

David Kahn

# The German Comint Organization in World War II

A German interpreter hunched over and listened intently to the Russian voice in his earphones. It came from a loop of wire that members of a wiretapping squad had set out two weeks before to intercept Soviet field telephone conversations.

All around him, that winter's day early in 1942, German forces tightened their steel grip around Sevastopol, a key port on the Black Sea. But the Russians defended their Crimean fortress with toughness and tenacity. Like a bear swiping at his tormentors with his paws, they struck out at the Germans in a series of counterattacks. The interpreter's unit, the 24th Infantry Division, had suffered many of these for the past week.

In this positional warfare, it was the chief duty of the wiretapping squad to preclude surprise attacks by eavesdropping on enemy talk that would give hints of Russian intentions. To this end, members of the squad had, after the suspension of the first systematic German offensive against Sevastopol, when Russian counterattacks might be expected, crawled to the Russian lines on 7 January and left there a loop of wire. One of three such loops, it did not actually connect to the enemy wires, but detected the return speech currents in the earth, like the Arendt apparatus of World War I. It thus picked up, not the distinct conversations of a single line, but some 20 telephone stations with consequent cross-talk and hum. For the first week, it produced general intelligence on enemy equipment and supplies, replacements and their instructions, observations, morale, losses, and battle measures. Twice it enabled the Germans to save their scouts, once from enemy gunfire, once from encirclement, by alerting them that the Russians had spotted the patrols.

On 15 January the Russians began a week-long series of attacks aimed particularly at winning observation posts that would overlook the German rear, as well as tying down and weakening German forces. The German wiretappers provided clues that helped alert

This was taken from a chapter of Mr. Kahn's new book, *Hitler's Oracles*. Used with permission of the author.

their division to Russian activities. They heard a speaker asking "Where am I going to get some schnapps?" and another promising to fire "very, very much" on a bunker. On 21 January, the attacks started early in the morning. The battles flamed in close combat along the main trench line, and at one point the Russians broke through, only to be quickly thrown back. During the early afternoon a pause set in. The infantrymen waited uncertainly, not knowing whether they were through fighting for the day or whether the Russians would suddenly rain shells upon them and follow with a renewed onslaught.

At 4 p.m. the interpreter heard Russian Post 21 calling all company commanders to the telephone. After some indistinct expressions, he heard the commander at Post 21 say clearly:

"Forty-five minutes left till then."

Ten minutes later, a Russian telephone speaker asked another:

"Usina! When are we supposed to begin again?"

To which the reply came:

"In 35 minutes."

The interpreter reported this to the divisional G2, who correctly interpreted it as another attack. The troops were alerted. As the Russians assembled their companies, the artillery of the 24th, of the neighboring 50th Infantry Division, and of the corps brought them under fire. When they finally attacked in battalion strength, only weak leading elements even reached the main German lines, and the infantry repulsed them with their light weapons. The Russians returned to the attack in several uncoordinated pushes but were repeatedly thrown back. At 6:45 they finally gave up, returning to their original positions and leaving the Germans firmly in control of their main lines.

The German Staff declared the next day: "Wiretap reconnaissance again achieved important results in the enemy attacks on 21 January, creating the basis for their successful warding off. In defense, wiretap reconnaissance is of controlling importance, which is widely recognized by the combat troops."

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Unlike political circles, the military welcomed communications intelligence. In fact, in the field it became the most important source of enemy intelligence.

In only one place does the Treaty of Versailles mention intelligence agencies. Its table listing German infantry division strengths allowed the signal detachment to include an intercept section. The German army did not use the men for the low-level work that had been intended, but assigned them instead to the army's 12 major radio stations. In 1925, with Germany increasingly departing from the Versailles restrictions, the army set up six posts specifically for interception. Each had three or four receivers served around the clock by about 20 radiomen. The difficulty of following foreign maneuver traffic from these fixed locations led in 1928 to the erection of mobile direction finders near the borders, and two years later to the creation of mobile interception units which evolved into mobile intercept companies. Directing this work was first the Cipher Center and then the new agency organized by about 1939 in the army command: the Main Intercept Post.

The intercept organization was part of the signal corps, which was headed by General Erich Fellgiebel. He was subordinated in wartime to the chief of the general staff; he served simultaneously as head of armed-forces communications, making him also the superior officer of OKW/Chi. A bespectacled, kindly, well-liked officer in his early fifties, divorced and remarried, a former chief of the Cipher Center, Fellgiebel won high praise from the OKW chief, Keitel: "In his field a pronounced leader type with broad vision, a gift for organization, full energy. . . satisfied even the most unexpected and difficult requirements." But Keitel added that Fellgiebel inclined to an "unconsidered mania of criticism" towards Naziism. And indeed Fellgiebel participated in the 1944 attempt to kill Hitler. His hesitancy in sealing off communications to the Führer headquarters after the bomb went off contributed to the failure of the plot, for which the conspirators, including himself, paid with their lives. He was succeeded in both his army and armed forces offices by General Albert Praun, 49, a short, pleasant, extremely capable signal officer who had also led an infantry division and who was, Chief of Staff Guderian wrote, a "good National Socialist."

These two men, especially Fellgiebel, presided over the remarkable expansion of German army communications intelligence in World War II. It provides a classic case history of how an intelligence organization develops in response to the requirements of intelligence consumers and its success in satisfying them.

At the start of the war, army communications intelligence operated on four levels: the Main Intercept

Post at Zossen, 10 fixed intercept posts that passed their information to Zossen and to the army groups, 7 mobile intercept companies attached to armies, and intercept platoons within the divisions. But communications intelligence scored only minor successes during the Polish campaign. Fellgiebel traced this in part to the distance of the Main Intercept Post from the action. But bringing control closer to the front implied a dispersal of control, and all the lessons of radio reconnaissance taught that strong centralization was essential for success. Fellgiebel compromised. He created commanders of intercept troops to handle communications intelligence for each of the three army groups getting ready to attack France.

This organization worked well on the higher levels in the French and Russian campaigns. But the tactical results continued to be poor. So in 1942 Fellgiebel centralized this work. He pulled men out of the intercept platoons of the divisions, which were left with only a squad, and assembled them in short-range communications reconnaissance companies. He gave one to each army headquarters. The company scattered its platoons throughout the army's area: two platoons for message interception, two for short-range direction finding, five for wiretapping. To rationalize the terminology, Fellgiebel renamed the armies' intercept companies "long-range communications reconnaissance companies," the Main Intercept Post the "Main Post for Communications Reconnaissance," and the commanders of intercept troops "commanders of communication reconnaissance."

Each army then had a short-range company and either a long-range company or a fixed intercept post. Again centralization promised improvement. On 15 December 1943, Fellgiebel united each army's organs into a communications reconnaissance batallion. The 17 that existed were in turn grouped into 8 regiments for communications reconnaissance, each under a commander of communications reconnaissance at army group or theater command. Finally, early in 1944, the only field level that did not have its own agency, corps, set up small, 10-man units to evaluate the material that came in from the divisions and from any nearby platoons of the short-range companies.

In the fall of 1944, Praun carried all this to a logical conclusion. At the very peak, he created a general of communications reconnaissance to assure cooperation among the various units and to improve personnel and equipment. General Fritz Boetzel, a man of some charm and broad cultural interests and a one-time head of the Cipher Center, was named to the post. This gave communications intelligence its sixth and final level and completed its evolution into a highly articulated organization that effectively served all commands and

delivered the most valuable enemy intelligence that came to German army generals during World War II.

The work of many of the officers in many of these posts can be illustrated by the daily routine of a young lieutenant, who despite his low rank became in effect the commander of Communications Reconnaissance 2, the regiment that served Army Group Center. He was Fritz Neeb, a stubby young Viennese who had been interested in cryptology as a teenager. He read everything he could find on it in the Austrian National Library and cracked the cryptograms that friends made up for him. Through some blunder on the part of the German army, he was actually put into the kind of work for which he was best suited. He served in communications in the Polish and French campaigns and the first part of the Russian—early in which, while a member of the 137th Communications Battalion, he captured 130 Russians 20 miles behind their lines. One day his major met an old friend, the colonel commanding the Army Group Center communications reconnaissance regiment. The colonel told the major of some of his problems, and the major responded that he had a young lieutenant who had resolved those same problems within his battalion. Three days later Neeb was at the regiment's headquarters. Codenamed HEINRICH EAST, it was located on two floors of a former Russian secret police building in Smolensk. Neeb was at first just one of several able evaluators but as first one and then another of the officers departed, and eventually the chief himself was transferred, Neeb became virtually the commander of HEINRICH EAST, with its 400 men, and made the daily reports to the army group G2 Colonel Rudolf Christian Baron von Gersdorff.

His day began when he got up about 11 p.m., after the most important reports from the subordinate companies came in. He looked through these, gave assignments as to how they were to be handled, and from about 3 to 5 a.m. assembled the daily report, either by dictating it or by simply assembling the rewritten drafts of the subordinate companies' reports. Between 5 and 7 a.m. these reports were teletyped to the Main Post for Communications Reconnaissance and to the subordinate armies' communications reconnaissance companies. Five or six copies went to the G2 and other officers of his own army group. If no immediate questions came in, Neeb could then go to sleep about 6 or 6:30; otherwise, 7:30. He awoke again around noon, ate in the officer's mess, put out a short so-called "advance report" of four or five pages with the most important new information, and then prepared for the daily G2 situation conference in Gersdorff's office. These began at 4 p.m. and sometimes lasted three hours. Here the leaders of the various organs of specialized reconnaissance submitted their results and

compared them. Often the discussions were very lively. Neeb had to advance communications intelligence entirely on its own, without recourse to any other source. At about 6 or 6:30, or sometimes 7, he went home, grabbed a bite to eat, and went to bed to try to get some sleep.

Sometimes instead of sleeping Neeb went to or gave instructional lectures, for he realized that for him and others on the same schedule it often didn't pay to try to sleep a few hours in the early evening. He also prepared tests for potential cryptanalysts and evaluators, and during the course of time tested more than 1,500 persons to try to cover his personnel needs. Twice he gave information out over the telephone in his sleep. He had no recollection of it when he awoke, but was told of it—and found to his relief that the information had been correct. Thereafter he had a wire recorder attached to his telephone.

The production of communications intelligence began with an assignment from an intelligence officer. Sometimes this simply called for general information, sometimes for specifics on, for example, artillery or armored formations. The communications reconnaissance commander disposed his units to obtain the raw material he needed to fulfill the assignment. In the west, Colonel Maximilian Baron von Oer, the higher commander of communications reconnaissance (called "higher" because he had two regiments under him), sought simply to get as much information about the Anglo-American forces as possible. Before the invasion, his Communications Reconnaissance Battalion 12 concentrated on radio traffic in and with the United States. After the invasion, he shifted ten receivers of its Fixed Intercept Post 3 at Euskirchen to cover Great Britain. He divided British army traffic between Fixed Intercept Post 2 in Port Marly, which listened from 4,500 to 7,500 kilocycles with a search up to 10,000, and Post 12 in Louveciennes, which listened from 3,000 to 4,500 with a search from 100 to 3,000 kilocycles. Within each post or company, the commander might further divide up these bands into subbands and assign one to each of his approximately 36 receivers. The monitoring radioman would tune slowly up and down, sometimes listening to two frequencies at once, until he heard a transmission. He notified the direction-finding team. If they told him the transmitter was outside of the interception area, he continued his patrolling of the other. If it were within the area, he continued to listen. He observed the tone of the transmitter and the "fist" of the radioman—his way of sending, which is as distinctive as handwriting. These alone could often identify a particular radioman, whose moves from one place to another—and by implication the moves of his unit—could therefore be followed. The monitoring radioman also noted other details, such as the wave length

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of the transmission, the calling station's sign, the called station's sign, and cipher recognition groups as he wrote down the intercept.

These intercepts poured out of the radio room, where the monitors sat with their headphones on, into an evaluation center. Each command level had such a center, corresponding in size to the volume and complexity of its work. The centers divided into subsections for traffic evaluation, direction-finding evaluation, contents evaluation, and final evaluation. The raw data could often reveal much. Long wave lengths often meant higher staffs; short waves, corps and division staffs; ultrashort waves, armor. Since not every unit held every cipher, the cipher recognition groups helped define communications nets and so, by implication, command organizations.

Supplementing this was direction-finding. Monitors in widely separated locations turned the movable antennas of their specialized radio sets until they heard an enemy transmitter at its quietest. A calculation indicated in which direction it was. They reported this direction to the direction-finding evaluation subsection. It plotted, on a map, the bearings given by several monitors. Where these lines crossed marked the location of the enemy transmitter.

The traffic evaluators then listed on cards all stations using a certain frequency, all stations called by a particular call sign, and all known locations of the different stations. They diagramed these relationships and saw what patterns emerged. One station addresses messages to many others, which seldom intercommunicate; direction finding shows it further to the rear. The evaluators deduce that it represents a higher echelon commanding the others. A higher volume of traffic on one circuit may portend an attack, a withdrawal, a relief, perhaps only a disciplinary problem, but almost certainly something. The evaluators followed the movements of the stations. Often they were extremely acute. Once the Russians sent an armored army toward Stalingrad while leaving some of the army's radiomen in its old location to give the impression that it was still there. But on the march, one of the radiomen who had gone along inadvertently transmitted. The Germans picked up his transmission, recognized him, and concluded that the armored force was moving south, probably toward Stalingrad.

Valuable as these inferences from the traffic patterns were, they could seldom provide the insights that the actual contents of the enemy messages could. Many of these were unenciphered. Indeed, at the lowest level, such cleartext radio or wire intercepts provided about 95 percent of communications intelligence. Sometimes they shocked with their revelations of enemy attitudes. In Russia on 17 February 1944, the 17th Panzer Division

overheard a conversation on 1,960 kilocycles at 10:30 a.m.:

Rokot: Thirty minutes ago my patrol came out of Oktyabr and reported that no one is there. It found only our own wounded.

Tochka: Why was it shot into? You're dogs, bastards, traitors.

Rokot: The battery commander fired without an order.

Tochka: Arrest him and shoot him with his own pistol.

Rokot: Acknowledged.

Other times the cleartext messages provided helpful background information. In May 1943, radio reconnaissance of a landing practice of the Royal Marines near Southampton shed light on amphibious tactics. The Germans learned that the Marine division landed on a width of 10 miles in the morning hours, attacking with three brigades in the forward lines. Despite strong "enemy" counterattacks, by 5 p.m. it had reached the line Totton-Ringwood, two-thirds of the way to its objective 12 miles inland. Most rarely, cleartext intercepts revealed actual enemy intentions. In November of 1944, the 26th Panzer Division in Italy intercepted an order for a bombing mission naming in clear the village that headquartered the neighboring 278th Infantry Division. It sent a warning, and the 278th suffered only minor casualties. Similar cases in Russia led a commander of communications reconnaissance to declare in mid-1943: "The monitoring of the radio voice traffic (short-range intelligence coverage) brings valuable results."

Wiretapping produced a lower volume of intercepts than radio, and seldom overheard anything but front-line conversations of limited concern. The German troops crawled from their own to the enemy trenches and either tapped directly into the enemy telephone lines or set out loops that picked up ground currents, which were then amplified.

During the Russian campaign, the wire reconnaissance team of the 72nd Infantry Division, advancing into the Crimea, hooked into the wires on the permanent telephone poles along the main road. Through these during a German attack, the team heard the Russian defenders being told that it was absolutely necessary to hold a certain position and that reinforcements were on the way. The conversation included details about the Russian guns and their locations. All this enabled the Germans to rush up their own reinforcements and to take the position.

Clear text messages like these nearly always outnumbered cryptograms. In September of 1944, for example, the commander of communications reconnaissance 7, in Italy, picked up 22,254 cleartexts and 14,373 cryptograms. This preponderance stemmed from the enormous number of short local messages within

a division. At the higher echelons, where orders live longer and therefore allow more time for encipherment, the proportion of cryptograms increased, until at the top, practically all messages were enciphered. They were obviously of far greater importance than those in clear. To get to their contents, the Germans had to crack open their cryptographic armor. As the enemy improved his cryptographic protection during the war and extended it to more classes of messages, the German army's cryptanalytic establishment grew to keep pace.

The Main Intercept Post had only a handful of cryptanalysts at the beginning of the war—five for all Britain, for example. By 1942, it had 200, divided into country sections and such service sections as those for Hollerith machine processing and for archives. It attacked not only the enemy high command systems but also those unsolvable by field echelons, which worked on the simpler cryptosystems of the enemy units on their level opposite them.

At first the Germans had relatively good success with the Russian codes. The solved messages, said the cryptanalysts of Army Group North in 1944, "contain operational combat reports, statements about assembly areas, command posts, loss and replacement reports, reports about chain of command and positions prepared for the attack (e.g., messages of the 122nd Armored Brigade on 14 and 17 February)." These results came from only a small proportion of the intercepts. In the thirteen months from 1 May 1943 to 31 May 1944, Army Group North intercepted 46,342 Russian cryptograms. It solved 13,312, or less than one in four. Its commander of communications reconnaissance explained why:

"It is only infrequently possible to get enough identically enciphered messages from the same net to be able to solve the current systems." Later he adduced additional reasons: "... a growing complication in the systems used by the enemy... a greater care in enciphering... (avoidance of identical addresses and signatures; names and phrases with characteristic endings and patterns, which must be given in code form in individual letters or syllables, were either enciphered abbreviated or were inserted in cleartext)."

In other words, as Russian code construction and discipline improved, German cryptanalytic success declined. Whereas from May to August 1943 the Army Group North codebreakers always solved more than 34 percent of all intercepts, from January to May 1944, with even greater monthly volume, they never solved more

than 33 percent. These almost never included the top-level command systems. It was the same for the western Allies. In general, the Germans failed to read the messages moving in the higher command nets.

The cryptanalysts passed their solutions to the contents evaluators, who passed their conclusions in turn to the final evaluators. They combined these conclusions with those of the traffic evaluators. Often their analysis could precipitate precious observations. The evaluators of Intercept Company 3./N.7 (3rd company of Communications (Nachrichten) Battalion 7) did so for the 11th Army in March of 1942.

In its drive to conquer the Crimea, the 11th Army had split the Russian forces on that peninsula. It had penned some in Sevastopol in the west; it had not yet swept away those in the eastern portion, an elongated peninsula ending in the city of Kerch. These Russian eastern forces, controlled by the Crimean Front, continued to assemble troops for a counteroffensive. The intercept company concentrated much of its effort at determining the composition of these forces, since this would help the Germans know how many of their own troops they might have to use to repel the Russian attacks in their rear.

This was the situation when, at 7:16 a.m. on 13 March, the company intercepted a message to an unknown radio station with call sign SOTÖ. It was addressed "To the chief of communications of the 44th Army." This indicated pretty clearly that SOTÖ was the 44th Army, and since company's records showed that direction-finding had located SOTÖ transmitting from near Kerch, the company could report a few hours later to the intelligence officer of the 11th Army, "44th Army definitely on the Kerch Peninsula." It was one more element in his picture of the enemy.

Though these chains of hypotheses might seem to have led to frequent error, constant observations corrected wild reasoning and kept the results close to the facts. A few days after the intercept company identified the 44th Army, it assigned radio station ÖPWCH to the air staff of the enemy's 51st Army on the similar basis of a message address. But the following day, it recognized that the net to which ÖPWCH belonged was in fact identical to a net of the 44th Army "according to the net construction, frequency notifications, and statements of the monitoring radiomen." ÖPWCH was therefore a station of the 44th Army, the company concluded, and had probably merely accepted the message for forwarding to the 51st Army.

Through such detailed and often wearisome activity, German radio intelligence units contributed enormously

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to German tactical and operational intelligence. In these low and middle echelons, it warned of enemy attacks, provided solid information on enemy order of battle and enemy weaknesses, and saw through both radio silence and radio deceptions.

In Russia, for example, the Main Post for Communications Reconnaissance issued a report each day listing all enemy troop units recognized or confirmed through communications intelligence. A typical such report ran 14 pages for Soviet army units, 2 for partisan forces, and 2 for air units. From the south to the north of the long Russian front, it dealt with the major commands, as far down as divisions. "5th Guards Army. Direction-finding for the army command from 24 August [1944] indicate the area southeast of Staszów [Poland]. According to a message of 7:30 a.m. 25 August it is changing its location," read one entry. Another entry, based on a Moscow broadcast praising heroic units, listed a score of divisions, their commanders, their location, and their subordination. This top-secret report, produced in 37 copies, went to Foreign Armies East, where it joined other sources in creating a picture of the Soviet forces opposite the German.

In France in 1944, the higher commander of communications reconnaissance likewise achieved good accuracy in determining American order of battle. Between D-Day and 25 June, it recognized the presence of the U.S. 1st Army, 4 corps, and 15 divisions or parts of divisions. Under the VIIIth Corps, for example, it correctly listed the 101st and 82nd Airborne Divisions and parts of the 90th Infantry Division. Much of this information later appeared in the order of battle reports of the G2 of the commander-in-chief west. Toward the end of June 1944, the breaking of a logistical code used by the senior officer, Ferry Control, in the area of the British 2nd Army in Normandy gave the Germans exact figures on the personnel and equipment brought in there for the bridgehead. They learned, for example, that in the 24 hours starting at 6 p.m. 1 July, the Allies unloaded 4,371 tons of supplies, 1,232 vehicles, and 1,700 men.

Of more direct value were those results that told of upcoming enemy measures. On 14 June 1944, German radio reconnaissance in Normandy ascertained the bringing up of the U.S. XIXth Corps and concluded the following day that a major attack would take place in that area. The attack did occur—and was halted that same day well short of its objectives by stubborn German resistance. On the 19th radio reconnaissance intercepted orders for Allied air units to take aerial photographs west and southwest of Caen, with a deadline of the 25th. This

told the Germans of the probability of an attack and its location; they prepared themselves accordingly. This attack too came as predicted, and likewise met strong opposition, with the result that three weeks later the Allies stood in virtually the same position as when they had started.

The front-line troops in France most acclaimed those results that warned of enemy bombings. The Germans intercepted and solved British calls for air support for ground forces. They then broadcast, in cipher, warnings based on these intercepts. At each divisional headquarters, a noncommissioned officer stood by constantly at the wave lengths assigned for these broadcasts. When he received one, he passed it to an officer, who deciphered the message and had it to his commander or G2 in half an hour. At 9 p.m. on 10 August 1944, for example, the western theater command warned subordinate units in this way that "In a short while the armor 2 kilometers southwest of Soignolles (15 kilometers northwest of Falaise) will be bombed." Between 20 and 30 such warnings were broadcast every day, and since the bombings usually took place at the exact time requested or within an hour of it, the German intelligence, which proved 90 percent correct, greatly reduced casualties and damage. A signal officer reported from the front that "great worth was placed upon the broadcasts" and that they were "thankfully accepted."

One of the most valuable operational results of signal intelligence in the west came during the Battle of the Bulge.

After Hitler had struck in the Ardennes in December 1944, the Americans brought up troops to push the German back. The military police battalion in the U.S. 1st Army zone controlled much of this traffic, which moved according to itineraries fixed by higher authority. The Germans soon discovered that the battalion broadcast these itineraries in cipher to all its control points—the Germans knew of 35 of these and located 22, many at the intersection of two French national highways. The messages gave the name of the unit, its time and place of departure, route, average speed, numbers of vehicles and of march blocks, and destination and time of arrival. The radio reconnaissance unit estimated that it intercepted about 90 percent of these broadcasts and so ascertained almost 100 percent of all units with itineraries. Those without itineraries and those going around this area were not spotted, it said. This gave the German command on the western front an accurate picture of which enemy forces were coming up and where, enabling General Hasso von Manteuffel to shift his 5th Panzer Army and so sidestep the Allied blow.

But communications intelligence did not invariably enable the Germans to win victories. Sometimes its information, though correct when delivered, was falsified by enemy plan changes that it did not detect. For example, in 1943, the commander of communications reconnaissance of Army Group North reported: "An intended Russian attack on Staraya Russa was recognized on 25 June, which was to begin at 2300 hours 25 June and in which 6 armored battalions, among others, were to take part. The attack, however, was not carried out, probably because of the unfavorable weather conditions."

Communications intelligence was also often nullified by any of the host of nonintelligence factors that determine success and failure in battle. On 9 August 1944, the Main Post for Communications Reconnaissance disclosed in its report that "11th Guard Army gets order to improve clothing, get new underwear, all airplanes to be overhauled and prepared for flight, provisions to be improved and three hot meals a day served." The next day, the Germans, who were preparing a relief operation, learned through radio intelligence that two of the 11th Guard Army divisions were ordered to be ready to go into action against enemy attacks by 5 p.m. When the Germans began their drive on the 16th, the 11th Guard Army responded with a counterthrust, just as predicted. But this forewarning did not enable the Germans to stop the Russians, one of whose platoons carried the ground war, for the first time, onto the soil of the Reich.

And sometimes communications intelligence simply failed. The evidence on which it rested was ethereal—peepings in radiomen's earphones—and could be suppressed or faked. Occasionally the Germans turned radio silence against its users: the 7th Army G2 declared in France in November 1944 that radio silence suggested Allied attack preparations. But in North Africa, the British concealed a division very close to the front by shutting off their radios for several weeks. Radio silence also preserved surprise for many Allied landings in Sicily and Italy. Radio deceptions sought to fool the Germans. The Russians tried this every few weeks, but the Germans always seemed to see through them. On the other hand, the British successfully covered the transfer of three armored divisions from one point in the line to another during the Normandy battles through radio deception.

Perhaps the most common failure was simply miscalculation. In November 1940, the chief of the general staff, Halder, thought that an intercepted message referring to a transfer of headquarters might mean that the English were about to occupy all of Ireland to get the western harbors. He was all wrong. Before Leningrad in

June of 1943, the commander of communications reconnaissance in Army Group North reported: "The [Russian] 8th Army had only a little radio traffic in the early days of May and soon afterward complete radio silence ensued. . . . Together with the radio silence of the 8th Army, the irregular and opaque traffic of the 2nd Shock Army and the change in location of the command post of the Leningrad Front. . . , it is concluded that a Russian attack of considerable magnitude is imminent." It never came.

But the many successes counteracted these occasional failures. Moreover, communications intelligence produced great quantities of information about the existence, locations, and movements of enemy formations—the basic enemy order-of-battle intelligence that says so much about enemy capabilities and intentions. Consequently, by 1943, commanders in the field, who in 1939 had mistrusted communications intelligence—particularly when it came, not from the contents of messages, but from inferences based on traffic volume and routing—came to look upon it as their best source of intelligence. The G2 of the XXXXth Panzer Corps noted that through the "outstanding" communications intelligence in February 1943 the corps "always knew almost exactly the enemy situation, location and strength. This knowledge contributed considerably to the complete annihilation of the Popoff armored army." During Normandy, the G2's in the west drew about 60 percent of their information from radio intelligence, 40 percent from all other sources combined. The chief of staff of the western theater called it "the most important means for clarifying the enemy picture." A head of Foreign Armies West called it "the darling of all intelligence men;" the head of Foreign Armies East, Gehlen, listed it as the most important of his sources. And Halder flatly declared it to be "the most copious and the best source of intelligence."

The glowing testimonials that many high-ranking officers gave to army communications intelligence referred only to tactical and operational results. For on the strategic level, German communications intelligence failed utterly. In contrast to the Allies, who could read all levels of German cryptosystems up to those enshrouding the command messages of the Führer himself, the Germans—though they sometimes read diplomatic messages of Roosevelt and Churchill—never cracked the high- and top-level military ciphers of the Allies. Thus unlike the Allies, who often knew German plans for the overall direction of the war, the Germans never knew the Allies'. Probes of high-level Allied messages showed that they could not be solved analytically. Testing them all statistically for a possible cipher clerk's error that might

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have permitted the solution of a dozen or so would have taken too many cryptanalysts away from work that, though lower in echelon, was more certain of results. So the Germans did not seek to crack these high-level messages, and after a while they even gave up intercepting them. This was their unacknowledged admission of defeat in the most vital sector of the secret war.

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