until January 1940. These events marked the beginning of a significant evolution in the organization as the threat of a German invasion of Britain loomed.

The genesis of the Special Liaison Unit (SLU) teams could be traced back to a mobile GC&CS unit that was formed when the threat of a German invasion was at its highest in the summer of 1940. BP established a mobile BQ[1] unit that would act as a conduit for localized cryptanalysis and dissemination. A precedent was found during the short 1940 campaign in France to use the link into the French *Grand Quartier-Général* maintained by Secret Intelligence Service (SIS) Section VIII at Whaddon Hall and their mobile unit attached to general headquarters. It was an experience that marked the beginning of a new initiative to provide timely intelligence where it was needed most.

The story of the SLU teams began in April 1941 with Special Signals Unit No.1 (SSU1). This designation carried British Army and Royal Air Force (RAF) communications, security, and cipher specialists. It included Major J. K. MacFarlan as its officer commanding (OC) communications and a small cipher detachment of six personnel under Lieutenant Colonel Robert Gore-Browne. SSU1 left Whaddon Hall for the Middle East with its personnel, equipment, and transportation. Alongside the senior officers were four cipher non-commissioned officers (NCOs), four signals officers, twenty-eight signalers, and six drivers. They deployed with four wireless telegraphy fitted vans, one staff car, and two motorcycles.

The team was deployed to a base at Abbassia, Egypt, just outside Cairo. Two outstations were organized—one in Jerusalem under Flight Lieutenant Crawshaw to cover the campaign in Syria. The other was sent to Bagush (also in Egypt) in the Western Desert under Gore-Browne serving the Eighth Army and Army Headquarters (AHQ) Western Desert. The Jerusalem team's arrival coincided with the Syrian Armistice, and the team quickly returned to Egypt. The Western Desert team (first AHQ Western Desert then Desert Air Force) would quickly prove its value supporting the Eighth Army and its air counterpart. They would never be without an SLU, which would accompany the army through the African campaigns to Tunisia and then onward to the operations in Sicily and

Italy, ending the war in Udine in northern Italy in May 1945.

This first detachment would see it grow to some hundred times its original strength. By September 1940 Special Communications Units (SCUs), with their associated SLUs charged with local dissemination, were servicing ULTRA material from Hut 3[2] at BP to Cairo for all three services: to Alexandria for the commander-in-chief of the Mediterranean, to Malta for AHQ, to the Western Desert for the Eighth Army, and to Jerusalem for the Air Officer Commanding.

There were essentially two components to an SLU: the wireless service team from the SIS Section VIII and a separate cipher section manned by RAF personnel. Each SLU was run by an officer (normally a major from the Intelligence Corps) referred to as the Special Liaison Officer who had the oversight and responsibility for getting the ULTRA reports to only the senior officers who were cleared to see it. The SLU was fitted out to be mobile and move within an Army Corps operational theater.

Group Captain Frederick Winterbotham, Commanding Officer for the British SLU network. Photograph from Royal Air Force.

But, in reality, the SLU teams varied widely in size and scope. One might have had one or more 15-cwt (three-quarter ton) Guy wireless trucks and a cipher van, operating with an accompanying twelve jeeps and trailers, totaling anywhere between thirty-five and fifty men. The units were organized to be self-sufficient in terms of fuel, food, and equipment—and even their individual pay.

The team included a significant number of specialists due to their role and function—for example, cipher operators (who were versed in the use of Typex—seen also as Type X or TypeX—the most powerful British cipher device), German or Italian translators, and wireless engineers (often from the Royal Corps of Signals).

United States: G-2 Special Branch

The original mission of the Signal Security Agency (SSA), which was subordinate to the US Army Signal Corps, was to compile codes and ciphers for the army's use. In the mid- and late 1930s, SSA began producing SIGINT for distribution to a very limited number of readers, one of whom was the commanding officer of the army's Military Intelligence Service. (MIS is also designated G-2 on the general staff organization chart. Since the origins of the General Staff system, G-2 has been the designation both for the intelligence function and the senior intelligence officer in a command.) MIS needed SIGINT more than ever with the coming war, but, unsurprisingly, the Signal Corps also needed secure communications more than ever. Consequently, the Signal Corps did not allow the SSA to be resubordinated to the army's intelligence component.

The MIS, in turn, sought to establish a unit to liaise with the SSA concerning SIGINT requirements and distribution of SIGINT product. This was not merely a turf fight between army branches; it was a significant management issue affecting a critical and sensitive resource, one that transcended traditional lines of authority in the army. Moreover, with the United States in a cooperative relationship with Great Britain, this issue now had international repercussions; it could not help but attract high-level interest.

In January 1942 Secretary of War[3] Henry Stimson, probably acting on a recommendation by Assistant Secretary of War John McCloy, invited noted New York lawyer Alfred McCormack to establish this unit. After some months' work, McCormack decided he could do the job better if he were in uniform, so in June he was commissioned a colonel in the US Army. His first task was to put together a large staff of qualified personnel to perform the sensitive tasks associated with SIGINT analysis and distribution. This new organization was known as G-2 Special Branch.

Colonel McCormack recruited as many lawyers as he possibly could to staff Special Branch. He recognized that lawyers were educated in information analysis and that precision in writing was a must for good lawyers; members of the profession would be well qualified to prepare SIGINT product for distribution. In addition, the handling and distribution of SIGINT product was bound by a rather detailed set of rules and regulations, and the Special Security Officers (SSOs) were likely to encounter situations not covered in the written rules. McCormack believed lawyers would be best qualified to reason out these challenges.

Although he did recruit qualified people from many backgrounds, McCormack brought so many lawyers into Special Branch over time that the in-joke in military intelligence was that he had, at government expense, put together the best law office in town.

Alfred McCormack. The inscription reads "To Bill Friedman, to whom Military Intelligence owes a great debt." CCH Collection.

Joking aside, McCormack encountered many daunting hurdles. From a macro perspective, he was building his military staff at a time when the character of the War Department itself was changing and all army branches were competing for people. For civilian employees, he had to deal with the hidebound Civil Service system, which had no categories for jobs in intelligence. McCormack was recruiting talent in competition with virtually every other military and civilian government department, all of which were expanding just as rapidly to meet the needs of a global war.

McCormack could not describe the exact nature of the work or fully explain its critical importance to those who controlled the personnel resources he needed as much of the job description was top secret.

McCormack did eventually get some assistance from the top levels of the War Department by send-

ing a memorandum to McCloy complaining about Civil Service obstacles. McCloy intervened with the Civil Service commissioners who controlled the system. This eased the job description situation somewhat, but Civil Service hiring processes were still time consuming.

Because of the demanding hours and the large volume of work, McCormack sought personnel who were young and enthusiastic. Then, mid-war, the War Department issued an order prohibiting the assignment of any officers under twenty-eight years old in Washington, DC. This was followed shortly by another order requiring that all officers under twenty-eight in Washington be sent to the field.

Despite the obstacles, McCormack managed to assemble an organization with first-class talent. During the war they excelled at analysis and also worked comfortably with senior commanders in the field to get them the intelligence information they needed. Many of the personnel that McCormack recruited went on to successful, even stellar, careers in law, business, and government after the war. One became a Supreme Court justice.[4]

As Special Branch evolved, Colonel (later Brigadier General) Carter W. Clarke, an acerbic but effective manager who also served as a deputy chief of the Military Intelligence Service, became its chief with McCormack as his deputy. They made an effective team: Clarke wrestled with administrative matters and the military bureaucracy, and McCormack managed the analytic mission.[5]

It should be noted that Special Branch had to provide ULTRA intelligence not only for ground forces, but to the US Army Air Forces, as well.[6]

As the war progressed, many leaders from the army air forces felt that Special Branch concentrated on intelligence for ground warfare and did not devote enough attention to air operations. Thus, the air forces became less dependent on Special Branch and sought to develop its own sources of intelligence that were more attuned to its needs.[7]

Special Branch eventually came to include a large headquarters staff, which turned raw decrypts into finished intelligence product ready for senior decision-makers, and a wide-flung network of officers who distributed that product to high-level readers.

As the Americans began to design a distribution system for SIGINT, they recognized that British SLUs were conducting distribution of ULTRA product to American forces in the North African Theater. Therefore, they concentrated their first efforts on a distribution system for the Pacific. The program was in place when formal regulations were established in October 1943.

In early 1943, as American military forces were being deployed in large numbers around the Pacific, the US Army began a distribution system for SIGINT product. By and large, the American system followed British rules, although the officers who conducted the distribution were designated SSOs, rather than SLU Special Liaison Officers.

The American distribution system incorporated British rules and practices: first, dissemination of this sensitive product was controlled by a central organization, giving local commanders no say in the process. Second, ULTRA was disseminated only through its own special communications channels, separate from general US Army communications, so the number of personnel cognizant of the material was considerably limited. In addition, the number of officers authorized to read this sensitive intelligence was strictly limited and only as authorized by the central system management.

One major point was that the ULTRA material in the field would never be out of the SSO's control. No ULTRA product was made available to any individual, from the commanding general to the clerks who handled the product, without an indoctrination for them about the fragility of the source and the need for utmost security.[8]

At each command, the SSO had his own communications security device for receiving and send-

ing messages related to ULTRA. All messages were enciphered on the SIGABA, the American top-of-the-line cipher machine.

The SIGABA was the most secure US communications security device. Its encryption was based on rotating discs that had been wired internally to scramble the alphabet. The SIGABA was similar to many encryption devices of the day in using rotors; however, the SIGABA had fifteen rotors, more than any other existing cryptographic device, and the rotor movement was in an innovative pattern. There is no evidence that the SIGABA was ever broken or that any messages enciphered on it ever solved.

The machine had been developed just before the US entry into the war, with contributions from both the US Army and Navy cryptologic organizations. Thus, both services used it during the war, although they gave the device different nomenclature.[9]

Where necessary, special arrangements were made to courier top secret material that was not ULTRA. One example of material requiring pouch distribution was the weekly MAGIC Diplomatic Summary, produced by Special Branch from Japanese Foreign Ministry decrypts and a few other sources. Military commanders in combat situations generally did not need this information, although sometimes senior visitors to their theater did; when this occurred, the summaries were handled separately from ULTRA decrypts and usually distributed by pouch.[10]

To a considerable extent, the analytic work of Special Branch resembled, perhaps paralleled, that of analysts in Military Intelligence. However, Special Branch dealt only with ULTRA, material of a higher classification that could not be accessed by MI analysts. One summary report of Special Branch work called this situation "an overlay." The odd situation was necessitated by the need for extreme secrecy and tight control of the extremely fragile ULTRA source material.[11]

Intelligence analysis is not merely a scientific process; it involves less structured types of thinking, arguably including intuition. Some technical aspects of analysis may be taught, but much of the skill comes to an individual through experience. A summary report about Special Branch analytic work admits that in the early period of its operation, much of its analytic product was "scrappy."[12]

But training continued and the analysts picked up experience. Soon, analytic product from Special Branch achieved and maintained a superior quality through the end of the war.

Notes

1. BQ was a cover term and not an acronym.

2. Hut 3 was the part of the Bletchley Park site that concentrated on the analysis of decrypted German Army and Luftwaffe communications.

3. Both the War Department (the US Army) and the US Navy were separate cabinet-level departments through World War II. In 1947 the government reorganized the defense and intelligence establishments, and the individual services were subsumed to the new cabinet-level Department of Defense.

4. The travails of founding Special Branch staff in an inhospitable environment are best told by the man himself in *The War Experiences of Colonel Alfred McCormack*, SRH-185.

5. Clarke was chief of MIS Special Branch from May 1942 to June 1944. McCormack was deputy chief of Special Branch for the same period; he then became chief of the MIS Directorate of Intelligence. In that reorganization, Clarke became deputy chief of the MIS, as well as the special security officer for the War Department.

6. In the aftermath of the First World War, the US Army had a small number of aircraft and pilots, which were known as the Army Air Corps. In the Second World War, as American forces grew in numbers and conducted major combat operations, the Air arm also greatly expanded and was

re-designated the Army Air Forces. It remained subordinate to the US Army chain of command but conducted some operations, particularly long-range bombing, more or less independently. The US Air Force became a separate service, subordinate to the new Department of Defense, in 1947.

7. Major James D. Fellers, "Report of Visit to Mediterranean Theater (25 March–10 May, 1944)," *Trip Reports Concerning the Use of ULTRA in the Mediterranean Theater (1943–1944),* SRH-031, 11.

8. *History of the Operations of Special Security Officers Attached to Field Commands, 1943–1945*, SRH-033.

9. The US Navy called the device the ECM (Electric Coding Machine). The US Army called it the SIGABA, which had no significance; all army devices involved in communications had designations beginning with the letters SIG, followed by randomly assigned letters (that had to be pronounceable).

10. *History of the Operations,* SRH-033, 4.

11. *Use of CX/MSS ULTRA by the United States War Department (1943–1945)*, SRH-005, 5.

12. *Use of CX/MSS ULTRA*, SRH-005, 9.

Chapter 3

Establishing a Shared System

McCormack Visit to the UK

Colonel Alfred McCormack, accompanied by William Friedman, the US Army's chief cryptologist, and Lieutenant Colonel Telford Taylor, an officer in Special Branch, visited Britain in April 1943 on behalf of Special Branch; this was to be a familiarization tour of the various GC&CS sites.

Friedman had been involved in cryptology since before the First World War and had been the US Army's chief cryptologist since 1930. His insights into traditional ciphers and modern machine-generated systems had revolutionized the field. He could talk the same technical language the GC&CS experts did. Friedman had been destined for the joint US Army-Navy visit to Bletchley Park in February 1941, but ill health prevented his travel.

Taylor had an impressive legal background; as the war began, he was a litigation attorney for the Federal Communications Commission. After the Japanese attack on Pearl Harbor, he sought a commission in the US Navy but could not pass the eye test. An old college friend with whom he played tennis had recently transferred from the Office of Strategic Services to Special Branch and mentioned to Taylor that the work was quite interesting. Taylor arranged an interview with Colonel McCormack and was accepted for a position. Once again, he didn't pass the eye test, but this time he was given a waiver.[1]

Taylor had something of a reputation for supporting liberal causes, enough so that McCormack worried that Taylor would run afoul of the Special Branch chief, Clarke, who was a conservative's conservative. However, Taylor and Clarke got along quite well. As it happened, the two encountered each other in a Pentagon washroom on Christmas Day; Clarke asked Taylor whether he expected to stay in the Washington area or was open to an overseas assignment. Taylor expressed interest in going overseas. Thus, after an intensive period of tutelage in US SIGINT production, he found himself accompanying McCormack to London.[2]

McCormack, Friedman, and Taylor met with Major General Sir Stewart Menzies, head of the Secret Intelligence Service (SIS), to which the British SIGINT organization was subordinate, then visited GC&CS facilities at Berkeley Street in London, followed by several weeks at Bletchley Park (BP).

As the tour of GC&CS facilities progressed, McCormack soon perceived that the UK produced SIGINT on a much wider variety of topics than he had previously realized. He also knew that this material was not reaching US decision-makers—previous American visitors had not picked up on the extent of British coverage and didn't know what they didn't know. So, McCormack decided to ask for access to this broad range of intelligence. He also asked for

permission to station a Special Branch liaison officer in London to facilitate US access to all ULTRA products American leaders needed.

McCormack negotiated the idea of the position and the conditions of its operation with Alastair Denniston, commander of GC&CS, and Menzies, who was also director of GC&CS (retitled director general GC&CS in 1944).

The negotiations were successful. When McCormack returned to the United States in June, Taylor remained behind in London to serve as the new liaison officer for ULTRA. Taylor worked out of an office in the US embassy. Later that year, Taylor left the London liaison office to become commanding officer of the American operational party then assigned to BP. For the rest of the war, he served as the senior SIGINT officer in Europe for the US Army.

The liaison officer's primary mission was to see that the United States received a copy of all SIGINT items of value produced by GC&CS. Taylor and his staff read all decrypts produced by BP and forwarded those of immediate intelligence value by encrypted radio transmission to Washington on a daily basis. Additional material, important but not considered quite as time sensitive, was forwarded by embassy pouch.

The exchange went both ways. Since the American army produced more SIGINT about Japan, the liaison office also provided copies to the British of US decrypts of Japanese messages. In addition, the liaison officer brokered queries between Special Branch and its British counterpart.[3]

Training and Recruitment

American Efforts

Special Branch established the concept of Special Security Officers (SSOs), basing the system heavily on British practices. Formal training began in early 1944 for several groups of officers recruited for this duty.

The SSOs were not intended to be simply couriers passing on the material from the producers to the consumers but were required to interpret the material for their commanders. In addition to the need to recognize the importance of different items of SIGINT, SSOs were required to understand how the ULTRA information differed from intelligence derived from other sources and to explain this difference to the commanding officer and his senior intelligence staff.

Therefore, the SSOs in training received a month's study on traditional intelligence work and had lectures on the situation in each theater of war from returning officers who had served there.

The SSOs in training also spent at least a week in the US Army's production areas for SIGINT, its SIGINT headquarters at Arlington Hall Station, or the collection/processing base at Vint Hill Farms Station (the latter two sites in Virginia). Officers who served in the European Theater received similar training at BP. Many SSO personnel destined for other theaters of war were also diverted to Europe for study time at BP before deployment to the Pacific.

Major Lewis F. Powell, Jr., who had had extensive experience as a non-ULTRA intelligence officer in North Africa before Alfred McCormack selected him to be an SSO, visited BP as part of his training. He was still impressed with it decades later, as he recalled in an interview, "I did not understand the full scope of ULTRA information until I went to Bletchley. I just could not believe the volume of traffic that was being intercepted and deciphered."[4]

Powell continued, "… [T]he ULTRA officers who had never been to Bletchley had no idea of the full extent of the reading of the German codes. As I recall, there were fewer than 30 American officers, ground and Air Force, trained at Bletchley for the entire European and Mediterranean Theaters, and wherever you were, you are sent only messages that pertained to your responsibility."[5]

One of the more unusual facets of the training of Americans at BP was introducing them to the specific vocabulary used by British intelligence and British SIGINT producers. The US and British militaries differed not only in traditions and organization but had different vocabularies for many aspects of their operations, including intelligence. One example of the problems created by different British and American usage is a report from BP that stated a certain German fuel depot "disposed of" a specific amount of fuel. The report meant that the depot had that much fuel on hand, available for use, but Americans interpreted the phrase to mean that the depot "got rid of" that much fuel.[6]

> It was not only the Americans and British who were separated by a common language, as George Bernard Shaw put it; the same problem occurred within American military forces. The US Army and Navy cryptologic activities had grown up separately, and often used different vocabulary for cryptographic and cryptanalytic functions. Increased sharing between the two services in wartime began to regularize their terminology.

Although the briefing of ULTRA materials to senior officers was effective in many, probably most, cases, it was not universally so. A number of postwar reports by SSOs mentioned all-too-frequent briefings in which the ULTRA information was presented as a jumble of facts, without any attempt to draw together a coherent narrative of the information or any explanation of its implications.

After the war, as SSOs submitted summary reports of their experiences, most emphasized that more training would have been desirable, particularly in general intelligence and specific knowledge of US Army operations and use of intelligence. However, the wartime situation necessitated shorter periods of training for the SSOs—commanders needed this intelligence, the strict control of ULTRA was paramount, and officers had to make do with what could be taught in a relatively short period of time.[7]

British Efforts

Personnel for the British Special Liaison Unit (SLU) teams were recruited from all three branches of the armed services and would be entirely independent of local control so far as their work was concerned "although their members had to submit to the discipline of the particular Service to which each belonged, to a greater or less degree."[8]

A senior SLU officer initially interviewed new staff that were brought into the teams. The original interview was always a challenge as no details could be given of the work for which the candidate was applying—so it was often difficult to gauge whether a candidate was suitable for the role.

If this interview was satisfactory, the recruit's details would be passed to MI5 for special vetting. If there were no issues with the candidate, they were instructed to report for duty and thoroughly initiated by the senior SLU officer "who impressed on them the vital necessity of keeping their mouths shut."[9] Members of the units were not allowed to leave until staff became redundant toward the end of the war in Europe; they then were permitted to leave but were given a very severe security warning first.

Unlike the Americans who chose lawyers, the British chose schoolmasters, who "having been accustomed to authority and having trained minds, were not likely to have too great an awe for high rank and could be firm when they found it necessary, without failing in respect to an officer of higher rank." They also found bank clerks and accountants to be most suitable as they "were usually quick to pick up book cypher work and, usually having some knowledge of typing, took quickly to TypeX."[10]

The early entrants to the units were typically from the Intelligence branches of the services, but later in the war they were often drawn from those

in the Code & Cypher branches who were "usually delighted to get out of a very monotonous branch of service life, and, by comparison, found [the] work very interesting."[11]

Initially, only a few women were employed, but an establishment for the Women's Auxiliary Air Force was created in the Mediterranean for WAAFs replacing officers who were returning to Europe in preparation for Operation OVERLORD. They worked well but were only permitted in a few stations because authorities believed they brought problems: "[T]heir tendency to get engaged and their consequent requests for postings were somewhat disconcerting to a harassed OC [officer in command] already struggling with the problem of how to fulfil all his commitments without sufficient staff."[12]

Security for the SLU teams had two aspects, internal and external. The need for stringent internal security was more pressing abroad and in countries recently occupied by the enemy than in England. Station OCs were responsible for ensuring OC SLUs observed security and that familiarity did not breed contempt. The issue of personnel having foreign contacts was covered by the names of all foreign friends being recorded—they were then confidentially checked by Section V of MI5. One SLU officer working in Alexandria, Egypt, had become involved with and then engaged to an Italian national—he was subsequently moved to Malta and prevented from seeing his fiancée until after the war had ended (even then strict inquiries were made before he was allowed to marry her). External security was covered by the security regulations agreed to by the inter-Allied chiefs of staff. It was the duty of all SLU officers to know the content of these regulations and to advise recipients of ULTRA intelligence at commands on their interpretation. It was also the duty of SLU personnel to inform OC SLUs of any breaches that they may have heard of—but the SLU was not responsible for observance of the regulations by ULTRA recipients.

Training the Readers

A majority of American senior officers had little or no experience with intelligence in general, and most had little confidence in it. Certainly, no American general had had experience with ULTRA prior to rising to senior command, and many were slow to appreciate the value that ULTRA represented for military decisions. Even General Dwight D. Eisenhower, who became Supreme Allied Commander in Europe, used the Military Intelligence Service's designator (G-2) as a synonym for guessing in an article about officers' education in a US Army professional journal, published before the Second World War.[13]

Formal regulations for the handling of ULTRA were first issued to British military customers in April 1943 to protect this most valuable of sources. The main points were:

- No action could be taken on ULTRA information (unless this could have been obtained from another source or adequate cover manufactured [e.g., arranging a reconnaissance overflight over an area containing a target already exposed by ULTRA]).
- No ULTRA records could be kept at a lower formation than an army group.
- List of authorized recipients was available at each SLU, and ULTRA information could only be discussed with and by such persons.
- New readers could only be admitted if they held positions authorized by the regulations to admission or if special permission had been granted.
- All new readers had to be guaranteed by their commanders (they had to be briefed by the Senior SLU officer or an officer of the rank of brigadier [or equivalent] already in the picture—and they had to sign a declaration that they had read and understood the regulations).
- Readers who left such positions had to sign a

declaration that they realized that they were no longer entitled to see or discuss ULTRA or divulge its existence. They were debarred from taking on any position which might involve their capture by the enemy and were never to take part in operational flights.

- The use of the telephone was only permitted in the UK (and even then, a scrambler had to be used). Occasionally it became vital during operations in France for this rule to be relaxed, but a voice scrambler had to be used and conversation camouflaged to give no indication of the sensitive source.[14]

The senior officer responsible for the SLU had to ensure that these regulations were implemented by the command they were attached to and by the senior intelligence officer within that formation. At many locations the SLU teams had to employ cover stories for their work. The fact they kept 24-hour watches and some staff had been drawn from the Code & Cypher sections of the services gave the uninitiated the impression that the SLU staff were involved with cipher work. In many sites the Special Communications Unit (SCU) radio aerials were clearly visible.

It was necessary to maintain and constantly keep up to date an accurate list of ULTRA recipients in each operational theater and it was the responsibility of the senior officers in each of the SLU detachments to indoctrinate new recipients in "sufficiently impressive style."[15] Theater OCs (who were responsible for internal security) were directly accountable for overall British ULTRA security and for security contact with recipients. If a recipient from another theater or command visited a different command, it was necessary to advise the SLU stations concerned; otherwise, they were denied access to ULTRA.

General George Patton and the Third Army present a typical example. Patton had little regard for the source, and the ULTRA officers in his command generally languished—only briefing Command Intelligence Officer Colonel Oscar W. Koch—in the early days after the command was established (shortly after D-Day). In the field, Majors Melvin C. Helfers and Warrack Wallace, Patton's ULTRA officers, lived and worked in a tent 300 yards from the G-2 command intelligence officer. They had no telephone or electric lights, and had to hitchhike with the G-2 transportation staff whenever the command moved.

However, gradually, Patton recognized the worth of the ULTRA material he was getting. His awakening came when, among intelligence sources, ULTRA alone predicted a German ambush for Patton's tanks at Avranches, France. Patton was able to use the warning to turn a probable military disaster into a significant victory. Over time, additional insights that only ULTRA could provide prompted Patton to allocate more resources to his ULTRA officers and pay more attention to their briefings. Thereafter, Helfers's principal complaint was that Patton's pet dog Willie would lift his leg on the ULTRA map while Helfers was waiting to brief the general.

ULTRA representatives also maintained enemy order of battle maps, sometimes keeping supplementary maps as well. These maps frequently included the locations of Allied units, since ULTRA briefing sessions sometimes turned into impromptu planning conferences. At army group level, the representatives maintained maps showing where the Germans believed Allied units had been deployed, as determined from *their* intelligence communications (which Bletchley Park was exploiting thoroughly).[16]

Wallace also commented in a postwar summary that a command's treatment of the ULTRA SSOs depended greatly on first winning the confidence of the command's G-2. In the Third Army, Koch's support and his practice of having the SSOs do the briefings directly for the general was an important factor in gaining Patton's favor.[17]

A postwar wrap-up report on the SSO system succinctly remarked that "skeptical commanders

usually like [*sic*] Communications Intelligence after they have seen and heard a little of it."[18]

The US Army's SSO: The Model

The US Army used a straightforward model for distribution.

ULTRA decrypts, whether produced by the Signal Security Agency (SSA) in the United States or BP in the UK, were sent to the Military Intelligence Service's Special Branch in the Pentagon. There, analysts prepared composite reports from the decrypts that consolidated information or helped clarify decrypts that were useful but not entirely straightforward.

Special Branch then communicated the ULTRA reports, and sometimes decrypts themselves, to SSOs (sometimes known as ULTRA representatives to cleared officers) at the major military commands around the world. This information was encrypted on the SIGABA, the most powerful cipher machine in the US military, using a cipher key exclusive to each SSO in the field.

Generally, only a handful of officers in each major command were authorized access to ULTRA, so few that in most cases the ULTRA distribution officers knew them by sight. Nevertheless, officers cleared for ULTRA were issued identification cards certifying their privileged access; the card had to be returned if the officer were transferred to a position in which he was not authorized to see this sensitive material.

At a field headquarters, the SSO decrypted the reports received from Special Branch and tailored them for presentation. This might mean adapting the reports in light of the local situation and putting them into the general's preferred mode: some officers preferred verbal briefings, while some wanted written versions. Usually, the SSO presented an in-person briefing to the commanding officer and his senior staff at a morning meeting (or prepared the G-2 to do so). The SSO also usually prepared written reports that cleared officers could read during the day. In addition, the SSO prepared supplementary materials, including maps for briefings or reference that reflected the latest ULTRA information. For many commands, these materials showed cleared decision-makers the stark difference between what conventional intelligence sources versus what ULTRA said about the enemy.

In many commands, it also fell to the SSO to help the non-cleared G-2 staff personnel gain correct knowledge of the enemy situation—based on ULTRA, but without revealing the existence of ULTRA.

One recurring problem for the ULTRA representative was keeping his mission secret, even from fellow officers in the G-2 staff not cleared for the special source. This was not necessarily difficult in commands when the SSO could occupy a separate office or separate caravan; however, many commands did not have the luxury of separate office space or trucks for their ULTRA representative.

The ambiguous title and low amount of interaction with the formal G-2 staff gave the ULTRA representative an air of mystery and attracted curiosity from other headquarters staff. In many cases, un-indoctrinated personnel believed the SSO to be a liaison officer with intelligence agencies outside the theater, or a liaison officer between the senior commanders of the local theater with other theaters. However, in not a few cases, it was clear some G-2 staffers recognized that the SSO was privy to a source of intelligence they could not see; given wartime strictures, however, the reaction usually was reticence rather than snooping.

After a suitable period, older ULTRA reports were burned to ensure the security of the material, both from potential enemy intervention and from soldiers who did not understand the fragility of the source.

The normal practice was to send ULTRA materials to the SSOs four times a day. This was intended to facilitate better security and handling of the sensitive materials. Even though regular deliveries were scheduled, items of immediate importance were sent

any time of day, as soon as a decrypt was recognized as needed by the field commands.[19] It was said that the SSO was the only junior officer on duty 24/7.

The G-2 assigned ULTRA officers extra duties in the non-ULTRA sections of the staff. This was tough on the ULTRA officer, but in practice it turned out to be a good idea. Such work gave the ULTRA officer a more comprehensive understanding of the overall situation the commander faced and enabled him to better tailor the ULTRA information to support the commander's decisions. Of course, in some commands, where the G-2 did not have a good relationship with the commanding general, or where the intelligence section was not well managed, giving the ULTRA officer these extra duties sometimes was merely a way to sidetrack him.

WAAF operators using Typex Mark II cipher machines in the Codes and Cyphers room at Rear Headquarters, Mediterranean Allied Air Forces in Algiers. IWM (CNA 4164).

The British SLUs were deployed to American commands because Americans had no trained personnel early in the war. Some continued throughout to maintain continuity. In the initial deployment of SLUs to American commands, the practice was to have a single SLU accredited to both a ground unit and the US Army Air Forces headquarters associated with that command. This soon proved impractical, due to the usual physical separation of the ground and air headquarters, which complicated the receipt and distribution of the intelligence information from BP to the ULTRA representative. Upon analysis, the model greatly slowed distribution of ULTRA product to the decision-makers due to the travel time necessary between the units.[20] As more trained SLUs became available, almost all headquarters with officers cleared for ULTRA got their own ULTRA representative.

In the North Africa campaign, British SLUs assigned to American units used one-time pads to encrypt their communications, despite the fact that machine-encrypted communications was considerably faster for both encryption and decryption. Fluid battle lines in North Africa increased the possibility that Typex machines, if deployed, would be captured by the enemy.

During the European campaign, there was less danger of an army headquarters being overtaken by the enemy, so British SLUs and American SSOs attached to various US headquarters in the field used their countries' top-of-the-line cipher machines, not one-time pads.[21]

A postwar summary about the experiences of ULTRA representatives noted that in most cases they worked long hours every day of the week. Further, the representative "was practically the only man on the staff who had no one to relieve him."[22]

This was the classic model for SSO activities. However, as an old American country song put it, between the classic model and the realities of work in the field, there were "forty miles of bad road."

The US Navy and ULTRA Distribution

US Navy distribution of ULTRA, in the words of a postwar summary report, "lasted throughout the war with surprisingly little change." ULTRA reports were delivered directly to the commander-in-chief of the Pacific Fleet at Pearl Harbor on a daily basis. When of special interest, this information was sent in a pre-delivery report by secure telephone to the fleet intelligence officer. For operational units, the fleet intelligence officer sent a daily ULTRA summary via a special communications channel to cleared intelligence officers at high command levels. When US Navy Intelligence began active cooperation with the US Army and Marines, this title was changed to combat intelligence officer, Commander in Chief, Pacific Command-Commander in Chief, Pacific Ocean Area (CINCPAC-CINCPOA).

The navy had a special distribution system for the American submarine fleet. The combat intelligence officer, recognizing that information important for submarine operations was often perishable, gave the ULTRA production organization the authority to release ULTRA information directly to the commander of the submarine force. While the production organization delivered written reports regularly, in the case of exceptionally urgent information an officer from the production center would drive to the submarine command and deliver the information in-person to the submarine force chief of staff.

Generally, there was little problem with security aboard a ship or in a task force. Further distribution of the actual intelligence was unnecessary, since it would be used by only a few individuals and ULTRA could be camouflaged by incorporation into the task force commander's orders for subordinate ships.

However, there was a problem with secrecy in naval commands ashore. The author of a postwar wrap-up report cited the operation to shoot down Admiral Yamamoto Isoroku's flight in 1943 as a good example. ULTRA information contained details of the Japanese admiral's itinerary for inspection of the front lines. This was transmitted securely to Guadalcanal, where the operation to attack the admiral's airplane was to be launched. However, there were no procedures for handling ULTRA information within the navy staff on Guadalcanal itself, and it became common knowledge to the American forces on the island that the operation was based on radio intercept. The navy needed more careful control of ULTRA dissemination and commented that the army's Special Branch system was "a model for the Navy to follow."[23]

Notes

1. Telford Taylor, interview by Robert D. Farley, NSA-OH-01-85 (January 22, 1985), 4–20.
2. Taylor, interview, 30–39.
3. "Memorandum Describing American Liaison [12 October 1945]," *MIS, War Department Liaison Activities in the U.K. (1943–1945)*, SRH-153, 8–10.
4. "Lewis F. Powell, Jr.: An ULTRA Memoir," in *ULTRA and the Army Air Forces in World War II*, ed. Diane T. Putney (Office of Air Force History, 1987), 19.
5. "Powell: An ULTRA Memoir," 54.

6. *Synthesis of Experiences in the Use of ULTRA by U.S. Army Field Commands in the European Theater of Operations*, SRH-006, 21.

7. *Problems of the SSO System in World War II*, SRH-107, 6–8.

8. *The History of the Special Liaison Units,* HW49/1, 1940 Jan 01–1945 Dec 31, The National Archives, Kew, Great Britain.

9. *The History of the Special Liaison Units*, HW49/1.

10. *The History of the Special Liaison Units*, HW49/1.

11. *The History of the Special Liaison Units*, HW49/1.

12. *The History of the Special Liaison Units*, HW49/1.

13. A Young Graduate, "On the Command and General Staff School," in *Eisenhower: The Pre-war Diaries and Selected Papers, 1905–1941*, ed. Daniel D. Holt (The Johns Hopkins University Press, 1998), 43–58. Holt points out that a draft of the article is in the Eisenhower Library; there is no doubt Dwight Eisenhower was the "Young Graduate."

14. *The History of the Special Liaison Units*, HW49/1.

15. *The History of the Special Liaison Units*, HW49/1.

16. *Synthesis of Experiences*, SRH-006, 15.

17. Warrack Wallace, USA, *Report on Assignment with Third United States Army, 15 August [to] 18 September 1944*, SRH-108, 2–3.

18. *Problems of the SSO System in World War II*, SRH-107, 17.

19. *Synthesis of Experiences*, SRH-006, 13–14.

20. *Synthesis of Experiences*, SRH-006, 8.

21. *Synthesis of Experiences*, SRH-006, 9.

22. *Synthesis of Experiences*, SRH-006, 15.

23. *Narrative [of the] Combat Intelligence Center, Joint Intelligence Center, Pacific Ocean Areas,* SRH-020.

Chapter 4

Supporting the War Effort (Ground and Air)

US Army Chief of Staff General George C. Marshall, the senior officer in the US Army, received daily intelligence briefings prepared by the Pentagon's G-2, with significant ULTRA input from Special Branch. Marshall and his senior staff got the briefings every weekday at 0900 and on Sundays at 1030. (Marshall was well-known within the army for his weekly horseback rides on Sunday mornings.)[1] On the several occasions when Special Branch issued specific rules for handling ULTRA in the various theaters of war, Marshall signed a cover letter endorsing the regulations and ensured that the theater commander understood that it was his personal responsibility to ensure the rules were followed.

It is unclear what influence ULTRA had on the chief of staff's decisions since neither Marshall nor his staff left memoirs about this time. However, there are known occasions when Marshall encouraged President Franklin Roosevelt to read ULTRA reports. In addition, when Marshall accompanied Roosevelt to the summit meeting at Yalta in February 1945, Marshall was accompanied by an officer from the Special Branch's German Military Reports Office to provide him with any ULTRA product he would need at the conference.[2] Marshall also had SIGINT support during his mission to China after the war. The senior general obviously knew the value of ULTRA.

The Mediterranean

Eisenhower was the first senior American officer to receive ULTRA intelligence. When British and American leaders agreed to form a joint force to fight the Axis, Eisenhower was appointed the first commander for a joint Anglo-American command. He traveled to Britain to take up his post, which required considerable organization before the Allied force could take the field. The trip also included a period to get acquainted with Prime Minister Winston Churchill. Apparently, during a weekend at Chequers, the prime minister's country retreat, Churchill briefed Eisenhower on the ULTRA secret.[3]

As commander of the first Anglo-American combat force for Operation TORCH, the invasion of German-occupied North Africa, Eisenhower initially received ULTRA at Norfolk House in London, his initial headquarters; as the operation began, he was in Gibraltar and received ULTRA material directly from Bletchley Park (BP). This operation was one of the first tests of British-American interoperability.

Generally, there was a harmonious work atmosphere between the British and Americans within the SLU. However, this was the early days of US-UK military cooperation, and there was some friction

Digraph	DB	PK	TZ	UG	FI
Location	Gibraltar	Algiers (HQ_SLU)	Constantine	Ain Beida	Laverdure
Serving	Navy	Navy Coastal Air Force AFHQ_	NAAF (Strategic and Tactical)	18th Army Group*	Originally served from UG, then via PK from April in direct contact with BP

*The 18th Army Group was an amalgamation of the First and Eighth Armies in North Africa. It was formed February 20, 1943, when the British Eighth Army advancing from the east and the British First Army advancing into Tunisia from the west came close enough to require coordinated command during the Tunisia Campaign. Within Tunisia, the First and Eighth Armies moved to Le Kef in March and then to Haidra in April.

between the senior operational officers of British and American combat units. Thus, American visitors on inspection tours of North Africa and the Mediterranean Theater usually recommended increased US participation in the ULTRA work to minimize inter-Allied problems both in intelligence and decision making.

Inspectors also found that the SLUs, though welcomed by both British and American commanders, often had not been fully integrated into the command itself. There were instances, for example, when the headquarters would relocate but fail to notify the SLU in advance, which meant the SLU was left behind and had to make special arrangements for movement to the new headquarters.

Early in November 1942, an SLU team, under the command of Major Smith-Wright, arrived in Gibraltar and was located on the grounds of the governor's palace. They directly fed ULTRA to Eisenhower who had his headquarters in the Gibraltar tunnels. Separate units were sent to the TORCH Theater under the command of Wing Commander Long. One party landed at Oran, Algeria, on D-Day +1 (November 9, 1942), another at Algiers, Algeria, and one at Casablanca, Morocco.

For distribution there was a system of address groups (digraphs and trigraphs) often used together with serial numbers. These letter address groups (e.g., IND for SLU Delhi) helped reduce the encipherment of a message. These stations used the following digraphs, which seem to have been randomly generated: DB (Gibraltar), PK (Algiers), TZ (Constantine), FI (First Army), and UG (Algeria). In the early days of TORCH, all ULTRA traffic for the theater was directed through to Gibraltar first and vetted by Brigadier Eric Mockler-Ferryman and Wing Commander Humphries who assessed what was transmitted forward to Algiers. If the traffic needed forwarding to a further outstation, the messages would be enciphered again at Algiers. On November 25, the SLU HQ was moved to Algiers and a small station remained in Gibraltar. By the middle of March 1943, the setup in North Africa was as shown in the table above.

In the North African Theater, and later in the Mediterranean Theater, much of the ULTRA distribution and interpretation was done by British officers, even when the commanding officer was American. The general pattern was a SLU with a majority of British personnel supplemented by one or two US Army officers. Some commands of the US Army Air Forces had a higher proportion of US Special Security Officers (SSOs), particularly later in the war.

Operation HUSKY was the next major test for the Allied ULTRA teams. The invasion of Sicily began on July 11, 1943. Two days after the initial wave, one SLU station landed with General Montgomery on the island's southern tip and quickly

moved up to Syracuse, where two days later a second SLU team arrived. As US Army and Army Air Forces headquarters were collocated, the two SLU teams were combined and followed the advance to Lentini, just south of Catania where stiff enemy resistance was encountered and the units became static.

A third SLU landed with Patton's Seventh Army on the northwest coast and advanced quickly along the northern coast, ending up in Palermo. Patton's rapid advance in the north caused the enemy to withdraw from its Catania area stronghold, pursued by Montgomery's Eighth Army and its SLU.

The armies ended up in Messina and by September began the assault on the Italian mainland. The assigned SLU made sixteen moves in just thirty days, shifting locations quickly up the western coast of Italy, reaching Bari where it remained for ten days. A joint US Army and Army Air Forces HQ was established at Lucera, where the two SLUs combined.

While the US Eighth Army advanced north, preparations for the Salerno landings were made in the west. On September 7, General Alexander and the commander-in-chief of the Mediterranean arrived at Bizerte, Tunisia, while Eisenhower and Air Marshall Coningham went to La Marsa, also in Tunisia. The SLU teams provided an ULTRA service to these senior officers for nearly a fortnight.

When General Mark Clark landed in command of the US Fifth Army he was oblivious to the value ULTRA intelligence could provide as he had not been well briefed on its value. Once the SLU began providing him with the intelligence feed, Clark changed his mind. The SLU station followed the Allied advance and set itself up at the Palace of Caserta (near Naples, in southern Italy) within the headquarters until the end of 1943.

US inspectors also found that the ULTRA system needed improvement in its air intelligence. Producers—principally at BP—were ready to exploit enemy sources and provide data, but US operational units in the field often did not know how to notify them when targeting changed.[4] For example, in early 1944, the US Army Air Forces altered bombing priorities in Italy, concentrating on railroad bridges instead of railroad yards. At first the US SSO did not share this change in targets with BP, as he did not understand why they might be interested. BP eventually learned about the new target, but this lack of communication delayed BP in providing specific, relevant SIGINT to the command.[5]

Both problems were addressed over time and the situation improved, although neither was entirely solved by the end of the war.

Western Europe

Eisenhower, the most senior Allied officer at SHAEF (Supreme Headquarters Allied Expeditionary Forces), first in North Africa, then in Western Europe, did not deal directly with an SLU or SSO. This task was delegated to the SHAEF Assistant Chief of Staff (G-2) Major General Kenneth Strong, a highly experienced British officer, who prepared an intelligence briefing every morning. Eisenhower insisted that Strong give him all-source intelligence briefings, in which ULTRA was meshed with information from other sources to provide him with a single and comprehensive appreciation of the war situation.[6]

Eisenhower's G-2 for the European Theater of Operations was Colonel Ralph Hauenstein, a former journalist. While Strong was the G-2 for SHAEF (all Allied forces fighting in Western Europe) Hauenstein was G-2 for the US Army component in the theater. Hauenstein was "astounded" by ULTRA, and in later reminiscences he recalled it was "timely, accurate, and relative to the current situation."[7]

The ULTRA officer at Eisenhower's headquarters distributed product to the various subordinate staff officers cleared for it. One important aspect of this job was keeping BP apprised of the changing requirements for information by this headquarters

command. In addition to ULTRA reports, the SSO at SHAEF distributed the MAGIC Diplomatic Summary to officers who needed it, particularly Robert Murphy, a State Department senior assigned as Eisenhower's political advisor.[8]

Photo of Helfers briefing Patton. Citadel Archives.

In early 1944, as US rules for ULTRA in the European campaign were promulgated, Marshall sent a letter to Eisenhower, Supreme Commander of the Allied Expeditionary Force that was preparing to land in Nazi-occupied France. He reminded Eisenhower of the importance of ULTRA material and enclosed a summary of the regulations that the War Department had codified since the US agreement with Britain. Most regulations likely were already well-known to Eisenhower and his senior staff, but Marshall had several points in his summary that emphasized the importance of strict security and handling of ULTRA. "It is vital," he said, "that the security regulations be meticulously observed, and that all personnel entitled to handle or receive ULTRA intelligence take all possible precautions in connection with its handling and use."[9]

Twenty-eight officers served as ULTRA representatives in the European Theater: Two of them were regular army, but the rest were reserve officers. Each had been carefully selected by Special Branch on the basis of personal interviews and background investigations. In accordance with the personal bias of McCormack in Special Branch, a majority of these ULTRA representatives were lawyers, although there were also former teachers, reporters, and "an engineer and a corporate executive."[10]

The ULTRA experience at Patton's Third Army probably was typical for American commanders in Europe. Helfers and Wallace worked closely with the command's intelligence officer Koch. The two ULTRA officers would collate all incoming ULTRA messages—sent in an encryption system only they had access to—and plot out locations on maps to prepare regular briefings for the commanding general.

Helfers and Wallace alternated days briefing the ULTRA material to the seven officers in the Third Army who were cleared for it. Each morning, Patton would convene a general staff meeting open to the senior operational and intelligence officers, who would present briefings on their areas of responsibility. At the conclusion of the general staff meeting, all officers were dismissed, except for those who needed to remain for a special briefing.

At that point, the ULTRA officer would brief Patton and his inner staff on the enemy situation as revealed by ULTRA decrypts, often with important

location data not known from conventional intelligence sources. This direct access to the commanding officer also let ULTRA officers provide ULTRA material of special importance or urgency.[11]

As planning progressed at pace for the Normandy landings (Operation OVERLORD) in 1944, the Whaddon Hall teams in England began fitting out seven to eight smaller Guy 15-cwt standard army trucks with the requisite wireless equipment. They were to be deployed with each Allied Army Group or assigned to army level after D-Day. They were also responsible for teams in the US sector, fitting out the standard US Dodge ambulances, using the same equipment. The trucks typically had a dedicated driver and two or three operators. The Royal Air Force (RAF) Cypher staff worked in a separate truck that, when combined with a staffed fitted truck, was designated as a complete SLU.

A significant SLU team structure was needed for the invasion of Europe. In December 1943 Lieutenant Colonel Robert Gore-Browne, with his extensive SLU experience in the Middle East and North Africa, was recalled back to Britain to build SLU8 that was to be established for OVERLORD. He had his pick of personnel and was given an office in Hamilton Terrace in London to start planning. Documentation for the unit was drafted at Allied Expeditionary Air Force (AEAF) at Stanmore, and staff were recruited and trained for the Normandy campaign—beginning with instructions in the use of Typex.

The table below shows units that were opened in 1944.

ULTRA traffic was originally passed to all seven stations listed below by teleprinter direct from Hut 3. But when Special Communications Unit (SCU) teams joined EF, TA, and FU in April 1944, test traffic (known as Chocolate) was sent by wireless telegraphy to train the new signalers. Live traffic continued to be sent via teleprinter.

When the OVERLORD planning was complete, NH closed down and SHAEF was moved to Bushey Park, with the NH team relocating to Portsmouth to serve the Allied Naval Combined Expeditionary Force (ANCXF), the organization that was responsible for the coordination of the whole invasion force.

In May three further mobile stations were formed. One was at Portsmouth serving the Second British Army and 83 Group. The second was at Leatherhead serving the First Canadian Army and 84 Group, and the third was at Knutsford serving the Third US Army.

Digraph	NH	ST	AG	EF	TA	FU	DL
Location	Norfolk House	Bushey Park	St Pauls School, London	Stanmore	Uxbridge	Bryanston Square, London	Wycombe Abbey
Serving	SHAEF planning (Chief of Staff of Supreme Allied Commander)	USSTAF[12]	(mobile) 21st Army Group	AEAF	TAF[13]	1st US Army Group (FUSAG)	8th US Air Force

On D-Day, June 6, 1944, these stations listed in the table were open.

Station	Location	Serving
ST/SH	Bushey Park	USSTAF and SHAEF
EF/AD	Stanmore	AEAF and Air Defences Great Britain
TA	Uxbridge	TAF
FU	Bryanston Square	1st US Army Group
DL	Wycombe Abbey	8th US Army Group
MI	Wycombe Abbey	Bomber Command
XF/SHA	Portsmouth	ANCXF and SHAEF Advanced
AG	Portsmouth	21st Army Group
ON	Portsmouth	Second British Army and 83 Group
CR	Leatherhead	First Canadian Army and 84 Group
ZE	Knutsford	Third US Army
YK	Bristol	First US Army

Within six weeks of D-Day, the following stations had crossed into France with their customers: ON, YK, CR, TA, AG, FU, and ZE.

The Second British Army and its Air component, 83 Group RAF, crossed into France on D-Day with a subsection from the ON station (in Banville), as well as a Ford utility truck and the SCU wireless telegraphy van. This contingency was reinforced on June 11 by the remainder of the team and included a 30-cwt van and an SCU 3-tonner. For the first month of the campaign this station served the advance party of Montgomery, in command of this army group. General Dempsey personally selected relevant ULTRA messages, which were delivered by SLU officers at the general's HQ.

While the US First and Third Armies pushed eastward from the Normandy beaches in August, the US Seventh Army conducted an amphibious landing (Operation ANVIL, renamed DRAGOON just before it was launched) on the southern coast of France and began moving inland. General Alexander Patch had been receiving ULTRA from an SLU in the Seventh Army staging area in Naples, Italy, prior to the landing in France, and continued to receive ULTRA through the end of the war. A special SLU station had been created at Ajaccio between August 12–19 to handle ULTRA traffic for the British prime minister and General Terence Airey who were on the island of Corsica to witness the invasion. The invasion took place on August 15 and the SLU team landed the following day at Saint-Tropez. The Allied forces moved quickly north, as resistance was weak. 6th Army Group relocated to southern France, moving from Corsica with a large Special Liaison Unit Typex station and two SCU teams, opening at Saint-Tropez on September 10, 1944.

The importance of ULTRA was apparent to Patch and his senior officers, and they arranged for the SLU to get an office in the command post adjacent to the G-2 intelligence officers. The command G-2 soon recognized that the volume of ULTRA made it impossible for him to brief the commander himself on this material, so he gave responsibility for the regular ULTRA briefings to the SLU. There were several formal briefings every day in the Seventh Army, first thing in the morning, then at midday and evening. The SLUs would quickly notify the G-2 about any SIGINT of importance whenever it arrived during the day, and he would decide whether to take them to the commander.[14]

Not all SSOs had positive experiences, such as had occurred at the US Third Army. In a postwar summary of his experiences, the US First Army SSO reported that intelligence in general and ULTRA intelligence in particular had not been well handled at the senior levels. He complained that "many of my difficulties were caused by the personality of the G-2… and his relatively unimportant voice in the Army's cabinet."[15]

SCU8 ZETA team attached to US Third Army near Black Forest, May 17, 1945, including RAF and Royal Corps of Signals (RSigs) members. Left to right, back row: Flight Lieutenant J. G. McCombie (RAF), Sergeant Povey (RSigs), Lieutenant L. Hull (US) or Flying Officer D. E. Tyrer (RAF). Front row: Signalman W. Neal, Corporal R. Chatfield (RAF), Lance Corporal C. Britton (RSigs), Captain C. Hutchinson (RSigs), Lance Corporal A. Parsons (RSigs), Flight Sergeant I. White (RAF), Driver J. Croucher (RSigs), Driver B. Bayley (RSigs). Courtesy of Dr. David Abrutat.

Initially, according to this report, the First Army command G-2 presented ULTRA material to the commanding general himself and without much analysis. Subordinates on the G-2 staff at first resented the ULTRA officer's presence, as the G-2 did not explain who he was or what his special duties entailed, although over time they came to accept his special role. The ULTRA officer was given no separate spaces for his work, even though much of the staff was not cleared for the sensitive material. Gradually, as the war continued, the G-2 accepted that he should do analysis of the ULTRA material and allowed the ULTRA officer to do some briefings for the commanding general.

The ULTRA officer reported in his postwar retrospective that this disregard of ULTRA procedures led to insecurities with the ULTRA material. Since the G-2 did not explain the situation to his staff adequately, this had led to high curiosity about his role among the other intelligence officers, and somehow the ULTRA secret got out among them. There turned out to be no long-term consequences, but that could not have been anticipated.[16]

Despite these complaints about problems at the 1st Army Group, another report on ULTRA at the First US Army—by the same author—listed many occasions during the European campaign from Normandy to the Rhineland in which ULTRA provided key information about the Germans and factored in the commanding general's decisions. It is unclear today whether the later complaints about the 1st Army Group use of ULTRA were venting and exaggerating

SCU8 ZETA vehicles attached to the US Third Army near the Black Forest en route Regensburg to Paris, May 17, 1945. (The team spent the night sleeping alongside.) Courtesy of Dr. David Abrutat.

personal grievances, or whether ULTRA fulfilled its important role despite organizational adversity.[17]

The first commander of the US First Army was Lieutenant General Omar Bradley, who led the unit through its initial training in Britain, the cross-channel invasion of France, and the initial breakout from the Normandy beaches. However, in July 1944, Bradley was promoted to command the 12th Army Group, and Lieutenant General Courtney Hodges replaced him as the First Army commander.

It seems unlikely the G-2 and ULTRA problems occurred while Bradley was in command. A detailed postwar report by the ULTRA officer on the use of ULTRA at 12th Army Group after Bradley's promotion describes a well-organized and harmonious operation, as well as active use of ULTRA by Bradley and his senior staff. They received an ULTRA briefing early each day, with updates as needed, and the ULTRA officer delivered a second ULTRA briefing daily to the cleared junior officers on the intelligence and operations staffs.[18]

The US Army Air Forces in Europe

Lieutenant Colonel Edward Thompson, assigned as the ULTRA representative for SHAEF Air Intelligence in August 1943, found the Air Intelligence staff at this senior Allied headquarters to be entirely British personnel. After his training with Special Branch and some time at BP, Thompson was assigned to the 1st US Army Group, then to SHAEF. At headquarters, he spent time with the chief of the Air Intelligence sub-division at SHAEF G-2, Group Captain R. Harry Humphreys. At first, Thompson's only staff was a Women's Army Air Forces corporal, whom he described as efficient, but who had had her first ULTRA briefing only the day before they began working.

The ULTRA representative prepared a daily digest of ULTRA air intelligence messages, which was used primarily by G-2 personnel. Thompson was proud that publication of this digest continued every day until the end of the war, with no gaps even when the headquarters moved or there were other problems. In fact, the digest soon became daily reading material for the Deputy Supreme Commander (Air Vice Marshal Arthur Tedder) and senior officers on the air staff.

Thompson's chief complaint was that members of the air intelligence staff showed little interest in ULTRA overall.[19]

The US Eighth Air Force was one of the principal commands for strategic bombing by the US Army Air Forces in Europe. It had been constituted as the VII Bomber Command and transferred its operations to Great Britain in February 1942; its headquarters were at RAF Daws Hill, near the RAF Bomber Command at Wycombe.

As the US Eighth Air Force set up operations, a small number of its officers were indoctrinated for ULTRA information, and first received ULTRA reports directly from the British Air Ministry, then through the US Strategic Air Forces liaison unit at the ministry. The senior American official in the liaison unit briefed the commanding officer, Lieutenant General Ira Eaker. In December 1943, when the US Strategic Air Forces was established and General Eaker moved up, the legendary General James H. "Jimmy" Doolittle was his eventual replacement at the US Eighth Air Force. Doolittle requested that his command be given a regular SLU, and this was done.

The organization and operation of the SLU generally went according to regulations and recommended practices. At any one time, there were 25 or 30 ULTRA officers assigned to the command. They received ULTRA information according to procedures and gave regular morning and afternoon briefings to the command's senior officers, as well as updates when needed. They produced several summary reports on a weekly basis. It was estimated that they would receive as many as 75 ULTRA reports each day, out of which they prepared their briefings.

The ULTRA officers were known to unindoctrinated personnel as the General Liaison and Special Reports Section of the intelligence staff.

Given its location, the US Eighth Air Force ULTRA officer was able to visit BP an average of once a week. He also was able to frequently consult with the Supreme Commander's staff (SHAEF), where he could get data from tactical intercept.

Unfortunately, the efforts of the ULTRA staff were hampered by inadequate working quarters. The SLU was in the basement of an operations building at High Wycombe, a location not at all convenient to the senior officers they would be briefing. In addition, the walls of the room were thin, prompting the staff to have to constantly remind visitors to keep their voices low when discussing ULTRA.

The ULTRA material generally centered on the principal strategic targets for the unit. One of its main missions was destruction of the German oil industry, so ULTRA reports concentrated on target knowledge and after-operations damage reports. The Eighth Air Force also made good use of ULTRA that listed the deployment of German air defense fighter aircraft, which helped them determine the number of fighters needed to accompany each bombing raid.

The ULTRA staff at US Eighth Air Force kept several reference files. They had a "hot message" file of the most important ULTRA reports of the previous ten days. In addition, the staff kept a card file on every German Air Force unit and coordinated this file with a large wall map of Germany. The cards were updated each time ULTRA revealed a new location for a unit. Another large chart, updated with wax pencils, allowed an officer to see at a glance each German Air Force unit's subordination, location, and strength.

The senior American ULTRA representative at US Eighth Air Force was Major Ansel E. M. Talbert, an aviation journalist in his prewar career. In addition to being a skilled writer, he had interviewed many of America's pioneer aviators—several of whom were now the officers to whom he was giving ULTRA briefings.[20]

The principal ULTRA briefing officer for the USSTAF Commander, Major General Carl Spaatz, was Lieutenant Colonel Julian Allen. He had served as an ambulance driver in the American Field Service in the First World War and then had been the senior official of Morgan Bank in Europe in the interwar period. Allen worked in a trailer outside Spaatz's home and headquarters and was available to brief the general at any time. Allen shared the ULTRA briefing duties for the general with Major Lewis F. Powell, Jr., although Spaatz often sat in on the intelligence briefings at Eisenhower's headquarters.

Powell also served as chief of operational intelligence for the command, which involved supervising a staff and briefing non-ULTRA intelligence, but he considered his ULTRA duties his principal job.

ULTRA material sent to USSTAF were generally summary reports or, occasionally, decrypts with commentary added at BP. The ULTRA officers at headquarters did not have the ability to maintain a reference card file to help them make sense of raw information in decrypts, so they very much appreciated the interpretation by BP's experts.[21]

The Pacific

In the summer of 1943, Special Branch developed concepts to institute field dissemination of ULTRA in the Pacific. It was at this time that the personnel who would distribute ULTRA were redesignated as Special Security Officers (SSOs). Each officer would be attached to a theater commander for administration and discipline, but would remain under the operational control of the US Army assistant chief of staff for intelligence. Of course, the SSO would follow the Special Branch rules for distribution of ULTRA, not the wishes of the local commander.[22]

With the concepts and regulations in place, the army recruited officers to become SSOs in Asia and the Pacific and began a training program in early July 1944. The program started with several weeks of general intelligence training and included up to a month working on actual ULTRA material in the various areas of Special Branch.

As the war across the Pacific expanded, the need for SSOs grew, and many had to be sent to operational areas with reduced levels of training.[23]

The Pacific Ocean Area command was in an anomalous position, with problems arising out of the long-standing US Army-US Navy rivalry. The most senior general was responsible for logistics support and training army units in the Pacific, but the actual combat units were subordinate to the theater commander, Admiral Chester Nimitz. Distribution of ULTRA to army combat units was from navy sources. The SSO at the army command headquarters kept his senior officers informed about ULTRA and had some supervisory responsibilities for the assignments of SSOs around the Pacific.

US Navy SIGINT was produced at the Joint Intelligence Center Pacific Ocean Area (JICPOA). There was rivalry between JICPOA and the army's G-2. JICPOA consistently refused to provide navy ULTRA to the army general in command. The army's G-2 reciprocated, declining to share its ULTRA product, and looking with suspicion on any army officer that got too friendly with JICPOA. Over time, the army and navy established a *modus vivendi* (way of life) regarding ULTRA. The senior SSO would be a staff member on the commanding general's staff and would brief senior army officers who were authorized to read ULTRA. The senior army SSO would supervise the ULTRA representatives sent to operational commands, although distribution of ULTRA to those subordinate commands would be from JICPOA. These procedures were

never codified by a formal agreement, but according to an SSO, "it worked."

The first senior SSO in the theater was Major Edwin E. Huddleson, who arrived on December 7, 1943; he worked alone until August 1944, when four additional SSOs arrived. Huddleson assigned SSOs to subordinate commands as they were needed.

In January 1945 Nimitz moved his command to Guam, which became the center of the war effort across the Pacific, and the SSO for the US Army was in the process of moving to Guam when the war ended.[24]

The SSO for the US XXI Bomber Command in the Pacific had an exceptionally smooth experience at the command's headquarters. Major Charles T. Kingston, Jr. was able to visit the command while it was in training at Colorado Springs. He met the senior general, as well as other senior operational and staff officers, including the A-2 chief of Air Intelligence. Kingston already knew many of the A-2 staff officers from their time at the US Army Air Forces Air Intelligence School in Harrisburg, Pennsylvania.

Kingston had flown to Hawaii in November 1944, where he met many senior navy SIGINT officers and made arrangements for command to get SIGINT from navy sources in the Pacific. This was important because his unit was an army command engaged in strategic bombing, but operating in a theater of war that was under command of the navy. The navy had extensive SIGINT production facilities in the Pacific and could provide weather information from SIGINT and other intelligence data particularly crucial to successful bombing operations.

He arrived at Bomber Command advanced headquarters on Saipan in late November. Because of transport problems, many of the intelligence staff officers had not yet arrived, so Kingston was required to perform additional intelligence functions beyond his ULTRA duties. This experience turned out to be valuable in the long run, preparing him to provide ULTRA information better tailored to the needs of the operational command.

Because of space problems and lack of SIGABA machines at the XXI Bomber Command headquarters, Kingston had to hitchhike to and from the nearby US Army Air Forces Pacific Ocean Area headquarters on the island to obtain the ULTRA material for briefing the air officers of his own command. When the Bomber Command moved forward on January 1, 1945, to Guam, the SSO was no longer constricted in working space—but it took him 10 days to get a wall plug in his office so he could operate his own SIGABA machine.

The SSO took on additional responsibilities as the US Army Air Forces reorganized in August. The XXI Bomber Command became part of the US Twentieth Air Force, and the US Army Air Forces Pacific Ocean Area became the US Army Strategic Air Forces (USASTAF). Kingston supported both commands with ULTRA information. The reorganization plans provided for an additional ULTRA officer for USASTAF, but the war ended before an officer could be assigned to the position.

Kingston pointed out that ULTRA information was absolutely critical to the mining operations in Japanese home waters by US aircraft, which began in late March. ULTRA was also critical during the industrial/urban area attacks in June and July. Kingston wrote, "the contribution of MIS to the successful bombing of the Japanese Empire by B-29s cannot be overstated. As the agent through whom MIS products reached the Bomber Command, I was in an excellent position to see that, except for MIS, the A-2 section of the command would have been practically without intelligence."[25]

Southwest Pacific Area

The Allies Southwest Pacific Area (SWPA) was headquartered in Australia for much of the war, while combat against the Japanese occurred in the mountains and jungles of New Guinea, then the

Dutch East Indies, and, finally, the Philippines. The theater's geography presented formidable challenges to the distribution of ULTRA to start with, but the problems were compounded by staff actions.

The supreme commander in the Southwest Pacific was General Douglas MacArthur, the longest serving officer in the US Army. He had been a daring commander in the First World War, superintendent of the Military Academy at West Point, and then US Army chief of staff, the senior post in the service. He had been hired in 1935 to build a Philippines army and then recalled to active service in the US Army when the United States entered the war. For much of his career, he had resented the army's entrenched establishment in Washington and disliked most presidents.

The Southwest Pacific Theater was unusual in that its SIGINT product came from multiple sources. In addition to distribution from the US Army's Signal Security Agency (SSA) in the United States, the Southwest Pacific had its own organic cryptanalytic organization, a joint US-Australian cryptanalytic unit known as Central Bureau Brisbane (CBB). Moreover, the navy had a SIGINT production organization in Australia which also distributed ULTRA to MacArthur's headquarters. It should be noted that the SWPA Theater was not unique in receiving ULTRA from multiple distribution points. The same situation occurred in the China Burma India Theater, CBI, which also had formidable problems in distance and terrain.

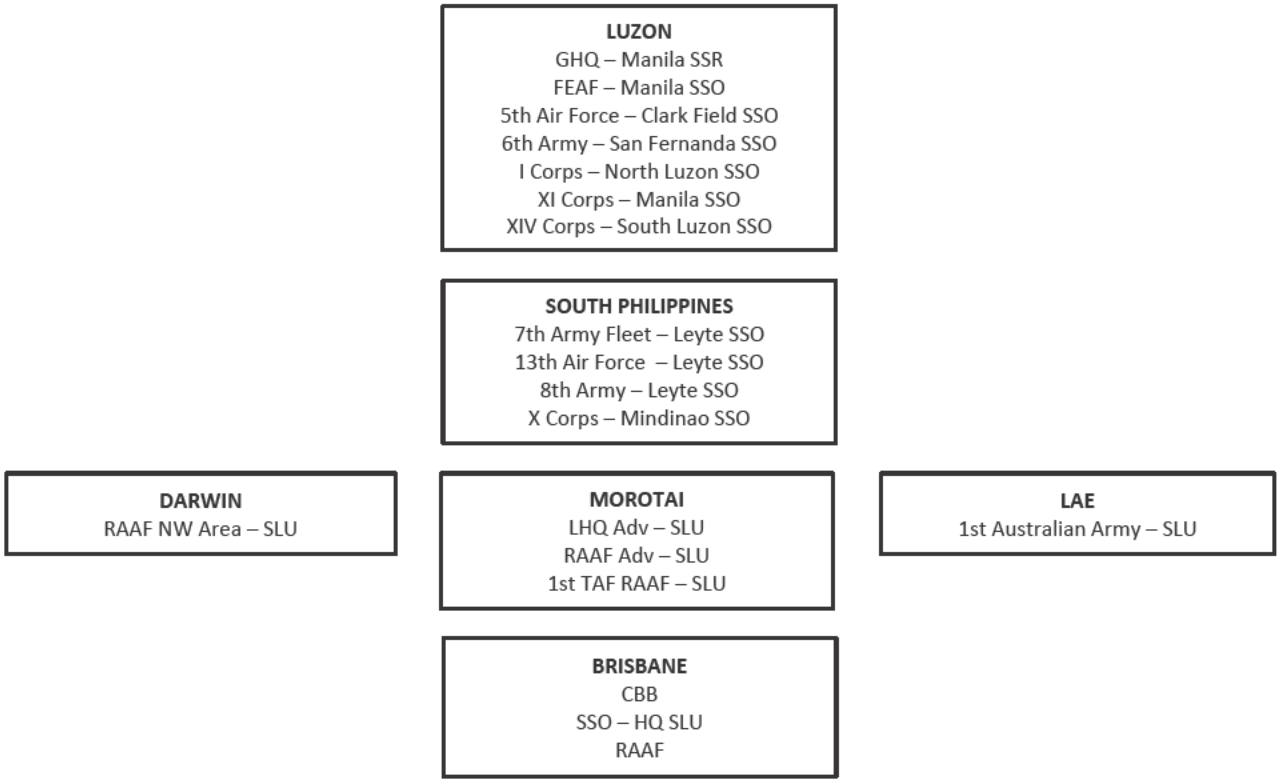
As he had with Eisenhower, Marshall sent a letter outlining the uses of ULTRA and the rules regarding assignment of an ULTRA officer to MacArthur on May 23, 1944. He stressed the necessity of protecting the secrecy of ULTRA, which made "uniform regulations and centralized control over the handling of all Japanese ULTRA wherever produced" essential.[26]

Although most commanders welcomed the regular supply of ULTRA intelligence, and therefore were willing to accept an officer from outside their command to distribute it, MacArthur bristled at the idea of an SSO. His motivation was unclear, but we can postulate a few possible reasons. US military commanders in general were leery of any officer within their command who had the authority to write reports to an outside command. In addition, MacArthur had a long-standing grudge against Marshall, stemming from their roles in the First World War, and on not a few occasions resisted what he considered interference from Washington.

Edward Drea's *MacArthur's ULTRA: Codebreaking and the War against Japan, 1942-1945* makes an interesting claim about the general's resistance to the imposition of SSOs in his command. Granting that the Southwest Pacific Theater had no uniform distribution system for ULTRA through the summer of 1944, "it is equally true that MacArthur did not need one until the Leyte invasion in October 1944." The argument is that until the landings in the Philippines, there was little ULTRA available from Japanese Army communications, and most combat in the theater was localized in one area.[27] This argument ignores the need for extra security for ULTRA.

Whatever the truth of the matter, Colonel (later Brigadier General) Carter Clarke, chief of Special Branch, made the lengthy flight to Brisbane. Clarke was famous throughout the SSA for his profane vocabulary, but what was actually said and done in his meeting with MacArthur has been left to the imagination. The conclusion, though, was that even as imperious a figure as MacArthur acceded to the Special Branch rules for ULTRA distribution.[28]

Whether caused by Clarke's remonstrance with MacArthur about the status of the theater SSO or not, the ULTRA officer for the Southwest Pacific Theater reported good relations with MacArthur for the rest of the war. The ULTRA representative always accompanied MacArthur, who frequently traveled to forward areas, to ensure that the commander-in-chief had the most current operational intelligence from ULTRA.



SWPA Locations of SLU and SSO Teams (as of May 10, 1945). *History of the Special Liaison Units (SLU) controlled by SLU 9 in the South West Pacific*, HW49/3, 1944 Nov 16—1946 Mar 31, The National Archives, Kew, Great Britain.

However, serious problems below theater commander level hampered ULTRA distribution. Some problems could be attributed to the complications of military operations in a zone spread over many different and remote islands, but myriad problems also were due to the nature of MacArthur's staff. As with most American officers, they were unfamiliar with intelligence. But most of the senior staff had also been selected primarily because of their personal loyalty to MacArthur. Therefore, problems for junior officers—including the ULTRA representative—often originated in the organizational games played by their seniors in a competitive atmosphere, and probably echoed the commanding general's disdain for the army leadership in Washington.

The first ULTRA representative arrived at Southwest Pacific Theater headquarters in Brisbane in 1943, and the first difficulties only revolved around shortness of staff for him. Over the course of the war, the SSO office would move with the theater general headquarters to Hollandia in Dutch New Guinea in August 1944, to Tacloban on Leyte in the Philippine Islands in January 1945, and to Manila in April. The final move for this office was to accompany MacArthur to Tokyo in September.

As it happened, the SSO was able to provide information to subordinate senior officers, including the Far East Air Forces (the official designation for the Air arm in the Southwest Pacific), the rear echelon general headquarters in Australia (after MacArthur moved his headquarters northward), and with each US Army Air Corps headquarters. An SSO was assigned to the headquarters of the Sixth, Eighth, Tenth (after the Tenth was put under MacArthur's command following the battle of Okinawa in August), and First Army headquarters. In

addition, an SSO served at the Fifth, Seventh, and Thirteenth US Air Forces. Since a significant portion of MacArthur's intelligence, perhaps as much as 40 percent, came from naval sources, the SSO maintained a liaison officer at the US Seventh Fleet headquarters.

Apparently, the G-2 did not provide adequately for the SSO during the movements of MacArthur's headquarters from Australia northward. In his postwar report, the Special Security Representative (SSR) noted that headquarters did not get all the intelligence it required during the move from Hollandia to Leyte, and that the SSO system received criticism for this. It appears that the G-2 itself was shorted on shipping space for the move, and just passed the inconvenience along, hampering SSO activities. Eventually, as the command again moved, to Manila, the SSO received adequate support in space and conducted operations that "worked to the best advantage, for the command."[29]

Even though the Southwest Pacific Theater had its own organic SIGINT organization, CBB, MacArthur's Chief of Staff, Lieutenant General Richard Kerens Sutherland, forbade sharing ULTRA information between CBB and the SSO. Thus, the SSO and CBB officers knew each other on a social level only, but there was no working liaison between them. This account is based on inference. The author of the postwar report on SSOs in the SWPA Theater diplomatically referred to officers other than MacArthur by their staff titles rather than their personal names.[30]

The US Navy had a SIGINT production organization in Brisbane, composed of experienced personnel evacuated from Corregidor in the Philippines. Its commander, Lieutenant Commander Rudolph T. Fabian, briefed MacArthur directly and took great pleasure in cutting out MacArthur's intelligence officer, Major General Charles Willoughby, as well as making rude remarks to him.[31]

The movement of theater headquarters to Hollandia and then the Philippines, as Allied forces pushed the Japanese back, required modification of the lack of cooperation between CBB and the SSOs. The CBB remained behind in Australia, which resulted in frequent delays in passing their decrypts to the forward headquarters. Thus, the ULTRA system, probably at the War Department level (although this was not clear in the available source material), arranged for a British SLU to be assigned to each Australian command, while an SLU and American SSO as his deputy would be attached to the CBB to provide a more effective channel for passing ULTRA to the forward headquarters.

This arrangement, however, was quickly destroyed by MacArthur's staff. The theater chief of staff, again presumably Sutherland, along with the chief signal officer, bluntly told the ULTRA representative on Leyte that this arrangement with CBB was canceled. They cited as reason ULTRA regulations that the SSO was to be an advisor on the security of ULTRA and also said that the theater G-2 should make the decision about what intelligence would be given to the theater's senior officers.[32]

Thus, at times, perhaps even a majority of the time, the SSOs in the Southwest Pacific Theater were treated as nothing more than, as one of them put it, a "quasi-administrative-signal-corps outfit."[33]

The SSO assigned to the US Eighth Army reported positive experiences, including an excellent working relationship with the command G-2. The G-2 gave the SSO "a free hand in the handling of information," and almost without exception accepted the SSO's recommendations on briefings, other disseminations, and security measures.

Despite this, the commanding officer of the Eighth Army, Lieutenant General Robert Eichelberger, was the victim of organizational games played at theater headquarters. In April 1945 the Southwest Pacific Theater headquarters discontinued publication of the daily *Special Intelligence Bulletin*, and declined to send its replacement to Eichelberger, giving as reason that the Eighth Army had not been selected yet for the impending invasion of the Japa-

nese home islands and had no need for intelligence about the wider war situation. Theater headquarters policy changed to only send the individual armies specific ULTRA cables they thought applied to the unit's situation. The SSO at Eighth Army noted that this resulted "in an almost complete lack of ULTRA information being received at Eighth Army."

Eichelberger sent a written appeal about this dire situation, without results. The SSO, Lieutenant Colonel Maurice J. Mountain, traveled to theater headquarters to make a personal appeal; he reported "lots of sympathy" but no support for releasing more information to the Eighth Army. Eichelberger still received some SIGINT from navy sources but groused that he was forced to depend on a separate service for ULTRA.[34]

The one positive exception to the dismal status of ULTRA in the Southwest Pacific Theater was use of the material by MacArthur's senior air officer, Major General George Kenney. Kenney used ULTRA brilliantly, not only to plan bombing raids on Japanese bases, but to isolate the battlefield and prevent the Japanese from sending reinforcements to locations of ground combat.

A lengthy postwar report on the ULTRA representatives at the Far East Air Force conveyed only positive experiences in providing direct support to the individual air commands, as well as to Kenney. It should be noted that the Special Security Office in the Southwest Pacific Theater was the only such unit to have a significant presence of women. MacArthur himself had encouraged the assignments of women workers in SIGINT to his command, and they served as SSOs as well as in other SIGINT disciplines at the analytic level.[35]

Major John H. Gunn was sent as an SSO to Leyte to support MacArthur in the Philippine campaign. He was introduced to MacArthur on his day of arrival, and as the SSO later recalled, Gunn "found him at all times as cordial and cooperative as possible." However, in his postwar report, Gunn added, "it is a matter of record that the same observation cannot be made of a number of his immediate subordinates."[36]

MacArthur himself could use ULTRA exceptionally well, but also would ignore it if the SIGINT information interfered with his plans. ULTRA provided key information that enabled MacArthur's "leap to Hollandia," a daring series of landings at Japanese rear-area bases that led to victory in New Guinea. However, during the Philippine campaign, when ULTRA information about Japanese strength in Manila warranted postponing an attack to wait for reinforcements, MacArthur insisted that his operation proceed as scheduled, rather than hold up his timetable.[37]

CBI (known to British as Southeast Asia)

The most unusual theater of the Second World War was called the China Burma India (CBI) Theater by the Americans and the Southeast Asia Theater by the British. It was the largest theater of war in overall area, encompassed the two most populous countries in the world, and had the most varied types of territory of any theater of war at the time: jungle, mountains, and desert.

Because neither the British nor American homelands were directly threatened, the two nations sent fewer military contingents and invested fewer supply resources to this theater. The principal Allied aims in the theater were the defense of India, liberation of Burma from Japanese occupation, and support to China in regaining large areas of the mainland conquered by Japan. The principal US combat units were the US Fourteenth Air Force and an infantry regiment that fought in Burma.

The first SSO in the CBI Theater was Captain (later Major) John F. B. Runnalls, who arrived in New Delhi on December 19, 1943. He established an office with the US Signal Intelligence Service in New Delhi, the principal American SIGINT pro-

duction organization in the theater, where he was given special privileges in the code room and the assistance of enlisted code clerks.

In March 1944 Runnalls sent a long report to Special Branch at the War Department explaining the system for distributing ULTRA product to senior commanders in CBI. Runnals had had experience with ULTRA distribution in the Mediterranean Theater and was able to compare and contrast the practices in these two theaters.

First of all, Runnalls pointed out that the CBI Theater differed greatly from the Mediterranean. Allied forces in the Mediterranean received their ULTRA product from a single source, GC&CS. However, there were several ULTRA production centers within CBI itself, plus pertinent ULTRA decrypts forwarded from BP and the US cryptologic organizations in Washington. This multiplicity of sources alone complicated the preparation and distribution to the recipients of ULTRA intelligence in the theater.

Second, the CBI Theater encompassed the widest and most geographically diverse territory of any theater of war. This necessitated the wide dispersal of American units, which naturally meant that the CBI senior officers (ULTRA recipients) were frequently traveling among these remote locations, not situated at a fixed headquarters. The senior US commander, General Joseph Stilwell, was constantly on the move. In addition to administrative offices in Chungking, China, and New Delhi, Stilwell frequently traveled to several other important US bases, as well as locations near the combat zones.

Runnalls also stated that, given the dispersed locations and smaller size of American bases, it was difficult to find suitably isolated quarters for the preparation of ULTRA product. In a number of cases, it had been necessary to house some ULTRA representatives with military intelligence personnel not cleared for ULTRA. Runnalls also admitted that occasionally it had been necessary to clear military intelligence personnel for ULTRA to prevent compromise of the source through ignorance about its importance.

Runnalls indicated that there had been times when ULTRA information had been sent directly to subordinate commanders not cleared for the source. The normal procedure, as practiced in the Mediterranean, would be for subordinate commanders to receive ULTRA indirectly, embedded in their orders from the theater commander. However, there were occasions when it was impossible to reach Stilwell with the ULTRA decrypts and any delay would have rendered the information worthless.

Runnalls reported that other senior personnel, including General Claire Chennault, commander of the US Fourteenth Air Force, were eager for ULTRA intelligence and would make any accommodation necessary to get regular access. Colonel Joseph Stilwell, the theater commander's son, who served as his father's intelligence officer, also was eager for ULTRA.[38]

As the theater expanded and the need for ULTRA intelligence increased and was needed over a wider area, several new SSOs were sent to provide assistance. Generally, ULTRA produced in Washington or at BP was sent by the special system to Runnalls, who further distributed it to his assistants by radio transmission or occasionally by officer courier.[39]

A later report in 1944 noted that six SSOs were already in the CBI Theater, and nine additional officers were in training—expected in Asia by September 1. However, this was still considered insufficient to cover all commands in theater. CBI needed a total of at least twenty.[40]

For the last year of the war, the senior SSO in CBI was Major (later Colonel) Inzer Bass Wyatt, an imposing figure. He was another noted lawyer from New York City and after the war was appointed a federal judge.

Notes

1. *The War Experiences of Colonel McCormack*, SRH-185, 33.
2. *Use of CX/MSS ULTRA by the United States War Department (1943–1945)*, SRH-005, 26–27.
3. The story of Eisenhower's briefing by Churchill is often retold, and is plausible, but the sourcing is tenuous. In *Ike's Spies* (Doubleday and Company, 1981) Stephen Ambrose fills in many details about this initial ULTRA briefing for Eisenhower, but he cites no sources. The story is said to have been told in Group Captain Winterbotham's book *The ULTRA Secret* (Weidenfeld & Nicholson, 1974) but it actually does not appear there.
4. Major James D. Fellers, "Report of Visit to Mediterranean Theater (25 March–10 May, 1944)," *Trip Reports Concerning the Use of ULTRA in the Mediterranean Theater (1943–1944)*, SRH-031, 2–20; Major Lewis F. Powell, Jr., "Report on Visit to Operational Air Commands in Mediterranean Theater (4 April–10 May 1944)," SRH-031, 21–47.
5. Fellers, "Report of Visit 25 March–10 May, 1944," SRH-031, 12.
6. Major General Sir Kenneth Strong, *Intelligence at the Top: The Recollections of an Intelligence Officer* (Doubleday and Company, 1969), 111–112.
7. Ralph W. Hauenstein and Donald E. Markle, *Intelligence Was My Line: Inside Eisenhower's Other Command* (Hippocrene Books, 2005), 93–95.
8. Captain Edmund H. Kellogg, memorandum for Colonel Taylor, "Report of Paris Officer for Dissemination of ULTRA," *Reports by U.S. Army ULTRA Representatives with Army Field Commands in the European Theater of Operations* [Part II], SRH-023, 118–120; Hauenstein and Markle, *Intelligence Was My Line.*
9. *Marshall Letter to Eisenhower on the Use of "ULTRA" Intelligence,* March 15, 1944, SRH-026.
10. *Synthesis of Experiences in the Use of ULTRA by U.S. Army Field Commands in the European Theater of Operations*, SRH-006, 10.
11. Warrack Wallace, USA, *Report on Assignment with Third United States Army, 15 August [to] 18 September 1944*, SRH-108, 3–5.
12. The breakout for USSTAF is US Strategic and Tactical Air Forces.
13. The breakout for TAF is Tactical Air Force.
14. Major Ronald S. Bussey, memorandum for Colonel Taylor, *Ultra and the U.S. Seventh Army*, May 12, 1945, SRH-022.
15. Bussey, *Ultra and the U.S. Seventh Army,* SRH-022.
16. Major William D. Hoetenthall, Jr., memorandum for Colonel Taylor, "Notes on ULTRA Traffic, First U.S. Army," *Reports by U.S. Army ULTRA Representatives with Army Field Commands in the European Theater of Operations* [Part I], May 27, 1945, SRH-023, 19–21.
17. Lieutenant Colonel Adolph J. Rosengarten, Jr., memorandum for Colonel Taylor, "Report on ULTRA Intelligence at First U.S. Army," *Reports by… Army Field Commands in the European Theater of Operations* [Part I], May 21, 1945, SRH-023, 11–18.
18. Lieutenant Colonel Charles R. Murmane and Lieutenant Colonel Samuel M. Orr, Jr., memorandum for Colonel Taylor, "Report of Lt. Col. Murmane and Lt. Col. Orr on Use of ULTRA at 12th Army Group," *Reports by… Army Field Commands in the European Theater of Operations* [Part I], May 23, 1945, SRH-023, 6–10.
19. Lieutenant Colonel Edward K. Thompson, memorandum for Colonel Taylor, "D.E. with SHAEF Air Intelligence," *Reports by… Army Field Commands in the European Theater of Operations* [Part II], May 12, 1945, SRH-023, 3–6.
20. Major Ansel E. M. Talbert, memorandum, "The Handling of ULTRA Information at Hqrs, Eighth Air Force," *Reports by… Army Field Commands in the European Theater of Operations* [Part II], SRH-023, 20–33.

21. "Lewis F. Powell, Jr.: An ULTRA Memoir," in *ULTRA and the Army Air Forces in World War II*, ed. Diane T. Putney (Office of Air Force History, 1987), 32–35.

22. *History of the Operations of Special Security Officers Attached to Field Commands, 1943–1945*, SRH-033, 3.

23. *History of the Operations,* SRH-033, 5–6.

24. Lieutenant Colonel Thomas E. Ervin, "History of Operations of Special Security Officers in Pacific Ocean Areas," *Reports by U.S. Army ULTRA Representatives with Field Commands in the Southwest Pacific, Pacific Ocean[,] and China Burma India Theaters of Operations, 1944-1945*, SRH-032, 36–39.

25. Major Charles T. Kingston, Jr., "Special Security Office, XXI Bomber Command," *Reports by… Field Commands in the Southwest Pacific*, SRH-032, 45–49.

26. *Marshall Letter to MacArthur on the Use of "ULTRA" Intelligence, May 23, 1944, and Related Correspondence*, SRH-034, 1–3.

27. Edward J. Drea, *MacArthur's ULTRA: Codebreaking and the War against Japan, 1942–1945* (University Press of Kansas, 1992), 29.

28. *History of the Operations,* SRH-033, 3–4.

29. Colonel Benjamin W. Heckemeyer, "Report of Special Security Representative, Headquarters Armed Forces, Pacific (formerly SWPA)," *Reports by… Field Commands in the Southwest Pacific*, SRH-032, 1–4.

30. Major John R. Thompson, memorandum, "Report of Major John R. Thompson, Deputy Special Security Representative, Southwest Pacific Area," *Reports by… Field Commands in the Southwest Pacific*, December 20, 1945, SRH-032, 5–9.

31. Captain Rudolph T. Fabian, US Navy (Ret), interview by Robert D. Farley, NSA-OH-1983-009, transcript, Center for Cryptologic History, Ft. Meade, MD, 66–67.

32. Thompson, "Report of Major John R. Thompson, Deputy Special Security Representative, Southwest Pacific Area," SRH-032, 5–9.

33. Captain James C. Sargent, memorandum for Brigadier General Carter W. Clarke, "Report of Captain James C Sargent's Activities as SSO in SWPA," *Reports by… Field Commands in the Southwest Pacific*, October 30, 1945, SRH-032, 34.

34. Lieutenant Colonel Maurice J. Mountain, to Colonel B. W. Heckemeyer, "Report on SSO System at Eighth U.S. Army," *Reports by… Field Commands in the Southwest Pacific*, December 6, 1945, SRH-032, 18–20.

35. B. J. Miriam, "History: Special Security Officer with Far East Air Forces, 24 October 1944–2 September 1945," *Reports by… Field Commands in the Southwest Pacific*, February 26, 1946, SRH-032, 10–17.

36. Major John H. Gunn, memorandum for the Special Security Officer, MIS, "Report of Major John H. Gunn, 0-388247," *Reports by… Field Commands in the Southwest Pacific*, October 23, 1945, SRH-032, 25–28.

37. *MacArthur's ULTRA* by Edward Drea cites many examples of both extremes in MacArthur's decisions.

38. Captain John F. B. Runnalls, *General Information on the Local ULTRA Picture as Background for Signal Intelligence Conference, 6 March 1944*, SRH-148.

39. "Special Security Operations in the China Burma India Theater and the Two Theaters Created from It[—]India Burma Theater and China Theater," *Reports by… Field Commands in the Southwest Pacific*, SRH-032, 81–87.

40. Memorandum, "Justification of Requirements for Increase in Field Quota for Officers," *Allocation of Special Security Officers to Special Branch, Military Intelligence Service, War Department (1943–1945)*, SRH-61.

Chapter 5

Summary

At the end of the war, almost all US Special Security Officers (SSOs) wrote a summary of their experiences, and most of these have survived. Fortunately for historians, many of these summaries were quite frank. A majority of postwar summaries by SSOs about the organization and operation of the ULTRA sections at major commands reported overall positive experiences—at least once commanders recognized what ULTRA meant to them. The few negative summaries suggested that the fault for inadequate use of ULTRA lay with the senior G-2 officer (who oversaw intelligence matters) on a command staff. Either the G-2 did not recognize that ULTRA delivered to combat commands needed further processing before presentation to the commanding general, or the G-2 wanted to do all the work (analysis and briefing) himself, without deferring to the ULTRA experts.

Experience showed that it was important for the SSO to have direct access to the commanding general, the chief of staff, and other senior officers in a command who used ULTRA in an operational sense. In most cases, it was more effective for the SSO to do briefings and evaluations personally, without the confusion that might result from using an intermediary. This also made them available for questions and any requests for additional information.[1]

The reactions of most US officers briefed on ULTRA was amazement. It is probable that more training on ULTRA, beyond a simple indoctrination to the special source, should have been given to each senior G-2. However, the pace of war did not allow time to do this; time was a luxury the Allied forces could not afford.

The commanding general in a theater was responsible both for the selection of his staff and the smooth functioning of that group of officers. A general normally selected his G-2, not because of his specific expertise in intelligence, but because of their personal relationship. In many, probably most, cases, neither the commanding generals nor their G-2s had much experience with intelligence prior to the war. They did not know what they did not know or how to fix a problem in organizational procedures that was barely perceptible to them.

The American system of SSOs, also known as ULTRA officers, was modeled on the British system, and was often successful, but it had some notable weaknesses or failures. One important failure was in training the SSOs themselves. Surprisingly, this failure was a lack of training about the US Army itself, including its staff system and the kinds of information a combat decision-maker needed to know. Most SSOs received a good grounding

in ULTRA, including a significant amount of time spent in either the American or British production center, sometimes both.

A majority of SSOs had come from professional life and were not career military officers. As a whole, they were above average in intelligence and adaptability, but they were placed in a situation quite unlike their civilian lives. They had to learn basic aspects of military life at the same time they were performing their specialized duties.

Where there were organizational issues many SSOs encountered problems from the commanding general's staff at their assigned unit. Often, the G-2 did not understand ULTRA or the criticality of the ULTRA officer's role. In all too many cases, the G-2 simply saw the SSO as "free help" and assigned him to regular staff intelligence duties on top of the ULTRA responsibilities that he had been assigned to do by Special Branch.

Many G-2 senior staff officers did learn the value of ULTRA information as well as the importance of the officer assigned to ensure that ULTRA was available in their sector. The G-2 from the US Third Army, under Patton, is a good example of this. In such instances, ULTRA became an important asset on a regular basis to the decisions made by the commanding general.

Unfortunately, this was not the case at all commands. And in one or two, such as MacArthur's Southwest Pacific Theater, staff rivalries and, yes, malfeasance prevented effective use of ULTRA by the senior combat decision-makers.

Part of the reason for the problems was the need for haste in designing and implementing the SSO system. US leadership recognized that ULTRA was needed, and needed quickly, as the American military confronted the two strongest military powers in the world; so they put the system to work with the best compromise between training and implementation that could be obtained.

In many, probably most, cases, the problems were overcome and the system worked. There is a rich treasury of stories in which ULTRA information provided to decision-makers resulted in successful operations—sometimes in very dramatic victories. Also less dramatic ULTRA information, distributed on a regular basis, provided a solid background for military decisions that led to successful operations—and helped save the lives of thousands of American and British soldiers.

The ULTRA system also raised the expectations of the officers who had access to it. Many senior leaders from the Second World War continued to serve after the war, and they recognized that ULTRA remained essential to decision-making. Thus, they insisted on a postwar version—and got it.

The ULTRA production organizations of World War II eventually transitioned in the postwar to the Government Communications Headquarters (GCHQ) in Britain and the National Security Agency (NSA) in the United States. The requirement for rapid dissemination and absolute secrecy continued, so the Special Liaison Unit (SLU) system was retained. The system was modified in each military reorganization and with the development of computers and the revolution in communications technology; however, the need for speed and security remained constant.

Without this important distribution process between producer and consumer, ULTRA would be a curious footnote to the war—a hint of what might have been—instead of the highly important war-winning factor that it is now known as.

The former SSO attached to the US Seventh Army noted that all ULTRA recipients were aware of the importance of the information and the advantages that ULTRA gave to American and British generals. He recalled that on one occasion the Seventh Army G-2 drolly remarked to him, "you know, this just isn't cricket."[2]

A number of ULTRA officers concluded their reports with recommendations for the future.

At the end of his summary of ULTRA in the US Eighth Air Force, Ansel Talbert added some salient remarks. He said that most might assume that the military inventions of the Second World War would depreciate the value of ULTRA in the future. He disagreed with this attitude, saying that "ULTRA information, if gathered and evaluated in peacetime with the same efficiency that has characterized it in this war, might well be the only means of knowing what actions were planned by an unfriendly nation." In fact, he commented, "ULTRA may be the only means in the future of foretelling and forestalling a Pearl Harbor-type attack."[3]

For the future, Edward Thompson, who had been the ULTRA representative on the Supreme Headquarters Allied Expeditionary Forces (SHAEF) Air Intelligence staff, remarked that "if we are not going to get caught short again, it is necessary to start building up intelligence immediately. The average regular [officer] considers his best bet an operational job. It may be quite beyond the power of anyone who reads this report to make intelligence a profitable military career, but it should be made a fully equal staff partner."[4]

Most SSOs from the Second World War followed the pattern of their fellow Americans who had entered the military in response to the wartime emergency. They mustered out of the service and returned to their prewar lives. Collectively they were above average in education and professional status, but most did not again come to the attention of history. A few did.

Ansel Talbert, who predicted the continued importance of ULTRA postwar, worked as an aviation reporter for the *New York Herald Tribune*, 1953–1966, and then freelanced for aviation magazines after *The Tribune* folded.

After leaving the US Army in 1945, Alfred McCormack worked with the Department of State on intelligence concerns in 1946. Afterward, he returned to his law practice in New York.

Carter Clarke at the end of the war became commander of the Army Security Agency, successor to the wartime Signal Security Agency. He later served in Japan as an assistant to the director of the Central Intelligence Agency. Clarke retired in 1954.

Telford Taylor, the senior US signals intelligence officer in Europe during the Second World War, would go on to become the deputy chief prosecutor and then the chief prosecutor of high-ranking Nazis at the Nuremberg war crimes trials. He later became an eminent professor of law at Columbia University.

Lewis Powell, who had been an SSO with the US Air Force, returned to a high-powered legal firm in Richmond, Virginia. He was appointed an associate justice of the US Supreme Court by President Richard Nixon in 1972.

At the end of the Second World War and subsequent demobilization, the scale and size of GC&CS was significantly reduced. There initially was no postwar requirement for SLU/Special Communications Unit (SCU) teams, but this quickly changed. The abbreviation GCO was first coined in 1947 when GCHQ implemented the decision to create Government Communications Officer (GCO) posts.

By 1948, the Malayan Emergency reinforced the growing importance of Singapore as a political and military center for the UK in Southeast Asia. The event also amplified the need for GCHQ on-the-spot representation. In November 1948 the first Singapore GCO—in fact, the first GCO anywhere—arrived at the Cathay Building in the territory. His office was later moved to a two-room building in Phoenix Park, Singapore. The post was firmly established and grew in prestige and importance over the years.

The roles and functions of the GCO are an important aspect of GCHQ SIGINT to get timely

intelligence to where it is needed most. While technology has rapidly transformed the way we communicate, the role of a GCO has not changed significantly from the early days of the Second World War. They are a vital cog in the wheel.

Notes

1. Major James D. Fellers, "Report of Visit to Mediterranean Theater (25 March–10 May, 1944)," *Trip Reports Concerning the Use of ULTRA in the Mediterranean Theater (1943–1944)*, SRH-031, 15.

2. Major Ronald S. Bussey, memorandum for Colonel Taylor, *Ultra and the U.S. Seventh Army*, May 12, 1945, SRH-022, 2.

3. Major Ansel E. M. Talbert, memorandum, "The Handling of ULTRA Information at Hqrs, Eighth Air Force," *Reports by U.S. Army ULTRA Representatives with Army Field Commands in the European Theatre of Operations* [Part II], SRH-023, 32.

4. Lieutenant Colonel Edward K. Thompson, "D.E. with SHAEF Air Intelligence," *Reports by… Army Field Commands in the European Theater of Operations* [Part II], May 12, 1945, SRH-023, 4.

Chapter 6

Notes on Sources and Endnotes

The US War Department, following the war, sought to understand the workings of the Special Security Officer (SSO) system in actual practice and had the senior SSO at each major command write a description and evaluation of the system as they experienced it. Thus, the historian today, normally accustomed to scrambling to find sources, has the rare pleasure of an abundance of information on this topic. The many reports sent in response to the War Department's requirement are available as part of the Special Research Histories (SRH) series.

SRHs were an early NSA format for declassified documents on cryptology, an attempt to speedily release formerly classified material in the wake of the excitement in the 1970s over revelation of the ULTRA secret. They still constitute a handy resource for finding information on cryptology in the world wars. Hardcopies of the SRHs are available in the library of the National Cryptologic Museum; most are available online in the library section at www.nsa.gov. The following were most helpful to the authors:

SRH-005 Use of CX/MSS ULTRA by the United States War Department (1943–1945)

SRH-006 Synthesis of Experiences in the Use of ULTRA by U.S. Army Field Commands in the European Theater of Operations

SRH-020 Narrative, Combat Intelligence Center, Joint Intelligence Center, Pacific Ocean Area

SRH-022 Ultra and the U.S. Seventh Army

SRH-023 Reports by U.S. Army ULTRA Representatives with Army Field Commands in the European Theater of Operations [Parts I and II]

SRH-026 Marshall Letter to Eisenhower on the Use of "ULTRA" Intelligence, March 15, 1944

SRH-031 Trip Reports Concerning the Use of ULTRA in the Mediterranean Theater (1943–1944)

SRH-032 Reports by U.S. Army ULTRA Representatives with Field Commands in the Southwest Pacific, Pacific Ocean[,] and China Burma India Theaters of Operations, 1944–1945

SRH-033 History of the Operations of Special Security Officers Attached to Field Commands, 1943–1945

SRH-034 Marshall Letter to MacArthur on the Use of "ULTRA" Intelligence, May 23, 1944, and Related Correspondence

SRH-061 Allocation of Special Security Officers to Special Branch, Military Intelligence Service, War Department (1943–1945)

SRH-107 Problems of the SSO System in World War II

SRH-108 Report on Assignment with Third United States Army, 15 August [to] 18 September 1944 (Major Warrack Wallace, USA)

SRH-148 General Information on the Local ULTRA Picture as Background for Signal Intelligence Conference, 6 March 1944

SRH-153 MIS, War Department Liaison Activities in the U.K. (1943–1945)

SRH-185 The War Experiences of Colonel Alfred McCormack

There are also a number of GCHQ/GC&CS files in the British National Archives at Kew, London, under the HW49 series, that relate to the history of the British Special Liaison Unit (SLU) teams:

HW49/1 The History of the Special Liaison Units

HW49/2 History of Special Liaison Unit 5 (SLU5)

HW49/3 History of the Special Liaison Units (SLU) controlled by SLU9 in the South West Pacific

HW49/5 Outline history of Special Liaison Units (SLU)

HW49/6 Special Liaison Units: set up to provide a secure and speedy way for passing ULTRA messages from Station X to Operational Commands

A final source of note is Pigeon, Geoffrey. *The Secret Wireless War—The Story of MI6 Communications 1939–1945*. Arundel Books, 2008.

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