Series V
Volume 4

National
Security Agency

Central
Security Service

CCH-N63-00-02

So Power Can Be Brought into Play:

SIGINT and the Pusan Perimeter

Cover Photo:

U.S. Marines in Pusan, 2 August 1950
(Courtesy of the Department of the Army)

UNITED STATES CRYPTOLOGIC HISTORY

Series V
The Early Postwar Period, 1945-1952
Volume 4

So Power Can Be Brought into Play: SIGINT and the Pusan Perimeter

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CENTER FOR CRYPTOLOGIC HISTORY
NATIONAL SECURITY AGENCY
2000

INTRODUCTION

In August 1950, the war in Korea was not going well for General Walton H. Walker and the U.S. 8th Army. The inexperienced soldiers were trapped by North Koreans in a small corner of South Korea known in the press as the Pusan Perimeter. Supplies were limited and morale was very low. In this desperate time, General Walker had a weapon – a secret weapon – that would help save the day: signals intelligence (SIGINT) from the Armed Forces Security Agency (AFSA) and the service cryptologic organizations.

General Walton H. Walker, left, with General MacArthur

In his book *The Forgotten War*, Clay Blair states that "As a result of the effort directed toward Moscow and elsewhere, North Korean codes had of necessity been grossly neglected" by AFSA. Further, General Walker "had no flow of 'strategic' enemy radio traffic from Washington to assist him. What he got he had to

acquire locally. . . ." [1] In truth, AFSA was a major contributor to the intelligence on North Korean operations, providing, among other things, the "flow of strategic enemy radio traffic" [2] that probably saved Walker and the 8th Army on the Pusan Perimeter. Although it is true that North Korean communications were given only token attention before the war, talented AFSA analysts quickly started studying them after the initial assault, delivering intelligence to customers in a matter of a few weeks. Overcoming budget and personnel shortages, AFSA provided valuable information to numerous entities, including the Army Security Agency Pacific (ASAPAC) and American troops in the field, that would have otherwise been unavailable. With few other intelligence sources relating to North Korea available, SIGINT proved vital to the U.S. military efforts in the first months and throughout the war.

THE CRYPTOLOGIC WORLD AFTER WORLD WAR II

The U.S. SIGINT world after World War II was one of departing personnel and budget cuts. At the end of the war, United States military personnel desperately wanted to return to civilian life and their families. They deluged American newspapers and their congressmen with pleas to be demobilized quickly so they could return to a "normal" life. Their successful campaign led Congress to drastically reduce the size of the U.S. armed forces over the next few years. The army, for example, went from over 12.1 million personnel in August 1945 to somewhat over one million by July 1947.[3] All SIGINT operations suffered from this significant loss of personnel, especially those that relied heavily on men and women in uniform. Even though stellar analysts like Solomon Kullback and Frank Rowlett remained, a large number of personnel left cryptology at the end of World War II.

This loss was made even more significant when combined with the drastic budget cuts that occurred at about the same time. There was no money to replace the individuals who had left the SIGINT world for civilian life. From 1945 until the start of the Korean War, President Truman slashed the U.S. military budget to help to pay

off the deficit caused by the recently ended war and to finance foreign aid promised through the Marshall Plan. Due to this and the personnel cuts, SIGINT activities were drastically pared back to the minimum requirements; only the most critical needs were filled. These factors contributed, in part, to the formation of AFSA in May 1949 as an effort to survive the lean times by combining reduced SIGINT resources.

In the five years before the start of the Korean War, the focus of United States SIGINT was on the Soviet and Communist Chinese problems. This decision was logical due to the increasing tensions of the Cold War and the fall of China to the communists. In order to provide adequate resources for these problems, targets of apparently lesser concern, like North Korea, were given less attention.

The allocation of the limited intercept and analytic resources was determined by a priority list. The *Recurrent Intelligence Requirements List* was the main SIGINT priority list, ranking targets in three separate groupings; the "A" list contained the highest priority targets, and the "C" list detailed items of lower interest. *Recurrent Intelligence Requirements List No. 2* was published on 15 December 1949 and was in effect until 15 May 1950. Of the twenty items on the "A" list, North Korea appeared only once in the entry: "Soviet activities in North Korea." There were two items related to North Korea among the fifty-eight items on the "B" list: "North Korean – Chinese Communist relations" and "North Korean – South Korean relations, including actions of armed units in border areas." Of the eighteen items on the "C" list, only "Views on U.S. Policy in Japan and Korea" dealt with either Korea at all. No reference was made to North Korea on any of the subsequent supplements to the *Recurrent Intelligence Requirements List No. 2. Recurrent Intelligence Requirements List No. 3*, dated 15 May 1950, dropped all mention of either Korea from both the "A" and "C" lists, but retained the two Korean items that appeared on the "B" list in *Recurrent Intelligence Requirements List No. 2*.

Although North Korea appeared in both *List No. 2* and *List No. 3*, there was still almost no coverage. Intercept requirements lists

such as these were best-case scenarios. Given the conditions prior to the Korean War, such requirements were almost never completely met in reality. AFSA simply had to cover what targets it could and slight the rest.

And so, the North Korean target was ignored, and no intercept site collected North Korean signals until 1949. Collection began inadvertently in April 1949 when a U.S. Army intercept station began collecting communications sent on an unidentified net using Soviet procedures. After some analysis in the field, the material was tentatively identified through direction finding as North Korean. In April 1950, the collected data were forwarded to AFSA for further analysis. After some study, AFSA analysts concurred that the intercept was North Korean. Dedicated North Korean collection was initiated on 21 April 1950 when, at the request of G2 (Intelligence Staff), AFSA tasked an intercept position in Japan to search for North Korean communications. A second position was added sometime before the end of June, and approximately 200 messages were collected before the war began. While the two intercept positions dedicated to North Korea took away from the higher priority Chinese and Russian targets, the loss was deemed necessary so AFSA could obtain the minimum coverage essential to develop a knowledge of North Korean communications for future COMINT needs.

AFSA was unprepared for the war with North Korea on the analytic front as well. In June 1950, there was one traffic analyst working on North Korean communications part-time, one part-time cryptanalyst, and one Korean linguist. The linguist was a senior Japanese linguist who had been studying Korean in his spare time since July 1949. It is unknown how far his Korean studies had progressed by June 1950. Preliminary work on the small number of North Korean messages available indicated that there were probably two networks in use, likely carrying North Korean military and North Korean police communications. However, the low volume of traffic, the little time the analysts could spend studying the North Korean messages, and the lack of linguists available to assist in the work severely hampered the production of intelligence from these communications. The limited effort was further hindered by the fact that there were no Korean

dictionaries, books on the Korean language, nor Korean typewriters available!

THE START OF THE WAR

The North Koreans launched a massive offensive against South Korea on 25 June 1950. This devastating attack was led by 150 Soviet T-34 tanks, which the South Koreans had no weapon powerful enough to stop. In a matter of days, the Korean People's Army (KPA) had captured the South Korean capital, Seoul, and was continuing to push south in an apparent attempt to reunify the Korean peninsula under communist rule.

Because of fears of the further spread of Communism and the obvious failure of appeasement before World War II, President Truman responded quickly. American sea and air power was committed to assist South Korea on 27 June, and ground forces were committed on 30 June. General Douglas MacArthur, United States commander in chief in Asia, transferred units from the American army of occupation in Japan to Korea in early July. Due to the need to move rapidly to provide assistance to the South Koreans, the arriving U.S. troops were out of shape, not well equipped, poorly trained, and almost totally unfamiliar with the Korean terrain. As a result, the UN forces, consisting mostly of Americans and South Koreans, were terribly torn up by the North Korean attacks. Throughout July, the KPA pushed the UN forces south, inflicting dreadful casualties in the process.

SIGINT PRODUCTION BEGINS

The lack of attention to the North Korean problem radically changed with the 25 June attack. With American troops fighting in Korea, the North Korean problem jumped to the top of the priority list. Changes were immediately made in the assignments to intercept sites. In the two weeks after the start of the war, the number of intercept positions collecting North Korean traffic increased from two to twelve: two Air Force positions, one Navy, and nine Army. The additional coverage was obtained by diverting intercept positions from other targets, bringing in additional

personnel, or having people work overtime. At the start of the war, any signal with properties that could be construed as North Korean was copied and forwarded to AFSA and ASAPAC for analysis. Teletype forwarding to AFSA was introduced to decrease the time between intercept and analysis. By 15 October, twenty-three positions were dedicated to the North Korean problem.

In spite of the extremely high interest in North Korean communications, the intelligence community realized that adequate coverage had to be maintained on the Chinese Communist and Soviet targets. Intelligence relating to their responses to U.S. activities in Korea and to their support to North Korea was vital to American policymakers. Therefore, collection resources could not be simply retasked to focus on North Korean signals. Reassignments had to be made cautiously to ensure that the Chinese and Soviet targets did not suffer too greatly.

The war also caused immediate analytic changes at AFSA. By 28 June, data delivery was upgraded so that traffic was arriving at AFSA ten to twelve hours after intercept. By 29 June, new traffic was arriving hourly in the analytic offices between 0800 and 1630, Washington, D.C., time. Analysts now worked on a twenty-four-hour schedule with maximum efforts occurring during the regular work hours and an operational watch at night. The additional personnel required to perform the analysis on this extended schedule were pulled from a variety of places. Analysts working on very low priority problems were transferred to the Korean target. Other analysts were borrowed from AFSA's technical consultants branch. To fill the desperate need for keypunch operators, training school students waiting for their clearances were tapped to do the punch work, but significant precautions were taken to prevent them from finding out the nature and purpose of their work. Any linguist with any experience in the Korean language was assigned to the problem. Strenuous efforts were made to locate Korean-English dictionaries and to formulate working aids. Further, steps were taken to increase the personnel and money at AFSA.

Once AFSA's analytic efforts were organized, success quickly followed. The first plain language translations appeared on 3 July 1950; the first traffic analysis reports were published on 11 July;

and the first decrypts were delivered on 14 July. Typewriters that could type Korean characters were cobbled together. As of 10 July, the traffic analysts had further refined their picture of the two North Korean traffic networks. One was determined to be a police force network of twelve fairly fixed outstations. The other was a military network of thirty outstations with sub-nets that was later determined to be the principal command net of the North Korean Army. Intercepted plaintext translation was well under way by mid-July and was hampered only by the lack of linguists. Even with this shortage, the intercepted plaintext was already proving extremely helpful to the American effort. During the first two weeks of July, nine working aids and two Korean language studies were completed. Efforts were so successful that the 16-31 July 1950 issue of the AFSA *Semi-Monthly Report for the Office of Operations* was able to report that

> The Korean traffic is now being processed and translations produced on a 24-hour basis. This has meant the strengthening of clerical and cryptologic aide staff in considerable numbers. The language staff has also been bolstered by loans from other branches. Courses in the language are being offered with a view toward increasing efficiency in . . . translating.

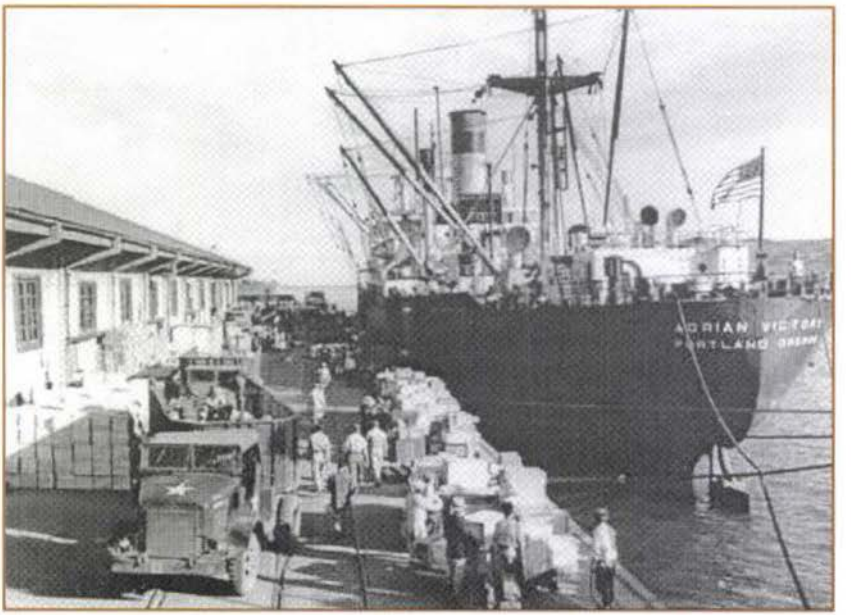
By 15 August, the *Semi-Monthly Report* claimed to have brought enough people together to permit full-time operations on the Korean Communist problem. By the end of August there were fifteen full-time and five part-time personnel engaged in this effort.

SIGINT AND THE PUSAN PERIMETER

The KPA continued to force U.S. troops and their allies southward until the end of July. Because of his green troops and equipment shortages, General Walker decided to establish a defensive line, retreat behind it, and hold it at all cost. The Pusan Perimeter, as the line came to be called, was an area in the southeast corner of South Korea bounded by the Naktong River on the west, the Sea of Japan on the east, rugged mountains on the north, and the Korea Strait on the south. The perimeter enclosed the port city of Pusan, where U.S. troops and supplies were


PEOPLE'S REPUBLIC OF CHINA
NORTH KOREA
Ch'ongjin
Yalu River
Ch'osan
Changjin (Chosin) Reservoir
An-tung
Sinuiju
Unsan
Kunu-ri
Taedong River
Hamhung
Hungnam
Sea of Japan (East Sea)
Sinanju
Sunch'on
Wonsan
Korea Bay
P'yongyang
Imjin River
Haeju
38th Parallel
Kaesong
Inch'on
Seoul
Han River
Suwon
Osan
Ch'onan
Ch'ungju
Line of Farthest Enemy Advance September 1950
Yellow Sea (West Sea)
Taejon
Nakdong River
Pusan Perimeter
Taegu
P'ohong-dong
SOUTH KOREA
Masan
Pusan
Koje-do
Japan

arriving, as well as the city of Taegu, where General Walker set up his 8th Army Headquarters. This defensive perimeter was established on 31 July 1950 when the last U.S. soldiers crossed the Naktong River. It was held by the U.S. troops for approximately forty-five days until the Inchon campaign provided enough of a distraction that Walker's forces could push across the Naktong River and drive the North Koreans north.



Transport unloads supplies for U.S. troops in Korea at Pusan.

Walker stationed his forces in small manned points along the perimeter to provide an early warning and some initial defense in the case of attack, fading back in the case of a major assault. Although the number of troops available to him was growing, Walker could not afford to do more at this point. During the first two-thirds of August, Walker faced uncoordinated attacks on four fronts: at the Naktong Bulge, around Taegu from two directions (north and east), and in a northeastern sector around Yongdok, Changsa-dong and Pohang-dong. The battle became a "daily succession of crises" in which Walker had to rush his men to

U.S. Army DUKWs bring supplies and equipment to shore from ships at Pusan Harbor, Korea.

various points along the perimeter to stop the North Koreans. SIGINT was vital to his efforts at this time because it provided him with an indication of the enemy's movements and plans and allowed him to spread his men as effectively as possible to repel the KPA.

During this desperate time, the SIGINT reports contained interesting and significant information that was very useful in efforts to keep the U.S. operations successful. For example, a few of the messages detailed locations of several North Korean infantry battalions. Additional intercept provided a listing of the ammunition being delivered to the 1st Division after what they had previously held was destroyed by the Americans. Several messages discussed a serious radio outage, which prevented an unidentified unit from talking to anyone except the North Korean 6th Division. One message revealed North Korean intelligence on the Americans and South Koreans. North Korean air force messages described the

Marines pushing to the summit of the Korean heights near the Naktong River are taken under fire by enemy mortars.

construction of new runways and some sort of shelters, believed at the time to be underground hangars.

The ground fighting around the Pusan Perimeter was temporarily suspended sometime after 21 August. In the ten days that followed, the KPA took the time to reorganize, resupply, and regroup. This rebuilding was reflected in the messages intercepted during this period. The North Koreans ordered massive quantities of ammunition from their ordnance department as well as detailed maps of the Taegu area in a variety of scales. Follow-up communications revealed that most of the ammunition ordered by the various North Korean entities was delivered sometime around 25 August. Another message ordered river-crossing equipment to be delivered to the KPA 1st Corps by 23 August. Another described the changes of disposition of several regiments and battalions. Additionally, North Korean communications described plans to organize a rear reconnaissance unit whose mission was to annihilate the enemy in fire raids. Obviously the North Koreans were preparing for something.

By late August, General Walker's men were exhausted, and the attacks that the North Koreans were planning could have potentially pushed them off the Korean peninsula. However, it was at about this time that AFSA began processing and delivering the messages that would prove the most valuable to the troops inside the Pusan Perimeter. These messages contained very specific instructions to KPA units, down to the battalion level, of where to attack, with what weapons, and when. One message, for example, ordered several specific units of North Korean soldiers, including a 76-millimeter gun battalion, to strike and pursue the enemy and attack his flank and rear at several very specific points around the perimeter. With such intercept, General Walker had a good idea of which units would attack and what weapons would be used. Now he could plan his strategy accordingly and organize the UN troops to best defend the perimeter.

The North Koreans initiated coordinated assaults on all four fronts simultaneously on 31 August. While no surprise, the attacks required all of Walker's skills to keep the UN forces intact. The North Korean forces broke through the U.S. defenses in Masan, cut the U.S. 2nd Division near the Naktong bulge in two, captured Pohang-dong, and forced Walker's headquarters to be evacuated from Taegu to Pusan.

Through the first two weeks of September, intercepted messages revealed the continuation of a powerful North Korean effort. The 15th and 1st Divisions, for example, continued to report successful advances against Walker's forces. Additional personnel, weapons, and ammunition were arriving in forward areas. Steel bridges over the North Han, Kum, and South Han Rivers were built or restored. However, detailed orders to the North Korean troops instructing them where to move and whom to attack continued to be sent and were available for General Walker to use in placing his troops as effectively as possible.

In spite of the reported successes, sometime around 5 September small hints began appearing in communications, indicating that there might be some weaknesses in the North Korean advance. The arrival of weapons and ammunition at some of the North Korean frontline divisions slowed, and Headquarters

began to instruct officers to make every effort to solve weapons problems on their own. A few furious messages appeared demanding to know why specific missions were not being carried out, such as why tanks weren't advancing and why there were complaints about fuel shortages, despite shipments. Successful American bombing raids were disrupting transportation. Kwangju Airfield was reported as unusable. One unidentified airfield demanded that aviation gasoline and other materiel be sent immediately. Another reported that air raid shelters were falling down, although exactly why this was happening is unclear. Nervous messages reported the arrival of additional British and American troops in Pusan. Anti-tank mines and entrenching tools began arriving in areas around the perimeter. Mine laying and sandbagging efforts were reported. Although North Korean advances continued through mid-September, indications of problems were appearing.

The final push by UN forces out of the Pusan Perimeter was made possible by the UN attack on Inchon, a port city about thirty miles west of Seoul. This surprise amphibious assault was the brainchild of General MacArthur. He felt that such an attack would "catch the enemy by surprise, outflank them, trap them between UN forces to the north and to the south, and obviate the need for the alternative: a long, bloodier, counteroffensive straight up the peninsula." [4] The plan was considered extremely risky by the Joint Chiefs and President Truman. These concerns were apparently well founded, as an examination of the North Korean communications reveals. As early as 6 September, there were messages revealing North Korean suspicions of a planned UN amphibious assault on a port city on the western coast of South Korea. Communications over the next eight days indicated the detection of enemy (American) plans to attack Mokp'o, Kunsan, or Inchon. There was at least one message requesting verification of a rumored American landing at Mokp'o prior to the Inchon attack. The 10 September U.S. bombing of Inchon further heightened fears, and rapid preparations were made for the defense of Inchon in order to prevent enemy landings ashore.

In spite of these reservations, the Inchon assault was finally approved and launched on 15 September. Fortunately for the United States, in spite of North Korean suspicions, the attack turned out to be a great success. Inchon fell in a day with little loss of American life. The American troops in the Pusan Perimeter, aided by the distraction at Inchon, began to push the North Koreans to the north at about the same time. UN forces captured Seoul by 26 September and had pushed the KPA back across the 38th parallel by 1 October. The Inchon attack had turned the war around.

Jeeps and ambulances pass two Russian-style tanks knocked out by U.S. Marines near the front in Inchon, Korea.

Beginning shortly after the American attack at Inchon, North Korean communications begin to trace the northern and western retreat of the KPA from the Pusan Perimeter zone. Some moved back to Kwangju by train, although there was an unspecified accident en route that killed three and wounded nineteen. In mid-September North Korean forces reported from Kumch'on that the situation of the battalion was not good and that ammunition was needed. There were indications that at least some of the forces in Kumch'on were ordered to pull back to Taejon. North Korean hospitals were moving their patients to safer areas, and the different unit headquarters were shifting north. Warm winter clothing could not be delivered to the North Korean troops in the mountains in the southern part of the Korean peninsula, and the

soldiers were getting sick. Obviously the Americans and their allies were gaining the upper hand.

Things quickly fell apart for the North Koreans after this point. The 1-15 October issue of the AFSA *Semi-Monthly Report of the Office of Operations* reported the disintegration of some of the North Korean military networks. The 16-31 October issue reported that AFSA analysis was now centered on North Korean police communications since North Korean military traffic had virtually disappeared. The issue further reported the enemy Supreme Command, now in Sinuiju, and the North Koreans were being driven farther and farther north by the UN attacks.

A North Korean prisoner of war captured by U.S. Marines near Naktong River.

CRITICISMS OF THE AFSA EFFORTS

In spite of such obvious successes, several individuals questioned the praise given AFSA for SIGINT successes during the Korean War. For example, in June 1952 General James A. Van Fleet, commanding general of the U.S. 8th Army, wrote: "Today, our intelligence operations in Korea have not yet approached the standards that we reached in the final year of [World War II]." The director of NSA concurred with this observation in March 1953. The achievements of SIGINT during World War II were far superior to those in the Korean War. However, this observation

must be considered in light of the situation in June 1950. At the start of World War II, analysis of Japanese and German communications had been going on for over a decade. By contrast, in-depth analysis of North Korean communications did not start until after the war began on 25 June 1950.

Other individuals give credit to the service elements in Korea for the SIGINT successes during the war. The problem with this view is that until mid-September 1950, ASAPAC and AFSA were the only entities available to support the U.S./UN effort. The first ASA personnel did not arrive in Korea until 18 September 1950, long after the messages so vital to General Walker in the Pusan Perimeter campaign had been delivered. The 60th Signal Service Company out of Fort Lewis, Washington, did not arrive in Korea until 9 October 1950 and did not start operations until 16 October. There were two groups on the ground in Korea in the early days of war: the Air Force Security Service and a South Korean SIGINT group working with an American civilian named Nichols. These entities, however, did no analysis and concentrated mostly on intercepting and translating North Korean communications. While their work provided vital tactical intelligence to the UN effort, they simply did not have the talent and materials to handle serious long-term projects. AFSA did.

Still other people argue that the success against North Korean communications in the early days of the war was due to the poor state of North Korean communications security. This is partially true. The North Koreans were actually sending highly classified materials, like battle plans, in the clear. However, to go from almost no effort against North Korean communications to the ability to provide significant amounts of valuable intelligence in a matter of six weeks was an amazing feat, especially since at the beginning of the war there were no full-time North Korean analysts or linguists. This situation provides a great testament to the abilities of the AFSA analysts who accomplished so much in such an incredibly short time.

But did this success really belong to ASAPAC and not AFSA? In studying the individual reports, it is sometimes difficult to determine exactly who processed a particular message, AFSA or

ASAPAC. However, throughout the war, the two organizations cooperated very closely, sharing all analytical results. Although, because ASAPAC was closer to the action, their reports may have arrived in the field before AFSA's, one unit always assisted the other. At first, and in fact throughout the time covered by this paper, there was a great deal of overlap between the ASAPAC and AFSA translation efforts. When the translation times for both entities are stated on the reports, they are usually only minutes apart. A plan was initiated later in the war to divide the work, moving as much of the translation to the field as possible in order to speed up turn-around time. Most of the long-term analytic effort, however, remained at AFSA throughout the war, and all results were passed to ASAPAC and the field elements as quickly as possible.

CONCLUSIONS

SIGINT proved vital to the American efforts around the Pusan Perimeter. It gave General Walker some warning of the North Korean troop movements and allowed him to position his forces accordingly. When the North Korean onslaught began to waver, SIGINT gave the initial indications of these weaknesses and allowed Walker to track their retreat from the Pusan area after the UN attack on Inchon. On 24 August 1950, a memo appeared from the chief, Office of Operations, detailing the important intelligence that AFSA had provided the troops on the ground in Korea. The memo stated that AFSA had "confirmed the identification" of several North Korean infantry divisions as well as identified several previously unknown units; provided "the first evidence of the corps structure of the North Korean Army"; provided advance warning of enemy troop movements around the Pusan Perimeter; reported on the location and construction of airfields and the planes at them; located "supply and distribution centers for artillery ammunition"; reported evidence that North Korean supplies were running low; and provided information on the health and morale of the North Korean troops. This priceless support continued through the entire campaign and beyond.

AFSA continued to produce large quantities of meaningful intelligence from North Korean traffic until July 1951 when the

North Koreans introduced new, improved communication security practices. However, until that time, AFSA provided the American forces in Korea with large quantities of North Korean SIGINT, which probably saved them from annihilation. These successes clearly demonstrate that AFSA was not ineffective during this period, but was a vital part of the war effort. Without the contributions of AFSA, the battle at Pusan Perimeter might have been lost.

Notes

1. Clay Blair, *The Forgotten War* (New York: Times Books, 1987), 171.

2. Ibid.

3. James T. Patterson, *Grand Expectations* (New York: Oxford University Press, 1996), 13-14.

4. Ibid., 217.

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