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SRH002

WAR SECRETS IN THE ESTER

By

Wilhelm F. Flicke

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By

Wilhelm F. Flicke

Translated by

Ray W. Pettengill

Office of Training Services
National Security Agency
Fort George G. Meade, Maryland

June 1959

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This is a reissue in one volume of the translation originally published in two volumes by the National Security Agency in 1953.

Translator's Note

The manuscript entitled "Kriegsgeheimnisse im Aether" came to the attention of American authorities in Germany by accident. All rights to the book were purchased for a curious reason shortly after World War II, and five years later the National Security Agency found itself the custodian of this property. This translation is issued, by request, in the belief that the document will interest other agencies.

No attempt has been made to verify the author's statements. Herr Flicke says that his manuscript of Parts I and II, covering the history of the intercept service up to World War II, was lost and had to be reconstructed largely from memory. Part III of this book, covering World War II, was written partly from memory, partly from notes made under trying conditions. Readers who chance to have more adequate information on this or that point will, therefore, make due allowance for any dubious statement.

This brings up the question of the author's qualifications and background. Herr Flicke began his intelligence career in the "Arendt Service" during World War I; from 1919 to 1939 he worked in what was eventually known as "OKW/Chi," where he developed the evaluation section; in 1939 -- apparently after getting into hot water by his opposition to the Nazi Party -- he was sent to set up the first intercept station of OKW/Chi at Tennenloche. From there he went to Libourne, and later to Lauf as technical director of the station; in September 1944 he was transferred to "Funkabwehr" (radio counterintelligence) in Zinna, where he became acquainted with the work against foreign agents and partisans. From the foregoing it is evident that Herr Flicke saw many of the fruits of German cryptanalysis and that he himself participated actively in most other aspects of the work he describes.

One other factor may be considered. Flicke says that in 1934 General Fellgiebel, then head of the intercept service, commissioned him to write a history of that service; this accounts for his copious notes. Possibly one motive for completing the book was his loyal devotion to the memory of Fellgiebel, who was one of the victims of the purge following 20 July 1944.

"War Secrets in the Ether" attempts to cover large segments of time and space. On the espionage side it affords an interesting check on the "Handbook for Spies" by A. A. Fote; as a revelation of German opposition to National Socialism it lacks some of the dramatic qualities of Gisevius' "To the Bitter End"; nevertheless, the reader may grant that it is significant. In Part III, the author reveals aspects of espionage and the counterespionage conducted on a scale never before known. As the title of the book suggests, the aspects treated are those concerned with communications; traditional cloak and dagger methods of securing information are involved, to be sure, but the spotlight rarely rests on them.

Others have already exploited this field and have painted more detailed word pictures of specific operations. Herr Flicke has done so himself in his novel "Die Rote Kapelle," published in 1949.

Part III has been somewhat abridged, primarily because of the space devoted to military operations which are adequately covered elsewhere. When no immediate connection between the main theme and a particular action was indicated, the translator has felt free to cut a bit. While this may have resulted in an occasional abrupt transition, it is not believed that the author's efforts to make a contribution to historical research have been impaired.

Ray W. Pettengill

Preface

(Prepared by the author for a prospective publisher)

The author of the book is a scientist who over a period of twenty-nine years had opportunity to gain deep insight into a special branch of the secret service of all European countries; this branch is known as "intercept service" to only a small part of the public.

Since the invention of technical means of communications -- such as the telephone, telegraph, and teleprinter -- the work has been spanned by a mighty network -- partly visible, partly invisible -- over which messages of all types are speeded almost without interruption. Since the invention of radiotelegraphy the ether has been filled with radiograms whose content extends to all realms of public and private life and gives a reflection of human existence on our planet.

On the other hand, all these radiograms act like a magic motor in shaping the life of mankind. Whoever follows this exchange of information in the ether (and in part over wire lines) knows the course of events in the past, present, and near future as no one else can and has a chance to look into things in a way of which the outsider can have no conception.

The present book draws on this source. It can offer only a tiny fraction of what that source has yielded in the course of the last thirty years. But even this small section will show mankind in what fateful fashion the interception of radiotelegraphy and of other technical means of communications has influenced the course of events.

The contents of this book fall into three periods of time:

1. The period from the inception of the intercept service to the end of World War I;
2. The period between the two World Wars;
3. The period from the summer of 1939 to the end of World War II.

Part I is purely historical in character. It is considered here in order to give a basis for an understanding of the intercept service, and to assure to the treatment of the material a certain degree of completeness.

Part II throws light on the development of the intercept service in European countries, especially in Germany, and is calculated to give many a hint regarding the events leading up to World War II.

Part III, the largest section, shows the decisive role of radio espionage in all its branches during World War II. It reduces the events at the fronts to a position of secondary importance when compared with the invisible, dynamic force of radio espionage in the mightiest of all wars. Here for the first time the most secret matters of the warring states are brought into the light of publicity. This is done in order that the world may know what went on behind the scenes, and so dispel many an illusion which might tend to give this war a semblance of romanticism.

In this third section the present work aims to show to the world, and in particular to the German people, the incredibly frivolous, casual unscrupulous manner in which Hitler not merely began the war but -- what is worse -- continued it contrary to all laws of reason and humanity after every chance that it might be decided in his favor had long since vanished.

This book is intended to help give the peoples the truth; it is intended as a warning, and so to serve the cause of peace.

Foreword

The Second World War has come to an end; it ended as it necessarily must. An infinite amount can be written about this war, the events leading up to it, and about the domination of the National Socialist system in Germany and its effects abroad. Many things will be explained eventually; many will forever remain veiled in darkness. This book is intended as a contribution to historical research. An attempt will also be made to air many a secret, to furnish an explanation for some things which seem inexplicable. This work is intended to illuminate events of the past thirty years from a point of view from which this has never yet been done and could not be done: namely, from the point of view of the so-called intercept service, i.e., the interception of radiotelegraphy and all other technical means of communication and the decipherment of cryptograms. The book originated in the main during World War II, but its beginnings go back much further. Originally it was intended to be a "History of the Intercept Service and of Illegal Decipherment." The first part, embracing the period 1908 to 1939, was completed in 1940. It was lost in consequence of the war. Hence, only a reconstruction in rough form from memory is possible.

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This work will destroy many an illusion. The period of the great generals, in whose hands armies became chess pieces, is past. In place of armies moved about with happy daring has come the war machine which operates with precision. The man at the helm can guide it, to be sure, well or badly -- according to his ability. But the operation is so complicated that he is not in a position to keep his eye constantly on all details of the mechanism. He does not notice things that have gone wrong until they begin to affect the operation as a whole and then it is often too late. In decision questions he must rely on his collaborators and subordinates, and thus he becomes dependent on their skill, their mental ability, their perspicacity, their ability to grasp intuitively the organic working of this vast machinery. If one little wheel in this mechanism fails, then the result of this work becomes questionable. On the other hand, these failures can give the helmsman of the opposing side chances of decisive importance and can suddenly place him in a position where he merely needs to grasp the opportunity. Whether success or failure results, is quite independent of the personality of the general and of his merit. The general himself becomes a tiny wheel in the machine.

This work is intended to serve the truth and hence to serve peace. The more we strip war of the romantic charm and reduce it to a basis of fact, the more strikingly does its horror appear to us. Along with the heroism of the soldier we see the frightful, destructive force of the war machine of modern states. And that forces us to turn away, and to recognize that war is not the father of all things, but that it merely destroys what is positive and is able to create only what is negative. And if, in the course of centuries, the positive has grown up again and again out of the negative, the credit is not due to war but to the creative powers innate in mankind. Advancing these powers means at the same time declaring war on war. And that happens when we strip from it its veil of romanticism and the charm of adventure.

I deliver this book to the public and the critic with the assurance that all things mentioned herein are based on facts. Possibly here and there a name or a rank or a date may be wrong. This is not a vital matter; only the happenings as such are significant. Most of my notes had to be made from memory after I had seen and studied the authentic documents. Moreover, all this was done at the constant risk of my life.

This work means neither to praise nor to accuse, neither to glorify nor to judge. It is intended only to aid in finding the truth.

Wilhelm F. Flicke

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THE BEGINNINGS OF THE INTERCEPT SERVICE

The endeavor to learn what is in the opponent's mind and to draw advantage from it has always been very important in the history of mankind in peacetime and particularly in wartime. During thousands of years only the methods have changed. In the days when there was no technical medium for conveying thought over great distances, the only existing possibility was either to overhear the spoken word or to intercept - or at least have a look at - messages transmitted in writing. To guard against this latter possibility, secret writing was invented. The history of the last three thousand years is full of examples of great successes in statesmanship or in military enterprises which were due solely to the fact that the statesman or general concerned was able to organize cleverly and to maintain for a considerable period of time a method of spying on the transmitted thoughts of his opponents. Cleopatra, Alexander of Macedonia, Caesar, Napoleon, Metternich, and many others owed their successes to the extensive use of this type of spying.

However, the practical possibilities were narrowly limited, and great individual cleverness was necessary in this work in order to arrive at the goal.

In the middle of the nineteenth century, when the Morse telegraph came into use, soon followed by the telephone, new technical possibilities of attack resulted by switching-in and listening; this quickly produced a new situation. The invention and use of radiotelegraphy, with the possibility of picking up anywhere at any time the radiations of a transmitter working at any point whatsoever, increased the possibility of interception in a way hitherto undreamed of. The hour when radiotelegraphy was born was also the hour of birth of illegal listening-in, i.e., of the so-called intercept service.

There were two countries in Europe in which the espionage service had been especially cultivated for centuries: France and Austria-Hungary. Consequently, these were the two countries which first recognized the importance of technical means of intercepting communications and took corresponding action.

Prior to World War I Austria had several occasions to test out this new means of gaining information.

During the crises which arose in 1908 between Austria and Italy in connection with the annexation by Austria of Bosnia and Herzegovina all Italian radio traffic on the continent and at sea was intercepted by the Austrians. At that time Austria began regular cryptanalytic work, and in this way was able to get valuable insight into Italy's attitude; this proved of great value for Austrian foreign policy.

In 1911, when war broke out between Italy and Turkey over Tripolitania and Cyrenaica, the Austrian intercept service had an opportunity for the first time to prove its worth in the military as well as in the political field. Since the Italians had set up several relay stations for traffic between Rome and Tripoli, where the first Italian landings were made, the Austrians had a fine opportunity to intercept all transmissions more than once - and therefore very

completely. The radiograms with military dispositions from the homeland, and the reports from the theater of war were all intercepted and deciphered so that the course of the operations in Libya could be followed day by day by the Austrian intercept service. This was the first time in history that the course of military operations between two opponents could be followed move by move by a neutral third party using technical means at a distance of hundreds of kilometers.

When the war in Tripoli took an unfavorable turn and Turkey lost its last possession in Africa and therewith its dominant position in the Mediterranean, an opportunity was offered the nations in the Balkans to shake off Turkish rule. This resulted in breaking up Turkey in Europe. The Balkan League, consisting of Serbia, Bulgaria, Greece, and Montenegro, which had been formed meanwhile, declared war on Turkey in October, 1912. The Bulgarians were victorious at Kirk-Kilisse and Lule Burgas; the Serbians at Kumanovo; the Greeks occupied Salonika. On 3 December a truce was made.

For the Danube Monarchy the course and outcome of the military actions and of the entire development in the Balkans were of interest. Therefore, Austria followed the radio traffic with close attention and again had opportunity to make successful use of this new means of gaining information, this time, to be sure, working to some extent with Italy. Austria and Italy put through the formation of an independent Albania. In the preliminary Peace of London, 30 May 1913, Turkey ceded to the allies all territory west of the Enos - Midia Line.

But a quarrel arose among the allies respecting the conquered territories. The Balkan League broke up. In bloody battles the Bulgarians were driven out of Macedonia by the Greeks and Serbs. Romania and even Turkey, which won back Adrianople under Enver Pascha, took the field against Bulgaria. A redistribution of territory took place in the Balkans, and once more Austria had the keenest interest in following the course of diplomatic and military events in this area. For the fourth time within five years Austria had a chance to get practice in interception and in cryptanalysis. At the peace conferences of Bucharest and Constantinople the new map of the Balkans was drawn.

Prior to World War I France had less occasion to engage in radio interception, but it watched all wire lines leading into foreign countries and particularly the exchange of foreign diplomatic telegrams passing over these lines. In the French Foreign Ministry there was a cryptanalytic section which worked with good success on the solution of the secret writings used by foreign governments and their representatives. For instance, even before the outbreak of World War I the French had solved the cryptographic system in which messages were exchanged between the Foreign Office in Berlin and the German Ambassador in Paris. When the long telegram containing the declaration of war on France was transmitted to the German Ambassador by the Foreign Office in Berlin, the French first deciphered the dispatch and, after they had taken cognizance of the content, so garbled important passages in the original that the German Ambassador could at first make nothing out of the telegram he received. Only after divers inquiries was he able to get matters straight. In this way the French gained valuable time.

In the Deuxieme Bureau of the French General Staff there was, even before World War I, a desk charged with following all foreign radio traffic (especially German and Italian), in order to have an idea of the normal radio situation and of the changes occurring in case of military complications. The use of radiotelegraphy in the armies of Europe had even then assumed considerable proportions and would probably increase considerably in any coming war. But this raised the question of the extent to which it would be possible to gain insight into the situation on the enemy side by observing his radio traffic. A prerequisite was to watch this traffic in peacetime, to recognize the types of traffic, the use of ciphers, and any methods of camouflage, and by so doing to maintain contact, so to speak.

These chances and possibilities had been recognized both in France and in Austria before the beginning of World War I. And both countries had made preparations in time. As in the French Deuxieme Bureau, there was in Vienna in the Evidenzbuero a desk for watching foreign army radio traffic, while in the Foreign Ministry in Vienna and in Paris, bureaus had already been set up which were engaged in the decipherment of the cryptograms which were customary in the diplomatic correspondence of other states.

In Germany to be sure, the General Staff thought of such possibilities, but down to the outbreak of World War I had undertaken practically nothing. Even in the Foreign Office nothing had been done in this direction which was worthy of mention. In England at the Foreign Office the decipherment of cryptograms had been attempted some years before the beginning of World War I, and good results had been achieved. In Russia, on the other hand, no attention had been paid to this matter.

This then was the situation respecting the intercept service and crypt-analysis at the beginning of World War I. At that time people did not suspect the proportions which interception would assume during the course of this struggle.

TANNENBERG

Heavy, gloomy, the towers of the Tannenberg Monument once towered against the sky of East Prussia. Grand and powerful stood behind them in those days the spirit of General Hindenburg, a symbol, as it were, of a force which must necessarily wreck anything that endeavored to attack it. The Battle of Tannenberg had become, since 1914, a symbol for the German people. Much has been written and spoken about this battle, but only little about the decisive factor in this mighty action. Tannenberg - a symbol! Even for one who knows! For it was at the same time a symbol of the ease with which small causes can unloose great effects, of the rapidity with which a great success can be achieved, if by accident the human inadequacy of wholly secondary and insignificant persons on the other side opens the way. Tannenberg - a symbol of mighty superiority and at the same time a symbol of fateful chance.

The Battle of Tannenberg was the first in the history of man in which the interception of enemy radio traffic played a decisive role. This is all the more remarkable since the intercept service of the Germans at that time

was not yet systematically organized, and the intercepted radiograms often represented the results of chance occurrences.

After World War I a series of books was published which, among other subjects, dealt also with the Battle of Tannenberg. The chief ones were: Hindenburg's "Aus meinem Leben," Ludendorff's "Erinnerungen," General Danilov's "Russland im Weltkrieg," and the German Archives publication "Der Weltkrieg 1914-18." In the three lastnamed publications the interception of radiograms of the Russian Army before and during the battle is discussed; but nowhere is it discussed fully. In the German Archives publication the intercepted Russian radiograms are touched upon briefly; but there are many sentences attempting to prove that all the Russian radiograms intercepted at that time had no influence whatsoever on the outcome of the battle.

What are the facts?

At 1400 hours on 23 August 1914 the new head of the German Eighth Army, General von Hindenburg, and his Chief of Staff, Major General Ludendorff, arrived in Marienburg and assumed command. The Eighth Army, which was to defend East Prussia, was composed on that day of an Eastern Group (I Reserve Corps, XVII Army Corps, and First Cavalry Division) on the Nordenburg-Instenburg line, and a Western Group (mostly the XX Army Corps) in the region of Tannenberg. The I Army Corps was being transported by railroad from the Eastern Group via Marienburg to the Western Group.

The Eastern Group was facing the Russian First Army (General Rennenkampf) consisting of the XX, III, IV, and II Army Corps plus five and one-fourth cavalry divisions; the Western Group was facing the Russian Second Army (General Samsonov), consisting of VI, XII, XV, XXIII, and I Army Corps, plus three cavalry divisions. The two Russian Armies formed an Army Group under General Shilinskij.

The Germans had the following radio communications: two heavy radio stations at the Army Headquarters, one heavy and two light stations in the First Cavalry Division, making a total of five mobile radio stations for the entire Army. In addition there was one radio station each in the garrisons of Königsberg, Graudenz, and Thorn.

Just what radio equipment the Russian Army Group had and how it was allocated cannot be accurately stated; it seems, however, that most of the staff headquarters down to the corps staffs were outfitted with radio stations. At the outbreak of the war there was one radio company each in I, II, IX, and XV Army Corps in European Russia, as well as in the Caucasus Corps. As can be seen from the above, I and XV Corps belonged to the Russian Second Army, and III Corps to the Russian First Army. Each of the companies which had been organized in the years immediately prior to the outbreak of the war had at its disposal at least six radio stations.

General Shilinskij's objective was - according to directives of 13 August - to make a decisive attack in which the First Army was to surround the German left wing (the Eastern Group) and prevent its retreat to Königsberg, while the Second Army was to advance into East Prussia south of Königsberg in order to

cut off the enemy's retreat to the Vistula and to attack him in the rear.

The German Army Staff Headquarters obtained information on this objective of the Russians through an order which was found on a Russian officer who had fallen in the battles around Gawaiten on 20 August. This order contained an extract from the above-mentioned directive of General Shilinskij.

Almost simultaneously with the arrival of this order in the German Army Staff Headquarters, a Russian radiogram was intercepted which mentioned this attack and contained an attack order for the Russian IV Army Corps (which was attached to the First Army). This telegram was, therefore, a confirmation of the order found on the fallen Russian officer.

On the evening of 23 August General von Hindenburg's operational plan was essentially complete. The entire Eighth Army was to be concentrated for the attack on the Russian Second Army. The XX Army Corps was already organized, primarily only for defense purposes. The I Army Corps - being transported by railroad - was to be stationed to the right of the XX Corps, to attack first the left flank of the enemy, and then the rear. The principal part of the XVII Corps and the I Reserve Corps (until then in the Eastern Group) were to march in a southerly direction and attack the right flank of the Russian Second Army. The two lastnamed corps were at that time still at a distance of about three day's march. Only the cavalry division and a small portion of the infantry of the XVII Corps were to remain behind to face the Russian Niemen Army.

How far this plan was capable of execution depended, on the one hand, on General Rennenkampf's tactics when he discovered the departure of the two German army corps and, on the other hand, on the ability of the XX Corps to maintain its position until the concentration of the Eighth Army.

On 23 August the battle began along the front of the German XX Army Corps, where the Russians started to attack. The Germans at first maintained their positions, but - to reserve their strength until an actual crisis - retreated somewhat on the 24th. On this day several radiograms were intercepted, which among other things, gave information on the line of march and the mission of the Russian XIII Army Corps. This Corps was to circle around the left flank of the German XX Corps and appear in the rear of the Corp's 37th Infantry Division.*

* The two radiograms which were intercepted on 24 August at 0500 and 0555 hours were as follows:

To the Commander of the XV Corps.

The Corps will deploy along the Komusing-Lykusen-Persing line till 0900, at which time attack is desired. I shall be in Jablonica. Klujew (-XIII Corps).

To the Army Chief of Staff.

The XIII Corps will go to the support of General Martos (XV Corps) and will deploy along the flank and rear of the enemy at 0900.

The Germans succeeded in avoiding this encirclement without too great losses on their side.

On 25 August they continued with the concentration of the Eighth Army troops. On this day General von Hindenburg intended to leave for the front early in the morning, meet the head of the I Army Corps, General von Francois, in Montawa,* and acquaint him with the existing situation.

Before his departure from Marienburg a radiogram was handed him which had been intercepted in the night of August 24-25. This radiogram, which was not enciphered, but had been sent in plain text, contained (a thing which until then had never happened) a complete operational order of General Rennenkampf to the IV Army Corps. From this intercepted radiogram General von Hindenburg obtained information on the future aims of the Russian First Army, which up till then had been completely unknown to him. Among other things, the radiogram stated that the First Army would not reach the Gerdauen-Altensburg-Wehlau line until 26 August with the southern flank (IV Corps) at Gerdauen. Also the marching goal for the 25th was given, which was to be several miles east of the above-mentioned line.**

Hindenburg now knew that for the present Rennenkampf was no menace. Therefore, in the course of the day he was able to decide to decrease still further the number of troops which were facing the Russian First Army and to withdraw the entire XVII Army Corps toward the south.

Hindenburg now went over to the I Army Corps. On his way down there, when he was passing Löbau, another intercepted radiogram of no less importance was handed to him. This time the organization and destination of the Russian

* Montawa not found, there is or was a Montowo in Western Poland. [Ed.]

** The radiogram contained the following:

To General Aljev, IV Corps.

The army will continue the attack. On 25 August it will reach the line of Wirbeln-Sealau-Norkitten-Potauren-Nordenburg; on 26 August the line of Damerau-Petersdorf-Wehlau-Allenburg-Gerdauen. The river divides the XI and III Corps; the Schwirbeln-Kl. Potauren-Allenburg road belongs to the III Corps. Chan Hussein Nachitschewanski (2 Cav. Div.) is to proceed in direction of Allenburg before the army front and in the sector between Pregel and the Darkehmen-Gerdauen-Bartenstein line; north of it Rauch (2 Cav. Div. Guards). Crossing of Pregel is mission of XI Corps.

Second Army were completely revealed. This radiogram, also in plain text, was dated 0600 hours 25 August and contained an order of General Samsonov to the Russian XIII Army Corps. To be sure, this radiogram was somewhat garbled. The intercepted contents were as follows:

"After battling along the front of the XV Army Corps the enemy corps retreated on 24 August in the direction of Osterode. According to information.....the land defense brigade by Gilgenburg.....The First Army pursues the enemy further, who retreats to Königsberg-Rastenburg. On 25 August the Second Army proceeds to the Allenstein-Osterode Line; the main strength of the Army Corps occupies: XIII Corps the Gimmendorf-Kurken Line; XV Corps Nadrau-Paulsgut; XXIII Corps Michalken-Gr. Gardiene, Boundaries between the Army Corps on advance: between XIII and XV the Maschaken-Schwedrich Line; between XV and XXIII, the Neidenburg-Wittigwalde Line. The I Corps to remain in District 5, to protect army's left flank..... The VI Army Corps advances to the region Bischofsburg-Rothfliess, to protect the right flank. To protect station Rastenburg the 4th Cav. Div., subordinate to VI Army Corps, will remain in Sensburg to observe region between the Rastenburg-Bartenstein Line and Seeburg-Heilsberg Line. The 6th and 15th Cav. Div..... staff quarters 2 Army in Ostrolenka."

Thus when General von Hindenburg arrived at 1300 hours on 25 August at the General Command Staff of the I Army Corps, he was completely informed respecting the mission of the Russian Second Army for that day. It was decided to begin the German attack on the following day. On the same day at 2030 hours the orders for the army to attack on 26 August were released in Riesenburg.

One must admit that it was a piece of unusually good fortune for the Germans that both these radiograms were intercepted on the morning of 25 August, that is, at a time when critical decisions had to be made. It seems the more remarkable that these two radiograms were the only ones of any considerable length and with contents of decisive importance to be sent in plain text by the Russians, and intercepted by the German radio stations, during the entire period from the beginning of the war to the middle of September, 1914.

On 26 and 27 August the I and XX Army Corps prepared to attack the left flank of the Russian Second Army. The German divisions which had advanced the farthest toward the right (the 5th Landwehr Brigade and the 2nd Infantry Division) met with stiff opposition, and for a while the situation was critical. On the forenoon of the 27th, Russian radiograms were intercepted which disclosed that the Russians were expecting reinforcements or perhaps had already received them, among others, the Third Guard Division from Warsaw (which was attached to the XXIII Army Corps). This information contributed to the fact that General von Francois (I Army Corps) no longer deemed it possible to proceed eastward to Neidenburg in order to sever the enemy's connection in the rear, but decided to turn the attack in a southerly and southeasterly direction.

The left wing of the XX Army Corps, which on 26 August had not been

drawn into the battle to any great extent, was attacked by the Russians early in the morning of the 27th. The attack gradually spread out more and more toward the north and finally reached the German Third Reserve Division, which was on the left of the XX Army Corps. A Russian radiogram which was intercepted by the Germans now gave information on the attack mission of the opposing Russian XV Army Corps and revealed its intention to encircle the German left wing. Other radiograms disclosed that the Russian XIII Army Corps intended to support this attack toward the right of the XV Army Corps, and to proceed toward the rear of the German Third Reserve Division.

While these encounters were progressing, the German XVII Army Corps and the German First Reserve Corps made forced marches toward the battlefield. On 26 August at Gross-Bössau they fought with the Russian VI Army Corps which then retreated southward. Simultaneously, a Russian radiogram was intercepted from which the German Eighth Army Staff Headquarters assumed that the Russian II Army Corps, which was at Rennenkampf's left wing, had been proceeding northward from Mauer Lake and was now supposed to march in a southerly direction, in order to help Samsonov.

That the Russian II Army Corps was proceeding northward from Mauer Lake was already known from reports of the Lötzen garrison, but that it was supposed to advance in order to support the Second Army was news. The German First Cavalry Division, which was stationed in the region of Schippenbeil, now received orders to halt the advance of the enemy corps along the Rastenburg-Korachen Line.

The German Army order for 28 August was signed by Hindenburg on the evening of 27 August. Later in the evening information was received that Russian troops from the south had arrived in Allenstein. There was thus the possibility that the Russian XIII Corps was striving to reach the north in order to join the approaching II Corps. The Army order which had just been signed was now immediately replaced by a new one which, among other things, ordered the XVII Corps and the I Reserve Corps to Allenstein.

On 28 August at 0700 hours Hindenburg and his staff arrived in Frögenau to direct the battle from there. Great tension prevailed at Army Headquarters. They were entirely in the dark as to the enemy's purpose at Allenstein. This group still had complete freedom of action.

At 0800 hours radiograms of the Russian XIII Corps disclosed that it was marching from Allenstein southward to Hohenstein, and that its vanguard would arrive at 1200 hours in Grieslienen, five kilometers north of Hohenstein. Its purpose was to aid the XV Army Corps.

On the basis of this knowledge, an order was immediately sent by airplane to the German I Reserve Corps to proceed at all speed, regardless of everything, by the shortest possible route, to the Stabigotten-Grieslienen Line (northeast of Hohenstein).

Even while the battle against the Russian Second Army was still at its height, the attention of the Germans was called to the pending operations against the Niemen Army. On the 28th a Russian radiogram announced that the

II Corps (left flank Corps of the First Army) was to begin the retreat toward the frontier and to be transported by railroad. This move, however, did not take place.

Early in the morning of 29 August, an incomplete radiogram was intercepted, which stated as follows:

"Because of heavy battles of Second Army the Army Command orders supporting reinforcements...and advance of cavalry... ."

(General Rennenkampf had received orders on the morning of 28 August to proceed with his left flank to the support of the Second Army. This radiogram was apparently an order of Rennenkampf to one of his Army Corps. A later radiogram, however, interrupted the advance again).

The above-cited radiogram confirmed what they had been expecting in the German Eighth Army Headquarters. During the night of the 29th a number of radiograms were intercepted which mentioned the encirclement of Königsberg from the south. On the morning of the 30th one such radiogram gave information that the head of the Russian II Army Corps on his countermarch (which thus had been ordered for a second time) was to demolish completely the railroads and telegraph wires west of the Königsberg-Rastenburg line, including Korschchen and Rastenburg. This last-mentioned radiogram made it possible for the German Eighth Army Staff to devote further attention to the remnants of Samsonov's Army.

All these Russian radiograms were intercepted by the German garrison radio stations Thorn and Königsberg, but also in part by the two heavy stations of the Eighth Army Staff, and were immediately translated and transmitted to the German Army Command. The German Command therefore knew not only the strength and organization of the enemy, but also his objectives.

It is very interesting to note how differently the importance of these intercepted Russian radiograms was estimated in the postwar period. Ludendorff mentioned this fact very casually in a subordinate sentence: "...we had received an intercepted enemy telegram which gave us a clear picture of the enemy's moves for the following days." Ludendorff forgot that there was not only "one" radiogram but that several dozen were intercepted during the course of operations which revealed the situation of the enemy.

Hindenburg himself, in his book, "Aus meinem Leben," which appeared in September 1919, did not devote even one word to the radiograms; on the contrary, he described the course of the Battle of Tannenberg in such fashion as to give the definite impression that he was in the dark as to the enemy's objectives and organization.

The Russian General Danilov spoke of an "unpardonable negligence" in the Russian radio service, and declared that the imperfect communication service had been the chief reason for the catastrophic outcome of the battle.

The German Archives publication declares: "...On the whole the German Army Command viewed the intercepted radiograms as an extremely welcome source

of intelligence. The Army Staff because of them, was temporarily, and even immediately before the beginning of the Battle of Tannenberg, advised of the objectives of the enemy in a way rarely possible in wartime." And in connection therewith, the German Archives publication immediately strives to save the face of the German Command by continuing: "But the critical decisions and orders for the battle, according to the unanimous statements of all participants, were made independently of the information which became known on the morning of 25 August through the radiograms. One cannot assume that without these radiograms the course of the battle would have been different."

To this one can only reply: The general has not yet been born, who, after winning a battle, would admit that he had won it thanks to a well-functioning intelligence service. Since the victory at Tannenberg had become a symbol for Germany, the "unanimous statements of all participants" could not of course be any different. Undoubtedly the dispositions for the battle were made before the first radiograms were intercepted. But during the course of the battle the knowledge of the contents of the intercepted radiograms played a decisive role. The development of the battle without these radiograms would very definitely have been entirely different.

Now we shall try to find out why the Russians sent their communications in plain text. To use plain text for such important communications as the two radiograms of 28 August was a mistake of the gravest kind. However, an examination of the circumstances on the side of the Russians gives an explanation. The Russian communication system operated very imperfectly during the battle. As a result, the army orders reached the staffs of corps at the front too late. Many times they did not receive their orders until about 1000 hours of the same day on which the orders were effective; under such circumstances the troops could not enter into action in the designated formation until almost noon. Very seldom were there telephone connections, which was partly due to the fact that there were insufficient cables. For this reason, where there were radio stations, these were preferred for the transmission of communications, as was the case between the army leaders and the army corps.

In itself this would not have been dangerous if the radio traffic had been handled so as to prevent enemy interception, but this was not done.

The radiogram of General Samsonov to the XIII Army Corps at 0600 hours, 25 August was of an urgent nature since it pertained to the operations of the same day. It was sent as a priority message. There were no wire connections. One can assume that time did not permit the encipherment of this message; in the last analysis, however, the reason seems to be that in the XIII Corps no radiograms could be deciphered; they had no cipher key! Hence an enciphered radiogram was simply out of the question in traffic with the XIII Corps.

This almost unbelievable state of affairs was the reason why, when the above-mentioned corps headquarters attempted to listen in on the traffic of a nearby corps with the Army Command in order to obtain desired orientation, this traffic could not be deciphered by them and as a result could not be

read. For example, on 26 August the XIII Army Corps was ignorant of the position and mission of the VI Corps, although they had in their possession intercepted radiograms from the traffic of this particular corps!

Since various Russian corps headquarters did not possess facilities for deciphering radiograms, it is probable that this was also the case in the Russian IV Army Corps, to which General Rennenkampf sent the above quoted fateful radiogram in plain text.

General Danilov, Quartermaster General at the Russian Headquarters, in his book "Russia in the World War," gives a different explanation for the use of plain text in radiotelegraphy. He writes: "The use of radio was something entirely new and therefore unfamiliar to our staffs. Moreover, our enemy was guilty of the same errors, and now and then we were successful in intercepting their plain-text radio messages and orders. But this does not absolve us from the charge of unpardonable negligence."

Danilov considers the faulty functioning of the Russian communications to be one of the major causes for the catastrophic outcome of the battle. Although the Russians at times made active use of radio, this means of communication was, nevertheless, not utilized as it should have been. On the Russian side there was not the experienced leadership which is required for the maintenance of a dependable radio network. When General Samsonov betook himself on the morning of the 28th to the XV Army Corps and sent the major portion of his staff with his radio station across the Polish border to Ostrolenka, all radio traffic on the part of his army ceased. All connections, both with the Chief of the Army Group and with the VI and I Army Corps were thus interrupted, wherewith the command of operations on the Russian side on this day practically ceased. On 31 August the Battle of Tannenberg came to an end.

In German military literature these circumstances have been carefully passed over or greatly reduced in importance. But anyone who has ever experienced how thirsty a command in a critical situation is for reports regarding the enemy, whoever knows how difficult and nervously exhausting it is to have to reach decisions without a knowledge of the enemy's situation, such a person will entertain no doubt that the knowledge of the content of the Russian radiograms decisively influenced the course of the actions in the Battle of Tannenberg.

The Germans had learned something from the happenings along the ether waves at the Battle of Tannenberg which was supposed to be put to practical use during the "Battle of the Masurian Lakes." Before the German attack on the Russian First Army began, the Germans wanted to tie up the important enemy reserves stationed farthest to the north- (east of Königsberg) - so that these could not be moved to the south where the German attack was in progress. Since no troop contingents were available to hold this large enemy reserve, the German Eighth Army Staff resorted to strategy. In the forenoon of 7 September, the radio station at Königsberg sent a radiogram in plain text as follows:

"To the Corps Chief,

Guard Corps,

Priority telegram.

Tomorrow the Guard Corps will join the...
immediately west of Labiau, parts of V
Army unloaded....(here follows a series
of garbles).....

Army Staff Headquarters."

The radiogram was intercepted by the Russians and the strategy succeeded. This is the first known case of purposely misleading radio traffic during World War I. The contents and the precise wording of the radiogram had been well thought out. The Guard Reserve Corps, which had shortly before arrived in the theater had in reality a different mission, but still was the northernmost army corps within the German attack organization; hence the mission designated in the radiogram could be possible. The V Army Corps, which was stationed in France, was garrisoned in Posen in peacetime, hence its presence in East Prussia appeared possible. The Russian Army Command had also believed for a long time that this V Army Corps belonged to the Eighth Army, although they did not know where it was located.

THE GERMAN AND AUSTRIAN INTERCEPT SERVICE IN THE EAST
AT THE BEGINNING OF THE WORLD WAR I

When the war broke out in August 1914, there was no fixed organization on either the German or the Austrian side for intercepting the foreign army radio traffic which immediately developed. The field regulations for German telegraph troops did foresee the possibility of listening-in on foreign radio traffic during those periods when their own radio traffic was dormant, in order to get some insight into the situation on the other side. Actually this work had never been practiced at all in peacetime maneuvers, and when the war broke out, nobody thought of undertaking the task.

At that time there were two rather large fortress radio stations in eastern Germany which had relatively little traffic of their own and consequently were in a position to listen to the enemy in periods of light traffic. These were the fortress radio stations at Königsberg in East Prussia, and at Thorn. Moreover, there was in Breslau the radio station of the German Eastern Europe Institute, which was likewise employed for military traffic after the war began but was used only for transmission. Entirely on their own initiative a few operators attempted soon after the outbreak of the war to listen to Russian army traffic as a sporting proposition, so to speak; it was not long before the first messages were intercepted but no one knew quite what to do with them because there was no regulation stating what should be done with such radiograms. In those days radiotelegraphy was a novelty both in Germany and in Russia. People were astounded at the technical progress which made possible wireless transmission of information over rather great

distances, but they did not yet understand how to make sensible use of this technical advance in order to gain information. In the Russian army the idea had not even become general that messages sent out by radio could be heard just as well by the enemy, and on the German side the idea was utterly foreign in lower and medium commands that one might be in a position to shape or alter one's own plans on the basis of intercepted traffic. Military thinking tended to consider one's own operation on the basis of the orders issued to be a fixed factor which could in no wise be influenced by any messages which might be intercepted.

The Russian operational orders intercepted in the last phase before the Battle of Tannenberg were forwarded to General von Hindenburg by motorcyclist solely on the personal initiative of the chief of the German fortress radio station at Thorn. The impression which this produced on the German High Command was, so to speak, the birth hour of the German intercept service, since now for the first time were the value and the possibilities of this service recognized.

The Austrians had already advanced somewhat further in this field by the time the war began. Here again there was no special organization for intercepting foreign radio traffic; here, too, they employed existing fortress radio installations for intercepting foreign traffic as a side issue. In the main, the stations at Krakow and at Przemysl were the ones involved. However, there was already rather more system in the organization of the work and, above all, provision had already been made before the war for passing on and utilizing intercepted enemy messages.

In this way the Austrians in the very first days of the war had definitely geared this new branch of the service with their Secret Service.* Moreover, the cipher section had taken up its work as soon as the war began, so that within the first fortnight it was able to read enciphered Russian radiograms.

In Germany, on the other hand, the cryptanalytic service limped so badly that it was almost half a year before the first regular work in this field began to take shape. It hardly seems credible that, in spite of the example of the Austrian intercept organization and in spite of the stimulus which must have resulted from the intercepting of Russian radio traffic after the Battle of Tannenberg, a fixed German organization for the systematic monitoring of foreign radio traffic did not come into existence until nearly one year after the beginning of the war.

AFTER THE BATTLE OF TANNENBERG

The Russian radiograms intercepted before and during the Battle of Tannenberg had suddenly pushed the value of the intercept service into the foreground with the German command. Only now the people began to say that, apart from the radiograms of the armies of Rennenkampf and Samsonov, many Russian radiograms had been heard which might have been valuable in

* (Geheimdienst = Cryptographic Section of the Imperial Chancellery.)

the execution of one's own measures, had they been exploited in time. The fortress radio stations were now instructed to do intercept duty in periods when they were free or had light traffic, and even the army stations were told to start hunting for Russian messages, insofar as their own traffic allowed. Naturally that was a rather pitiful measure - compared with the practical possibilities - for it resembled a suggestion rather than an order, and gave the receiving operator no hints at all as to how he should do his job, since for this there should have been a systematic search of all wave bands which might come into account. The effect for the moment was merely to arouse interest in this work, while any practical results depended on the intelligence and skill of the momentary heads of the stations. The only thing that was covered by regulations was the forwarding of intercepted telegrams so that at least there was no longer any doubt on this point. The radio intercept service was attached at that time to Section IIIb of the General Staff and was controlled from there, insofar as this word can be applied to conditions of those days. Only during the second half of 1915 were special receiving stations for monitoring foreign military traffic set up with the army groups and only from this point on was any real, systematic coverage of the enemy possible. If the German Army Command had attacked and solved the question of monitoring and evaluating enemy traffic in the fall of 1914, if it had introduced a special organization for this purpose in the east by the end of 1914, i.e., at a time when the enemy was making one mistake after the other in this field, it is highly probable that a number of decisive operations might have been added to the list of German successes.

The Chief of the German General Staff in the years 1914-16, General von Falkenhayn, stated later in his memoirs: "The radiograms intercepted by us permitted us to follow the movements of the enemy on the eastern front, day by day, week by week, from the beginning of the war nearly to the close of 1915, and we adapted our measures to this circumstance."

Conrad von Hoetzendorf, who describes the activity of the Austro-Hungarian Headquarters in World War I, remarks in Volume IV of his memoirs that "from the time when the Supreme Army Command was set up in Neu-Sandec (i.e., since the middle of September 1914) it was able to get information in an ever more exact and dependable manner regarding all measures which the enemy ordered by radio." At another point he says: "In this way a basis for the performance of the command functions was created which no previous war had ever known... ."

In Volume V of his memoirs, Conrad von Hoetzendorf emphasizes the fact that whenever the words "according to reliable reports" were used in connection with orders of the Supreme Command of the Austro-Hungarian troops, only such reports were to be understood as had been obtained from intercepted radiograms; this was never admitted in order not to betray this highly esteemed source.

Colonel Nikolai, Chief of the German Information Service in the years 1914-1918, writes: "The intercepted Russian telegrams constituted a very trustworthy source of information. Of course, the orders were enciphered, but the cipher system was very simple and was rarely changed; consequently, it was easy to read the radiograms."

The common conduct of the war in the east by the German and the Austrian Armies was dominated at the outset by the point of view that Russian attacks should be beaten off by active defense until, after the expected decision in the west, adequate forces could be brought from the west to pass over to a decisive attack in the east. The Austrian Army was to make a thrust from eastern Galicia against the Russians still on the march, the Austrian First and Fourth Armies began the advance on Lublin and Scholm; defeated the Russians near Krasnik and Komarov; but, due to the failure of the Austrian Third Army near Lemberg, had to withdraw in the face of superior Russian strength during the first half of September to the Carpathian Mountains and behind the Wisloka. The German Army Command now decided to support the Austrian front by detachments from the Eighth Army located in East Prussia, which had participated in the Battle of Tannenberg, and, using these detachments, to set up a new German Ninth Army in Upper Silesia, with its right wing extended to Krakow. Hindenberg took over its command.

The removal of large portions of the Eighth Army in order to set up the Ninth Army had to be carried out with great caution in order not to reveal to the enemy that East Prussia was now left with very feeble protection. Consequently, the Germans decided to try deceiving the enemy again by radio. Since the movements of the transports could not remain entirely concealed, it was decided to bluff the Russians by pretending that a new German thrust from East Prussia was impending. Two radiograms relating to such unloading were intentionally sent in garbled plain text under the assumption that the Russians would intercept these messages. Actually, the trick worked.

Meanwhile, the Russians had recognized the danger of sending plain text by radio, and the Supreme Command of the Army (The so-called "Stavka") sent out instructions by radio on 14 September to the effect that as a matter of principle military arrangements should only be sent completely enciphered in the future. However, this instruction came too late. The Austrian cryptanalytic service had already gotten so well started that the Russian digit cipher was solved on 19 September. Henceforth, reading Russian radiograms no longer caused any difficulty.

Meanwhile, the German initial assembly in Upper Silesia was completed.

In their retreat the Austrians had expected the Russians to pursue them sharply; however, after reaching the San the Russians took a very slow pace and finally stopped at the Wisloka.

This conduct of the Russians posed a serious riddle for the Austrian Army Command, especially as it was learned from intercepted messages that the Russians were constantly receiving reinforcements. From these doubts the Austrians were relieved on 23 September by an intercepted radiogram of the Commander of the Russian Ninth Army, General Litchizkij, who ordered the XVI Corps to return from the Wisloka toward the San to Stany on the following day. With this, the assumption that the Russians would continue frontal attacks was dismissed.

Meanwhile, at the Austrian army commandpost, reports were coming in

from agents who spoke of strong Russian cavalry forces in the area between the Nida and the River Vistula. Soon, however, the radio intercept service showed that here it was a question of the Novikov group, which consisted of only one cavalry corps but regarding which the Russians had been spreading exaggerated reports. An intercepted radiogram from General Novikov to the Russian High Command in Warsaw, dated the morning of 24 September, revealed to the Austrians the complete results of his reconnaissance work and also showed his intentions clearly.

It was probably the first time in the history of warfare that the result of enemy reconnaissance was revealed so swiftly to those against whom this activity had been directed. While the Russian cryptographers in Warsaw were busy solving the radiogram, the Austrians were working on the same text. The telegram was intercepted at 0840 hours. Toward noon it lay deciphered before the Austrian High Command. At 1600 hours the German Army Command had been apprised of the content and was able to make good use of the data in its dispositions for 25 September.

The day following, Austrian and German divisions stood ready for battle in their new positions. In this phase the Austrians again intercepted an important order of the Command of the Russian Ninth Army; it reads as follows:

By command of the Supreme Commander and with reference to the impending movements I order the withdrawal tomorrow, the 26th, of the troops of the Army behind the Wisloka and the leaving behind of only small rear guards at the Wisloka. The troops are to be quartered in the areas previously occupied by them. The guard corps will remain in the area Kolbuszowa - Kupno, which it reached today; its advance guard is to approach nearer.

With this the situation was clarified for the Austrians. It was obvious that the Russians were undertaking regroupings for a new operation. The Germans now began to urge the immediate beginning of an offensive, in order to attack the Russians during their regrouping. The Germans had their eyes on the middle reaches of the Vistula.

In the night before 28 September the Austrians intercepted the Russian order for a shift of the Ninth Army behind the Vistula, below the mouth of the San. It was now clear that the Russians planned to shift their main weight from Galicia to Poland.

On 28 September the German Ninth Army and the Austrian First Army, which joined it to the right, started an advance on Ivangorod north of the lower Vistula. South of the Vistula the Austrian Fourth, Third, and Second Armies moved forth on 4 October toward the San. The Austrian intercept service had received from Russian radiograms full information regarding the Russian disposition. The Army Section under Mackensen undertook the protection of the German left against an encircling movement which threatened from Warsaw.

For a time the German-Austrian offensive progressed well. Soon, however, the intercepted radiograms showed daily more and more clearly a shift of the Russian Ninth, Fourth, and Fifth Armies from the San to the middle reaches of the Vistula, and of the First and Second Armies from the Russian "northwest sector" to the area north of Warsaw. Other Russian dispositions betrayed the fact that the Russians were assembling an enormous force for an advance against the heart of Germany from the Ivangorod - Warsaw area. No less than 94 Russian divisions were to attack 52 German and Austrian divisions at most, in which connection it should be remembered that the effective strength of a Russian division was far greater than that of a German or Austrian division. In the event of an attack by this military force, a catastrophe for the armies of the Central Powers was inevitable.

On the basis of information obtained from intercepted Russian radiograms, the Germans decided to retreat. Without the Russians noticing anything, the German and Austrian units broke contact with the enemy and retreated, to the Russians' surprise, to the line of the Carpathians - Krakow - Upper Silesia. Hindenberg was now appointed Commander-in-Chief of all German forces in the east. Mackensen took over the Ninth Army; it was moved to the area of Thorn and prepared for a new thrust at the right flank of the advancing Russian army group. Protection of Upper Silesia was taken over by the Austrian Second Army, which was moved from the extreme right wing of the Carpathian front to the region north of Tschenschow. From East Prussia all available forces were sent to the Ninth Army.

On 12 November Mackensen started his advance between the Warthe and the Vistula. On 13 November the Russian disposition for a general advance on the following day by the Russian "steam roller" deep into Germany was intercepted and deciphered the same day. From this it was evident that the Russians had no idea of the extent to which their northern flank was threatened; they thought that the German Ninth Army which was attacking amounted to a corps at most.

On 19 November the Russian Commander-in-Chief, Grand Duke Nikolaj Nikolaevich, radioed that the hour had come, when by exerting all their energies the general attack would be crowned by success.

The next day brought the Germans and Austrians a sudden surprise. A communications officer of the Russian Fourth Army announced that the old cipher key had come to the knowledge of the enemy. A new cipher was introduced. The Russians had captured the German cipher key, had deciphered a few messages, and had learned in this way that their system was known to the opposition.

There resulted a painful situation for the armies of the Central Powers, since the great struggle had reached its climax. The right wing of the Russian army near Lodz was almost encircled; capitulation was awaited hourly. And at this moment the best reconnaissance means of the Germans failed.

The German Command now had to operate without knowledge of the enemy

situation. This was all the more disagreeable since from the Warsaw area new Russian forces were coming up. In a few days the fortunes of war changed. The German group, which was supposed to encircle the Russians, was itself encircled. It consisted of the XXV Reserve Corps under the command of General von Scheffer-Boyadel and the Third Guard Infantry Division under the command of General Litzmann. The result was the well known battle of Lodz, in the course of which the annihilation of the German group seemed almost certain. In ice and snow, without any supply, it was obviously fighting in a lost position.

At the Austrian and German cipher bureaus they were working feverishly to solve the new cryptographic system used by the Russians. There were direct teleprinter connections between the two offices, and every meaning which was recovered by one or the other was exchanged immediately. In the evening hours of 21 November solution of the Russian cipher was accomplished, and with it a solution of a number of intercepted radiograms. From these the troops forming the encirclement ring were recognized. But it was also discovered that this ring was not absolutely closed but that there was a relatively weak spot near Brezeziny which was closed only by Russian cavalry units. This fact was reported by radio to the encircled German groups, and General Litzmann undertook the task of breaking through the Russian ring near Brezeziny.

Meanwhile, the Russians had already prepared means for transporting the encircled German units off into captivity. To the surprise of everybody General Litzmann's break-through was a success, and the encircled group was able to escape although its heavy materiel was left behind. This feat later won for General Litzmann the nickname, "The Lion of Brezeziny." Nobody made any mention of the cryptanalysts whose work made it possible to recognize the weak point in the Russian line. If they had not succeeded with their decipherment, then the whole German group would have been taken off into Russian captivity along with the "Lion."

Before and during the winter battle of the Masurian Lakes (4-22 February 1915) the interception of Russian radio traffic by the German intercept service was of decisive importance. This time the Russians sent very little in plain text, but the German cryptanalytic service, which had been set up meanwhile, succeeded in solving the cryptographic system used by the Russians, the so-called "Service Code" (RSK), and thus deciphered all Russian radiograms.

The German attack under the leadership of von Hindenberg was directed against the Russian Tenth Army. From the line Johannisburg-Lötzen - Gumbinnen - Tilsit, the German Eighth and Tenth Armies attacked and with encircling operations forced the Russians back to the forest of Augustowo where the remnants of the Russian Tenth Army had to surrender. All Russian countermeasures against the German advance were recognized promptly by the German radio intercept service.

Since the Battle of Tannenberg, Ludendorff had become so accustomed to making his dispositions on the basis of intercept results that he became impatient and nervous if these radio monitoring reports failed to

come, were delayed or gave little information. His regular question was: "Any radiograms?" Later on he took it as a matter of course that the Russians would have to send informative radiograms and that the German cryptanalytic service was to decipher them. If for a time no messages of importance were intercepted, then he used to growl that they had not been paying enough attention and would they kindly do better. If a new cryptographic system was not solved in a very short time, he called it a "damned mess" and said the cryptanalysts had become "absolutely stupid."

In spite of all the German successes, the situation in the east remained serious. On 22 March 1915 the fortress Przemysl fell, after having been encircled by the Russians. In the Carpathians the Austro-Hungarian front laboriously warded off Russian attacks. Only because of the smooth functioning of the Austrian intercept service was it possible to recognize impending dangers promptly and to take countermeasures.

In March 1915 the Austrian intercept service had ascertained that in the area between Tarnow and Gorlice the general military situation on the enemy side was such that this front sector seemed the one suited for a break-through operation. The Austrian Chief of General Staff, General von Hoetzendorff, proposed therefore to General Falkenhayn the inauguration of a large-scale offensive starting from this area. The plan of operations was developed in consultations between the two. It was necessary to handle the assembly so that the enemy should notice nothing by intercepting German and Austrian radio traffic. Radio schedules and the handling of all other camouflage and secrecy measures were worked out by the Austrians, and it was actually possible to execute the entire German-Austrian assembly unnoticed by the Russians. Colonel General von Mackensen took command of the German Eleventh Army, which was to effect the break-through.

On 1 May 1915 the German attack began; on 3 May the Russian front had been pierced. The Russian armies were caught in a vast rolling-up operation in a northeasterly direction and were either defeated or driven away. In the second half of May came the crossing of the San. Early in June Przemysl was recaptured; on 22 June Lemberg was occupied. Mackensen was appointed General Field Marshal. In mid-July the German armies in Poland passed to the attack. In quick succession during August and September the Russian fortresses Ivangorod, Warsaw, Lomza, Kowno, Novo-Georgievsk, Oswiec, Brest-Litovsk, and Grodno fell.

During this entire operation the Austrian and the German intercept services experienced their period of glory. The swift change of battlefield forced the Russians to make constant use of radio-telegraphy. Of course, they were always changing their ciphers, but the Austrian cryptanalytic service had gotten so well tuned to Russian cryptographic systems by this time that every new key was solved in a few days. And in this the Russians often afforded wonderful assistance; often they sent one and the same message in the old key and in the new one. Or they would send an inquiry in the evening in the old key and get the answer from the same station on the following day in the new key (which had gone into effect at midnight). Often they sent messages in plain text with references to

enciphered messages, etc. All this facilitated cryptanalysis. Day by day the German and Austrian intercept services received so many Russian radiograms that in every phase of this operation the Command of the Central Powers was almost completely orientated regarding the enemy. In view of the existing strength ratios, it is absolutely impossible that the German-Austrian summer offensive of 1915 could have succeeded as it did if Russian radio traffic had not constantly betrayed the Russian measures.

The prompt reaction of the German and Austrian Command to measures undertaken by the Russians came so often and in such a persistence manner that it could not fail to be noticed by the Russians. In Russia, however, they could find no other explanation than the suspicion that treachery was always involved. The cry, "Treason!" ran through all Russia and the Russian Army, and a search for "traitors" began everywhere. Every Russian officer with a German or a German sounding name now appeared suspicious. A number of them were deposed; many were court-martialled. It went so far that finally this fury had to be stopped by cabinet order of the Czar. At that time no one in Russia got on the track of the actual "traitor." And in that fact lay the great tragedy for the Russians; for in those summer days of 1915 the entire campaign was decided and decided against them. And that was the opening act of the revolution of 1917.

Late in September 1915 the front ran along a line from Czernowitz almost due north to Dünaburg and from there along the Dvina to the Gulf of Riga. On the Russian side, the Grand Duke Nikolaj Nikolaevich was relieved and the Czar resumed Supreme Command of the Army himself.

The eastern front subsided to a war of position.

Early in October 1915 began the great German-Austrian offensive in Serbia which led at the end of November to the complete collapse of Serbian resistance. Early in December Serbia had been almost completely cleared of Serbian troops. The Russians now decided on a diversional offensive to aid Montenegro, which was then seriously menaced. They began to bring units from southern Russia to the eastern Galician front, and to shift the Ninth and Eleventh Armies thither. These measures, however, were very soon revealed by the Austrian intercept service which was able to deduce therefrom an impending Russian offensive against eastern Galicia.

In this tense situation the command of the Russian southwest front on 2 December forbade all radio traffic until further notice. The measure was correct, but it came somewhat too late, since too much had already been betrayed. Three weeks later (20 December, at eight in the evening) Russian radio traffic started up with a new cipher (now the thirteenth); however, this cipher had long since been solved because the Russian Third Army, which did not belong to the Russian "southwest sector," had begun working with it on 14 December. The so-called New Year's battle was not a success for the Russians; the exertions made were in vain; Montenegro was not saved.

THE INTERCEPT SERVICE IN THE WEST
AND THE "MIRACLE OF THE MARNE"

When the war began in 1914, there were two countries which sought to shape the fortunes of war in their own favor as quickly as possible by a swift, powerful thrust far into enemy territory and by crushing hostile armies. The Russian armies were to fight decisive battles in East Prussia and then advance quickly on Berlin. In the west the German armies were to advance through Belgium and northern France and deliver a crushing defeat to the French army somewhere east of Paris.

There is a certain irony in the fact that, at the very time when in the east the Russians, by clumsy use of radio, were exposing themselves so disastrously that the course of the battle of Tannenberg wrecked their entire plans for the campaign, the Germans in the west should make the same mistake with the same results -- namely that, although the war continued for years, the fundamental idea had already been hopelessly wrecked. In the east it was the Battle of Tannenberg; in the west the Battle of the Marne.

There are few battles in military history regarding which so much has been written as about the Battle of the Marne. There are many names for it; one of the best liked among the French was "The Miracle of the Marne." People have sought and found all sorts of explanations for the seemingly inexplicable bogging down of the German advance, and they have tried by clever reasoning to figure out what the course of the Battle of the Marne would have been if this or that measure had been taken. On the German side Lieutenant Colonel Hentsch of the Supreme Command of the Army came off worst; he had to accept the role of scapegoat because ostensibly he called for the German retreat without compelling necessity. People contented themselves with this explanation because it sounded as if the Battle of the Marne had really "almost" been won.

In 1928 the Polish Lieutenant Colonel Szieszynski, and shortly afterward the French Colonel Calvel, lifted the curtain, inasmuch as both of them gave out some information from the archives of the French Deuxième Bureau. These were little memoirs which were not given to the public but had only a limited distribution. In Germany they were not published at all but were passed over in absolute silence. These glimpses into the French secret archives gave an explanation of the "Miracle of the Marne," which was no miracle but only the logical result of very commonplace and factual matters.

The German war plan had consisted in advancing with a strong right wing through Belgium and then by a gigantic sweep eastward to the left, thrusting south past Paris, and surrounding and destroying the French armies in a grandiose, encircling battle. With that the entire campaign was to be decided. The German right wing was made up of the German First Army under Colonel General von Kluck; to this army belonged a cavalry corps under the command of General von der Marwitz.

Immediately after the beginning of operations, an active use of radio-

telegraphy began on the German side. Since the Germans had done practically nothing with radio intercept before the war, they could have no idea of the effect which the use of radiotelegraphy by armies in the field would have on the opposite side. Consequently, camouflage measures were very inadequately developed. The use of station call signs, for example, was such that all radio stations of an army had call signs beginning with the same letter. Moreover, there was no change of call sign or of wave length. Therefore it was possible after a short time to recognize a given radio station as belonging to this or that army by its call signs.

To this we must add the astonishing lack of discipline in radio operation on the part of the German station personnel. The radiograms were not enciphered (or deciphered) by the sender (or recipient), i.e., not by the staffs which were exchanging messages; the staffs turned the messages over in plain text to the radio stations where the cipher materials were located. The messages were enciphered here by the radio officer of the station and were then transmitted. If we consider the lack of experience in transmitting, receiving, enciphering, and deciphering radiograms, it is clear that a chain of errors must be the result; frequently the receiving station requested repetition of part or all of the radiogram; sometimes merely of a single cipher group or of a word. Impatient persons sometimes requested the answer in clear.

Study by the French of the numerous messages intercepted soon permitted a division of the intercepted stations into the following three groups:

- a. Stations, each of which was in communication with a number of receivers - always the same ones; among these were recognized the stations of the higher echelon command; their correspondents were recognized as stations of their subordinate units.
- b. Stations of those units which were constantly or often active; these were interpreted to be stations of cavalry divisions operating on French or Belgian soil.
- c. Stations of the lower echelon command, which operated rarely and obviously belonged to units whose staffs rarely changed location; these were the radio stations of army corps and of infantry divisions.

Accordingly, a mere checking of radiograms and station call signs allowed the French information service to differentiate quickly:

Call signs of stations belonging to staffs of armies,

Call signs of stations to be considered as belonging to staffs of most of the cavalry divisions,

Call signs of stations which were to be considered as belonging to staffs of some army corps and infantry divisions.

The fact that various cavalry divisions belonged to definite corps was easily recognized because the station call signs of divisions subordinate to the same corps began with the same letter. What was even more important was that the call sign of the station of the staff of a cavalry corps could be recognized by the fact that it was the only station within a group of radio stations which regularly communicated with all other stations having call signs beginning with the same letter.

This allowed the French to recognize four groups of control radio stations, each of which belonged to a cavalry corps; the divisional stations of each corps had call signs beginning with the letters "S", "G", "L", or "D". "S" operated in Belgium, "G" in Luxembourg, "L" in the Woevre plain, and "D" in Lorraine.

These findings were soon confirmed by various radiograms in plain text which were intercepted by the French.

Generally the messages were enciphered. Nevertheless, from time to time single words of plain text were encountered; these were either geographic terms or words which the recipient had not understood. Radiograms were intercepted repeatedly which were entirely in plain text, and sometimes even bore the signature of the originator in clear. Thus, after a few days, it was known that General von der Marwitz commanded the corps whose staff radio station had the call sign beginning with "S"; while General Baron von Richthofen commanded the corps whose staff radio station used a call sign beginning with "G".

From an intercepted radiogram sent in clear (by a station with call sign beginning with "L"), it was learned that two cavalry divisions had forced their way into the Woevre Valley, and were moving toward Verdun via Malavillers and Xivry-Circourt, where one of the divisions had its staff quarters.

The French had committed their intercept service in full, even before the beginning of the war, and were following German army traffic attentively. After a few days they had a perfectly clear picture of the operational structure of the German army in the west. It was of greatest importance for them to follow the movements of the German right wing on its way through Belgium in the direction of Paris.

The above-mentioned cavalry corps of von der Marwitz was relatively well supplied with radio equipment, and consequently used it extensively.

There would have been no objection to this in view of the situation and of the rapidity of the advance. What was very risky was the fact that these radio stations sent a vast number of messages in plain text giving locations, troop designations, movements, plans, orders, and commands. In between, enciphered messages were sent, but they were all quickly solvable because they referred to the content of the plain-text messages. Sometimes there was a question in clear, while the answer was sent in cipher. This made it possible for the French to solve the cryptographic system in the shortest possible time. In the course of 14 days, the French intercept

service picked up some 350 radiograms from the cavalry corps under von der Marwitz alone, and through these they were informed not merely of all movements of this corps, its plans and its geographical distribution, but regarding the whole German First Army of von Kluck, and the Second Army of von Bülow adjoining to the south.

The French intercept service did not fail to note the movement of the German First Army toward the north to avoid being outflanked by the French Sixth Army of Maunoury; furthermore, the overexpansion of the German front and the resulting gap between the First and Second Army, which could only be filled by the cavalry corps of von der Marwitz, could be quickly recognized by the French intercept service.

The cavalry corps of von der Marwitz was supposed to effect a screen between the areas of the German First and Second Armies. But what the troops tried to accomplish in carrying out their orders was utterly ruined by the German radio service, for the transmitted radiograms gave the French an absolutely clear picture of the situation. That gave the French and English the possibility of breaking into the above-mentioned gap on 8 September, since they knew precisely the weak places in the German front. This threatened to encircle the army of von Kluck, and to outflank the army of von Bülow; and this circumstance was decisive for the recall of the German front.

It is not true that Hentsch ordered the retreat without cogent reasons in a situation which was favorable for the German troops, and that the Allies were surprised and followed only hesitantly; rather, the penetration by the Allies gave Hentsch occasion to recommend withdrawal to the Aisne. On the French side, the fighting units were indeed surprised by the change in situation but not the higher command, which had a precise view of events on the enemy side during the entire course of operations because of the intercepted radio traffic.

With the outcome of the Battle of the Marne, the German attempt to gain a quick decision in the west had failed. The resulting war of position and the subsequent superiority of the Allies in materiel decided the entire course of the campaign in the west.

THE DECIPHERING OF CRYPTOGRAMS

In the course of the preceding descriptions, there has been repeated mention of the fact that the Austrians, French, and Germans broke the cryptographic systems used by foreign governments or armies to render their communications safe from unauthorized reading. In lay circles, any such decipherment of foreign ciphers is always regarded as a kind of "black art" where one works by magic recipes. That, however, is not true; instead, the art of decipherment rests on exact scientific foundations. To render the nature of this work somewhat intelligible to laymen, an attempt will be made below to give some clarifying explanations.

First, a few words on the question of what a cryptographic system is.

We may remark here that in this connection secret writings produced with chemical ink, which can only be recognized by some chemical or physical procedure, will not be considered here. Nor can we treat here cryptographic systems found in antiquity when a long strip of parchment was rolled around a conical staff, inscribed across the laps and then removed, so that the strip appeared to be covered merely with mysterious signs and could only be read by the person who, as rightful recipient, possessed an absolutely identical staff around which he wrapped the strip in the prescribed manner. Only such systems will be described as can be transmitted by technical means (by radio or by wire).

Cryptographic systems of the last mentioned type were likewise used in olden times. One of the best known was invented by Julius Caesar, who substituted for each letter of the alphabet either a group of digits or of letters, and thus transformed the open plain text into a cryptogram which consisted merely of a long series of digits or of letters arranged in seemingly meaningless fashion.

This type of cryptogram could not be solved until it was learned that every language is constructed according to definite mathematical laws, i.e., that the frequency of occurrence of the individual letters in any language differs and is subject to the laws just mentioned. In the German language, for instance, the letter E occurs most frequently; then, at considerable intervals, follow the letters R and N, then D and T, then S, and so on. Accordingly, one merely needs to substitute the corresponding letters on the basis of the frequency of the cipher elements appearing, and he can in this way solve a considerable portion of the cryptogram; the remainder comes as a matter of course.

During World War I this type formed the basis of many cryptographic systems; indeed, it was often used in the same way that Caesar used it; for this reason it is also called "Caesar."

In Germany during the Middle Ages, an abbot by the name of Tritheim invented a cryptographic system in which, instead of replacing single letters by secret elements, he replaced syllables, endings, word stems, prefixes, etc. This resulted in a great multiplicity of secret elements occurring in a cipher, and the problem of solution seemed to have been rendered much more difficult, until people became aware of the fact that a fixed regularity underlay the occurrence of endings, prefixes, and the like, with respect to their frequency of occurrence. After that even this type of cryptogram could be solved.

People now went on to the use of the so-called multiple values (variants), i.e., instead of assigning one secret element for the most frequently occurring letters, endings, prefixes, etc., they now assigned several. But the art of cryptanalysis also found ways of solving these cryptograms. Little by little an entire science developed, both with respect to the creation of new cryptographic systems and in respect to their cryptanalysis. They created the system of the reenciphered "Caesar" or "Tritheim" through the addition of specific groups of numbers to the cipher texts, and in this way transformed the so-called "open" cryptograms into "concealed" cryptograms; this did for the moment veil the frequency of the cipher elements

occurring, and prevented recognition of the cipher elements as such. People invented the "box" transposition, the "comb," the "Raster," (grille) the "double box," and then reenciphered these with a limited or an infinite "additive sequence," i.e., by a correspondingly long chain of digits. They also invented the "open" or "concealed" code by numbering the entire vocabulary of a language from 00001 to 99999, for instance, according to a definite system; or they sometimes used groups of letters instead of groups of digits. When the limits of the individual code groups were effaced by reencipherment, then the cryptanalysis of such a message clearly caused considerable difficulty.

But let the resulting ciphers be what they might, the science of cryptanalysis always found ways of solving them after a while, because every cryptographic system conceals within itself a number of possibilities of solution; these have to be tried, until one finally encounters the one and only correct possibility. It is simply a question of making the number of possibilities so great, when setting up the system, that the unauthorized decipherer needs such a long time to try out these possibilities, that, practically, there will be no useful result; with a really complicated cryptographic system, the numbers of possibilities to be checked runs into the billions.

The solution of cryptographic systems is in most cases facilitated by errors in their use. In World War I, for instance, it frequently happened that a station receiving an enciphered message could not decipher it completely and asked the sender: "Send 0317 in plain text," which was sometimes actually done. Or in case of change of key: "We have not received the new code books yet; please repeat in the old code." By comparing the two transmissions, it was often possible to solve the key. Sometimes requests were made in plain text and the answers were sent enciphered, or vice versa. In these cases one generally knew the approximate content of the message, and that helped greatly in the task of cryptanalysis. The number of such compromising errors was so great that we could take a long time telling about them - so we shall only suggest that in most cases the quick solution of an enemy cryptographic system was possible only because of errors made.

In the use of cryptographic systems, the Russians at that time were so unskilled that the recipients of radiograms often asked whether there had not been a mistake in the encipherment or whether this or that group was correct. The Austrian cryptanalyst, on the other hand, were already so adept at solving Russian ciphers that they would often have been in a position to help the Russian addressees decipher their own messages.

Once in a while an original Russian cipher book (code) was captured. In this case it was not necessary for them to make any analytic decipherment, since they could go about decoding at once, using the captured material.

THE DIRECTION FINDING SERVICE

Today every schoolboy knows the essential things about direction find-

ing. At one time - in 1915 - this invention was a novelty, and at first an English rather than a German novelty. Soon after the beginning of the war the English had developed the system of "direction finding," that is, of fixing the direction in which a transmitting radio station was located; and they had put it to use against the floating units of the German navy. Direction finding stations were not introduced into the German army until about the end of 1915.

Since the radio service in all armies was tending more and more toward the principle of secrecy (not merely regarding the content of the radio-grams dispatched, but also regarding the location of the transmitters), while determination of the location of an enemy station was of great importance, since it always coincided with the location of a unit staff, and the determination of the territorial distribution of radio stations likewise gave clarity regarding the front organization of the enemy, henceforth direction finder stations were coupled with all radio intercept stations. The sum total of their direction finding readings made possible the determination of the location of transmitters within a fourth of a square kilometer since at that time all armies were using long waves. With this the system of changing call signs which had been devised to prevent identification of the stations, lost effectiveness. As a rule three direction finding readings from different receiving stations sufficed to determine the spot where the radio station was set up. Since the number of stations in the armies of Europe in those days was very small when contrasted with the present, it was almost always possible to identify positively these transmitting stations.

This became really important when troop movements were being carried out by the opposing side. In this way, one could often follow for hundreds of kilometers the movements of radio stations (and hence of the units to which they belonged). This was true in a very significant way, for instance, during the preparations for the first grand Brusilov offensive in the east; later in connection with the support of the Romanian front by the Russians; in connection with the Austrian grand offensive on the Italian front in 1917; and on other occasions.

The French set up their direction finding service (goniometric service) very quickly and in a very perfect fashion; the Italians were also very active in this field. The Russians, on the other hand, limped far behind, and had not gotten beyond some very modest beginnings by the end of World War I.

Looked at practically, direction finding operations in those days were by no means so simple as they are today. At that time there were no maps showing local and magnetic deviations. It was necessary to learn by experience how deviations of the direction finding ray behaved in the terrain lying between the transmitting station and the direction finder. When a direction had been fixed, it was very important to know whether the station fixed lay at a distance of 20, 50, 100, 200 kilometers or more. Such experience had to be gathered and collated.

Direction finding operations achieved their greatest importance in the naval intercept service. The English in particular scored outstanding

successes in determining the movement of German warships, particularly of submarines. Many a German submarine sunk in those days could be credited to the British direction finding service. Moreover, Zeppelin raids were observed constantly by the English with excellent results. The task was rendered easier for them by the fact that the Zeppelins handled their radio traffic on a definite wave length, and worked with a fixed system of call signs. Therefore, as soon as such a call sign was heard, people over there knew at once that a Zeppelin was coming, and they merely needed to follow its course by readings at short intervals, which was easy to do because of the low flying speed of the airships.

POLYPS AND PENKALAS

By a polyp we understand in zoology a marine animal which catches its victim in its outstretched tentacles in order to eat it. What a "Penkala" is, that probably few people know today. Therefore, it may be mentioned that this was the name of a firm which before and during World War I was producing the first mechanical lead pencils. In its advertising, this firm used a head with an enormous ear behind which was stuck such a mechanical pencil. Beneath was simply the word "Penkala." This big ear of the Penkala poster and the tentacles of the polyp served the Austrian and the German intercept services respectively from early 1916 on as the symbolic designation for a new branch of this service which will be described below.

In the summer of 1915 German engineers near Verdun had captured instruments by the aid of which the French had been intercepting German telephone lines. These instruments had been improved in Germany by the then Postal Councilor Arendt, and they had been used in the war of position, first by the German and then by the Austrian army, to intercept telephone conversations of the enemy. These devices were installed in a dug-out in the front line, and from here insulated wires radiated out which ended in the so-called "search grounds"; these search grounds consisted of metal stakes which were driven into the ground as close as possible to the enemy's system of trenches. Where a single telephone line was used the currents passing through the soil would encounter one or more of these search grounds, and after being amplified by the attached apparatus were rendered audible. Thus, as if with a magnet, conversations carried over the telephone net of the enemy were attracted, and, by using a switchboard, any number of search grounds could be thrown in selectively to eavesdrop on a definite sector of the front. In the German army these listening posts, which by the beginning of 1916 were installed everywhere along the front, were called "Arendt Stations" or "Polyps"; the Austrians called them "Penkalas" (big ears!).

Since at that time the Russians at the front used almost exclusively so-called single wires, and even in the west single wires were still used to a great extent, the German and Austrian listening stations generally had very good results. While the radio listening service gave the connections, orders, and reports of the higher staffs, the Arendt service supplemented the picture with respect to small units and the front line. The results during 1916 -- especially in the east -- were so abundant that

one Arendt station was supplying on the average 15 to 20 pages a day of significant information regarding the enemy. Excellent results were achieved by the Austrians with their Penkals on the Italian front, where they were always very exactly informed of the situation on the Italian side.*

When several such stations fell into the enemy's hands during the summer of 1916, and the listening in on telephone conversations became known, people began to use two wire connections everywhere. It was much more difficult (often impossible) to intercept these. Nevertheless, it took a very long time to make the change and to safeguard telephone traffic at the front - particularly for the Russians - to such an extent that listening in became virtually impossible. In any case, the German and Austrian Arendt services were able from early 1916 till about the middle of 1917 to hear most of the telephone conversations of the Russians up to five kilometers behind the front, and to utilize the content for shaping their own measures. The Russian telephone operators were very loquacious when seated at their instruments. When a Russian telephone operator took over either by day or by night, he began "testing" all his connections by calling up the correspondent stations. Generally he knew the men at the other end of the wire, and a conversation ensued in the course of which the two exchanged experiences, impressions, and observations. Very often they spoke also of official matters. They discussed impending or accomplished reliefs, the question of supply, the spirit of the troops, extension of positions, losses suffered, changes in command, reinforcements received, and the like.

Aside from these bits of private information, very good information could sometimes be obtained from the conversations of the officers, particularly when patrol undertakings were impending, attacks were planned, etc. Precise information was obtained regarding the locations of staffs, batteries, depots, and the like. Artillery observers could generally be heard clearly because they were stationed well forward with their telephones. They gave firing directions; by observing where missiles struck and comparing the figures transmitted, one could soon get the exact location of the hostile battery. From now on it was impossible to prepare for any major military action without its being noted by the Arendt service, since, if an order was given to stop all telephone traffic and this was done, this very measure was enough to attract attention and to indicate that the enemy was making preparations.

* It is true that the Austrians did not find out until November 1917 that the Italians, beginning early in 1916, had likewise set up a considerable number of these listening stations. As General Max Ronge states in his book, "Military and Industrial Espionage," the Italians listened in on some 5200 telephone conversations of the Austrians in the sector between Wippach and Rombon. In October 1916 the leader of an Austrian listening station deserted to the Italians, and was able to acquaint them in detail with the Austrian arrangements and to warn them fully. Later on a number of Austrian deserters were employed by the Italians in this listening service on the basis of their linguistic ability.

Since the telephone lines of the staffs further to the rear were attached to the same switchboards in which lines from the front terminated, induction often made it possible to listen also to these wires, over which extremely informative conversations were carried.

The introduction of the "Polyps" and "Penkalas" in the armies of the Central Powers signified from the military point of view an unparalleled factor. Since, from the summer of 1916 on, these stations were located at intervals of about 10 kilometers along the entire front, it was possible to monitor the entire enemy telephone traffic at the front almost without a break. In the east this onesided superiority continued down to the end of the war; in the west it was equalized since the French and English used similar apparatus to intercept German conversations.

In the eastern theater the practical result of this superiority was that a large part of the troops of the Central Powers could be withdrawn without risk, since there was now no danger of a surprise movement by the enemy. It would never have been possible for the armies of the Central Powers to keep the eastern front stabilized, if they had not had such extensive insight into the enemy situation, due to the results of the radio intercept and the Arendt services, since the strength ratio on the eastern front was in many sectors 10:1 against the Central Powers.

THE WEST

While in the eastern theater the intercept service during World War I resulted in a one-sided German superiority, the situation in the west was quite different. Here it was not the Germans who started using this novel means of gathering information and thus got a head start, rather it was the French who began working systematically and purposefully in this field as soon as political tension began and who derived a corresponding advantage. There were two reasons for this: the first was that at the very beginning of the war the French had at their disposal a fairly well set up system of interception which merely had to be adapted to the new tasks; they already knew the value and the possibility of using this means of gathering information. The second reason was tactical: while the French were operating in their own country and could rely on a closely knit, undamaged wire network and consequently needed to use the radio but little, thus affording the enemy few chances to employ radio interception, the situation was reversed for the Germans. After crossing the frontier the Germans encountered a telephone and telegraph net which had been more or less destroyed or rendered temporarily useless. They either had to set up their own field wires, which took time and on the right wing was hardly practicable due to the swift advance, or they had to resort to radio-telegraphy. This was done to a great extent and afforded the enemy a marvelous opportunity to get practice in interception. After a few days the French intercept service had already gotten its bearings, and from then on maintained very close contact with radio developments among the Germans.

We have already reported briefly on the French intercept service which became so important before and during the battle of the Marne. Immediately

after this fateful battle there followed in the west the so-called "race to the sea". The German attempt to outflank the enemy again from the north called for the utmost watchfulness on the part of the French. Once again the focus of French reconnaissance lay in the intercept service. On the other hand, the French army command tried to create a new situation here by threatening the German right wing. Thus the two opponents kept crowding one another more and more to the north and there resulted the famous "race to the sea."

These movements forced the German army command to make extensive shifts of troops. The French, on the other hand, were faced with the problem of recognizing these movements, their type, extent, and goal, and of doing this in time.

The Germans were still resolved to continue to hold the front in Lorraine and the Vosges by defensive action and to force a decision in the north. The two German "Southern Armies" (the Sixth and Seventh) were withdrawn from the front and replaced by newly activated army units. The Seventh Army, which was in the Vosges, was transferred to the Aisne sector and committed there. The Sixth Army was moved from Lorraine to the extreme German right wing. Thus the Germans succeeded in countering the movement of the French and the English which was extending farther and farther to the north. From 1 to 13 October the battle raged around Arras; by mid-October a new front ran from Noyon to north of Lille.

The removal of the two German armies from the southern flank, their replacement by new units, and their march to the new areas of commitment were recognized in the very beginning by the French intercept service as clearly as one could wish. It was the first time in the history of war that such a movement had been followed by the technical means of radio intelligence. The French also recognized these units as they appeared one after the other in the new areas. That gave them and the English a basis for carrying out countermovements, whereas the Germans had to rely exclusively on reconnaissance by patrols and scouts along the front; thus at best they had success with their reconnaissance only after the hostile units, which had been brought up, had already been committed.

On 9 October 1914 Antwerp had fallen. From the besieging troops thus released and from new units activated in Germany a new Fourth Army was formed in Belgium, which started its advance on 18 October with the purpose of bringing the channel coast under German control. This movement was also recognized promptly by the French intercept service and by the intercept service of the British Expeditionary Army which had in the meanwhile become active, so that appropriate countermeasures could be taken in time. After heavy fighting the German attack was stopped at the Yser. The attempt of the German Sixth Army to break through toward Ypern, which was prematurely betrayed in radio traffic, was likewise without success. With the end of the battles around Ypern the war of movement in the west was concluded for the time being. The war of position began.

Several years after World War I the French Colonel Calvel prepared for instruction purposes for the Signal School in Versailles a timetable

containing all the German army radiograms intercepted by the French intercept service during those months. Upon comparing this table with the operational movements executed by the Allies one recognizes clearly that these results were the basic factor in carrying out countermeasures, and that it was only due to the intercepted German radio traffic that the French and English were able to act so promptly and to eliminate the German threat in the north. What the German intercept service accomplished in the east, the French did here in the west. With remarkable parallelism there took place here an equalization of spiritual forces which determined the outcome of the war back in the fall of 1914.

In the further course of the campaign in the west the forces were equalized in respect to the intercept service, just as the forces on that front had been equalized in other respects. On the basis of experiences in the east, the Germans began late in 1914 a systematic interception of enemy radio traffic. Both sides now developed extremely great activity in this field. There resulted an invisible struggle between camouflage, concealment, and deception on the one side, and the intercept service, evaluation, and cryptanalysis on the other, which was soon carried on by both parties with the most refined methods. This service extended to interception of all technical means of communication of the enemy, but was concerned primarily with radiotelegraphy and the telephone. As recognition of the danger of using radiotelegraphy for transmitting secret information began to permeate everywhere, people in the western theater began more and more to give up the use of this means of communication. Furthermore the stabilization of the fronts afforded a possibility of extending wire communications. Consequently, the focus of the intercept service in the west shifted more and more to the interception of telephone lines, both on the Allied and on the German side. This duel sometimes assumed violent forms, as for example, in 1915 near Apremont, where mutual interception of the telephone conversations of the artillery formed the tactical basis for the military actions. At times some rather droll situations resulted. Once the Germans had even learned the hour of the impending attack. But instead of learning a lesson from this and being doubly cautious in the use of their own telephones, the Germans made the mistake of passing the time of the expected French attack in plain language by phone, and all countermeasures were adjusted to this point and time. This was intercepted by the French in turn, whereupon the French attack was advanced several hours and was completely successful in spite of all German preparations for defense.

In the autumn battles in the Champagne (22 September to 3 November 1915) and at La Bassée and Arras (25 September to 13 October 1915) the Germans were able to frustrate the intended break-through of the enemy simply because, through the interception of enemy telephone traffic, they had been in a position to recognize the impending attack and to prepare appropriate defense.

In September 1916 during the battle on the Somme, the French intercepted a German radiogram from which they learned details of the impending great German counterattack in the vicinity of Bouchavesne.

The French Colonel, Givierge, who describes the results of interception during the First World War, says: "The results achieved by deciphering telegrams were unusually great since they made possible the identification of many units. If we glance at the archives, we see that between 5 and 15 December 1917 four movements of divisions were recognized by the aid of this special organ more quickly than would have been possible by any other means of reconnaissance; these divisions were later checked by the statements of prisoners. Moreover, 32 infantry regiments were spotted, whose areas of commitment had been ascertained previously by other means. A radiogram intercepted on 10 December reported to us the presence of an 'attack division' north of St. Quentin; another telegram of 10 December informed us of the presence of General von Erpf, commander of the 242nd division; another telegram of 15 December allowed us to anticipate the German sortie against the Albia Farm; our troops anticipated the enemy and threw him back. A radiogram of 5 December reported to us the change of call sign of a German radio station, and gave us the old and new call signs..."

Of the utmost importance in the intercept service were so-called little things; they often proved of decisive value. In many cases the French discovered and identified German radio stations by the fact that when they changed call signs the German stations did not break the sequence of message number in the headings.

One German divisional radio station (183rd Infantry Division) could always be recognized by the fact that it put the sending time and the word count at the end of the radiogram instead of at the beginning, as was generally done.

Another German station could be recognized by the stereotype formula: "Can you hear all right?", which occurred each time it began traffic with a correspondent. In such cases it did no good to change the call sign.

The French and English were especially successful in listening to the radio traffic of the German Air Force. At the very beginning of the war the German airships were easily recognized in radio air traffic because they all had call signs beginning with the letter "T". Whenever this signal was heard, it was known that the transmitter of a Zeppelin was involved; the position of the airship was then determined quickly with the aid of radio-goniometry. At the beginning of the war these airships cruised over the North Sea and radioed incessantly to their base in the Helgoland Bight; they reported the spotting of mine fields, submarines, warships, merchant ships, etc. The French kept posted on these matters by listening to these transmissions over a distance of 700 to 800 kilometers.

During the air attacks on Paris and London, the Zeppelins and large aircraft which carried out the bombardment were constantly requesting bearings from various German direction finding stations. This entire radio correspondence was listened to by the French and English, who thus received directly from the enemy valuable clues regarding the movement and the direction of the German attacks. Moreover, after the English and French direction finding stations had become acquainted with the signals of the

German Air Force transmitters, they took the necessary readings and determined the momentary position of the airships.

Toward the end of the war the German dirigibles - like the land stations - changed their call signs almost daily so that it was more difficult to recognize them. But this difficulty was offset by the routine which had been acquired meanwhile by the French and English intercept operators and by the aid of the improved direction finding system.

Interception of hostile artillery aviators was likewise carried on successfully. One system of interception, which was organized particularly for the purpose, yielded a mass of information which permitted the command to orient itself on the following questions:

- a. Intentions of the enemy artillery; recognition of the firing procedure of newly committed batteries and the firing of old batteries getting a range on new targets.
- b. Zones and distribution of fire of enemy heavy artillery.

Interception of this type is not so easy as listening to the traffic of ground radio stations. The planes move very fast; fixing their momentary position in the air calls for great speed and practice on the part of the crew of the direction finding stations. In addition, it is necessary to recognize the transmitters again in spite of the daily change of call signs; moreover, decipherment of the radio dispatches calls for no little effort. In addition, the precise times of the flight must be compared with those of the artillery fire and evaluated. Nevertheless, it was possible again and again to get valuable information and to shape one's own measures correspondingly.

With the introduction of universal military service in January 1916, England manifested the tenacity of its purpose to keep fighting. On the other hand, France appeared greatly weakened both in a military and an economic way. In order to wear down the French completely and thus bring about a decision in the west, the German army supreme command decided to attack Verdun. The attack began on 21 February and continued until September without achieving the desired success. In these battles the intercept service on both sides played an unusually important role. The telephone lines were constantly being damaged by the uninterrupted artillery fire so that there were possibilities of interception by the resultant grounding. Moreover, a new phase began in the war of interception. Everywhere along the front so-called ground telegraphy instruments were installed. Their introduction had become necessary because reliable use of the telephone had become impossible in view of the destructive effect of the artillery fire. The ground telegraph sent buzzer currents into the earth, and was therefore independent of wires. Of course, it could be heard by the enemy at short distances but not to the same extent as radiotelegraphy. The intercept stations, at which hitherto the listeners had been accustomed to hear and translate oral conversations, now had to shift to intercepting Morse telegraphy, which also offered a possibility for the use of cryptographic systems. The English had constructed a special device for signal communication in the combat zone, the so-called Fullerphone, which they

considered secure against eavesdropping; but even this turned out to be subject to interception under certain conditions, so that the struggle in this field never ceased but merely changed in its technical aspects.

The intercept service achieved strategic significance in the west only once on the German side, and that was in February - March 1917. From countless intercepted conversations and telegrams the Germans had ascertained that the Allies were preparing an attack on a grand scale in the Somme area. The areas of attack and the directions of thrust could be clearly recognized. This time the German supreme command actually did draw the correct conclusions from the available information, and immediately before the attack was to begin ordered a withdrawal to the so-called Siegfried Line. In this way, the target was withdrawn from the crushing superiority of the Entente in materiel, and the attack petered out in empty space. Of course, the Allies had recognized from intercepted German traffic the German intention to retreat, but strangely enough they did not draw the only correct deduction and immediately continue the attack which could have resulted in a very difficult situation for the German troops. Instead, they clung rigidly to their existing plan and missed a very favorable opportunity.

Meanwhile, the French had been making excellent progress in the field of direction finding. As early as October 1914 they had started experiments with direction finding apparatus, and then developed a model which could be used in the field, being held to such dimensions that it could be installed in a vehicle. The rotatable frame had sides two meters long and was located on the roof of the vehicle. The apparatus itself was mounted inside the vehicle.

With this mobile direction finder the French got excellent results. Such direction finding stations particularly proved their worth early in 1917 when the Germans were preparing to retreat to the Hindenburg Line. Long before they started to occupy this defense line, radio stations were set up and put into operation. Of course, that was sheer stupidity because there was no valid reason for operating radio stations far behind the front as it then stood, they could have gotten along very well with the existing wire communications. The fact that they did tune up their radio traffic shows that the responsible authorities had not the slightest idea of the danger accompanying the use of radiotelegraphy. They were setting up communications just as might have been done for practice according to the principles employed before 1914. The new radio stations were immediately recognized by the French; readings were taken, and the locations determined, so that in a relatively short time they recognized the exact course of a new German line of defense. The French were also in a position to recognize with certainty the imminence of German retreat operations.

A little while after that the Germans also missed an exceedingly favorable opportunity which the intercept service served up to them, so to speak. In the middle of April 1917 the French under General Nivelle with strong employment of troops and material made an attack on the Aisne and in the Champagne, east of Reims. The Germans intercepted this thrust by a mobile defense, and in heavy fighting caused the French such severe

losses that the morale of the French army was badly shaken. In numerous army corps there was mutiny. Troop units and single soldiers were leaving the front, or going over to the enemy.

The German intercept service had its great hour in the west, as one intercepted message after the other revealed clearly the critical situation on the enemy side. In this situation the French front could not have resisted a German attack. But the incredible happened: the German command saw in these events a parallel to those on the Russian front, and expected a collapse of the French power of resistance without any action by the Germans. It missed the chance which was never to return, and kept waiting until the French government and the army command had succeeded in restoring the situation. Pétain resumed supreme command; the crisis came to an end; the French front again stood firm. America was able to proceed calmly in shipping its divisions and armies to Europe. The Danube Monarchy recognized the hopelessness of the situation, and the idea of a separate peace began to spread there visibly. The Entente had survived the crisis; the scale of victory slowly tipped in its favor.

In respect to the intercept service, the tide now began to turn. Just as the German intercept service in the east had been able to follow the increasing war weariness of the Russian soldiers from early in 1917, so now the French were often able to observe similar phenomena among the German troops, even though not to the same extent as had been the case in the east. The resolution in favor of peace passed by the Reichstag on 19 July 1917, the Peace Note of the Pope, the German reply thereto, the formation of the "Independent Social Democratic Party," the resignation of Reich Chancellor von Bethmann-Hollweg; and many other happenings became the subject of occasional short conversations over the telephone, in spite of all regulations, and these allowed the Allies to infer that there was a general, slow decline in the will of the German troops to resist. This phenomenon was increased as the American troops began to arrive in France from overseas; conversations on this topic occurred again and again on the telephone, and showed that the Germans at the front were by no means indifferent to this problem. But the most valuable intelligence was gained by the French intercept service in listening to the telephone conversations of German units which were moved from the eastern to the western theater beginning in December 1917. These units had no taste for the war, and the French intercept service was busy seeking such units since their telephone conversations afforded the best information. Nevertheless, the French did not succeed in recognizing from intercepted telephone traffic the impending German offensive of March 1918. This offensive, which broke loose in the morning hours of 21 March came as a complete surprise to the French, at least as far as its timing and the direction of thrust were concerned. Numerous German troop movements had been recognized by the French intercept service, but in the main very good radio and telephone discipline had been observed by the Germans. Hardly had the front come into movement, however, when the German radio stations again began to send eagerly and to supply the French with excellent material. Foch quickly recognized that the German offensive had been undertaken without adequate, fast moving forces, and he quickly took his countermeasures. After barely two weeks of successful German attacks, the great spring offensive had bogged down.

A few examples may serve to show the importance which was attached to the intercept service even in 1918 - after the danger of using technical means of communications had been generally recognized.

The French Captain Cousillan relates that on 6 May 1918, for example, the French station "ZZ2" sent a telegram to station "ZZ1" which began with the words: "The lieutenant and chief of the radio service with the staff of General X. To the chief of the radio service with the staff of General Y." The Germans, who knew, naturally, what divisions were led by these generals, discovered in this way the presence of these units in the sectors involved.

The presence of several Italian divisions on the French front was brought to the attention of the German intelligence service by the fact that an Italian operator made what would seemingly be a very slight mistake. The Italian radio stations employed in France were required to follow French regulations and to accommodate themselves to the French traffic in all particulars. The operator in question made the mistake of transmitting the Italian signal "Y di X" instead of the signal "Y de X" when calling another station. In this way the presence of Italian units on French soil was betrayed.

On 1 June 1918 the French intercepted a German radiogram which they deciphered on the second day following. It had been sent by a station in the region of Roye, and contained the text: "Speed up supply of ammunition even by day, if not subject to observation." This telegram, which suggested an impending action, was a warning signal for the army of General Humbert, and made it possible to prepare the means employed by General Mangin on 11 June near Mery-Courcelles to hold the attack, which started near Montdidier in the night from 9 to 10 June.

The order of the day of the German Seventh Army on 9 July 1918 states that the presence of the French Tenth Army had been revealed to the Germans by mentioning a French radio officer by name. This army betrayed itself by the stereotype formulation of the daily reports of the weather station Trilport. The German daily report also remarks that at the end of the week the station call signs of the American Third Division had been heard in the area east of Chateau-Thierry.

The French intercept service scored its greatest triumph in July of this year before the beginning of the German attack on both sides of Reims. From intercepted German telephone conversations and ground telegraph traffic, as well as from several intercepted radiograms, the French had recognized the area and the time of the attack. They did the only thing possible under the circumstances - they evacuated the front positions and received the German thrust in their rear positions. Twenty-four hours after the attack began, the German supreme command had to issue its order to stop the offensive. Likewise, the attack of Foch from the forest of Villers-Cotterets on 18 July against the right flank of the German bulge was supported for the most part by the intelligence gleaned by the French intercept service, mainly from intercepted ground telegraph traffic. The same held true for the attack by Foch between the Somme and Scarpe in the direction of Cambrai on 21 August, and again in connection with the

American attack shortly thereafter on the Lorraine front near St. Mihiel.

In all these cases interception of German ground telegraph traffic had given the Allies extensive insight into:

1. the structure of the German front,
2. strength, or losses, and weakness of the German units,
3. difficulties with supply of artillery ammunition, and with respect to the quality of the badly used up German guns,
4. morale of the troops, conditioned by the difficult supply situation, by the war weariness of units brought from the east, and by the impression on morale made by the tanks now appearing in large numbers on the Allied side.

On the German side, the above-mentioned attacks by the enemy had been recognized in time by intercepting telephone and ground telegraph traffic; however, there were no forces left which could be opposed to the superior forces of the enemy.

The French direction finding service had been greatly developed during 1917 and during the first half of 1918. A large number of mobile direction finding stations had been assigned to the armies, and these patrolled the entire front. These stations proved their worth admirably in July 1918; without having to decipher a single German radiogram, the German intention to retreat beyond the Vesle, then the Aisne, then the Ailette was recognized clearly from day to day by comparing the French direction fixes. The fact that the German station call signs were changed daily, sometimes several times a day, did not disguise this. The German radio stations were working so industriously that the French were able to recognize the identity of the stations from the abundance of direction finding fixes whenever there was a change of call sign. The long moves of the weather stations in the rear areas held by the Germans gave the French valuable clues as to the German intentions.

Shortly after the end of the war it was asserted on the German side that the German army in the west had returned unbeaten from the war and that only the "dagger thrust from the homeland" (the Revolution of November 1918) had brought about the catastrophe. While maintaining complete objectivity, I must observe that there can be no mention of such a thing. I had opportunity to compare the results of the German intercept service and those of the Allies for the year 1918, to weigh them against one another, and to compare the military measures which were then carried out. The intercepted messages gave a reliable picture of the situation on both sides; they showed the degree of readiness for battle and the morale on both sides. Without wishing to detract in the least from the value of the German soldier, it must be stated factually but emphatically that, from May 1918 on, the German front was in an utterly hopeless situation. The assumption that the Germans might perhaps have succeeded in gaining more favorable conditions for an armistice by retreating step by step and

fighting all the way is quite erroneous. Had this been done, then a complete collapse would doubtless have come in the spring of 1919 at the latest, and it would have resulted in the complete annihilation of the German army in the west. Any attempt to gainsay this neglects the facts, and these facts were nowhere reflected more clearly than in the results of the intercept service. The German soldier fought bravely; more than that - he tried with heroic self-sacrifice to resist just as far as possible in spite of undernourishment and hopeless inferiority in materiel. But there is such a thing as the impossible.

THE SECOND HALF OF THE WAR IN THE EAST

(LATE 1915 -- 1918)

From September 1915 to the end of May 1916 virtually nothing occurred in the east, operationally speaking. Then in June 1916 on the Austro-Hungarian front the famous Brusilov offensive broke loose, just at the moment when the Austrians had committed all their available forces on the Italian front. This offensive was not quite unexpected by the Austrians, for the Austrian radio intercept service along with the Arendt service had picked up many indications of an impending large scale operation. In particular, there was a Russian telegram sent on 3 June which betrayed to the Austrians the impending large scale attack. But in downright, frivolous underestimation of the fighting strength of the Russians, the Austrians had taken the matter lightly and made almost no preparations to ward off the attack. Thus Brusilov was able to penetrate deep in the region of Lutsk and particularly in the Bukovina before reinforcements from other sectors brought the wavering front to a stand.

The Austrian intelligence service had not at that time recognized fully the value of the Arendt service, and had not organized the exploitation of the intercepted conversations, as it should have done. Moreover, the Austrian army command had turned its entire attention to the Italian front, and, despite the warnings of the commanders in the east, had not been able to make up its mind to send reinforcements to the threatened front. In the central sector of the eastern front, which was held by German troops, the Russian attack had no success, for here the people had known how to make better and prompt use of the results of the intercept service. At that time all Russian arrangements from army down to company orders had been intercepted long before the beginning of the offensive. The attacks met with a well-organized resistance.

Even at the end of 1915 the Russians were still supplying plenty of material for the opposing intercept service. Only slowly did recognition of the danger lurking in the careless use of technical means of communication begin to spread among them. Late in 1915 one station of the Russian Fourth Army was ordered to monitor the work of its own stations. This was the first recorded attempt to increase the security factor by monitoring their own radio discipline; at that time, however, it was already too late.

In the spring of 1916 the Russians attempted a radio deception on the Austrian front, and this caused much amusement in the Austrian intercept service. To veil the withdrawal of two corps, they had several radio stations carry on deceptive traffic. Ronge reports that the Russians, innocent as children, announced this in advance in a radiogram which was solved, naturally, by the Austrians. Moreover, they prefixed to every fake telegram an enciphered sentence with the following content: "Do not be alarmed; this is just deception". This intermezzo was comforting to the Austrians, inasmuch as it showed that the Russians had no idea that their enciphered messages were being deciphered currently by the enemy.

The Brusilov offensive was the last attempt by Czarist Russia to turn the fortunes of war in its own favor. With its expiration in September 1916 and with the outcome of the following campaign in Rumania, the war spirit in Russia had disappeared. Intercepted Russian telephone conversations revealed a rapid decline in fighting morale and a clear rise of revolutionary tendency. Over the telephone men scolded openly about their officers and talked about the senselessness of prolonging the war. The thoughts of the Russian soldier turned more and more toward home rather than to the front and to the enemy. Even among the officer corps trends could be recognized which aimed at ending the war, since a military victory was no longer considered possible. Supply was inadequate; the ammunition situation was bad. Social tensions began to occupy more and more space in all conversations.

In March 1917 the revolution broke out in Petersburg. Czar Nicholas II abdicated in the night of 15 - 16 March. The middle class Democrats and the moderate Socialists under Kerenski took power. In spite of the war weariness of the soldiers, they determined to continue the war. Monitoring of Russian internal traffic showed that a new wave of energy from above poured out over the country and the army. There was an attempt under national democratic watchwords to reenliven the military fighting spirit at the front.

Very soon the intercept service learned that the Russian front was stabilizing itself anew, and was preparing for offensive battles. While the Germans were engaged in violent defensive battles in Flanders, and the Austrians stood at the Isonzo, the Russians under Brusilov, who had meanwhile become commander-in-chief of the entire Russian Army, attacked on 1 July 1917. The impending attack had long since been recognized by the German and Austrian intercept service. They had had ample time to prepare for it. The men at the instruments sat tense and listened to every conversation which referred to the attack and its execution. From Riga to Smorgon the storm broke before the German lines. Only in Galicia did the Russians have partial success. But in the counterthrust German and Austrian troops broke through the Russian lines near Tarnopol, and caused the entire Russian front to waver. All of East Galicia and Bukovina, which had been lost the year before, were again occupied.

To complete the military collapse of Russia, on the left flank the German Eighth Army attacked and took Riga on 3 September. The islands Oesel, Moon, and Dagoe were occupied in October.

Meanwhile, the intercept service had learned of the complete breakdown in morale of the Russian front. The former war weariness of the

Russian soldiers had made way for definite hostility toward war. The tension between men and officers changed into open conflict. The social factor came into the foreground, sharp and clear. All conversations turned on the ending of the war and the readjustment of social problems. They talked only about capitalists and bourgeois as parties interested in the war; it was clearly to be felt that the war on the eastern front was virtually at an end. On 7 November the second revolution broke out in Petersburg. Kerenski was overthrown. The Bolsheviks took over the government. Now propaganda radiograms and instructions from the new government went out all over the country by the dozen, they were heard by the German and Austrian intercept services as well. The major activity of these services was now turned from monitoring Russian military radio traffic to listening to Russian internal traffic. It was a question of gaining clarity regarding events in Russia. The military intercept service in the east had completed its assignment; now the political assignment stepped into the foreground.

After the end of World War I, General Hoffmann, in his book "The War of Missed Opportunities," stated with regard to the intercept service that during the entire war in the east this service had supplied the German command currently with such complete information regarding the enemy that it was always fully informed regarding the situation on the enemy side.

From Tannenberg to the end of the war the interception of Russian technical means of communications had given the German and Austrian command so many suggestions for the execution of their own measures that it is impossible to conceive how the war in the east might have gone, if this means of intelligence had not been employed by the Central Powers, and if the Russians had not used their technical means of communications in such a careless manner.

THE ZIMMERMANN TELEGRAMS

In the course of World War I the intercept service on both sides scored various successes which made it possible to win battles, to plan and carry out operations, or to help shape entire campaigns to a very great degree. However important these individual successes were and however greatly they influenced the course of military events, they were nevertheless not able to produce results which would decide the war. Only in one case did this happen, and this case will now be described briefly.

It was in August 1914, a few days after the occupation of Brussels by the German troops, when a German officer appeared in an aristocratic villa in the suburbs of Brussels, presented a billet slip and took up his quarters there. The villa belonged to the family Czek. On the following day the son of the house, Alexander Czek, an engineer by calling, announced himself to the German officer and asked for a brief interview. It was granted willingly, and now Alexander Czek related that he had set up in his house a short time before a radio sending and receiving set which was not being used by him at the moment but was ready for operation. He desired to bring this fact to the attention of the German military authorities so that he would not come under suspicion of carrying on espionage with the aid of

this radio set. He led the German officer into the room in question and showed him the apparatus. The officer now gave instructions to leave the set standing untouched and said he would immediately report to the competent German signal officer, who would then take proper action.

On the following day there appeared at the home of Alexander Czek a German lieutenant colonel, the signal officer of the German command in Brussels, who had the set demonstrated. He recognized at once that Czek had constructed an apparatus which was brand new in the field of radio-telegraphy, since it made possible working on an extraordinarily wide wave-band without having to undertake complicated switchings or other changes. Such an apparatus was exceedingly important for handling reception, especially for the intercept service which still had to count on the enemy's using waves for which one was not equipped. Czek's apparatus was dismantled and taken to headquarters. With that the matter was settled for the time being.

Some weeks later technical trouble developed in the transmitting apparatus of the heavy German radio station in Brussels, which could not be eliminated with the means at hand. By chance, someone remembered the engineer Alexander Czek and had him summoned. Czek succeeded in eliminating the trouble in a short time and in getting the station ready for operation.

The radio station of the Brussels general command had three assignments at the time: first, it had to work the army traffic of the higher German military authorities; next, it was in direct communication with Nauen and Königswusterhausen for handling diplomatic radio traffic between the Foreign Office in Berlin and the "Military Administration Belgium"; the third task consisted in copying during free periods foreign radio traffic, i.e., in carrying on intercept work.

The technical qualifications of the engineer Alexander Czek had now attracted the attention of the Germans, and it was decided to make use of his services. Especially since, as it turned out, Czek was not a Belgian but an Austrian. His father had held a high position in Austria and belonged for a time to the intimate circle of Emperor Franz Joseph. Alexander Czek's mother was an English woman. The family had resided in Brussels for several years, and Belgium had become their new homeland. Before engaging Czek's services for a long term, some investigations were made, which all turned out in favor of the Czek family. In Vienna it was stated that there was not the slightest doubt regarding the family in general or about Alexander Czek in particular.

Whereupon, Alexander Czek was requested by the Brussels command to appear, and they now revealed to him that there was a prospect of using his services for some little time; they suggested that he enter the Brussels radio station on the basis of a civilian contract.

Aside from his technical knowledge in the field of radio, Czek had a good knowledge of several languages, and it was this latter circumstance which finally proved the determining factor in engaging him at the radio station. Czek agreed and, as time went on, proved to be an extremely useful fellow worker. He took care of all the apparatus, made suggestions for

improvements, and on every occasion rendered good service with his linguistic knowledge. They came to trust him absolutely and one day revealed to him that they intended to use him in the radio receiving service.

Czek knew the Morse alphabet and could copy at what was then the usual speed. He was given additional training in ear reception, and was then employed in copying the transmissions of foreign stations sent in plain text. They had had Czek sign a pledge of secrecy; had admonished him to maintain absolute silence; and with that, all the formalities were at an end.

In his new field Czek worked to everybody's satisfaction. Evidently they had made a good find at the Brussels radio station. After some months had passed, they went a step further and used Czek for their own sending and receiving service, primarily on traffic with Nauen and Königswusterhausen. He had to send or receive the enciphered telegrams.

Alexander Czek was not only a competent technician and linguistic, but he also proved to be an agreeable companion and comrade. He spent many an evening in animated conversation with his new comrades and with the officers of the Brussels command and was everywhere a welcome guest. The general confidence in him was unbounded. One day when there was peak operation at the radio station, several very long enciphered telegrams arrived from the Foreign Office at Berlin. It also happened that two people at the station were sick. The heads made up their minds quickly and handed Czek the two code books by the aid of which the cryptographic system used by the Foreign Office was deciphered, gave him the necessary instructions for using the two codes, and Czek set to work.

The cryptographic system used by the Foreign Office in communication with representatives abroad (including the administration of the "General-Gouvernement Belgien") consisted of a code and an encipherment. The code, or "Schlüsselbuch" as it was called at that time, was a thick volume in which the code elements and their meanings in plain text were entered in alphabetic sequence. A decipherment by the aid of this key book was quite simple; one only had to look up the code groups in their alphabetic sequence and read off the meaning. To make the system more resistant to unauthorized decipherment, they had provided an encipherment by the aid of which the secret text derived by changing the plain text into code groups was changed again, i.e., was reenciphered. This encipherment book was a relatively small volume, and when deciphering a telegram it was necessary to work with this little book first, i.e., to find the basic key by removing the encipherment. This procedure was relatively simple, but called for a certain skill, since radiograms sometimes arrived in garbled condition and the solution of the groups was not always obvious. Therefore, it was necessary to master the Morse alphabet and to know the possible errors and garbles in order to reach a solution of garbled messages without having to send back long inquiries.

Czek turned out to be an extremely clever decoder, and from then on he was used repeatedly for decoding messages arriving from Berlin. By being introduced into the intercept service, into the entire sending and receiving activity of the station, into the work of decoding, and into questions of

technology, Czek had arrived at a confidential position of the first rank. He filled it conscientiously, and gave no occasion for any complaints whatsoever.

In the summer of 1915 a captain of the English Intelligence Service turned up in Brussels who had learned that there was a man employed at the Brussels radio station who had been residing in Brussels. He thought this might be a chance to get some insight into the operation of the station, and began to spin a web around Czek, so to speak. A young lady of Brussels was selected to win Czek over to work for the British secret service. This was not exactly easy because Czek had endeavored thus far to be correct in every way. Gradually the young lady brought Alexander Czek into contact with members of the Belgian liberation movement, and after months of work finally succeeded in convincing him that it was his duty to work not for the Germans but for the Allies. They reminded him of his mother's nationality, of his new homeland, of the German attack on Belgium, of the German striving for power, of the just cause of the Allies, and brought it about that Czek said he was ready to prepare a copy of the code of the Berlin Foreign Office for the British secret service.

This was the goal of the entire activity of the British secret service, as far as Czek was concerned.

This task was not exactly easy since the two code books were not in Czek's custody but were only handed over to him from time to time when he had to decode an incoming telegram. And this was by no means the rule. Normally, decoding was done by the German personnel of the station; Czek was only brought in to help out. Moreover, there was usually a second person in the room so that it did not seem feasible to copy the book systematically. Consequently, Czek chose another way. When decoding incoming telegrams, he noted the groups occurring in the telegram along with their meaning on a sheet of paper, as a draft for his fair copy so to speak, and then copied the text neatly. The pencilled notes on the draft he did not destroy but concealed on his person. In this way he succeeded over some months in noting the meaning of all the code groups contained in telegrams received during this period. And after all, those were the syllables, words, or phrases which were most frequently used.

Czek went about his work so cleverly that never once did suspicion fall on him. It was in a different way that he aroused the mistrust of the German military authorities. He had been seen a few times in public places in the company of members of the Belgian liberation movement. People watched him and found that he went around with a young lady concerning whom it was known that she was in contact with the British secret service. Thereupon, Czek was dismissed from the service of the Brussels military command, and was ordered to remain in Brussels and not to leave that city.

Now Czek saw danger arising for himself and for his work, and he decided to flee. He left Brussels, taking along his sketches, and reached the Dutch border. Along this border the Germans had stretched a great wire barricade charged with electricity. Czek knew this. With two boards which he wrapped with inflated bicycle tubes, he succeeded in producing two

insulated plates by the aid of which he crawled under the electric fence and reached Dutch territory. Shortly afterwards Czek's sketches were in the British Cipher Bureau in London. From then on they were able to decipher and read all radiograms which were exchanged between the Berlin Foreign Office and the German representatives abroad. This was the case from about the end of 1915 on.

Even though this stroke by the British Intelligence Service deserved great recognition, it is simply marvelous that the English succeeded in keeping secret throughout the entire war the fact that they knew the cryptographic system. Not the slightest shadow of suspicion was aroused by any lack of caution. Every German telegram enciphered by this system was laid before the British Foreign Minister personally, who made his decisions accordingly.

What made the Alexander Czek case a matter of the utmost importance will now be revealed.

The Secretary of State for Foreign Affairs in Berlin at that time was Zimmermann. Late in 1916 and early in 1917 the role of the United States as purveyor of war material for the Allies had assumed such importance that it almost equaled a state of belligerency. Again and again, voices had been raised in the United States to the effect that the United States must enter the war in order to shorten its duration. On the German side, an intensive counter-propaganda had been carried on, and gradually there had developed a war party and a peace party. As seen from Germany, the possibility of the entrance of the United States into the war loomed threateningly on the political horizon. Then in the Foreign Office they decided on a political intrigue which was intended to afford a counterpoise for this danger. Zimmermann decided to play Mexico against the USA.

At that time the President of Mexico was Carranza, who had attained the presidency by the aid of the United States but, nevertheless, had taken a position distinctly friendly toward Germany. About the middle of 1917, Zimmermann had recourse to the German ambassador in Mexico, von Eckhardt, in a rather long telegram.

This telegram was so important for Zimmermann that he was very anxious to have it reach the German ambassador, von Eckhardt, safely under any circumstances. Accordingly, several routes were chosen for transmission. The first led via radiotelegraphy from Nauen to Sayville on Long Island for forwarding to the German Ambassador von Eckhardt in Mexico.

The government of the USA had, to be sure, since the beginning of the war forbidden the use of this wireless link for the transmission of messages dealing with the war, and had kept an eye on the radio traffic. Nevertheless, the radiogram was sent and delivered to Count Bernstorff, the German ambassador in Washington, who forwarded the contents to von Eckhardt.

The second route was via Sweden, by wireless from Stockholm to Buenos Aires, from there to Washington, and from there again to Mexico.

The third route was not without its humorous side. It had been planned to send the telegram in the form of a letter on the large German submarine "Deutschland," whose captain, König, was considered at that time one of the best submarine commanders. The departure of the submarine, which was originally fixed for 15 January, was delayed and they withdrew the letter in order to append its contents to a telegram which was being sent by the then American ambassador in Berlin to his government in Washington. How this route came to be chosen was as follows:

The German Foreign Office applied to the ambassador of the USA in Berlin, Gerard, with a request to transmit a telegram of the Foreign Office to Ambassador von Bernstorff. Since it was customary to show the text of the telegram in plain language in such cases, the Foreign Office showed Ambassador Gerard a telegram numbered 157 which was directed to von Bernstorff and which referred to the peace action of President Wilson. Gerard approved of sending the telegram. In reality, however, the Foreign Office had appended to the enciphered text of the telegram 157 another telegram, namely, the one previously mentioned and intended for Ambassador von Eckhardt. The grotesque feature was that Zimmermann was using the American ambassador, Gerard, and the American Secretary of State to transmit a telegram whose content concerned a hostile action against the USA.

At the Berlin Foreign Office they felt at that time that they had been very sly, and they were proud of having so neatly "taken in" the ambassador of the USA. But it is an old story that, precisely when one is trying to be especially sly, one is already about to commit something especially stupid. In this case the stupidity was enormous, for it was known to the Foreign Office that this telegram had to take the following route: from Berlin by wire to Copenhagen, from there by cable to London, and from London by cable to New York.

After the outbreak of war, England had generously declared itself ready to forward enciphered telegrams of neutral diplomats which contained messages of the German Government to its diplomatic representatives abroad. It never occurred to anyone in Berlin that this generosity was prompted by the idea of being able in this way to control all German telegrams in both directions.

The humorous part, in this instance, lay in a different direction. On 16 January the British Intercept service had intercepted the Nauen telegram to Sayville; however, the reception was so bad that the message could only be copied in badly garbled form. When they had deciphered the enciphered text in London, they finally got the following:

To the Imperial German Ambassador in Washington.

Count Bernstorff,

For the Imperial German Ambassador in Mexico, von Eckhardt.

Strickly secret, intended only for the personal information
of Your Excellency and to be forwarded to the Imperial

Ambassador in Mexico, by means of ... by a secure route.

We are planning to start unrestricted submarine warfare beginning 1 February. Nevertheless, we are very anxious to keep the United States neutral... . If that is not successful, we propose to Mexico an alliance on the following basis: ... warfare....conclusion of peace. Your Excellency will, for the time being, inform the President...war with USA...President..., that our submarines will force England to make peace within a few months. Confirmation requested.

Zimmermann

This dispatch showed that a diplomatic action of the first rank by Germany was involved. The "Secret Service" was immediately told to purchase in Mexico City from the telegraph bureau a copy of the telegram forwarded by von Bernstorff to von Eckhardt. However, before this happened, the telegram sent by Gerard to Washington arrived in Room Number 40 of the British Admiralty, and this supplied the British cryptanalytic service with a complete text of that telegram of Zimmermann to von Eckhardt.

On the evening of 23 February 1917, the ambassador of the USA in London, Mr. Page, received a telephone call from the British Foreign Minister, Mr. Balfour, who requested him to call at the Foreign Office that same day. Page betook himself at once to Downing Street. After the gentlemen had greeted one another, Balfour without a word handed the ambassador of the USA a sheet of paper whose typewritten text Page read with growing interest.

In the following night the following very urgent cablegram went from London to Washington:

24 February 1917

To the President,

Office of the Secretary of State, Washington.

In about three hours I shall dispatch to the President and Secretary of State a telegram of the greatest importance.

Page.

At the expiration of the announced three hours the London overseas cable station received the following ciphered telegram for urgent dispatch:

24 February 1917

To the President,
Office of the Secretary of State, Washington.
Secret. For the President and the Office of the Secretary
of State.

Balfour has given me the text of an enciphered telegram from Zimmermann to the German ambassador in Mexico. A copy can probably be secured through the telegraph office in Washington. The first group indicates the telegram number; the second the code which was used; the third is Zimmermann's personal identification group. I am sending by post a copy of the enciphered message and the deciphered German text. Meanwhile the English translation follows:

"We are planning to open unrestricted submarine warfare on 1 February. Nevertheless, we are endeavoring to keep the United States neutral. Should this not succeed, we shall make Mexico a proposition for an alliance on the following basis: common conduct of the war, common conclusion of peace, extensive financial aid, and an understanding on our part that Mexico is to reconquer the lost areas of Texas, New Mexico, and Arizona. Details are left to you. Will you most secretly inform the President of this when the entrance of the United States into the war had become certain, and suggest at the same time that he on his own initiative call upon Japan to join us, and that he mediate between Japan and ourselves. At the same time, call the President's attention

to the fact that we are waging unrestricted submarine warfare, and in that way shall force England to make peace in a few months.

Zimmermann"

I hasten to send this message so that all necessary measures may be taken to guard our territory against invasion.

Strickly secret! -- At the beginning of the war the British Government came into the possession of a code. It served for decipherment of the above telegram. The Government obtained copies of von Bernstorff's telegrams which went to Mexico. They were sent to London and deciphered there. This system has hitherto been a strictly guarded secret regarding which the British Government informed me only in view of the unusual circumstances and of its friendly feelings for the United States. The British Government requests maintenance of strictest secrecy, but has no objection to the publication of this Zimmermann telegram.

Copies of this and other telegrams were not secured in Washington, but were purchased in Mexico.

I have thanked Balfour.

The Japanese have not as yet been informed, but it is probable that they will discuss the matter publicly when they have knowledge of it, in order to clarify their position and to prove their fidelity to the Allies.

Page.

The way in which the British came into possession of this message is described in the words: "The telegram was purchased in Mexico." However,

the English secret service actually got this precious message in the following ways:

1. by intercepting the radiogram from Nauen to Sayville;
2. by intercepting the radiogram from Stockholm to Buenos Aires;
3. by reading the cablegram from Berlin via Copenhagen to London and Washington;
4. by purchasing from a Mexican telegraph official the Morse tape, preserved in the telegraph office in Mexico, of the telegram from von Bernstorff to von Eckhardt.

The purchase in Mexico did not take place, to be sure, until a knowledge of the content had been obtained in the first three ways mentioned; it merely served for confirmation.

One can imagine what impression the knowledge of this dispatch made in Washington on the President and on Secretary of State Lansing. Although the content of the Zimmermann telegram was conditional and only applied in case the United States declared war on Germany, nevertheless this German step aroused great indignation in Washington. The support - even though conditional - of Mexico's claim to the three southern states which it had lost to the United States in the war of 1846, was regarded as an attack on the territorial status of the United States. They overlooked the basic idea of the dispatch which was to the effect that Germany was trying to maintain the neutrality of the United States, and only regarded the contingent consequence which would be released by America's entrance into the war.

In spite of all their indignation, people in Washington were mistrustful of London. Suppose the entire Zimmermann telegram were only a fake to maneuver the United States into the war? They wanted proof, and telegraphed to the ambassador in London that he should ask the British Government to turn over a copy of the German secret code.

The British Government declined from basic considerations of security, but declared that it was ready to have the Zimmermann telegram decoded once more using the code present in London, and to have this done in the presence of a member of the American embassy in London. This was an easy matter, since Mr. Bell, the Secretary of the American embassy and representative of the signal service, lived quite near the British central intelligence office.

The enciphered Zimmerman telegram was given to Bell; the British loaned him their precious German code, and Bell was now able to perform the decoding within a few hours. Wilson was now in a position to determine that the message was absolutely authentic. However, the President insisted on receiving the German original text. In answer to this Page telegraphed:

London 2 March 1917

To the Secretary of State in Washington

The first group signifies the number of the telegram 130.
The second indicates the code to be used in deciphering.
From group three on, the groups read:
Auswärtiges Amt, Januar 16.Nr.1. - Ganz geheim.
Selbst zu entziffern. - Wir beabsichtigen -

Meanwhile, the second Zimmermann telegram had been deciphered in London and Page got a copy:

To the Imperial German Ambassador in Mexico, von Eckhardt

8 February 1917

Strictly secret. To be deciphered personally.

Under the assumption that the USA would find out nothing about it, you are requested to present again to the President the proposal for an alliance. Any final decision, however, is dependent upon the entry of the United States into the war. The President may enter into negotiations with Japan on his own initiative. If the President should fear retaliation, you are authorized to offer him a permanent alliance after the conclusion of peace, provided he succeeds in drawing Japan into the alliance.

Zimmermann

In London they declared they were ready to have decipherment of telegrams of the German Foreign Office carried out jointly with a member of the embassy of the USA in order to give guarantee of the genuineness of the material. They were also ready to have messages sent to Berlin by German representatives abroad deciphered in his presence. In Washington they agreed to this.

In Berlin, meanwhile, people entertained the firm conviction that the ciphers of other nations might be capable of solution but not their own. And the method of transmitting a message of such importance through the ether did

not appear to them as a piece of folly.

Through these two telegrams of Zimmermann's Wilson's position in regard to Germany was now clearly determined; for those states which had not been able to get up any enthusiasm for the war these dispatches afforded proof that an intrigue of the Berlin Foreign Office was willing to hand over to the Mexicans great areas of the USA.

Meanwhile, in Washington they had become convinced that the first and second Zimmermann telegrams were genuine. They inquired in London whether people there would agree to making the content of the first telegram known. After some hesitation the British Government stated that it would agree on condition that the true source should not be revealed but that the impression should be given that the telegram had been brought to the attention of the United States in some manner in Mexico. Thereupon, Wilson at the White House published the content of the dispatch on 1 March.

A storm of indignation passed through the Congress and the entire country. The war party got an enormous lift.

The publication in Washington of the Zimmermann dispatch became known at once in Berlin. There was an excited session of the Reichstag. Zimmermann was forced to admit that the dispatch was genuine.

On the following day in the "Vossische Zeitung," Georg Bernhard criticized the frivolousness of the German Government, and declared: "We cannot comprehend how a message of such importance can come to the knowledge of a foreign country. We cannot conceive that such a message would be given to a courier for transmission, even though he were the best and most reliable in the world."

Georg Bernhard was absolutely right; no courier played a role in this case, and in England they sat tight.

On the very day on which Wilson was publishing the text of the Zimmermann telegram in Washington, von Eckhardt was telegraphing the results of the negotiations. According to him, Carranza had shown himself "not adverse to such plans"; he would "consider benevolently," and he had "talked for an hour and a half" with the Japanese ambassador in Mexico.

But on the very same day von Eckhardt learned of events in Washington, and on the next day he telegraphed:

To the Secretary of State of the Foreign Office 2 March
1917, in Berlin.

The local paper "Universal," which is friendly to the Allies, publishes today the same report that was contained in yesterday's Washington telegram - and which apparently has

been in the hands of President Wilson since the breaking of relations - namely, the wording of cablegram A Nr. 1. Naturally, this was not revealed by me here. Treachery or indiscretion must have occurred in the United States or cipher I 3040 has been betrayed.

The wording of cable Nr. 2, which reached me in the other familiar fashion, has not been published as yet. I have denied everything here.

v. Eckhardt

In Berlin the uneasiness grows. They seek the source of the betrayal. The following exchange of telegrams ensues:

To v. Eckhardt

7 March 1917

Please burn all compromising instructions. Have publicly recognized the cable. Please see to spreading the word that the alliance was only intended in case of America's entrance into the war.

Zimmermann

To v. Eckhardt

21 March 1917

Strictly secret.

Decipher personally.

Please cable in the same code used for deciphering cables 1 and 2 how the originals and keys were safeguarded, and especially whether the two cables were kept in the same place.

Stumm. - Berlin.

To v. Eckhardt

Various things indicate that the treachery took place in Mexico. The utmost caution is in order. Burn all compromising

documents.

Zimmermann

To Zimmermann

27 March 1917

Both cables were deciphered by Magnus according to my special instructions. Both telegrams, as always where political documents of secret character are involved, did not come to the knowledge of embassy personnel. Telegram Nr. 1 K 4 arrived in the cipher system I 3040, while Kinkel (a former employee of the German embassy in Washington), who is now employed here, thinks he recalls that the Washington embassy sent it, like all other enciphered telegrams sent here, from Cape Cod (a cable station). In both cases the originals were burned by Magnus and the ashes were scattered. Both cablegrams were preserved in an absolutely secure safe, which was bought solely for this purpose and was located in Magnus' bedroom, down to the time that they were burned.

Answer to telegram Nr. 21. Instructions were carried out.
Cable number 18 has not arrived as yet.

v. Eckhardt

In a further telegram of 30 March 1917, von Eckhardt asserts again that any indiscretion in Mexico was not possible and recounts again all security measures, the reading of the telegrams in a low voice at night, the security of the safe, etc.; but at the same time he calls attention to the less cautious procedures at the German embassy in Washington, where even secret telegrams had been known to the entire chancellery and where two carbons had always been made for the registry office, something which was never done in Mexico. Finally, he insists upon a judicial investigation by Consul Grunow.

In Berlin they allowed themselves to be convinced of von Eckhardt's innocence by this telegram, and confirmed this to him by radiogram of 4 April 1917 in which it says: "No blame attaches to you or Magnus."

Meanwhile, negotiations with Carranza in Mexico continued because the deliveries of ammunition stood in the forefront.

To v. Eckhardt, Mexico

17 March 1917

Find out what ammunition and weapons are desired and what Mexican harbor on the east or west coast a German ship would enter under a foreign flag. As far as possible, Mexico must procure arms from Japan and South America.

Zimmermann.

The Berlin Foreign Office, however, did not build all its hopes on Carranza alone. They even went so far as to draw his political opponents and antagonists into the circle of intrigue. Thus, on 24 March 1917 the German military attache in Mexico radios to Berlin:

The Vice-Consul in Mazatlan reports that Villa, who is being supported by the Germans, is expecting three shiploads of ammunition to be landed between Mazatlan and Manzanillo. It is thought that Cantu is also in the alliance. (Cantu was a Mexican revolutionary leader whose field of activity was southern California.)

These telegrams were deciphered in London, and the content disclosed in a small intimate circle. The German search for the source of the compromise occasioned great merriment.

In this connection, it must be emphasized that the British intercept service was able during the entire war to keep its work so secret that not the slightest hint regarding it reached the outside. The British secret service, to which the intercept service belonged, even went so far in camouflaging its work that it allowed articles to appear in the British press criticizing its own work and making violent attacks on it. In these articles, which were written by the service itself, the work of the British secret service was characterized as totally antiquated, and it was asserted that one failure followed the other. The affair of the Zimmermann dispatch was made the occasion for special criticism; it was said that the American intelligence service was much more thorough and precise and it was a shame that the Zimmermann affair had been discovered in Washington and not in London. By this constant self-ridicule they fooled the German intelligence service and German public opinion so thoroughly that these articles in the English press were seized upon with great delight, were reprinted, and provided with appropriate commentaries.

Far more serious, however, was the effect of the Zimmermann telegrams in the United States. Between mid-January and the end of April 1917 some 60 telegrams were exchanged between Zimmermann and von Eckhardt. All came to the knowledge of Wilson. Their pression of a plot between Germany and Mexico. They tipped the scales in the foreign policy of the United States. On 6 April 1917 the USA declared war on Germany.

However, the exchange of telegrams between Berlin and Mexico continued:

Zimmermann, Berlin

To v. Eckhardt, Mexico

13 April 1917

Please answer telegram number 10 stating the sums which will be required to support our policy. Preparations for the shipment of considerable amounts (aid, eventually weapons, too) are being made here.

v. Eckhardt, Mexico

To Zimmermann, Berlin

13 April 1917

For Nadolny and the Grand General Staff.

Mexico 12 April

Where is Lieutenant Wohst? Did he send approximately 25,000 dollars to Hilken? He or someone else must send me money for 55793 quarterly payments for Hermann. An explanation: Hermann, a handsome, blonde German with an English accent, claims to have received from the general staff a year ago the mission to destroy the Tampico oil field by fire; this order was repeated supposedly by Hilken in January; he now proposes to carry it out, and asks me whether he is to do so. Would it not be well to answer him that I am not in touch with Berlin? Verdy thinks that he and his companion B 51158 Gerds are English or American spies.

Request an immediate answer.

v. Eckhardt, Mexico

To Zimmermann, Berlin

14 April 1917

The President declares he intends to remain neutral under all circumstances. If Mexico nevertheless becomes involved in the war, we must wait and see. In his opinion the alliance has become a ridiculous matter due to the premature publication of the telegram but may later turn out to be necessary. As for the deliveries of ammunition - 7 mm Mauser rifles - and money, he will give an answer when he has the power of decision in his own hands after getting powers plenipotentiary from the Congress. The Congress is dominated by the pro-German military party.

v. Eckhardt, Mexico

To Zimmermann, Berlin

17 April 1917

Mexico, 16 April.

Yesterday I attended the opening of the Congress. The President expressed his strict neutrality. Both coming and going I received great applause. "Long live Germany! Long live the Kaiser!" On entering the hall the entire chamber manifested its good will. The American ambassador was whistled at feebly three times.

The German public learned nothing of all these events, and in the Foreign Office at Berlin no one had any idea that the entire telegraphic correspondence between Berlin and the German representatives abroad was being read in England, insofar as it could be picked up there. In Berlin they strove for the utmost secrecy, and yet, for all practical purposes, it seemed as if the most secret matters stood in the public press. Down to the end of the war the English were able to follow precisely all dispositions of the Berlin Foreign Office and of the German Imperial Government. The chief of the British secret service during the war, Admiral William Reginald Hall, declared in 1920, in a very interesting speech at Manchester, that the decipherment of the Zimmermann telegram had decided the World War in favor of the Allies. It would be impossible to estimate highly enough the significance of this deed.

But what became of Alexander Czek? - When World War I had come to an end, his father tried to follow the trail of his son. He inquired in Holland and after much difficulty discovered the last traces in Rotterdam. From there on nothing could be discovered.

Since he knew that his son had worked for the British secret service, he applied to the chief of that service after the end of the war, and requested news of his son's whereabouts. He received this information: "I have received your letter and must inform you that this is the first time I have ever met the name Alex Czek. I am sorry to have to inform you that I cannot tell you anything whatsoever regarding your son and his fate."

Alexander Czek had disappeared.

THE INTERCEPT SERVICE AT SEA

The war at sea 1914--1918 (aside from submarine warfare) did not play the role that one had initially been led to expect. Germany's principal opponent at sea was Great Britain. On the question whether the German fleet should seek a decisive battle with the English Battle Fleet, the German Imperial Government differed with the Admiralty Staff and with the Secretary of the Imperial Navy, Grand Admiral von Tirpitz. While these last two wished to commit the fleet, above all to interrupt English-French communications across the channel, the Imperial Government considered it correct to guard the fleet against severe losses so as to have it as an instrument of power at the time of the peace negotiations.

Within the framework of the intercept service, however, the interception of enemy radio traffic occupied no less a place at sea than with the land forces. In fact, we may say that the battle in the ether at sea was much more intensive than on land. Primarily it was England and Germany which paid most attention to the naval intercept service and repeatedly knew how to derive advantage from this invisible weapon.

The principle of disguising radio traffic was here pushed into the foreground far more than ashore. From the very beginning, the use of cryptographic systems was on a larger scale. Moreover, the system of so-called fake radio traffic was very good; here a message from a naval command station to a ship at sea was apparently dispatched by radio to some other coastal station, while the warship stood by for reception on the same wave length and heard it at the same time.

Soon after the outbreak of the war, the German fleet suffered a mishap which later turned out to be very disadvantageous for the German naval forces. In the Baltic the German Fleet opened the naval war with an attack by the small cruisers "Augsburg" and "Magdeburg" on Libau on 2 August 1914. A few months later the cruiser "Magdeburg" was sunk by Russian naval forces in the Baltic. That did not remain a secret. However, it did remain a secret that the Russians sent down a diver to the sunken "Magdeburg" who brought up from the radio booth the code book with its heavy lead covers. The book was dried carefully and turned out to be utterly undamaged.

Monitoring of German naval traffic by the Russian naval intercept station at Kronstadt revealed that the Germans were still working with this secret system. Now there began a lively deciphering activity at the Russian cipher bureau in Petersburg which yielded excellent information regarding all events in the German high seas fleet. The English got a copy of the code, and henceforth were likewise in a position to decipher German naval radio traffic, -- and that for a period of years!

One of the first successes of the British fleet, which was based on results of the intercept and deciphering service, was the battle at the Doggerbank on 24 January 1915. The English had been able to follow exactly the approach of the German light naval forces, and they knew all the German ship units which had been committed for this action. The sinking of the German armored cruiser "Blücher" at that time was due to the English intercept service.

In the course of World War I, the interception of naval radio traffic assumed ever greater proportions; the English in particular achieved very noteworthy results, especially in monitoring the traffic of German submarines with their bases and with other naval units on the high seas.

The London "Times" on 22 December 1927 published a short resume of a lecture delivered by Sir A. Ewing, Professor of the Philosophical Faculty at the University of Edinburgh. This man, an outstanding professor, was, during the period 1914-1918, chief of that bureau of the English Admiralty whose task it was to decipher the intercepted radiograms of the German Navy. This bureau thrived beyond all expectation and had more than 50 regular decoders; on the average 2,000 intercepted messages were handled here daily. All movements of German warships were followed by the British Admiralty, primarily by the aid of information secured in this fashion. As Sir Ewing remarked, thanks to various fortunate accidents, the British information service had nearly all the German codes in its possession; the remainder were solved by analytic methods.

The carrying out of the long range blockade of the German North Sea coast by the British was possible with only meager forces, because they were promptly informed regarding all movements of German units. Moreover, the British cipher bureau very quickly succeeded in solving the German cipher used in the radio traffic with submarines. This was a success of really inestimable value, since now in connection with the direction finding service the English were in a position to follow the movements of the German submarines precisely from day to day. While in Germany people were anxiously endeavoring to keep everything pertaining to the use of submarines strictly secret, doubling and tripling their guards and security measures in a downright convulsive fear of English spies, the English intelligence service had nothing to do but to follow carefully the German naval radio traffic. In Room Number 40 in the British Admiralty, in which the evaluation center was located, there was busy activity day and night. On an enormous wall chart the ascertained positions of German units were entered. Everything having to do with this was as well known here as if details had been published in an "Extra."

The English were the first in World War I to create a technically exact and fast working system of evaluation, a system which can be regarded as modern even today. The "direction finding" stations were connected with each other and with the central office by teletype. Every reading taken was passed at once to the central office, and laid out here by the aid of silk threads on a great orientation map which was mounted horizontally. In the cipher bureau sat the men who day and night deciphered every incoming intercepted radiogram. An enormous card file contained all station call signs which had hitherto appeared in the intercept service, along with all other available data, and this made it possible to recognize currently the systems according to which call signs were changed in German traffic, to reconstruct these, and even to tell in advance what call signs this or that German station would have tomorrow or day after tomorrow or a week hence.

The collaboration between direction finding, evaluation, and decipherment was sensible and well-organized, as it never was in Germany either during World War I or after the war, or even during World War II, because here people never got away from petty concern with their own interest and egotistic pride in their own unit.

What significance the English attached even at that time to the intercept service is evident from the mere fact that there was an admiral at the head of the service; in Neumuenster (where the central office of the German naval intercept service was located) it was a naval lieutenant. In London, at the last, several hundred men were engaged in decipherment and evaluation; in Neumuenster there were a few dozen. And if, in spite of that, successes were scored by the German naval intercept service, then that was due to the intelligence and initiative of individual men. The over-all organization was inadequate.

The greatest success of the young German submarine weapon came soon after the beginning of the war in the sinking of three English armored cruisers by "U-9" under Lieutenant Weddigen. That was before the breaking of the German code for submarines. Later, when in February 1915 submarine warfare was carried on according to plan, it did not bring the expected results, and for the above-mentioned reasons could not possibly do so. After the sinking of the "Lusitania" submarine warfare was also limited by American pressure. And when it was resumed again in an intensified form on 1 February 1917, it only served in conjunction with the Zimmerman dispatches to bring the USA upon the scene as an active opponent.

The forces available at the beginning of the war for cruiser warfare abroad consisted essentially of the East Asiatic Cruiser Squadron under Vice Admiral Count von Spee. Since von Spee could not maintain himself in eastern Asia against the superior forces of the Allies, he put out into the Pacific on 13 August 1914. His squadron consisted of the armored cruisers "Scharnhorst" and "Gneisenau," and the small cruisers "Dresden," "Leipzig," and "Nürnberg."

What happened in the next weeks on the Pacific was an extremely interesting battle in the ether, which was essentially something brand new. While the English radioed away bravely in their search for von Spee's squadron, with the result that it was always possible for von Spee to keep posted

on the movements of the enemy, he himself was able so to mislead the enemy by radio silence and occasional deceptive radio traffic by the ship's radio of the little cruiser "Emden," which had been ordered into Australian waters, that his appearance in Chilean waters came as a complete surprise. At Coronel on 1 November 1914 von Spee's squadron in complete battle order and battle readiness met the squadron of the utterly unsuspecting Admiral Cradock, who supposed that von Spee was far away in the direction of Australia. Von Spee was able to bring his ships into such a favorable position and to strike so unexpectedly that within a very brief time the British armored cruisers "Good Hope" and "Monmouth" were sunk, and several other units were badly damaged. By this naval victory Allied shipping in adjacent areas was almost completely paralyzed for a number of weeks.

To be sure, the "Emden" itself fell victim, so to speak, to radio traffic a few days after the battle at Coronel. After a fairly long career as a raider in the Indian Ocean, it had appeared off the Cocos Island to take on water and destroy the radio station there. In so doing, the radio station of the "Emden" engaged in traffic with the land station, which took the "Emden" for an Australian cruiser. During this radio conversation the operator of the "Emden" did something in an unskillful way so that the land station recognized the true character of the ship and sent out alarm messages; the "Emden" now sent out a landing party to destroy the radio station. While the ship was waiting for the return of this unit, a superior Australian cruiser hurried up in response to the alarm messages from the station, fired on the "Emden" and damaged it so badly that it had to be run on the reef by its own crew.

Count von Spee had a similar misfortune with his squadron on 8 December 1914 when, on his way around South America, he was approaching the Falkland Islands and made contact with the radio station there, without noticing that a strong British squadron was lying protected by the Islands. In this way von Spee gave himself away prematurely, and was attacked unexpectedly without being able to deploy his ships properly.

The greatest sea battle of World War I was the battle of the Skagerrak on 31 May 1916. It, too, was influenced by the intercept service and, to be sure, on both sides. Both the British and the Germans had followed the course of the enemy squadrons; the only difference was that the Germans had succeeded in veiling the course of the German main fleet so that it appeared as a surprise for the English, and by so doing decided the course of the battle.

In many other undertakings at sea during World War I the intercept service played a decisive role. A detailed account of all these cases will be reserved for a later work.

THE ITALO-AUSTRIAN WAR

Down to the beginning of World War I the Austrian intercept service had been directed against Italy. The Austrian cryptanalytic service had succeeded even before the outbreak of the war in solving the cryptographic system used

by the Italians in traffic between Rome and the diplomatic representatives abroad, and it was able to read such traffic. That was a success of the greatest importance, since the attitude of Italy was one of the significant problems occupying the Austrian diplomatic service in those decisive days of July and August 1914. And the question still remained open; therefore, it was a matter of employing all possible intelligence sources to obtain clarity.

At the outbreak of the World War, Italy had proclaimed its neutrality. In December 1914 negotiations were started between Vienna and Rome which dragged on lazily. Beginning in January 1915 the Austrian radio intercept service established the fact that Italy was turning more and more to the Allies, and that preliminary conversations were taking place in Paris between the Italian ambassador and the French Minister of Foreign Affairs, conversations which must be taken seriously. Vienna decided, therefore, on a countermove, and on 30 March 1915 made the Italian Government a proposal to relinquish the purely Italian portion of the southern Tyrol in return for the assurance of benevolent neutrality on the part of Italy until the end of the war, and of complete freedom of action for Austria in the Balkans.

The Italian Foreign Minister, Sonnino, then held several conversations with the French and English ambassadors, the results of which were again revealed in radio traffic picked up and deciphered by the Austrians. It could be clearly recognized that a much greater Austrian concession -- especially with regard to Trieste, Istria, and the Balkans -- would be necessary in order to influence the attitude of Italy decisively in favor of Austria. The greatest haste was also demanded in order to meet successfully the efforts of France and England. In Vienna, however, they stuck obstinately by a peculiar misinterpretation of strength ratios, and decided to wait.

The Italian Foreign Minister then officially turned down the Austrian offer as inadequate, and Italy decided to make its entry into the war on the side of the Allies. Early in April 1915 this intention of Italy could be recognized beyond doubt from several radiograms exchanged between Rome and London.

On 26 April France, England, and Russia concluded in London a secret treaty with Italy which obligated Italy to declare war on Austria within one month. In return, Italy was assured of the fulfillment of all its territorial claims and aspirations in Europe, and also of an equal share in the division of Turkey. The content of the London secret treaty was known in its essential points in Vienna on 30 April.

On 4 May Italy denounced the Three Power Pact; on 23 May it declared war on Austria-Hungary.

Apart from the previously mentioned information received by radio, which -- from a military point of view -- must exclude any factor of surprise from the start, the Austrian intercept service succeeded during April and May 1915 in following the Italian assembly, especially behind the Isonzo. But instead of taking the clearly recognizable situation into

account in any adequate fashion and massing strong forces in the southern Tyrol to create the base for a rapid thrust in the direction of Venice, in order thus to take the entire Italian assembly in the flank, the Austrian command had its principal forces drawn up on the Isonzo front to await here the enemy's attack. The consequence was that series of fruitless battles on the Isonzo which characterized the entire Italo-Austrian War.

The entire conduct of the Austrian command is all the more incomprehensible, since the Austrian espionage service had succeeded during the summer of 1914 in securing the most important Italian code, namely that for communications of the higher staffs, which actually came into use shortly after the outbreak of the war and which gave the Austrians an abundance of excellent information.*

The Italian "Field Keys" had been solved by the Austrians back in June 1915. To be sure, they were changed on 10 July but the Austrian cipher section soon found the solution of the new ciphers. Subsequently, the Italians changed their cryptographic systems very frequently, but this did not help them much. Early in October 1915 they put the "Cifrario Tascabile" into use, which the Austrians had bought long before the war. It had proved a profitable deal.

For the rest, the "Cifrario Rosso" remained in force for almost a year. Not until 30 March 1916 did the Italian High Command forbid in a radiogram further use of this system in radio traffic, "since the suspicion that it was partially known by the enemy has been confirmed". In reality, it was entirely known to the Austrians. On 1 April the new system went into effect. Twenty-four hours later it had been solved by the Austrian cryptanalyst.

Probably rarely has a sequence of very important intelligence results been used to so slight a degree as in the first phase of the Italo-Austrian War. And therewith the course of the entire campaign was decided.

Not until the spring of 1916 did they try the obvious plan of a flank attack. With several German divisions, which had been requested and promised as reinforcements, they wanted to do what a year before would have been correct and might have been crowned by success, but what now could no longer be accomplished since the Italians had meanwhile materially strengthened the Tyrolese front. There was the added fact that the requested German divisions could not be spared, because the bleeding of the German army before Verdun had exceeded all expectations. The Austrian command then decided on an attack with its own (inadequate) means. As might be expected, after initial successes at Asiago and Arsiero, the attack bogged down and had to be broken off, because the Brusilov offensive had started which brought the entire Austrian eastern front into retreat.

* This was the so-called "Cifrario Rosso" which was used for traffic between the general staff and the army command.

In connection with this Austrian attack, there was a piece of deception which we shall not allow to pass without mention. In order to mislead the Italians and to force Cadorna to hold his operational reserves in readiness behind an entirely different sector, the decision was reached at an interview between General Ronge, Chief of the Austrian Evidenzbuero, and representatives of the German General Staff to carry out a deceptive action on a large scale based on experiences of the intercept service. The Italians were to be fooled into believing that a German army was being brought up.

The only chance of success was by using the radio. The entire action had to be prepared very conscientiously and carefully, and carried out with the same care, if it were to succeed. For the execution of this action, a staff was formed, at the head of which stood the German von Bonin, at that time Major in the General Staff. He was charged with the tactical management of the deceptive measures. For the technical execution, a German radio company was employed which was under the command of the then Captain Meydam. Furthermore, a battalion of mountain light infantry was detailed for the purpose. The plan was to lead the Italians to believe, over the space of several weeks, that a German army, the headquarters of which had hitherto been in East Prussia (as far as I recall it was the Tenth Army) was moving up into the Kärnten area.

Meanwhile, it had become known to the Austrians that the Italians were preparing for a new attack on the Isonzo.

The radio company detailed for this deception had four heavy and four medium mobile radio stations. They began by having two of the heavy stations and a company of mountain infantry change trains as conspicuously as possible in Munich. The leader of the transport had his men drawn up before the train, gave them a series of general instructions, and then enjoined upon them the utmost secrecy. "No one needs to know that we belong to a German army going to the Italian theater," he declared at the end. The grins of several bystanders showed that the first seed had fallen on fruitful soil; the innate need of the German to tell something would take care that within 24 hours half of Munich would know all about the sending of a German army to the south.

During the transport, these people had to show themselves diligently, and to drop mysterious hints. At the location selected for army headquarters, they set up the first of the heavy stations. The transmitter was tuned up, and then communication was begun with two Austrian army radio stations. On the following day, the second heavy radio station was set up at a distance of some 15 kilometers. Both stations immediately entered into regular traffic with one another. For their radio traffic they used a cipher which had been produced especially for this purpose by the Austrian cipher expert Captain Figl; it was so constructed that the Italians could not fail to solve it, but the intention to mislead must not be evident in any event. For the rest, the manner of handling traffic at the German stations differed markedly from that of the Austrian stations so that both stations could not fail to be recognized at once as Germans.

A radiogram of this "army station" was transmitted to the garrison radio station at Munich with the request that mail arriving there for the

staff of the Tenth Army be sent to ... in the Tyrol. Other messages went via Munich to Königsberg and had reference to the handling of supply, preparation of quarters for the troops, forwarding of mail, and the arrival of single formations belonging to the Tenth Army.

A few days later the two remaining heavy radio stations arrived in the area picked for the fake assembly, and entered into communication with the "army radio station" and with each other. They were supposed to represent corps stations. A second and a third company of mountain troops also arrived; they too had to show themselves as much as possible in the "assembly area"; they were quartered now in this and now in that place, and special billeting officers went through the entire region and labeled buildings and barns with the numbers of formations belonging to the Tenth Army.

At intervals of two days, the nine medium stations arrived and entered into traffic in the manner prescribed for them. They were supposed to pass for divisional stations.

The traffic grew more and more animated. The content of the messages now referred to the arrival of individual units, and had to be composed very carefully in order to make the fake transport movements agree with the capacity of the Austrian railways.

In order to help the Italians in their task of decipherment, various intentional errors and breaches of radio discipline were made; a few messages were sent in plain text. The handling of the entire traffic was managed so that the new radio net could not help but stand out clearly from the Austrian picture. It was intended to reveal to the Italians the entire "assembly area" of the German Tenth Army.

Now it was most important to ascertain how the Italian intercept service was reacting to this little game. A few days after the first stations had started operations, an Italian instruction to their own radio stations was intercepted and deciphered. It called for a limitation of their own operation so as not to "disturb interception of the German stations which had just appeared." A day later came the instruction "to follow most carefully all traffic at the German stations, since this was most important." A few days later several telephone conversations of the Italians were intercepted from which it could be recognized that the opposing Italian forces had been ordered to watch for any relief in the enemy lines and to ascertain when the first German troops showed themselves at the front. A couple of Austrian horse-drawn batteries, to which a number of German mountain troops had been assigned, had to drive around behind the front, go into position, fire a few shots to get the range, and thus little by little indicate the arrival of the German artillery.

Soon it could be noted from intercepted Italian radio traffic that the Italians were beginning to strengthen the opposing front and to set up operational reserve units behind it. The ruse had succeeded.

On 13 March 1916 Cardona began his fifth battle of the Isonzo. It brought him no more success than the four preceding; incidentally, he was

holding a considerable portion of his troops behind the Kärnten front in expectation of the "German attack."

But the Austrian offensive on the Tyrolese front suffered a great delay through enormous snowfalls which made the entire district impassable. Instead of beginning in mid-March, it did not get going until two full months later.

A few days before the Austrian attack in the Tyrol, the deceptive station set up as "army radio station" began sending time signals for setting watches. This had always been a signal for an impending large scale attack. German mountain troops appeared at various points on the front, and had to carry on telephone conversations which they were sure would be heard by the Italian intercept stations. Twenty-four hours before the attack, all Austrian artillery assigned for the deceptive game began drumfire on the Italian positions, while already, on the day before, the radio stations had sent out orders for a change of position and then ceased sending; only the main radio station sent out mysterious X-signals.

Then the Austrian attack on the Tyrol broke loose. After initial successes it bogged down and ended indecisively. It had been prepared and carried out with totally inadequate means.

Soon the Austrian intercept service was able to recognize the bringing up of Italian reinforcements. In the night from 19 to 20 May, an Italian radiogram was deciphered from which dispositions for a great Italian counter-attack were learned. At 3 o'clock in the morning the decipherment was completed; an hour later the orders for countermeasures to break up the attack were already going out. On 1 June the Austrian intercept service recognized the appearance of a new Italian radio station in the region north of Padua. Here the Italians were preparing strong forces for a great counteroffensive.

Meanwhile, in the east the Brusilov offensive had started. Reinforcements had to be sent hastily at the very moment when the superiority of the Italians on the Tyrolese front was increasing greatly. Part of the territory gained had to be sacrificed. The entire operation fizzled out without lasting results.

General Hoffmann later called the First World War the "War of missed opportunities," i.e., of opportunities missed by Germany to end the war decently. I should prefer to call this war a "war of halfway measures," or the "war of inadequacies." From beginning to end these appeared on all sides, but they were especially bad in the Italian campaign.

The whole action should have been based on a really big and decisive operation. A deceptive maneuver of the kind described above can be effective only once; it is hardly possible to repeat it with any prospect of success. Therefore, one should have saved these deceptive measures for a case where their execution must be really profitable. Instead, they made use of it where its effectiveness was allowed to peter out. The Austrian attack was made with too feeble forces. When it was done, history recorded

another battle, but the Austrians had to write off what was in and of itself an excellent ruse which they had wasted uselessly.

Since the war between Italy and Austria developed chiefly as a war of position, the "Penkalas" achieved special importance here. One of the principal reasons why all Italian attacks, particularly on the Isonzo, failed, lay in the fact that all preparations of the Italians were recognized by the Austrians in good time by listening to their telephone conversations, so that the necessary defense measures could be taken. Of course, the Italians likewise eavesdropped successfully on the Austrians, so that in this field things were equalized in the long run.

The Austrian intercept service in this theater attained its greatest importance in connection with the German-Austrian offensive in October and November 1917. Down to the autumn of 1917 the Austrians, thanks to their intercept service, had been able to frustrate all Italian attempts at an offensive and to maintain their front. Nevertheless, in September 1917 the situation was so tense that the Central Powers decided on a large scale attack. Nothing less could give the Austrians a breather.

The Austrian intercept service had learned meanwhile that the sector Flitsch-Tolmein seemed best suited for such an attack, in view of the grouping of the Italian forces. It was decided, therefore, to choose this sector. The German Fourteenth Army was directed into this area and was to force a break-through.

From 24 to 27 October followed the attack and break-through under the command of General Otto von Bulow. On the 28th Udine was occupied. Advancing along with the adjoining Austrian armies, the Tagliamento was crossed early in October. The Italian radio service had been thoroughly disorganized by the German attack. All movements of the Italians, all plans, and the entire constitution of their front could be recognized clearly. Scarcely had one of the Italian radio stations taken up a new position when it announced in plain text "I am packing up," and then announced its new location. That showed that the retreat was continuing.

The entire offensive became a triumph of the Austrian intercept service. Soon, however, two things became evident from the intercepted radio traffic: first, that the Western Allies were bringing up strong forces to support the Italians; and secondly, that a strong new defensive front was being formed on the Piave.

On the Austrian side they were uncertain respecting the strength and organization of the new front. Then a long message from the chief of the Italian radio service gave absolute clarity. In its address this message listed all the higher units with the locations of their staff radio stations. This betrayed the entire organization of the new battle alignment, but showed that the army group opposing the Austrian and German troops was far too strong for the latter to think of overrunning the new front. Therefore, the decision was made to break off the offensive. Henceforth, the Piave remained the new front line.

In summing up, we must say that the results of the Austrian intercept service during the entire Italian campaign were so abundant and good that at times they far exceeded the results of the intercept service on the Russian front. Strangely enough, full advantage of this was never taken, except in connection with the last described attack in the fall of 1917. But at that time the proper moment had already been missed, due to general political and military developments.

The struggle was to flare up once more on the Austro-Italian front in the summer of 1918. Early in March the Austrian intercept service noticed that the English and French had begun to withdraw their troops from Italy. By mid-March it could be clearly seen that only the French XII and the English XIV Corps were left.

The Austrian attack was planned for mid-June. The intercept service began in the spring to strengthen its work because the listening stations which had become free in the east could be profitably used here. By the beginning of June more than 80 "Penkalas" had been installed on the Austrian southwest front.

The Austrian radio intercept stations also found a fruitful field of activity. There was, to be sure, on the Italian side a general order to use radio only in urgent cases, but the chief of the Italian army radio service required daily reports from all his stations, so that the Austrian intercept service was very well supplied with material day by day. The situation reminded one of the fairest days of the war in the east. All the prerequisites for the success of the Austrian attack were at hand.

But in this case the equalization of strength in the intercept field, which I have mentioned several times, showed up in an especially striking fashion. Not only had the Austrians been listening industriously, but so had the Italians. In spite of all orders to the contrary, the Austrians had used the telephones incautiously. The preparations for the attack, and even the precise hour of attack, had become known to the Italians. They abandoned their front lines and deluged the advancing Austrians with a hail of shells from batteries which had likewise shifted their positions in time. The Austrian artillery preparations had been wasted on an empty area; the second Italian defense line was well equipped. The Austrian attack failed and the losses were heavy.

A SECOND "ZIMMERMANN"

The description of the affair with the Zimmermann telegrams above has shown that the Allies during almost three years of World War I were in a position to decipher the diplomatic traffic of the Berlin Foreign Office and to derive a great deal of profit therefrom. In regard to Austria, something similar occurred in the course of the war, although in quite different form, and, indeed, in the following way:

Since 1913 Count Czernin had been in Bucharest as the Austrian ambassador. He was a diplomat of the old school, and likewise a polished

society man and cavalier who not only knew his job but also knew how to take life in an agreeable fashion. Just when the event we are about to describe took place I can no longer recall exactly, but I believe it was before the outbreak of World War I. Count Czernin had taken a little ride in a cab and then gone into a cafe to spend a brief hour. While he was talking with a lady of his acquaintance at one of the tables, it suddenly occurred to him that he had left his brief case in the cab. He excused himself, hastened to the cab, which was waiting for him, only to discover that the brief case had vanished. The cab driver could give no explanation; he had left his carriage for a little while and claimed that he had not noticed a brief case in it. In this brief case there were a number of extremely important documents, including the cipher used by the Austrian embassy in Bucharest for communication with Vienna.

Count Czernin immediately reported the matter to the Bucharest police who willingly promised their aid, and immediately began investigations concerning the whereabouts of the brief case. Three days later Count Czernin got back his brief case undamaged and with all the contents.

Conscientiously Count Czernin had informed Vienna of the occurrence, and offered his resignation. Emperor Franz Joseph in his courteous fashion declined to accept the resignation, called the matter a regrettable oversight, and requested Count Czernin to continue in office. With that the whole affair was settled, and in the Foreign Office in Vienna it never occurred to anyone to change the cryptographic system, although its continued use contravened all principles of security; for any document which has been in strange hands for even a few hours without control must be regarded as compromised.

The first phase of World War I ran its well-known course. The attitude of Romania toward Austria became cooler and cooler; relations grew more and more tense; and finally, at the insistence of Russia and the Western Allies, Romania declared war on Austria in August 1916.

The course of the campaign was not what had been generally expected, and after a few months the Romanian army was crushed and Romania was conquered. Russia had not been able to give adequate assistance because, from a military point of view, Russia itself had already been forced to the defensive.

When the Austrian troops had occupied Bucharest, the dwellings of members of the former Romanian Government and other persons of high station were searched. There in the attic of the villa of the former Romanian Prime Minister Bratianu was found a box of photographic negatives. When they were studied more closely and the individual plates checked, some turned out to be photographic copies of all the documents which had been in the brief case of the Austrian ambassador, Count Czernin, at the time of its loss, among them the secret code. The Romanians had, therefore, been in a position to follow the entire telegraphic correspondence of the Viennese Foreign Office with the Austrian embassy in Bucharest, and also to decipher all messages enciphered in the same system and radioed to other Austrian embassies.

Meanwhile, Count Czernin had become Austria's Minister of Foreign Affairs. Not until now was the cryptographic system of the Foreign Office changed. However, the damage could not be repaired, for in 1917 the war had been virtually decided.

On the one hand Zimmermann, on the other Czernin! The Allied secret service could be quite satisfied with the Central Powers, since copies of the Austrian diplomatic secret code had been supplied to France and England by the Romanians.

It seems almost incredible that the two powers which had developed the intercept service to a high degree of perfection during World War I and whose military operations were based to a very great extent on its results, which therefore knew very well how exposed the communications of a country or of an army are to the attack of an enemy, should have displayed at times such utter unconcern in respect to their own communications, an unconcern which could hardly be exceeded.

THE "JUDGMENT OF GOD" AND ITS EXPLANATION

During World War I there was a German soldier song which contained, among others, the following couplet:

...For this campaign
Is no fast train... .

Although in general there is little logic and sense to soldiers' songs, the accuracy of this verse could not be disputed. From a campaign at express speed, such as had been expected in August 1914, there developed one which at best had the speed of a slow freight, and this was true on all fronts. There was only one exception, and that was the campaign 1916-17 against Romania. In four months this action was carried out from the beginning to a completely successful conclusion, and the enemy was utterly beaten. In those days in Austria and Germany they spoke of the Judgment of God which had fallen on this country. But they were careful never even to hint at what had really brought on this "Judgment of God."

In 1913 Romania had renewed its treaty of alliance with the Central Powers. The condition for any active participation in the war by Romania on the side of the Central Powers was that the attack must not be made by the Central Powers, and that Italy should immediately enter on the side of Austria and Germany. However, since Austria had let loose the war by its attack on Serbia, and since Italy took a waiting attitude, Romania proclaimed its neutrality on 3 August 1914. After the death of King Charles on 10 October 1914, it became more and more evident from month to month that Romania was turning more and more to the Allies. At the time of my sojourn in Romania in the spring of 1915, I could feel plainly that sympathy for the Central Powers had receded greatly, and that the question of entering the war on the side of the Allies had become merely one of time and of a favorable opportunity.

Strangely enough, people in Austrian and German official circles simply would not believe this change. The Austrian ambassador, Count Czernin, sent to Vienna one report after the other in which he emphasized Romania's love of peace and stressed the fact that he, as representative of Austria, was being treated by all organs of the Romanian Government in the most respectful and cooperative fashion and that he was constantly being assured that Romania's entry into the war against Austria was a thing which could not even be discussed. The German ambassador took a similar position in his reports. On the other hand, the Austrian military attache had his eyes wider open. From the spring of 1916 on, he reported earnest military preparations on the part of Romania which by their very nature could only be directed against Austria. The difference of opinion between the Austrian ambassador and the military attache went so far that an open conflict broke out between them.

It must be admitted that the Romanians were able to deceive the diplomatic representatives of the Central Powers in masterful fashion regarding the true attitude of the government. The two ambassadors were invited on every occasion, the "traditional friendship" with Austria and Germany was diligently stressed, and the existence of any tension or of causes for conflict was positively denied.

Since the Romanian Government was in possession of the Austrian code, it could follow precisely the effect of its deceptive measures by reading the telegrams sent by Count Czernin to Vienna. For the Romanians it was an extremely interesting play which was going on here behind the scenes.

Now while the official diplomatic representatives of the Central Powers continued their reports from the point of view that the Romanian Government intended to maintain absolute neutrality, the reports of the Austrian military attache took on more and more a tone of warning, especially after the beginning of the Brusilov offensive. These warnings finally led to a common consultation of the chiefs of staff of Austria and Germany during which it was decided to set up an increased security force along the Transylvanian border. A new Austrian First Army was formed, with a new German Ninth Army at its right; but both consisted solely of worn-out formations which had been withdrawn from the Russian front for rest and to be brought up to strength. Many of them consisted of very scant remnants without any fighting strength and needed to be built up almost entirely from new personnel. This was done without any haste because nobody believed there was any serious threat to the Austrian border in the southeast.

Meanwhile in Romania they were preparing for the attack; above all, the Russians urged Romania's entry into the war. On 27 August 1916, on a quiet Sunday afternoon, the Romanian ambassador in Vienna delivered a long-winded declaration of war, while in the same hour the Romanian troops began their advance.

The moment of Romania's entry into the war could not have been better chosen, for the Austrian offensive in Italy had bogged down and the Austrian troops there were engaged in severe defensive fighting. The Brusilov offensive was progressing beautifully, and a thrust by the Romanians could tie in with the advance of the Russians. Germany and Austria had their

hands full trying to stop this Russian advance. Furthermore, Germany was badly tied up in the west before Verdun. Moreover, possession of the Austrian diplomatic code gave the Romanians extensive information and a feeling of great security. They were convinced that the collapse of Austria was impending, and that for the Romanian army it would merely involve more or less of a picnic. They had to hurry in order not to arrive too late for the division of the spoils.

The Romanian declaration of war was directed only against Austria-Hungary, but necessarily and automatically it involved Germany too. The first result of this declaration of war was the resignation in Germany of General Falkenhayn as Chief of the General Staff; the failures at Verdun and the crises on the Somme had helped bring this about. Hindenburg, with Ludendorff as First Quartermaster General, replaced Falkenhayn, while the latter assumed command of the German Ninth Army against Romania. General Arz von Straussenberg commanded the Austrian First Army. On Bulgarian soil along the southern frontier of Romania stood the Danube Army under General Kosch and the Bulgarian Third Army, the latter facing the Dobrudja.

The Romanians had marshaled their main forces on the Transylvanian border. Immediately after the declaration of war, they started an attack on Transylvania from the east and the south, using an encircling operation with greatly superior forces against the German Ninth Army. Fighting a delaying action, the German units withdrew while the Romanians pressed forward over the eastern and southern Carpathians and turned in the direction of Klausenburg.

The Austrian and German intercept service had done no work against Romania until shortly before the outbreak of the war; in fact neither Romanian diplomatic nor army radio traffic had been monitored. Now and then they had listened to Romanian stations, but that was rather due to accident. Consequently, the Central Powers had no special experience with the handling of Romanian radio traffic before the end of July 1916. Not until early August were several receiving stations committed by the Germans and Austrians to begin a systematic monitoring. However, during their assembly the Romanians had been so cautious in their use of radio telegraphy that very little information could be gleaned. When war broke out on 27 August, the German and Austrian intercept service faced an utterly new problem.

The picture changed, however, within a few days. Scarcely had the Romanian advance gotten under way, and scarcely had the first engagement resulted, when the Romanians began to use the radio to their hearts' content and, to be sure, in a way that would have made the incautious Russians of 1914 turn pale with envy. They radioed with fixed call signs in plain text; gave the names, numbers, and designations of troop units and formations; sent back all reconnaissance reports in plain language; and received their instructions and commands in clear. Of course, they used cipher for a large part of their radiograms, but this was done with so little skill, and the number of plain-text messages gave the Austrian cryptanalysts so many clues, that the cryptographic system was solved in a very short time.

And now on the part of the German and Austrian intercept service began an activity which was and remained unique during the entire war. The number

of translators was hardly sufficient to translate all the intercepted messages. The evaluators were busy day and night turning the results into situation reports. In a short time they had a clear picture of the organization, strength, and intentions of the enemy, and of all of the difficulties which the enemy was experiencing in respect to supply and communications. Through their own radio traffic the Romanians gave away their operational and tactical situation so completely that even the handling of radio traffic by the Russians before and during the battle of Tannenberg seems simply superb in comparison with what went on here. For Tannenberg was something that happens only once, and one had to excuse the Russians because of the novelty in the use of this modern means of communication. Meanwhile, however, there had been two years and the Romanians of all people should have drawn a lesson for their own army from their practice in intercepting Austrian radio traffic. But now they acted as if they had never encountered the idea of an intercept service.

General Falkenhayn seized the opportunity which was thus offered him. Every three hours the radio evaluation center of his operational section had to supply a situation report on the enemy. For four weeks he withdrew into the interior of the country, deceiving the enemy. Then the situation was such as he required for his blow. From 26 to 29 September he crushed the Romanian left flank near Hermannstadt: in the following weeks he broke through the center of the Romanian line of battle near Fogaras, and immediately afterward in the battle before the Geisterwald drove the enemy back on Kronstadt. On 8 October Kronstadt was taken; on the 10th the passes of Türzburg and Predeal were occupied. At the same time, on the left of the German Ninth Army the Austrian First Army attacked the Romanian right wing and threw it back. Transylvania was reconquered within two weeks.

In the meantime, the Bulgarian Third Army had begun its attack from the south against the Dobrudja. Collaborating with the Bulgarians, the Austrian intercept service had set up a central office in Sofia, and from here was able to give the Bulgarian army valuable suggestions. On 6 September the bridgehead Tutrakan was taken; on 9 September Silistria was occupied. After the loss of Konstanza the Romanians withdrew from the Dobrudja late in October, and left the protection of the mouth of the Danube to the Russians.

The first phase of the campaign had broken over the Romanian army like a thunderstorm. It could happen as it did only because the Romanian radio service supplied the enemy with all the details required by its intelligence service. It was a play with a grotesque charm which one was watching here; if anyone were to describe the details of the operations carried out on the basis of intercept results, it would give a story comparable with the most thrilling detective story.

The Romanians were deeply impressed by the precision with which the enemy was acting and, like the Russians in their day, were convinced that treachery was involved. They looked for traitors, replaced men in various positions, court-martialled a number of high officers, but in the main allowed their radio to operate in the same old way. They merely changed some cryptographic systems and did so with the cooperation of the French military mission which had meanwhile arrived.

But it happened that in the deciphering office of the Ninth Army there were two decipherers who had worked for some time solving French cryptographic systems. They were acquainted with a definite French tendency to be systematic. With the accumulated traffic, amounting to some 80 messages, they attacked the new system, and within six days achieved complete success. All told, the German and Austrian intercept service received and processed during the first two months of the war no less than 6,240 Romanian radiograms!

Meanwhile, the Romanians had once again pulled themselves together for determined resistance, and opposed all available troops to any further advance of the German Ninth Army over the Türzburg and Predeal Pass toward Bucharest. They were convinced that the German attack would come here, and omitted strengthening their left wing. This circumstance could be recognized in all details from intercepted traffic. Falkenhayn therefore decided on a mighty surprise attack against the Romanian left wing. In mid-November at the Vulcan and Surduc Passes the right wing of the Army broke through the Romanian position, overran the main Romanian force on 17 November near Targu-Jiu, and on 21 November took Craiova. The out-flanked Romanians then had to abandon their resistance at the Roten-Turm Pass. On 23 November the Danube Army, which had learned from intercepted Romanian traffic of the withdrawal of some units, forced a crossing of the Danube near Swischtow by a surprise attack. The battle on the Argesul (1 - 5 December) ended with the defeat of the demoralized Romanian troops and with the evacuation of Bucharest. Covered by rear guard actions the Romanians retired behind the Sereth. The Romanian campaign was then concluded and settled into a war of position. The Russians, for whom Romania's entry into the war was supposed to bring relief, had been forced during the last phase of the struggle to send troops of their own to aid the Romanians.

At the conclusion of the Romanian campaign, three-fourths of the Romanian army had been annihilated and, save for a meager remnant, had ceased to exist.

Later on, the lightning campaign against Romania was ascribed to the outstanding strategy of General Field Marshall von Mackensen whose troops occupied Bucharest. Actually, von Mackensen was nominal commander-in-chief of the troops operating against Romania but only the "Army Group Mackensen", which was composed of the Danube Army and the Bulgarian Third Army, was directly under his command. This southern group was assigned only a secondary role during the entire campaign. The decisive operations took place on the northern front, and the focal point here lay with the Ninth Army. This army, however, would never have been able to deliver such decisive blows against the Romanians in Transylvania, and later on against their left wing in the north, if Romanian radio traffic had been handled according to modern principles of concealment. The only credit due Mackensen came from the crossing of the Danube near Swischtow, the battle of the Argesul, and the occupation of undefended Bucharest. All this was possible only thanks to Falkenhayn's operations - and thanks to Romanian radio traffic.

THE INTERCEPT SERVICE IN THE BALKANS

The various campaigns and operations in the Balkans during the course of World War I were very largely influenced by the Austrian intercept service. In a number of individual actions the Austrians and Germans were successful solely because of the results of the interception of the technical means of communications employed by the enemy. To report on this in detail would far exceed the limits of this work. However, we must not fail to mention that, after their landing at Salonika, the Allies on their part devoted very great attention to the intercept service and were especially concerned with preventing intelligence material from reaching the enemy through their radio traffic. The greatest triumph in securing one's own radio traffic against enemy interception came for the Allies in September 1918. At that time, the French 122nd Division and the 17th Colonial Division succeeded in maintaining absolute radio silence up to the moment of their commitment at the front, so that neither their disembarkation nor their transport to the front was recognized by the enemy. According to an admission of the Bulgarians, the element of surprise, which was thus gained, was the reason for the defeat of the Central Powers in the Balkans.

BREST-LITOVSK

One of the main goals of the Bolshevik Government immediately after it seized power was to bring the war to an end. Not merely the war between Russia and the Central Powers, but the World War as a whole and on all fronts. This was the burden of the appeals which went out by radio from Petersburg and Moscow. They were directed to the working population of the Western Powers, and to their organizations and representatives.

But it soon appeared that the political power of these organs was far too small to have any decisive influence on the attitude of the governments of these countries. On the basis of this discovery, the Soviet Government decided on separate negotiations with the Central Powers to bring about a separate peace. On 22 December at Brest-Litovsk conversations began between the Russian delegation headed by Joffe and the representatives of the Central Powers whose spokesman was, in the main, General Hoffmann. The course of the negotiations is in general well-known; what is not known, however, are certain circumstances which will be mentioned here for the first time.

The special character of these peace negotiations lay in the fact that here there sat at the conference table to end war not merely representatives of the two countries or groups of countries which were in a state of war, but that here two philosophies stood opposed to one another, between which - from the point of view of ideologies - there was no bridge; on the one side were the representatives of militarism, imperialism, and capitalism; on the other the representatives of radical socialism, of anti-militarism, and of the international collaboration of the proletariat. From the beginning this created a hostile atmosphere. There was the added fact that the Bolshevik Government had only been in power a few weeks, and this in the greatest continental country on earth. On the side of the Central Powers there was, therefore, a very great interest in gaining insight into the actual situation in the newly created Soviet Union as well as into the

thoughts of its delegation. Accordingly, in all haste a large radio intercept center was set up in Brest-Litovsk, whose task it was to intercept all Russian internal radio traffic and to exploit it for the information of the German and Austrian delegations. A great staff of evaluators and analysts with linguistic ability was at work day and night.

A teletype line for direct exchange of telegrams with the Soviet Government had been placed at the disposal of the Russian delegation. The Russians even had permission to use cipher. The Hughes teleprinter at Brest-Litovsk was operated by Russian personnel.

Without the Russian telegraphers' knowing anything about it, other teleprinters had been wired in parallel with the Hughes teleprinters used to transmit telegrams. The tapes produced here went at once to the cryptanalytic bureau set up especially for the purpose, where 15 cryptanalysts were sitting ready to begin work at once. On the third day of the proceedings the German cryptanalytic service succeeded in solving the cryptographic system used by the Russians. From then on, all incoming and outgoing telegrams could be deciphered, and General Hoffmann received their content currently; sometimes the deciphered messages were laid before him during the conversations.

Aside from these two intercept devices, there was a third listening device installed in Brest-Litovsk. In the conference room of the Russian delegation the Germans had installed in the chandelier several microphones from which well-disguised leads ran to a listening room. Here sat several interpreters who took down in shorthand the conversations of the Russians. Moreover, behind the wallpaper in the living rooms of all members of the Russian delegation there had been concealed a series of microphones from which there were leads to the above-mentioned listening room. Thus, every conversation of the Russians could be heard.

The net result of these three listening devices was that the chief negotiator of the delegation of the Central Powers was not only very well-informed at all times regarding the sometimes very unclear situation within the Soviet Union and regarding the actual power of the new government, but was also informed regarding all instructions which the Russian delegation received, all reports which it sent to Moscow, and all ideas discussed within the delegation. They knew precisely how far they could go, how far the Russians were ready to go, and what they could answer to the threats of Joffe and later of Trotzky. The Russian delegation could bring up anything it wished, but this did not make the slightest impression on General Hoffmann, since he often knew the enemy's situation better than the Russians themselves.

Twice it happened that General Hoffmann said too much in the heat of debate so that the Russians noticed that their correspondence with Moscow was being read by the Germans. Thereupon, they changed their cryptographic system but this too was broken in barely a week, and the total picture was now the same as before. The Russians, from a technical standpoint, found themselves in a hopeless defensive position and could not go a single step forward. Then on 10 February 1918 Trotzky declared that Russia regarded the war as ended and would dispense with a formal treaty of peace. He then

broke off the negotiations.

On the German side this step by the Russians was used as a pretext for doing away with the armistice; beginning 18 February 1918 German troops occupied Livonia and Esthonia as far as Narva and thus threatened Petersburg. The Soviet Government found itself forced to give in, and on 3 March the treaty was signed at Brest-Litovsk.

Meanwhile, a government had been formed in the Ukraine which was quite independent of the Bolshevik Government; it had come into being with German support; on 9 February it concluded a separate peace with Germany and Austria-Hungary which provided for the entry of German and Austrian troops into the territory of the Ukraine. Beginning 18 February the troops of the Central Powers marched into the Ukraine, occupied Kiev, Odessa, and Kharkov, and early in May advanced to the Don. In the south the Crimea was occupied.

In spite of the conclusion of peace the situation in the east remained very strained, indeed - from a military point of view - it became still less favorable than it had been up to February 1918, since in the enormous expanse of the western and eastern Ukraine there was stationed only a relatively thinly distributed force of the Central Powers. The Soviet Government on its part now set about organizing with great zeal a new "Red Army," and let it be recognized that it had no thought of tolerating permanently the situation in the Ukraine.

It was now necessary for the Central Powers to keep an exceptionally watchful eye on the development of the situation in the Soviet Union, in order to be protected from surprises. A whole net of radio intercept stations was set up by German and Austrian troops in the Ukraine and in the occupied northern territories, in order to monitor the entire radio traffic within Russia. The results were so good that actually a completely clear picture could be secured currently.

Along with their entire governmental apparatus, the Russian also had to reorganize their entire radio service, and in the early months they made the same mistakes as once before by sending out their measures and arrangements all too frankly into space. But they soon made up for this error in another way. They began to send over their high-power transmitters a propaganda campaign in the German language which was directed to the German and Austrian soldiers. These transmissions were intercepted by all German receiving stations, and despite all security measures were soon trickling through everywhere. The German and the Austrian soldiers, weary of war, filled with the questions of a new social order, were eager to hear and to absorb what was coming out of this land of consistent socialism. The reports of the Russian transmitters, however, were calculated to undermine confidence in the leading class of one's own country. The system of radio propaganda, used here for the first time in history, began to bear very serious fruit in the summer of 1918. The war in the east was ended, to be sure, but - and this signified far more - the troops which had been left there began to drop out of the picture as a dependable military force for the Central Powers. At that time Russia was the first country to recognize and make use of the value and power of modern radio propaganda.

COMPIEGNE

The First World War showed during its course a number of parallel incidents in the intercept service, some of which strike one as remarkable, some as downright comical. The first of these parallels is between the battle of Tannenberg in the east, and the Battle of the Marne in the west; the last is between Brest-Litovsk in the east and Compiègne in the west.

In the negotiations at Brest-Litovsk the Germans listened to all communications from and to the Russian delegation, and deciphered them insofar as was necessary. In the forest of Compiègne the same thing occurred, although in an abbreviated and simplified form.

On 8 November 1918 the German armistice delegation headed by Erzberger arrived at Allied Headquarters in the Forest of Compiègne. It remained there until 11 November. During this time all telegraphic traffic of the delegation was deciphered by members of the Deuxieme Bureau of the French General Staff. Even the famous dispatch to Erzberger: "Try for milder terms; if not obtainable, sign nevertheless." was deciphered by the French. To a certain extent, this decided the fate of the defeated partner in the negotiations. The interception and decipherment of the German telegrams to and from Compiègne were the last act of the intercept service during World War I.

PART II

THE GERMAN INTERCEPT SERVICE

AFTER THE END OF WORLD WAR I

The collapse in the west and the armistice in the Forest of Compiègne ended the First World War. At least in the west. In the east the struggle went on in a new form; in the Ukraine, in the Baltic provinces, and along the Polish frontier, since the Poles had announced extensive claims and had set up a new army, and since there was fighting in the border regions. On the German side, volunteer corps were formed. In Berlin the National Ministry of Defense was created; a small remainder of the general staff took up its work anew.

The German intercept service likewise began immediately, under the changed conditions, a task adapted to the new situation. All garrison radio stations were reoriented for intercept service, which they had to carry on along with their own traffic. It was a question of following developments in the Soviet Union where civil war had flared up. Moreover, the situation in Hungary required the closest attention. In Berlin, in Friedrichstrasse, a new central office was set up for the intercept service and the crypt-analytic section. The then Lieutenant Colonel Buschenhagen took charge. He had been concerned with the German radio deception in Italy and had subsequently worked in the intercept service at Grand Headquarters.

This newly created office bore the designation "Volunteer Evaluation Office of the OHL" and consisted at first of a small group, which was still more reduced in a short time when various participants found more promising jobs in private industry. Buschenhagen now endeavored to create a new group which would form the basis for the subsequent development of this branch of the service. At the same time a Captain Selchow, who had likewise been active in the intercept service during the war and had for a time headed the cryptanalytic group of the OHL, set up a bureau in the Foreign Office which was occupied with the development of cryptographic systems and their employment in diplomatic correspondence and also - and this was the novelty - with the decipherment of foreign systems. The assignment covered foreign diplomatic radio traffic.

Thus after the end of the war there ensued the typical German phenomenon, that instead of combining all energies to attain the greatest possible useful results, there began a splitting up, a struggle between rivals. To the outside world the creation of the two bureaus was justified by saying that the "Bureau Buschenhagen" was to occupy itself with cryptanalysis and evaluation of foreign military radio traffic, while "Bureau C of the Foreign Office" was to carry out cryptanalysis of foreign diplomatic cryptographic systems. In practice, however, it was by no means easy to draw the line between them since the radio traffic of a military attache, for example, can fall both into the military and into the diplomatic circle of interest. Furthermore, in solving a cryptographic system it is an open question where the content of the messages to be deciphered will lie. Furthermore, a cryptographic system - no matter where it is used - is simply a cryptographic system, which has to be solved by the same methods without regard for the use to which it may be put.

The methods of cryptanalysis had to be the same, naturally, in both bureaus, and the experience and practical application were the same. Any knowledge gathered in one of the two bureaus must also be of value to the work of the other.

With rational collaboration between the two offices, it would have been possible in the long run to avoid duplication and one could have employed the scanty personnel available in a rational manner. However, anyone who knows German conditions will not be astonished if I tell him that, as soon as the two offices had been set up, there sprang up a mutual jealousy, an effort on the part of each to out-strip the other, to find out as much as possible from the other without giving anything in return, and to hold itself apart as far as possible. There was an attempt, to be sure, to keep up appearances and to arrange a sort of exchange of ideas, but from the beginning these attempts were not based on any honest intention, so that no really sensible collaboration came about, either during the period of organization of the two bureaus or later. Of course, with the small number of really high-grade cryptanalysts available, this meant a very impractical use of talent and many years passed before the two offices had developed an adequate number of good cryptanalysts.

While with Bureau C of the Foreign Office the main emphasis was on cryptanalysis, in the control office of the intercept service of the National Ministry of Defense, the main emphasis soon turned to the field of so-called evaluation, i.e., to the systematic piecing together of numerous single phenomena in foreign radio traffic for the purpose of getting an over-all picture of the situation in the area to be observed. That was to the point, and corresponded to the duties of an intercept control station attached to the highest command of the armed forces of a country. The result, however, was that soon there broke out an envious competition between the sections "Cryptanalysis" and "Evaluation", regarding which more will be said later.

As already mentioned, immediately after the end of the Great War, fighting had broken out between the Poles and Germans along the newly established boundary in the east. On the German side so-called Border Guard Armies were set up; one Border Guard Army South with its chief command in Breslau, and a second Border Guard Army North with its chief command in the vicinity of Hammerstein. These consisted in the main of volunteer formations; the command, however, already belonged to the cadre of the newly created Reichswehr. In both Border Guard Armies evaluation offices were set up for the intercept service, and the attempt was made to intercept Polish traffic both by radio and by wire. Since the Poles had no experience in this field, they used their technical means of communication in a very carefree fashion, and thus gave the German intercept service a vast amount of good information. All preparations and plans of the Poles, all proposed undertakings, and all details regarding difficulties encountered in them were revealed to the German intercept service, so that it was almost always possible to start countermeasures in time.

Here in the east there was a repetition of the situation which had existed on the Russian front during World War I. With the internal

situation of those days in Germany, with the great variety of political currents, with the constantly recurring, severe internal tensions, with the militia-like character of the relatively feeble border guard formations, it would hardly have been possible to safeguard the German frontier in the east to the extent it was, had not constant knowledge of events among the Poles put the German command in a position to intervene at the danger points in such effective fashion that the enemy was always forced to take the defensive. Here the Poles had to pay the same tuition fees that the Russians had had to pay at the beginning of World War I. Of course, they learned their lesson more quickly than the Russians and governed themselves accordingly. We shall have something to say on this point later.

THE WINIKER CASE

Older readers may perhaps recall an episode which occurred in 1906 in the vicinity of Berlin and which, under the title "The Captain of Koepenick," formed a favorite subject of conversation for many years and, in a sense, even became a part of German history. For those to whom this theme is new we will report the occurrence briefly.

On a beautiful summer Sunday morning a small detachment of German soldiers under the charge of a non-commissioned officer was marching through the little old city of Koepenick, southeast of Berlin. In the vicinity of the city hall, a man in captain's uniform met them, to whom the non-commissioned officer reported his detail in accordance with regulations. Thereupon he was ordered by the captain to march with him to the Koepenick city hall, since he (the captain) had the mission of arresting the mayor because of serious malfeasance in office.

The non-commissioned officer saluted snappily, had his formation about-face, and marched his little force under the command of the captain to the city hall. The entrances were occupied, and the captain, along with the non-commissioned officer and two men, betook himself to the office of the mayor where the latter was told that he was under arrest because of serious irregularities, and was to turn over the keys, in particular that of the city strong box, to the captain at once. This was done, whereupon the mayor was led away, the detachment of troops departed; the captain remained in the building. On the following day it turned out that the whole affair was a bluff; the supposed captain had been a shoemaker, Wilhelm Voigt, who had already been convicted repeatedly. He had procured a captain's uniform and relying, correctly enough, on the absolute obedience in the German army to the insignia of a higher rank, had used this occasion to appropriate with the aid of this small detachment, all the money he could lay hands on in the town hall, and then had vanished with it.

There was a great deal of laughter about the affair later on, and it was called "typically Prussian," although people were inclined to admit that it probably could happen but once. It probably was typically Prussian, but it can be said that it would only happen once as far as the external circumstances were concerned; Koepenick pranks of like type have often occurred in Germany especially in Prussia; only they were less talked about.

The event described above has been mentioned here, because an event which took place in the summer of 1919 in the Border Guard Command South in Breslau reminds one vividly of the Captain of Koeppenick, save that in Breslau matters were far more serious.

One forenoon in March 1919 there appeared in "St. Petersburg Court" in the Teichstrasse in Breslau, where the Army High Command (South) was stationed, a gentleman in army uniform, having the insignia of a technical officer with the rank of major, to see the head of the intercept service. He introduced himself as Dr. Winiker, private scholar and teacher at the Institute of Technology in Berlin, and declared that he, along with all students of this institution, had placed himself at the disposal of the Border Defense against Poland. He himself had been ordered to the Army High Command (South) in Breslau by the head of the communication system in the new Defense Ministry because of his linguistic ability, and was now placing himself at its disposal.

Winiker gave the impression of a man well versed in the ways of the world and possessing good manners; he was very sociable and in a short time was known all over the place. He was not a friend of much work, in contrast to this, however, a friend of long drawn-out conversations and gossip. Since he possessed a complete command of the Polish language, he was employed in the translation of Polish documents. He telephoned to Berlin almost daily, especially to numbers in the Defense Ministry, and made a great showing of his far-reaching connections. Since his family - as he declared - was living in Berlin, he sometimes traveled from Breslau to Berlin over the weekend, and as a rule, did not return until some time the following Monday. These trips always furnished him with more material for chats in his circle of comrades in Breslau. It was rather remarkable that on his journeys between Berlin and Breslau he nearly always met someone who was very well informed on the situation in Poland. At that time no one in Breslau attached any significance to this circumstance, but on the contrary, they were only interested in the stories told by Winiker.

A few weeks after Winiker's arrival, various secret papers began to disappear from the main office of the intercept service, as well as from the office of the head of the communications system, to which the intercept service was subordinate; these, however, generally reappeared elsewhere. As a rule, it so happened that they disappeared toward the weekend, and reappeared on one of the first days of the following week.

It took a very long time before one began to pay attention to the legality of these happenings. After some time it was established that the Poles at different times had information at their disposal which they could have acquired only through treachery. In the meantime, Winiker lived in Breslau in a good hotel, boasted about his excellent connections in Berlin and his private wealth, and, wherever possible, incurred debts.

The months passed until the beginning of August 1919. Then on a Saturday forenoon, there disappeared from the private office of the head of the communications system a strictly secret map, on which were minutely drawn the complete wire connections of the Southern Army. This disappearance was immediately discovered and created great excitement. Not until

Monday, when Dr. Winiker failed to report for duty, did they become suspicious and make inquiries at his hotel, only to discover that Dr. Winiker had vanished leaving behind him nothing but a large unpaid hotel bill.

Now an investigation was begun which showed that Winiker was neither a doctor nor a professor at the Institute of Technology in Berlin, but an ordinary spy who had brazened his way into the Defense Ministry in Berlin through his personality and references to his outside connections in the same way that he had deceived the men in Breslau. They now found out that Winiker had undertaken, while in Breslau, to obtain for himself knowledge of the most secret matters, which he then delivered on his journeys between Breslau and Berlin to liaison men of the Polish secret service.

The incident was hushed up as much as possible in the office of the Army High Command (South) because the affair was too shameful. All inquiries as to what had become of the capable co-worker yielded no results. The episode has been related here because, for one thing, it is symptomatic of German conditions, but also because the effects of this incident were very far-reaching. Winiker had communicated to the Poles all results of the German intercept service, and had given them valuable pointers on what not to do in radio traffic. This gave the Poles their first lesson in regard to camouflage and one must admit that they learned to follow these instructions in a comparatively short time.

THE WORK OF THE GERMAN INTERCEPT SERVICE

In February 1920 the "Volunteer Evaluation Office of the Army High Command" moved from Friederichstrasse to the Defense Ministry Building in Bendlerstrasse. The office now received the designation "Cipher Bureau of the Army High Command," and belonged to the "Abwehr"* Section as Group II. This merging with the "Abwehr" Section lasted only a few years. Since the intercept service had to work with personnel and equipment of the communication troops, there naturally followed a close connection with the Inspection of Communications Troops. In time this led to friction between the Abwehr Section and the Inspection of Communications Troops, so that eventually the intercept service was wholly subordinated to the Inspection of Communications Troops. Of course, to a certain extent cooperation with the Abwehr Section was still maintained; this was, however, more of an informational character.

In the years 1920-1925 the task of the German Intercept Service consisted in watching the entire international press radio service. The intercepts were written up in brief reviews, and gave the government valuable insight and information of a political and economic character. In addition, they turned more and more to the expansion of the cryptanalytic group and the interception of international diplomatic radio traffic. This work proceeded rather slowly, but was carried on very systematically and in time showed gradually increasing results. At that time they were especially successful in deciphering Italian diplomatic traffic, and in this way derived from the reports of the Italian ambassadors and legates in London, Paris, Moscow,

* Abwehr = counterintelligence

and other places, a good insight into the governmental proceedings of these nations.

Viewed as a whole, the focal point of the work of the German intercept service lay in the field of politics. With regard to military matters the work was limited to the observation of events in the Russian Civil War and the course of the Greco-Turkish War. Especially in regard to occurrences in the Soviet Union it was possible for the German intercept service to pursue events in almost uninterrupted sequence. It was especially interesting, however, to follow the radio traffic on both sides, and in particular on the Russian side during the Russo-Polish War in 1920.

The course of this campaign was one of the first noteworthy things in the period following 1918. At that time Russia found itself in a state of civil war which raged everywhere. The armies of Kolchak, Denikin, Wrangel, Petljura, Judenich, Miller, and various other White Russian leaders were seriously threatening from all sides the structure of the newly arisen Soviet Union. Resurrected Poland took advantage of this condition to declare war on the Soviet Union, and to annex large areas. At that time the Poles succeeded in pushing forward and reaching the Dnieper, in crossing it at some points, and in advancing beyond Volhynia toward the south.

A very critical situation resulted for the Soviet Union, but this soon led to an astounding reaction; the result was that within the territories dominated by the Soviet government all political dissension ceased at once and there arose a united defensive front against Poland. Even high officers of the former Czarist army placed themselves at the disposal of the Soviet government, and the "Third War for the Fatherland" began.

The onrush of the Polish troops was brought to a halt, and in bold advances, units of the Red Army succeeded in throwing the Polish forces back a long way. It was particularly the cavalry army of Budjennyj which was able to achieve surprising results in the beginning, until there came that famous "Miracle at the Vistula," which was no miracle at all but the result of very matter-of-fact causes. These were as follows:

During World War I the Russians had had to pay dearly for their lessons in the proper use of radio in the face of the German intercept service. Nevertheless, they had begun to learn and in the course of three years of the war had in some cases made very good progress. The collapse of the Czarist army resulted in scattering all previous experience and knowledge to the wind like chaff, and the newly arisen Red Army virtually had to begin again from the beginning. That meant that in respect to the security of their own radio traffic they were precisely where the Czarist army had been in 1914.

The command of the Red Army attached great importance to the use of wireless telegraphy in general and especially in the army. When the new defense armies were set up against the Polish invader, they were equipped abundantly with radio apparatus from the remaining stocks of the old Czarist army. This equipment was - relatively - far more extensive than any one of the Czarist armies had ever had during the World War.

The shock of the Russian forces, which had passed to the attack, threw back the Polish front and pressed it nearer and nearer to the Vistula. It looked as though there would be a vast battle of annihilation in the great bend of the Vistula, but the Russian successes suddenly began to diminish until finally there came the well-known, decisive turning point. This came about in the following way.

In the first phase of the Russian attack, the Polish command had virtually no information regarding the organization, strength, offensive power, and intended direction of attack of the Russian armies. Thus the Russians were able to take advantage of the element of surprise to a full extent. However, scarcely had the Polish front begun to move backward when the Russians began to use radio on a large scale. This was particularly the case with the cavalry army of Budjennyj.

Some eight years after this campaign, the Polish Colonel Szieszynski revealed the secrets of those days in a brief memoir,* and cited a number of interesting radiograms which were sent by the Russians during those weeks, partly in clear, partly in a very primitive cryptographic system, and which were intercepted and deciphered by the Polish intercept service. The Polish intercept service had been built up from former Austrian-Polish and German-Polish officers as soon as the Polish army was created. From the events mentioned in the Winiker case, they had had a good opportunity to gather experience and to train themselves.

When the Polish-Russian War broke out, there was a small but nevertheless very useful Polish listening organization. It was immediately committed for the monitoring of Russian military traffic, and after the beginning of the Russian offensive afforded such an abundance of fine and superfine intelligence regarding the enemy that we can only compare with these events those associated with the cavalry corps of von der Marwitz in 1914, but with the difference that the individual messages of the Russians were much more comprehensive and informative than those sent in its day by the cavalry corps on von der Marwitz. In content the Russian telegrams closely approached those from the days of the battle of Tannenberg. In particular, it was the cavalry army of Budjennyj which soon distinguished itself in this direction. Such conduct must naturally lead to a serious reverse sooner or later, especially since the Poles for their part made no use of radio due to lack of apparatus, and hence were not supplying the Russian intercept service, which did not exist to any appreciable extent, with information of like value. The Russians revealed their measures and intentions to such a degree that the Polish general staff, in collaboration with the French military mission, could proceed successfully with the preparation and execution of a counterblow. This was the famous "Miracle of the Vistula," that astoundingly striking parallel to the battle of the Marne, which gave a decisive turn to the entire campaign and put the Poles in a position to secure a drawing of the boundary virtually as it remained until the autumn of 1939.

* For the Polish Signal Corps.

From the gigantic mass of radio messages intercepted by the Poles we reproduce a few below.

From a telegram intercepted 2 July 1920 from the chief of the radio service of the Bolshevik Fourth Army, Nr. 517/op. taj., it could be learned that the radio station of the 48th Infantry Division was to be moved to Dzisna to serve the staff of the Fourth Army. In this way the Polish intelligence service received definite confirmation of earlier reports of the formation of a Fourth Army. At the same time, the location of the army staff was disclosed.

On 24 July the chief of the signal service of the 16th Army revealed in a service message through the signal officer of the 10th Infantry Division the location of the army staff in Baranovichi.

On 26 July the chief of the radio station of the Fourth Infantry Division informed the chief of the radio station of the 54th Infantry Division of his location in the village of Olszana.

On 30 July the heads of the radio station of the 10th and 53rd Infantry Divisions did the same thing. This was repeated during the entire war, so that the Poles knew the precise location of all higher Russian staffs, and hence the grouping of the enemy.

On 10 August a service telegram of the War Commissar of the Fourth Army was intercepted which was deciphered on 12 August; its wording was as follows: "To the War Commissars of the 10th, 12th, 15th, 53rd, 54th, and 48th Divisions, to the Third Cavalry Corps, to the 164th Brigade, and to the Quartermaster Section of the Fourth Army: from the moment of the arrival of this present message the use of cipher 'Natisk' is forbidden; in its place the key 'Revolucija' will be used for communication of division staffs with army staffs. The key 'Natisk' may be used up to receipt of the key 'Revolucija', which has been dispatched by courier. Then it is to be retired from use, and sent to the field staff of the army. Report on receipt of the key and on measures undertaken."

In July 1920 the Poles learned from most important operational telegrams of the commander of the cavalry army, General Budjennyj, which were dated Korzec, 4 July at 2030 hours, precise details of his intended advance and the military composition of the army, which was given in the open address of the telegram: "To the commander of the 4th, 6th, 11th, and 14th Cavalry Divisions and to the Commander of the 45th Infantry Division."

On 5 July the first operational order of the Commander of the Fourth Army, General Tschuvaev [?], was heard, which was addressed to the commanders of the 12th, 53rd, and 18th Infantry Divisions, the Commander of the 143rd, Brigade, and the Commander of the III Cavalry Corps.

On 6 July a similar order from the commander of 12th Army was intercepted.

These three, almost simultaneous orders were the basic orders of the three Russian army commanders for the beginning of a new stage of the Russian

offensive.

Such orders in enormous number were intercepted and deciphered during the month of July. These intercepted telegrams were usually deciphered on the same day, or on the following day at the latest, and were brought to the immediate notice of the II Section of the General Staff as well as to that of the Operations Section. The Russian III Cavalry Corps distinguished itself particularly in this respect; it supplied the Polish intercept service with at least one very informative radiogram daily.

The events during the Polish-Russian War were also observed and evaluated by the German intercept service so that day by day the troop organization of both sides and the course of events could be followed by use of large maps. This was the first training which the reconstituted intercept service received and its first opportunity for practice.

At the beginning of 1920 the total strength of the central office of the German intercept service in Bendlerstrasse consisted of some 12 persons. Then they began to expand both the cryptanalytic and the evaluation groups. This program, however, was not easy to carry out, since the organs of the Inter-Allied Military Control Commission were endeavoring to follow closely all happenings in the National Ministry of Defense. The Germans tried with all means in their power to deceive these control officers. The cryptanalytic group was transferred in part to Grunewald. To the outside world the evaluation group became a newspaper translation office, and in this way it was possible again and again to escape the threatened dissolution of the intercept center. For the intercept service had been strictly forbidden to the German Reichswehr by the Inter-Allied Military Control Commission. The cipher bureau was only authorized to develop, reproduce, and distribute cryptographic systems for German use. Any unauthorized decipherment of foreign cryptographic systems was forbidden by the Inter-allied Military Control Commission. A few times the Inter-Allied surveillance organs had gotten on the trace of the activity of the German intercept service, and there was a regular fox-hunt. But in each case the matter turned out favorably for the German intercept center.

While the German intercept service had thus far limited itself to interception of foreign radio traffic, in 1925 at the intercept center in Bendlerstrasse an office was set up which was concerned with listening to telephone conversations. In the main it was a question of listening to conversations of the Russian embassy and the Russian military attache. In a special room a series of switchboards was installed, and every time a telephone at the Russian embassy on Unter den Linden became active, a flap fell down, and the interpreter on duty would listen to the conversation, and if necessary could even record it with a magnetophone. Later the Germans also began observing the British and French embassies, and the results of this activity not only proved of great interest because of the direct information, but also indirectly, since they gave such good insight into what was going on at these embassies that the cryptanalysis of enciphered messages emanating from them was in many cases greatly facilitated.

In spite of all budgetary difficulties and in spite of the surveillance of the Inter-Allied Military Control Commission, the expansion of the

cryptanalytic group and the evaluation group of the cipher bureau made good progress, whereby the main emphasis rested more on cryptanalysis than on evaluation. This situation did not change when, beginning in 1923, an increased monitoring of the radio traffic of foreign armies began. In particular, the observation of the radio service of the Polish airforce, and the results achieved thereby, lent charm and stimulus for a further extension of the intercept and evaluation service in the purely military field. A sound balancing of the interests of the two branches of work would have been the only correct solution, since, in the framework of the army, the focal point of the work must necessarily lie in a purely military field.

Surprisingly, however, at that time another development gained the upper hand, namely, the defense Ministry meddled in purely political affairs and especially foreign political affairs. A deciphered diplomatic radiogram offered far more material for lectures, conversations, and interesting discussions than did the determination of military details about the armed forces of foreign countries.

Naturally, the Foreign Office did not like this development at all, and there was constant tension and friction between "Bureau C" and the "Cipher Bureau." Another result was that an increasingly sharp contest arose between the evaluation group and the cryptanalytic group, since the latter always wanted the best personnel for itself. In most cases the cryptanalytic group was successful since the Defense Ministry, as mentioned above, was far more interested in political proceedings than in military establishments, and in addition, strangely enough, the idea prevailed that a higher degree of intelligence was required for cryptanalysis than for the scientific work of evaluation.

Such an installation, which might have been justified in 1914 or 1915 but which now ignored the facts completely, later proved to have ominously detrimental results for the German intercept service, especially during World War II. The present-day pursuit of evaluation in the intercept field requires such a wealth of knowledge of the organization, tactics, structure, and equipment of foreign armies, and above all, such a far-reaching knowledge of the structure and employment of foreign communications troops, such an intense mental projection into the course of operations, that only a high degree of intelligence coupled with intensive training extending over a period of years is able to produce personnel who are highly qualified for this work.

In contrast to this, the focal point in cryptanalysis lies in the field of statistics, which can be much more rapidly mastered. It is, however, characteristic of cryptanalysis that it is surrounded by an air of mystery, and - supported by this nimbus - is able to arouse more interest.

Now, while the cryptanalytic group was expanding more and more, the evaluation group remained restricted essentially to a very small group of persons. This picture became still more marked in the autumn of 1928 when Major Kesselring (who later became General Field Marshal), as delegate for the personnel retrenchment program, ordered a further reduction in personnel in the military evaluation group.

As mentioned above, the results of observing the radio traffic of the Polish air force spurred the Germans on to an intense vigilance regarding the radio systems of the armed forces of the countries bordering on Germany. At that time the Polish air force was being built up and delivered an extraordinarily large volume of radio traffic, which was sent partly in plain text and partly in secret text. The German cryptanalysts were successful in breaking the system used by the Polish air force, and thus were able to read all its enciphered radio traffic.

The results were so voluminous that the German evaluation service, insofar as collective proceedings and details of the Polish air force were concerned - no matter in what field - was able to obtain the very best kind of information. After a few months they knew every airplane with its number and engine number, every pilot, every officer, all details of equipment, organization, structure, tactical views, preparedness for commitment, etc., so completely as has perhaps never before or since been the case in the German intercept service. One day, however, this fine source of information was stopped by the following event:

The Polish espionage service had been successful in obtaining the services of a German railway postal clerk working between Breslau and Berlin. This clerk, whose duty it was to sort the mail addressed to Berlin which came into Breslau and Frankfort on the Oder, had received instructions from the Polish secret service to hold back pieces of mail bearing certain addresses, and on arrival in Berlin to hand them over to a confidential agent who carefully opened the envelopes, looked over the contents, photostated them, carefully resealed the envelopes, and on the same day returned them to the clerk for forwarding.

This work proceeded very smoothly for several months until a chance discovery revealed the activity of the railway postal clerk. He was followed, but plunged into the Landwehr Canal and drowned. His body was recovered the next day immediately in front of the Defense Ministry Building.

The Polish intelligence service had obtained from this postal clerk information that the German intercept stations in Breslau and Frankfort on the Oder were engaged in watching the Polish air force traffic, and were able to ascertain from the intercepted mail just how far the Polish enciphered telegrams were being deciphered by the Germans, since the deciphering of these telegrams was not done in Berlin but in the individual intercept stations. The Poles therefore changed their system and substituted for it one that was extraordinarily complicated and could not be broken by the Germans for several years. In addition, they restricted their radio traffic so greatly, both as to volume and content, that there was no comparison at all between the present results and those formerly achieved.

THE OBSERVATION OF MANEUVERS

The year 1928 signified a turning point for the German intercept service inasmuch as from this year on the actual duties of a military intercept service began to be cultivated more than hitherto. In part this was a natural

development, because in most of the states of Europe down to 1928 there had been no maneuvers on a large scale. The possibility of training the intercept service in the observation of the course of military operations was therefore present only to a very limited degree. Now a maneuver is a military action which in its essence closely approaches a state of war. The intercept service of the armed forces of a country has the task of training itself for the observation of the radio traffic of a potential opponent in time of war. If the German intercept service had transferred its primary interest to the observation of political events, that would have been an unnatural phenomenon. Of course, this continued to be the case, but, nevertheless, on the initiative of a few men, the proper task of the German military intercept service, namely, the observation of foreign armies, began to gain in importance.

The first opportunity for carrying on an observation of regular maneuvers was afforded by the Rhineland maneuvers in 1928. These began with a crossing of the Mosel near Trier by the British troops, and continued during the course of a week into the vicinity of Euskirchen. At that time the German intercept service succeeded for the first time in following very exactly the entire course of the maneuvers and in reconstructing the progress of operations in all details.

The next opportunity was afforded in 1929 by the maneuvers in Czechoslovakia and Poland. The Czech maneuvers at that time took place somewhere in the neighborhood of Olmuetz, and one of the German cryptanalysts succeeded in solving within six hours the cryptographic system employed. That permitted such extensive insight into the course of the maneuvers that these could be reconstructed in the same way as the Rhineland maneuvers. The German intercept service was not quite so successful that year in observing the Polish maneuvers in the vicinity of Lida. To be sure, here too they succeeded in recognizing in general the entire course and the organization of the troops; however, the way the Poles used radio and the cryptographic system which they employed caused such difficulty that only after a considerable time was it possible to gain insight into the details.

The observation of these three maneuvers revealed that the three countries in question differed greatly in their use of radiotelegraphy. Consequently, it was necessary to adapt the commitment of intercept units, direction finding units, evaluation and cryptanalytic sections to the conditions of each individual case. Nevertheless, one could say even now that when following foreign maneuvers results could be achieved in every case, if the tactics employed in commitment were sensible, and if the units could feel their way into the radio situation of the country to be observed. The extent of this success might vary according to circumstances, but in all cases good information was to be expected.

That meant that the intercept service, if employed properly, must necessarily gain great significance in a coming war. If I say "if employed properly," then I mean that the commitment of one's own monitoring organs must be carried out very carefully and must be adapted to the situation then existing; but I also mean that for this type of evaluation of the results of the observations, it is of the greatest importance to have a large number of

really first-class men who must be appropriately trained and constantly given additional training. No improvisation is possible in this field. If one does improvise, one is exposing himself to the danger that not only will the value of the intercept service be diminished by falsely drawn conclusions, but that this service in the hands of inexperienced people can become a great danger for one's own command.

From 1930 on there began a long series of French maneuvers and large-scale exercises. They occurred chiefly in the northeastern part of France, specifically in the French defense districts VI, VII, and XX. Almost all were observed by the German intercept service and in almost all cases it was possible to gain extremely far-reaching insight not only into the course of the maneuvers but also with respect to troop organization, tactics employed, weapons committed, march performance, employment of the air force, etc. France turned out to be the country whose maneuvers could be observed in an especially favorable fashion. We shall speak later of the reasons for this.

It was interesting not only to follow the land maneuvers but also to observe drills and maneuvers of the French air force. Thus the German intercept service succeeded, while observing an air exercise in the vicinity of Nancy, in calculating precisely how the French warning service was related to the speed of the attacking enemy. It was possible to set up comparative time-tables which showed on a time basis the movement of the incoming units and showed simultaneously the manner in which the warning service reacted. It turned out that in all cases the warning service went into operation promptly at the starting point, but alerted the objects to be warned much too late, and this based on the relatively low flying-speed of those days!

In observing French air maneuvers in the area of Grenoble, the German intercept service had succeeded in reconstructing the air warning system, the reporting system, and the compass points used by the spotting system, all by means of short radio reports.

The German intercept service succeeded in following some French maneuvers, e.g., on the Aisne in 1932 and on the Marne, to such an extent that the results were considerably more comprehensive than the reports of all the military attaches and agents employed.

The copiousness of the results of monitoring French maneuvers was exceeded only by the results which could be obtained against the Italians. The Italians used radiotelegraphy at all maneuvers and exercises as if they had never heard of radio camouflage, radio deception, or of an intercept service. Most of the radiograms were composed in plain language. Their content was so informative as to remind one of the best periods of the World War; indeed, they sometimes surpassed these. The observation of Italian maneuvers or exercises did offer one difficulty, inasmuch as the distance, the intervening massif of the Alps, and the sharp angles resulting from a short direction finding base resulted in many disadvantages; however, these were compensated for completely by the rich and instructive content of the radiograms which were transmitted with high power. It would be hard to conceive of a more satisfactory opponent for one's own intercept service than the Italian radio service.

The observation of Austrian, Dutch, and Belgian maneuvers was also crowned as a rule with very good success. The problem children of the German intercept service were and continued to be the Poles and the Russians. In the case of the Poles it was possible to achieve certain successes by employing a very large number of direction finding stations to recognize the movement and the location of the individual radio stations. That in itself was a great deal! For the rest, the Polish air force saw to it by its use of radiotelegraphy that much was revealed regarding the ground forces. In general, however, Polish radio traffic was handled so cleverly that it was only with the greatest difficulty that relations could be recognized.

With respect to the Russians the situation was still less favorable. Distance alone offered insuperable difficulties. Any mass employment of direction finding station was possible only from East Prussia, and consequently gave such sharp angles that any certain location of the stations was in most cases impossible. The radio procedure used by the Russians was the best in all Europe as far as the camouflage factor was concerned. Their cryptographic systems also proved in most cases incapable of solution. Of course, covering Russian maneuvers always gave a certain amount of information, but this was so slight that it scarcely repaid the time and effort expended.

Aside from the observation of foreign maneuvers there was one other opportunity to get training on a war basis.

In general, people are accustomed to regard the period of time between the First and Second World Wars as a period of peace. In reality during this entire time there was an uninterrupted chain of revolts, revolutions, uprisings, and military actions, with one following on the heels of the other or sometimes running parallel. In the years 1926 to 1932, for instance, the Italians waged a series of six campaigns in Tripolitania and Cyrenaica, of which one read little in the European papers, to be sure, but which afforded an extremely welcome target for the training of a war-time intercept service.

The six Libyan campaigns were led chiefly by General Graziani, started initially from Tripoli, subdued all Tripolitania down to Gat, and ended later in Cyrenaica with the conquest of the Kufra oasis. For this, fast mobile columns were engaged which made very extensive use of radiotelegraphy. The entire traffic of all units engaged in these operations both in communications with one another and with their bases, in communication between Tripoli and Benghazi and between these places and Rome, all instructions emanating from Rome, and almost all orders and reports were handled by radio. That gave a watchful intercept service the chance to follow the course of operations and to recognize on the basis of numerous reports and orders the preparations for further operations long before they began.

The results of monitoring the Italian Libyan campaigns, together with the results of following Italian maneuvers at home, gave reason to assume that in any coming war the monitoring of Italian radio traffic by

a foreign intercept service would not fail to give the best possible results.

Things were similar in Spanish Morocco during the revolt of the Riffs under the leadership of Abd el Krim. The Spanish expeditionary troops maintained a very active radio traffic, both among themselves and also with the garrison stations Ceuta, Tetuan, and Melilla. These last three stations also communicated constantly with Barcelona and Madrid. Almost all the traffic was sent in plain text. Insofar as ciphers were employed, they were extremely primitive and capable of quick solution. Consequently, it was easy in those days for the French, as well as for the Italians and Germans, to get detailed insight into events in Spanish Morocco.

But even the French were not acting very differently in those days. In connection with the uprising in Spanish Morocco, there were other serious native uprisings in French Morocco, in particular in the area of the middle and high Atlas range. On the one hand, the focal points were in the area Ouezzan - Taza - Oudjda, and on the other hand in the area Tafilelt - Ksar es Souk - Ain Sefra. The radio traffic of the larger garrison stations gave so many insights into the course of the entire operation that one could follow events very perfectly from Europe. As in the case of the Italians and the Spanish, the entire handling of military traffic was guided solely by the idea of transmitting the information to the addressee quickly. The factor of disguise retreated entirely into the background. From a tactical point of view this was an error in any case, since even though it might be assumed that the natives in Libya and Morocco had no radio intercept service, and consequently could draw no advantage from enemy traffic (which is by no means proven), nevertheless, this represented a danger in respect to the training of the signal troops, a danger which was not to be underestimated. The same signal units, which were developing their radio traffic in this manner here, might be engaged at any moment in an entirely different theater of war. There was great danger that they would then operate in the same manner they did here.

THE INTERCEPT SERVICE OF OTHER EUROPEAN COUNTRIES

Not only had Germany placed great emphasis on its intercept service after World War I and built up a good organization accordingly, other European countries were also busily working in the same direction. However, the methods adopted were vastly different.

On the basis of its previous experience, France had built up a very good organization, the main part of which was merged with the Deuxieme Bureau of the General Staff. This handed out the various work assignments, and here also were to be found the cryptanalytic group and the evaluation center. The technical accomplishment of intercept work was in the hands of communication troops. The organization for intercept service in France differed from that in Germany in that the intercept stations installed in Germany from 1925 on formed themselves into special organizations and were never used for domestic radio traffic, while the French many times entrusted their domestic military radio stations with intercept duties as well. This was a great mistake, for it happened again and again that the radio traffic of these stations showed that they were also engaged in intercept work. For example, they would request certain forms which were only used in intercept service, or they gave information on equipment which also was

used only in intercept service, and so on. The knowledge obtained from observing these French radio stations was so far-reaching that in 1931 the German intercept service was very well informed on the French intercept service, its organization and practical accomplishments. The organization of these intercept stations was very clearly recognized.

While in the French intercept service the focal point was directed toward the observation of radio traffic of foreign armies, the English worked in two different directions, namely, in observation of all radio traffic of all nations in the world, and in complete coverage of the international political (diplomatic) radio traffic. The last-named field was, of course, also cultivated by other countries, but in no country in such a comprehensive and strictly centralized manner as in England. Accordingly, their results in this field were undoubtedly the best in Europe, since the English placed great emphasis on the selection and training of personnel.

The Italian intercept service presented a picture of rather extreme laxity. The Italians had erected a legion of relatively small intercept stations along the French and Austrian borders, and in addition were operating several such stations in southern Italy. The control station with its auxiliary organizations was located in Rome. From a technical standpoint, the Italian intercept stations were well equipped; but their organization and the processing of material was deficient. Also, their cryptanalysis was in quality far behind that of the English, Germans, and French.

In the four military districts of Czechoslovakia, all the larger garrison radio stations were integrated for intercept service. The Czech intercept service operated not at all badly, but it made the same mistake as did the French, by compromising itself through the radio traffic of its own intercept stations. The Czech intercept service was connected with many of the traditions and experiences of the Danube Monarchy, and maintained excellent cooperation with the French intercept service.

Strange to say, the new government of Poland had one of the best organizations. Indeed, I would like to say that this organization was really better than that of the French. Here there was a clear separation between radio service and the interception of foreign radio traffic, so that no compromises could take place by radio transmission. Occasionally officers of the Polish communication service were ordered to France where they participated in intercept training courses. Since France had gathered abundant experience in World War I, this training was extremely advantageous. On the other hand, the Poles themselves had already had opportunity to gather practical experience which was now turned to good account. Poland maintained a still more intensive cooperation with the French intercept service than did Czechoslovakia.

The Russian intercept service had the most obscure organization. That they attached great importance to it, however, was shown by the fact that in all communication formations they had large contingents for purely military intercept service. How the watching of foreign diplomatic and military radio traffic was carried out as a peace measure is shown

only indirectly by the fact that they made use in their own radio traffic of all experience gained from the mistakes made by all other countries. For the rest, it appears that the organization was very simple but for that very reason was more rapid and exact in operation.

The Austrians and Hungarians had also established a very usable intercept organization in their countries. The Hungarians as well as the Germans laid stress on the political side, while the Austrians looked beyond this and directed more attention to the military side of the intercept service. In cryptanalysis the Hungarians were far ahead of the Austrians.

The cooperation of the intercept services of the different European countries presented a fascinating picture. The German intercept service had since 1926 cooperated closely with the Hungarian service - particularly in regard to diplomatic decipherment. The cooperation of the cipher bureau of the Defense Ministry with the cryptanalytic bureau of the Hungarian Honved Ministry was closer and more intensive than that with the Foreign Ministry in Wilhelmstrasse.

Late in 1929 cooperation started haltingly between the Germans and the Austrian intercept service, which was beamed especially toward Italy and Czechoslovakia. About the same time cooperation began between the German and Finnish intercept services, maintaining a united front against Russia. Since the Finnish intercept service on its part also cooperated with the Polish service, very ticklish situations sometimes arose. The German intercept service also maintained after 1930 a certain amount of cooperation with Lithuania. This was directed against Russia as well as against Poland, but was accompanied by a great deal of mutual suspicion.

Only occasional cooperation existed between the German and Spanish intercept services. It was directed against France and England and was chiefly sponsored by the German naval intercept service. After 1933 collaboration was also brought about between the Italian and the German services, especially in the field of cryptanalysis. There has probably seldom been a cooperation which from its very beginning was marked by such strong mutual suspicion as this. Directions were always given on both sides to exhaust all intercept possibilities of one's partner, but to reveal nothing yourself.

The French maintained good cooperation in intercept work with Poland, Czechoslovakia, Rumania, and Yugoslavia, and occasionally also with Switzerland.

The English cooperated with the Norwegian and Danish intercept services, and also in part with Portugal. Essentially they worked only for themselves, which was easy for them since they were in a position to establish intercept stations throughout the world in their own possessions.

Between Poland and Czechoslovakia as well as between Poland and Rumania there also existed a cooperation which sometimes became quite far-reaching. But in all the above-mentioned cases, this never kept the contracting partners of the moment from actively monitoring each others traffic. One of the

closest forms of cooperation probably existed later during World War II between Germany and Hungary and between Germany and Italy. And yet these three countries watched each other so closely that a large part of each monitoring organization was burdened with this work.

SOME REMARKS ON THE TECHNIQUE OF THE INTERCEPT SERVICE

If in what follows something is said regarding the technique of the intercept service, then this does not mean the technical apparatus by the aid of which the stations to be observed are monitored, but rather the technique of practical commitment for the monitoring of foreign radio stations and the processing of the material intercepted.

For the observation of fixed radio stations abroad there were in Germany in 1926 six so-called "Fixed Intercept Stations"; one each in

Königsberg in East Prussia,
Frankfurt on the Oder,
Breslau,
Munich,
Stuttgart,
Münster in Westphalia.

The monitoring of foreign stations was generally divided up by countries, thus Stuttgart monitored France, Spain, and North Africa; Munich monitored Italy, Switzerland, Austria, and a part of the Balkans, etc. Along with this, however, for technical reasons those stations which were difficult to hear were assigned to the intercept stations where they could be heard best.

Not quite so easy to solve was the question of monitoring the radio traffic when maneuvers were held abroad. For this purpose, detachments had to be set up which were pushed forward to the frontier. In this connection, the areas of commitment depended primarily on the area in which the maneuvers to be observed were taking place. Besides this, the following factors had to be considered: reception conditions in the places where the stations were set up; wire connections available for transmission of the observed results; and above all, electromagnetic conditions for employment of direction finders. The locations for the direction finders had to be selected very carefully if the readings were to prove reliable. Furthermore, it was very important, when employing direction finders, to know in which direction the maneuver parties would move. If the maneuver ran off in such fashion that the two parties moved parallel to the direction finding base, then it was relatively simple to keep the radio stations apart and to determine their locations. On the other hand, if the parties to the maneuver moved on a line vertical to the direction finding base, then the resulting angle was generally so acute that an error of 1° in a reading was often enough to cause wrong conclusions. Therefore, it was not at all simple to differentiate the two parties to the maneuver by direction finding. And within the one party matters often lay so that small errors in the reading were enough to give false conceptions regarding the grouping of this party. In such cases, it was necessary to choose a relatively broad direction finding base.

However, this was limited by the audibility of the radio stations. The best possibilities resulted when a maneuver occurred in an area which could be surrounded, so to speak, by direction finders. This was usually the case, for example, when observing Polish maneuvers, since here the opponent could be taken in the flank from East Prussia.

Until 1936 a great obstacle to the observation of French maneuvers was the so-called demilitarized zone, in which no organs of the German armed forces were to be employed. From 1926 on, there were camouflaged operations here each year, whereby the units committed were represented as technical surveying detachments of the German Broadcasting Company, of the German postal districts, or of the German Central Post Office. Persons participating wore civilian clothes. So far as I know, complete disguise of the commitment was achieved in all cases; at least, the French never raised any objections through diplomatic channels.

Of the utmost importance was the manner of carrying out evaluation of the intercept results, since the work was so planned as to keep step at all times with the development of the operations so that, for example, the fruits of the day's activities should be available late that evening at the central evaluation office. This called for precise work on the part of the communications service, and for intelligent cooperation by the various branches of the evaluation service. The reports of direction findings were passed every hour by telephone to the evaluation center and were processed there. On a large map the locations and movements of the radio stations which could be heard were marked by colored pins. Traffic evaluation endeavored to recognize from the relations of the radio stations to one another the framework of the command net of the parties. The cryptanalytic section meanwhile worked feverishly to solve the cryptographic systems employed, and to decipher the radiograms sent. The content evaluation section tried to deduce tactical conclusions from the content of the intercepted dispatches, while the final evaluation section combined the results of all the above-mentioned branches, and endeavored to gain a clear picture of the course of the movements.

We must say that the monitoring of foreign maneuvers by the German intercept service during the period from 1928 to 1939 was attended by great success. The most favorable period lay between 1931 and 1937. Of the 52 maneuvers and large scale exercises covered in this period, the German intercept service achieved a complete reconstruction in 35 cases, a good partial reconstruction in 12 cases, while the results in the remaining cases were still good enough to yield useful information.

THE CHANCES FOR THE INTERCEPT SERVICE

The monitoring of the radio traffic of foreign armies and air forces afforded an excellent opportunity for a comparative estimate of the radio procedures employed in the various countries. Spontaneously the question arose, to what extent the radio traffic of an army would be vulnerable, so to speak, to the enemy intercept service, i.e., to what extent it was likely to afford the enemy information. Around 1936 all the European countries

could be divided into three groups, and it is very tempting to compare these groups with one another.

To the first group belonged those countries whose radio traffic gave the most information and which consequently in case of a future war would be likely to offer welcome targets for a hostile intercept service. To this first group belonged Italy, France, Austria, Belgium, and Holland.

To the second group must be assigned those countries where the armed forces worked according to radio procedures which were likewise calculated to offer good information to a watchful intercept service, but by no means to the same degree as the countries in the first category. Here belonged primarily England, Czechoslovakia, and Yugoslavia.

To the third group belonged those countries where special attention was given to the camouflaging and disguising of radio traffic, and where these measures were so far developed that information of a tactical and operational character could be obtained to only a slight extent. In this category one must assign primarily Russia and Poland.

Before defining more precisely our position in respect to the several groups of countries, some remarks may be in order regarding radio procedures in general. The oldest and simplest procedure, which was used especially in World War I and had been retained by the countries mentioned in the first group above, is the so-called circular traffic (Kreisverkehr). Here a certain number of stations communicate with one another on a common wave length, using fixed call signs. The call signs may be changed daily, but are fixed for any one radio station insofar as its call signs remain the same in communication with any other station. This system is very convenient for practical radio communication, and affords a large degree of security for the transmission of the message. However, it has the unmistakable disadvantage that the enemy intercept service very soon recognizes the connections between the radio stations and can easily draw from them deductions as to tactical relations.

Another system is the so-called star traffic (Sternverkehr), where a definite number of stations communicate with a control station. In this system various call signs and wave lengths can occur.

A third method is termed net traffic (Netzverkehr); it is similar to star traffic in its use of wave lengths and call signs, but differs in that the radio stations communicate not only with a control station but also among themselves. The two last mentioned systems make the work of the enemy intercept service much more difficult because the relations within the command net are not immediately obvious, since in every traffic direction a different call sign and a different wave length will be used; a considerable amount of observed traffic is necessary to be able to reconstruct a tactical or operational command net on the basis of the traffic handled and the direction findings obtained.

It is still more difficult when so-called line traffic (linienverkehr) is introduced in an army; here only the radio traffic of two stations with

one another is recognizable, since for each so-called radio link a particular instrument is employed with its own wave length and its own call sign. If in this case, as happened in Poland and Russia, several call signs are used optionally by one and the same radio link, and if traffic in the two directions is worked on different wave lengths, with daily change of wave length and call sign, then recognition of the relations is possible only if an extraordinarily large number of very dependable direction finding readings is available, or if the type of traffic sent permits some deductions. If neither of these conditions is satisfied or is satisfied only to an inadequate degree, then we no longer get on the evaluation map of the enemy's intercept service a picture of a coherent command net, but simply a large number of individual links totally without connections, and with these nothing can be done.

While it is possible to reconstruct the tactical and operational command net from the traffic of an army working with circular traffic, even when it is not possible to get a single plain text message or to solve quickly the cryptographic system used, it is generally impossible to work out the command net without a knowledge of the content of the messages when line traffic is used.

Of very great importance in disguising radio traffic is the manner of using call signs and wave lengths, or of the system according to which tables of call signs and wave lengths are constructed.

I just used the word "system", and precisely in this there is a trap. If a table of call signs and wave assignments is constructed according to a system (i.e., with a periodic recurrence of the same call signs or wave lengths in a definite rhythm), then the enemy is in a position to recognize this system after a time, to reconstruct the table, and the disguise that was aimed at becomes unavailing. The temptation to work according to a system is very strong, however, since the use of such a table is extremely practical for the operator and for handling a change of call signs and wave lengths. It is possible to change such tables relatively often and without great difficulty. Furthermore, the preparation of such a call sign table is easy. If it is lost in any manner, it can be reconstructed quickly. When using call sign tables which are without system the difficulty lies in the fact that a single table must be prepared for the entire army in order to avoid repetitions of the same call sign. In spite of its relative simplicity, the production of such a table, is very time consuming and must be carried out most conscientiously, if subsequent errors are to be ruled out. If such tables are lost, then the damage cannot be calculated, since the production of new tables always calls for a great deal of work and their introduction entails a whole avalanche of changes in the army. Nor can one keep such tables in stock in any desired quantity.

These technical questions have only been indicated here in a rough way in order to show the significance which the use of a specific radio procedure may have on the disguising of traffic. However, there are still other factors affecting to a large degree the camouflaging of traffic. One of the chief of these is the organization of the communications troops of an army. In this respect the various countries of Europe differed very greatly from

one another, and the organization ranged from one that was greatly centralized to one which was entirely decentralized.

France had the centralized type of organization with all communications troops combined into three regiments from which detachments were sent, according to need, to the individual divisions, corps, and armies. On the other hand, there was great decentralization in the Soviet Union where every division, every corps, and every army had its own signal unit. From the standpoint of disguising radio traffic, the decentralized organization is unquestionably better since it is better suited to take into account the practical needs of radio operation, e.g., no previous "tuning up period" is required. In France, for instance, when large scale maneuvers were held, communications companies were assigned to the divisions committed and these companies had to set up their traffic for these divisions, starting from scratch. Consequently, it was often possible to recognize the radio net in the maneuver area before the maneuvers actually began. In Russia such a thing was impossible. But this phenomenon was not limited to the initial stage of the commitment but in many respects continued on. With centralized organization the signal unit always remained a foreign body within the framework of the unit, while with the decentralized form it was organically fused with the unit.

The above-mentioned criteria and a number of other factors were decisive for the question of the extent to which it would be possible for an intercept service to get insight into the radio traffic of one of the European armies or air forces in case of war. They could not fail to have a decisive influence in any future war.

Within Group I the Italian armed forces undoubtedly took the lead, and there was not the slightest doubt that in any future war the radio traffic of the Italian army and of the Italian air force would give the enemy most valuable information. Not quite so bad, but still very informative, was the situation in France, Austria, Belgium, and Holland. The circular traffic employed here, the frequent transmission of plain text, the use in France of no less than 78 different types of radio apparatus, the use of signal tables - which were very easy to solve - for brief tactical reports, the tendency to be systematic in the construction of tables of call signs and wave lengths, and many other things, made it certain that in a war between Germany and the countries just mentioned the intercept service would have the best of success in gathering intelligence.

With regard to the countries of Group II the prospects for a foreign intercept service were distinctly less favorable. In England, moreover, the use of short and ultra short waves had been greatly developed, so that it was rather difficult to fix the location of the transmitting stations. Furthermore, England, Czechoslovakia, and Yugoslavia strove to make as little use as possible of radio traffic. It is true that Yugoslavia worked basically according to French methods, but there was a certain timidity about employing radio telegraphy, and this timidity was based on unhappy experiences which Serbia had had in World War I when the Austrians monitored all Serbian traffic and derived the best possible information therefrom.

Russia and Poland were the countries where the disguise of radio traffic had been developed to the greatest possible perfection, at least in the army. From traffic of the airforce of each of these countries it was still possible to get good information; on the other hand, through intensive training and a model organization of pre-military operator training, a point had been reached where radio traffic took into account the needs of its own command for the transmission of messages and also achieved very good disguise. Long before World War II it could be recognized that these two countries had learned a great deal from their experiences during World War I and the post-war period; it was certain that in a war with these two countries the intercept service could only count on very modest results.

The preceding remarks force us to recognize not only that the central organization of a well-functioning intercept service cannot merely limit itself to studying and evaluating the radio traffic of a foreign country, but that a very extensive training of the personnel employed in the evaluation staff is necessary. Even in peacetime one must have an absolutely clear picture of the organization, tactics, equipment, and training of foreign communications troops; must know the systems according to which they work; must get practice in reconstructing their tables of call signs and frequencies; and must maintain constant touch with the cryptographic systems put into use. For intercepting and evaluating the radio traffic of a foreign armed force, a large number of aids must be prepared which, in the event of war, will allow the personnel employed to secure the necessary insight within a short time.

In this last-mentioned direction, it happens that in Germany some very good preliminary work had been done by 1936. However, in the train of the rapid rearmament, it was so badly battered by a personnel policy, which in some cases was handled in a downright senseless fashion, that at the outbreak of World War II the German intercept service took the field with the same materials that had been produced between 1930 and 1936. In most cases these could only be regarded as antiquated.

THE "FORSCHUNGSAMT"

It was in the first weeks after the assumption of power by National Socialism that Hermann Goering in Berlin set about realizing a plan which was calculated to give the government and the dominant party such far-reaching insight into the thoughts, feelings, and aspirations of the entire German people as had never been known in all history. Compared with this plan, the informer methods of Metternich and the French Minister of Police, Fouche, had been amateurish experiments.

It was Goering's intention to create an organization which would cover all channels by which an exchange of information or ideas took place within Germany. Furthermore, by intercepting all means of communication of foreign countries which were open to tapping, an opportunity was to be provided for securing extensive information regarding the situation abroad.

This last-mentioned idea had already been realized in two forms, since the interception of the radio traffic of foreign countries and the exploitation of the material thus obtained was being carried on both in the Foreign

Office and in the Ministry of Defense in Berlin. These two Ministries were Cabinet Ministries, however, and it was Goering's intention to build up an organization which would service and be bound to the Party on the one hand, and to his own person on the other. There was therefore no hundred percent confidence in what was being done in the Defense Ministry and in the Foreign Office, and instead of unifying and combining the double organization of the intercept service and thus creating a competent one, Goering decided to let these two offices of the intercept service continue to exist, and to set up a third one alongside them which should be at his personal disposition.

In order to realize this idea, it was necessary to find trained technical personnel; without long deliberation recourse was had to the Cipher Bureau of the Ministry of Defense. Here there was a naval lieutenant, by the name of Schimpf, who had been serving for some years as liaison officer between the naval intercept service and that of the army, and who was a personal friend of Goering and a convinced Party member.

Schimpf had for some years played the role of a silent observer at the Cipher Bureau, and had organized within it a National Socialist Party cell without any word of this having leaked out to the outside world. He had made a few trips abroad, had arranged for collaboration between the German intercept service and that of the Italian armed forces, and had also set up a small illicit German intercept station on a private estate near Barcelona in Spain. This intercept station was working primarily for the navy and had the mission of watching shipping in the Mediterranean. It was also supposed to listen to French radio stations in North Africa and in the southwestern part of France.

In connection with these trips, Schimpf had established contact with Party organizations in Italy and Spain, and had made a great many connections with leading personalities. It was Schimpf who was entrusted by Goering with the formation of the projected surveillance organization. From the officers and civilians in the Cipher Bureau, he immediately selected a group of eight persons, all reliable Party members, who were to be the key men in the new office.

This new office differed, as indicated above, from the corresponding organizations of the Foreign Office and the Ministry of Defense through the fact that the two last-named limited themselves to the interception of foreign radio traffic, and thus were organizations such as were customary in all countries, while the office planned by Goering turned its attention to the interior, and was intended to penetrate all means of communications existing within Germany or leading from here to foreign countries. This meant, therefore, the monitoring of every type of radio connection, of all means of wire communication within the country, and of all wires leading over the frontier; it also meant watching the press, magazines, and all other printed material, the surveillance of letters, and the interception of conversations carried on without the use of wire connections, this latter by installing microphones in particular rooms.

Schimpf and his collaborators went to work about the middle of March 1933. In Berlin, in Behrendstrasse, a building was requisitioned and the

central office of the new service was set up here. It received the cover name "Research Bureau of the German Air Ministry" ("Forschungsamt des Reichsluftfahrtministeriums"), although it had absolutely nothing to do functionally with the Air Ministry, but was directly subordinate to Goering. In between stood the then State Secretary Koerner.

For listening to all foreign radio traffic (except military) and to illicit transmitters within the country, a system of intercept stations patterned after those of the army was distributed over all Germany. At the headquarters of all postal districts and at all cable junctions so-called postal surveillance posts were established where it was possible either to listen in or to copy. In this way all wires leading out of the country were covered as a matter of principle by switching in, in parallel, a recording device. No telegram of any foreign diplomatic representative in Germany could now get out of the country without a copy going to the Forschungsamt in Berlin. That applied to all enciphered telegrams, as well as to all messages in plain text sent to a foreign address by anyone whomsoever in Germany.

Special value was attached to the interception of the telephone conversations of government officials and of those holding high offices in the state and in the Party service. For this purpose a number of listening posts were created, some large, some small. Gradually an enormous, invisible spy net was spun over all Germany. No officer, no official, no government employee, no Party functionary, and no person of any importance could telephone from now on with any assurance that his conversation was not listened to.

Of course, the German public had no suspicion of all this. Even high and very high offices in the state knew nothing about the Forschungsamt, or had only very nebulous conceptions of this agency. Furthermore, the cover name "Research Office of the Air Ministry" had been so well chosen that anyone would have been led to believe it to be a purely technical agency.

The Forschungsamt paid special attention to the Ministry of Defense and to the commands of the military districts. Here most of the telephone conversations carried on by higher officers were listened to; moreover, there was established a system of "confidential agents" whose duty it was to gather information and pass it to the Forschungsamt.

The surveillance of general delivery letters formed a large part of the work of the Forschungsamt.

The house in Behrendstrasse was only intended as a provisional and temporary solution of the housing problem. While they began organizing the new task in this location, a former hotel, "am Knie", in Charlottenburg was remodeled for the purposes of this agency. The technical organization of the "Haus am Knie" was carried out according to the most modern principles. Postal pneumatic tubes, teletype installations, soundproof rooms, listening centers, switching devices, etc., came into being here which were installed on the basis of all previous experience in the field of interception. Toward the end of 1933 the agency moved into this house.

In the meantime, the personnel and materiel of the cryptanalytic section and the evaluation center had been increased and their work had been begun late in the summer of 1933.

At the outset, the Forschungsamt tried to work in conjunction with the Cipher Bureau of the Ministry of Defense and with Bureau C of the Foreign Office, but soon met with a cold shoulder since the Forschungsamt intended as a matter of principle always to be the recipient and never the giver. It was only a short time before there was an open break, and the cooperation continued only in a purely formal way, with each party endeavoring not to let the other gain any insight into its own work.

In the first phase of the work of the Forschungsamt, a number of special objectives arose on which work began. One of the most essential was the surveillance of the Officer Corps of the Ministry of Defense and of the armed forces in general. The second target comprised the high leaders of the NSDAP and their formations, since it was believed that one could not absolutely rely on the loyalty of these men. The third target was the Catholic Church with all its institutions and the surveillance of the communications of the Vatican with Catholic organizations or personalities within Germany. In this activity they found at that time traces of various money transactions of Catholic monasteries, and the flood of so-called foreign exchange suits and other measures directed against the Catholic monasteries had its origin in the activity of the Forschungsamt. The fourth target was the German People in general, and particularly all persons who had formerly been active in political life, in trade union movements, in labor organizations, and the like. There was close collaboration with the Gestapo.

In creating the Forschungsamt, Goering had intended to use this instrument exclusively for his own purpose. However, the nature of the work soon brought it about that Himmler attempted on his own initiative to gain an influence over the Forschungsamt and its activity. This soon led to a rivalry between the two men which at times took on a serious character. In time Himmler succeeded, however, in getting a stronger and stronger influence, so that gradually power in respect to the Forschungsamt passed from Goering to Himmler.

The first great "justification" of its work was achieved by the Forschungsamt in connection with the Roehm affair. Roehm and his adherents, as well as the group in the Ministry of Defense which was opposed to National Socialism, had been watched constantly since the end of 1933. Every telephone conversation of these people, every letter written by them, and every other utterance was recorded; in time, a veritable mountain of material could be gathered in this way in the evaluation center of the Forschungsamt. In the case of many of these men, there had been installed in their private rooms microphones which were concealed in regular telephones, table lamps, chandeliers, electric clocks, etc. It was at that time that the first serious contact with Himmler resulted; he used the work of the Forschungsamt, in conjunction with Goering, to eliminate troublesome opponents. The evaluated material was cleverly pieced together and laid before Hitler, who then instituted that celebrated blood purge of 30 June. In the train of this action fell General von Schleicher,

General von Bredow (former Chief of the Defense Section), and other officers. Schimpf, who had meanwhile become a councilor of ministerial rank (Ministerialrat), secure for himself by this action a position of great power but also a number of enemies who had to be taken seriously.

To that period belongs also the attempt on the life of the student, Bell, in Kufstein, which was organized on the basis of information from the Forschungsamt; the action against Professor Lessing in Karlsbad and the kidnaping of Jakob Salomon were also due to the activity of the Forschungsamt.

In mid-April 1935 the following occurred: Ministerial Councilor Schimpf, who until then could almost always be reached by telephone, had suddenly "gone away for an indefinite period," and the information one could get was put so strangely that it was impossible to keep from feeling that something or other was wrong at the Forschungsamt. Soon rumors began to circulate, and one day it came out: Schimpf was dead.

The first version was an auto accident; the strange thing about that was that the statements regarding the place where the accident was supposed to have occurred differed widely. First it happened in Silesia, then in Berlin, then in Königsberg. Soon afterward it was learned that Schimpf had committed suicide. However, the case was the same as with the auto accident. At least a dozen hotels in Breslau, Königsberg, and Berlin and environs were named, in which the tragedy was supposed to have occurred. One story was that he shot himself; the second story was that he killed himself along with a lady friend, but even here there were so many variants that it was immediately obvious that the spreading of these rumors was only intended to veil the truth.

In its propaganda activity National Socialism always made the mistake of working too clumsily. It did not satisfy these people to work out a version of a story and then spread it consistently, instead they always tried to spread a haze, and to cause confusion by a whole collection of different stories. Thus it was with the burning of the Reichstag; thus it was on countless other occasions; thus it was later on in the Hess case; and so it was in the case of Schimpf. But the very clumsiness which underlay this propaganda generally resulted in letting people get on the right tract fairly soon. It was not long before the following facts were known: for his eavesdropping on the Ministry of Defense Schimpf had smuggled a number of confidential agents into the bureaus of this ministry or had recruited persons there for his work. In March 1935 one of these agents had extracted an exceedingly important document from a safe in order to turn it over to the Forschungsamt for a short time for inspection. As chance would have it, this document, along with several others, was needed a few days before Easter; they looked for it and could not find it. An investigation, which was started immediately, cleared up the affair, and it was reported to the then Minister of Defense, von Blomberg. Blomberg, who was already in opposition to Goering and Schimpf, was extremely perturbed and used the occasion to make before Hitler a violent attack on the Forschungsamt. The matter ended with Hitler's dropping and disavowing Schimpf.

On the day after Goering's departure on his wedding journey, Schimpf was found in Gruenswald not far from Potsdam with a bullet hole in his head.

There can be no doubt that Schimpf did not commit suicide but was put out of the way by the Gestapo as one who knew too many secrets. Schimpf was a happy fellow who was extremely fond of life, and who would never have taken a moral reprimand as an occasion for leaving this world. But Schimpf had become not only unbearable but downright dangerous to Goering and Himmler, and he had to disappear.

Goering prepared for him a great cremation ceremony at the crematory in Wilmersdorf, and sent a gigantic wreath of laurel with ribbons bearing the inscription: "To My Faithful Collaborator Hans Schimpf in Gratitude Hermann Goering." State Secretary Milch delivered an address. Then followed a salute of honor. The "Voelkische Beobachter" carried an article glorifying the "untiring old fighter of the National Socialist Movement and faithful collaborator in the building of the Third Reich."

The Ministry of Defense sent no representative to the cremation ceremony; Schimpf's former comrades were forbidden to participate.

The work of the Forschungsamt found its second justification in connection with the Tukhachevski case, concerning which we shall speak at a later opportunity. In this action the leading role was in the hands of the Forschungsamt, where, as successor to Schimpf, Prince Christoph of Hesse had been appointed chief.

The Forschungsamt had a third opportunity to prove the "worth" of its work in a big way when late in 1938 the great housecleaning was undertaken in the then Ministry of War. Von Blomberg, Baron von Fritsch, and a number of other officers of high and very high rank had to quit the field. This was Goering's revenge, and the revenge of the Forschungsamt for the Schimpf case.

After what has been said, no one will be surprised to hear that this agency was also eavesdropping on Ribbentrop's Foreign Office in Berlin by the use of microphones it had installed. Hardly anyone will be astonished to hear that the installation of these microphones was undertaken over a period of weeks in the calmest fashion by men commissioned by the Forschungsamt, without a single official in the Ministry having noticed anything.

The work of the Forschungsamt played a very important role in penetrating the entire inner structure of the government in Austria before the German occupation. For this task a special subsection was formed, and from here the penetration of the entire communications system of Austria was accomplished by the Forschungsamt. They had an easy time since a large part of Austrian officialdom proved quite ready to aid in this respect. For instance, all telephone conversations carried on within the ministries, the content of all telegrams sent to representatives abroad, and the content of many important documents were channeled to the

Forschungsamt. They even went so far as to betray to the agents of the Forschungsamt practically all the cryptographic systems used by the Foreign Office in Vienna, by the Austrian armed forces, and by the Austrian police. The Austrian telephone and telegraph cables leading through the Berchtesgaden area were tapped by representatives of the Forschungsamt.

During the war there were countless opportunities for significant work on the part of this agency. To detail all these here would lead us too far afield. We shall only mention that the frustration of the action of 20 July 1944 and the disclosure of those participating in the conspiracy was due in large part to the surveillance activity of the Forschungsamt. At that time Himmler had already fought his way through to a victory over Goering, and the work of the Forschungsamt was directed according to his wishes; it was by no means an accident that Himmler was not present at the two conferences in the "Fuehrerhauptquartier" during which the attempt on Hitler's life was to be and was carried out. After 20 July 1944 Himmler was the undisputed master, even in respect to the work of the Forschungsamt.

THE FORMIS CASE

The SA-Man, Formis, had faithfully and studiously done his duty in his native Württemberg during the so-called "period of struggle." He had marched, had sung, and had diligently drunk beer on Party evenings. You could tell that by looking at him for his girth had increased so that when he took a bath he only had to fill the tub one-eighth full of water; if he then laid himself down in it, it was sure to be full.

Along with his liking for SA evenings, he had from youth up had another love, which was tinkering with the radio. And this he did with devotion and skill. Therefore his comrades and superiors in the SA considered him a radio expert. That led to his getting a job with the Stuttgart broadcasting station after the "assumption of power," and, to be sure, as announcer. And this office he likewise administrated henceforth with the requisite diligence.

Up to that point his career revealed nothing extraordinary and it might have remained so for the rest of his life, if serious injustice had not been done him by the Party and the SA in the year 1934. It does not matter to us what this injustice was; nor does it signify who was responsible for this injustice; it is certain in any event that Formis had been calumniated in base fashion and felt deeply aggrieved -- despite his usual cheerfulness and optimism. The spectacles of optimism and faith through which he had hitherto regarded everything that went on within the NSDAP and its formations has been shattered, and he now began to regard very critically what had hitherto been considered by him as an untouchable sanctuary. It was not long before Formis had a nose full - as the saying goes, so full that he thought he could no longer stand the stench of the new era in Germany, and betook himself to Czechoslovakia where he attached himself to the oppositional Strasser group or the "Strasser Movement."

Here in Czechoslovakia a so-called "Black Front" had been formed which was waging a bitter but hopeless struggle against the Hitler regime in

Germany. Formis with his knowledge and ideas came very opportunely for these people. With his aid they thought of setting up a propaganda broadcasting station in order to carry their own ideas and their agitation against Hitler and his system across the border to Germany.

So Formis went to work and within a short time constructed a shortwave transmitter for telephony, which was so small it could have been carried in a small handbag. He rented a room in a tavern in the vicinity of Prague and installed his radio station very skillfully in the upholstery of a big armchair, so that outwardly nothing could be seen of the entire apparatus.

After these technical preparations had been completed Formis was supplied twice a day by the information section of the "Black Front" with news which seemed suitable for propaganda work in Germany. Formis himself saw to the transmission, and served as announcer.

The transmitter was very soon heard in Germany and it was astonishing to see how many listeners this first anti-Hitler German broadcaster found within a very short time. People were whispering to one another: "Have you heard? Wave 31 m! Evenings at six and mornings at ten! Very interesting! But psst! Don't betray anything!"

And so they listened with pleasure to the new transmitter of the "Black Front." They really enjoyed hearing a voice at last which ventured to speak against this new regime of force which suppressed all criticism.

Compared with present day standards, the transmissions of Formis were not brilliant performances. At that time no one had any experience in this field. But at that time, in 1935, they were a sensation and a dangerous one.

The intercept stations of the army and of the police, in conjunction with the organs of the Forschungsamt, monitored the new sender for the purpose of ascertaining its location and of picking it up if possible. But this was more easily said than done. Getting bearings on shortwave transmitters was still in its infancy in those days. They got the most varied directions and for a time were of the opinion that the transmitter was located in Hamburg. Other readings pointed to England or southern Germany. A good many of the readings did point to Czechoslovakia, and to be sure, to the general area of Prague.

In his broadcasts Formis tried to give the impression that he was in German territory. "We are standing here at the microphone," he said once, "and beside us are 600 pounds of dynamite. If those black dogs come (he meant the SS), they will be blown up along with us." Another time he said: "We here in Germany... ." or: "When we look out of the window and see those brown rascals passing by...."

A few times he did make a slip and used expressions which gave the impression that he was outside the boundaries of the country. Only one never knew whether this was done intentionally to mislead.

The newscasts of Formis testified to the fact that there must be a smoothly functioning, fairly sizeable information organization behind him. He was always very well informed on all happenings within the Party and the government and its organs. The general tendency was toward an overthrow of the Party government and the abolition of the entire system. "Brown is the..., and Hitler is leading us to... ."

After some months of observation the Forschungsamt had ascertained by direction finding the approximate location of the transmitter. The exact location could not be determined, however. An accident helped them get on its trail.

Hitherto, no one had any idea who the announcer might be. However, Formis had a characteristic manner of speaking, and in the Forschungsamt, whose intercept stations were monitoring this transmitter, there was an official who had formerly been well acquainted with Formis. He listened to the transmitter several times and came to the conclusion that the speaker could be none other than Formis. Now a Gestapo man was sent out into the region where the transmitter must be located. After a few days he had gotten on the trail of Formis.

Now the Gestapo was determined to pick up the station. But that was not so easy, because it was located in Czechoslovakia, that is to say, in an independent country where the Gestapo had no possibility of making a raid. It was impossible to count on any cooperation by the Czech police.

Since there was no way of taking action in "legal" fashion, they resolved on an illegal act of violence. They inquired carefully about Formis habits. An official of the Gestapo took a room in the same tavern and watched the man. After they had gotten sufficient clarity, an auto with two other specially selected Gestapo agents was sent out to the place where the transmitter was located. The action was carefully prepared in every detail. Formis was to be over-powered and brought to German territory.

At the appointed hour, at six o'clock in the evening, i.e., at transmission time, the auto arrived in front of the inn. All three Gestapo agents rushed into the house and into the room. Formis attempted to defend himself and then tried to escape through a window but was shot during the melee. The Gestapo men now climbed into their car again and sped away to the frontier.

The occurrence became known instantly and all Czech border stations were instructed by telephone to stop the car with the perpetrators. This was done. The German Government, however, immediately intervened with all possible pressure and the Czech Government, which did not desire any serious incident, gave instructions to let the three men go.

This encroachment by the Gestapo caused great agitation in Czechoslovakia. In Germany there were many people who continued for a long time a fruitless search on their radio dial for the transmitter of the "Black Front" until they finally became convinced that all their efforts were in vain.

THE THILO CASE

It is certainly not an everyday occurrence that a man has the given name Thilo. But in the present case not only should the name of the man be classed as a rarity but the whole affair can lay claim to being rather unique.

One day in the spring of 1926 a man was engaged at the Cipher Bureau of the Ministry of Defense who had the given name Thilo, and who was the brother of a major in the General Staff who was then functioning in the Ministry of Defense. Later on this Major occupied a very high position of command in the armed forces and for that reason the name will not be mentioned in this connection. It is enough if we speak henceforth of the "Thilo case."

Thilo was then, as already mentioned, employed in the Cipher Bureau and, to be exact, in that section in which cryptographic systems intended for use within the armed forces were compiled, reproduced, and distributed. Thilo had been a first lieutenant in World War I, had then married, and had had a soap factory and bone yard in the vicinity of Berlin. His business had gotten into difficulties during the economic crisis; Thilo had been compelled to close the doors of his factory, and had sought the help of his brother in getting a position.

As it soon turned out, Thilo was not one of those people who are in the habit of working over hard. Even his external appearance suggested that he was one who could take things easy, but in his work this was even more so. At least, that was the impression he made. In the morning he was the last to report for work, at noon the first to disappear for his meal; and approximately every second or third afternoon he had "something to do outside." In this manner he continued to work within the Cipher Bureau, without doing much, without making himself a burden to his colleagues, or displaying any ambitious tendencies. Very often he traveled as courier to the commands of the military districts, in order to bring the new ciphers to the appropriate parties when systems were changed. He supervised the printing of new keys and the recall and destruction of systems retired from use.

He did this sort of work until 1934. During that time certain mishaps occurred, due to Thilo's carelessness and as a consequence of his pronounced laziness; it was therefore decided to transfer Thilo to another section of the Cipher Bureau. The cryptanalytic section declined to receive him into its ranks; finally he landed in "evaluation" and, since he had some knowledge of the English language, was set up as a specialist in the English subsection.

Since Thilo had stood on an excellent footing with all his previous colleagues, he continued to maintain contact with the section for German cryptographic systems and still journeyed now and then to the commands of the military districts as courier. He also endeavored to continue his old style of work in the new section.

Of course that could not well go on in the long run, since the assignment was constantly growing and, in order to master the material, it was necessary to familiarize oneself with many questions concerning the British armed forces. However, neither kindly persuasion nor serious admonitions could move Thilo to familiarize himself more intensively with his field, and the end of the matter was that in 1936 he was dismissed from the service of the Cipher Bureau. It was all the easier to clear up the situation, since Thilo had expressed the intention of quitting the service anyway and of reopening his factory, since he had succeeded in getting together a considerable amount of money which would enable him, in the new economic situation, to get his enterprise going with some prospect of success.

So Thilo left the Cipher Bureau and began grinding bones and making soap. But the business did not last long, and one day Thilo faced the problem of having to look around for a new job. At the Ministry of Defense the doors were closed to him; accordingly he applied to the Forschungsamt, especially since he could prove that he was a good old member of the Party. In the fall of 1937 Thilo was engaged at the Forschungsamt and took up his work.

Two years later the Second World War broke out. Poland was subdued. In the summer of 1940 France was conquered and occupied, and at one of the railway stations in Paris the German troops captured a freight train filled with documents from the French Ministry of War and the Foreign Office which was supposed to have left for the south of France. The documents were taken to Germany where they began to sift and arrange them. Naturally this was done with characteristic German thoroughness, i.e., slowly. First of all lists and tables of contents were prepared and so a considerable time went by, before anyone found out in detail what had been acquired.

By the end of 1941 they had progressed so far as to ascertain that they had captured here a large number of documents from the French secret service. Now they set about a systematic evaluation of these documents and early in 1942 amid the mountains of papers they found a neatly arranged list -- provided with all details and giving the appearance of an almost Prussian thoroughness -- of those confidential agents who had been working for French intelligence in Germany. And lo, among other well-known names they found that of Mr. Thilo. But whereas in the case of the other confidential agents it was generally a matter of so-called small fry, since they had been paid off with relatively small amounts, there were very different sums entered in Thilo's account, which led one to infer that he had really been providing something. The last amount which had been paid out to him was the cool round sum of 100,000 German marks.

Now it is an open secret that the espionage service does not usually act very handsomely in paying agents. When sums of this magnitude were paid, only information could be involved which was of especially great value to a foreign power.

Now they began to follow up the affair and learned that our friend Thilo during the entire period of his activity in the Ministry of Defense had currently betrayed to the French liaison man in Berlin all the

cryptographic systems then used in the German army. Moreover, cryptographic systems, tables of call signs, details regarding the German cipher machines - all of which were intended for use in case of war - had traveled the same route. In the field of evaluation he had become more adept than anyone had suspected, since it was with the real understanding of an expert that he had brought to the knowledge of the French secret service all details respecting the organization of the German intercept service, regarding the systems of evaluation and their applicability, regarding the methods of German commitment for the observation of foreign maneuvers by the intercept service. Both the betrayal of the cryptographic systems and that of the call sign tables could not have failed to put the enemy intercept service into a position where it would be able to read all German radio traffic without difficulty. This was of inestimable value for the French; the betrayal of the assignment of the German intercept service likewise revealed to them the weaknesses of their own radio organization and showed them to what extent it was possible to penetrate into the secrets of their means of communication.

Thilo had, moreover, supplied the French with lists of those persons who might be considered as really competent and capable evaluators on the German side; from this it was possible to see that their number was exceedingly small.

Aside from the things already mentioned, Thilo had supplied the French with many other bits of information, which he had been able to secure easily since he was a familiar figure in the Ministry of Defense and the name of his brother opened doors for him anyway. During the period of his activity in the Forschungsamt, he had brought to the knowledge of the French the entire organization of that agency and a good many details regarding its work.

In view of the cooperation between the French and English intelligence service, it was self-evident that the English were also informed of at least a part of these deliveries of Thilo.

Thilo was arrested and his hearing revealed so many things that the interrogators never ceased to shake their heads. Before the case reached the courts, Thilo committed suicide in his cell.

Whether Thilo was working only for the French secret service or whether he had other connections will probably never come to light. The French at all events were not able to profit much from his work since the war sped across the country too swiftly. It is to be assumed, however, that the English were able to make use of much that Thilo had supplied to France.

It is interesting to note in this connection that the "Thilo Case" had a "side line" which was not without its humorous aspect. The counter-intelligence section of the Ministry for Defense had gotten on the trail of the work of a French agent in Berlin in 1930. They decided to play fake material into the hands of this man. For this purpose a sergeant F. was selected to act as middleman. F. was employed in the Ministry of

Defense as clerk and draftsman in the Cipher Bureau. He was now put in touch with the French agent, had to meet him now and then, and had to turn over documents or photographic copies thereof, which had been falsified or faked in the counterintelligence section. That went along for a while quite according to plan. But Thilo was very well acquainted with this sergeant F. ; they even worked for a time in the same subsection. In a clever manner, Thilo succeeded in transforming F. from a "fake" supplier into a "genuine" purveyor. From now on he betrayed to the French agent what was falsified, so that the French secret service was informed regarding the deception. The game continued for years. From the papers captured in Paris in the above mentioned train the double role of Sergeant F. was likewise revealed.

Thilo's treason gave the French intercept service an unheard of opportunity, for it made it possible to read all German military radio traffic over a long period. It gave the French at the outbreak of the war possibilities of a reconnaissance service in the ether which could not fail to have great consequences. Strangely enough, the French did not make full use of this chance. We get the impression that, relying on the memory of the decisive role of the French intercept service in 1914 and in the reassuring knowledge that they were in possession of the German ciphers and call sign tables, they neglected to do many things which they necessarily should have done, in view of the German superiority in personnel and materiel.

THE DEVELOPMENT OF THE GERMAN INTERCEPT SERVICE AND OF ITS CONTROL STATION AFTER JANUARY 1933

At the end of 1932 the control station of the German intercept service had reached a state in its organization and personnel which enabled it to direct the peacetime work of the intercept service rather well and to process the results. Immediately after the "assumption of power" by National Socialism in Germany, a development set in at the Cipher Bureau which gives the impression of being an advance, but in reality signified a retrogression.

This development moved in two directions; on the one hand, in regard to the personnel situation; on the other, in regard to the general organization. In the train of the rearmament which now began, people were constantly brought in who had not the slightest qualification for the intercept service. Their only merit was that they had been officers in World War I and wished now to reenter the German armed forces, which were being expanded. They were all officers who had served during the World War in the Signal Corps, but whose outlook was never broader than that of a company commander.

First they were brought in as civilians; then they got the designation "L-Officers"; and finally they became the so-called "E-Officers". They usually got credit for a good many years of service, and in consequence in many cases obtained a rank higher than that of the experts who had been in the service up to that time. This immediately brought a factor of

friction into the whole situation, and since the newcomers were often installed as section heads, after a short period during which they were to familiarize themselves with the work, while the previous section heads were subordinated to them, the joy of the old personnel in the work declined rapidly, especially as the new masters generally acted in a very presumptuous fashion.

In many cases gentlemen were engaged who turned out later to be very questionable characters. Thus, for example, in 1934 the Organization and Assignment Section of the Cipher Bureau was turned over to a new man who, up to then, had been selling typewriters, who had not the slightest idea of the technique and tactics of the intercept service, and who finally had to be condemned on account of various shady dealings. On the basis of documents captured in Warsaw after the occupation of Poland in 1939 another of these new gentlemen turned out to have been a former agent of the Polish secret service. In the meantime he had risen to the rank of major in the German armed forces!

Naturally, not all the newly assigned gentlemen were in this category; however, they were in most instances - looked at objectively - wholly unsuited and only had a desire to advance as quickly as possible and make a good career for themselves. Any feeling for careful scientific work was completely lacking on their part.

Any permeation of such sensitive organization as the evaluation and the cryptanalytic groups by elements of this sort naturally could not fail to cause serious harm. This was manifested in the case of the evaluation group, for instance, in the fact that henceforth there were more maneuvers covered and more official journeys made, while the results were far inferior to those of the earlier years.

In respect to the organization of the intercept service, the measures which were now put through were likewise such as to cause serious concern. The creation of the Forschungsamt, concerning which we have reported, withdrew from the control station of the German intercept service a considerable number of good men without any corresponding reduction in the assignment. For, although it had been stated originally that the monitoring of all diplomatic radio traffic would now be taken away from the Cipher Bureau of the Ministry of Defense, there was actually no change in the picture.

A little later some members of the Cipher Bureau wandered off to the Ministry of Propaganda. Moreover, the newly created Air Ministry now set up an intercept service of its own, and again drew away a certain percentage of the old, trained personnel of the Cipher Bureau. In this case, too, there was no change in the assignment of the Cipher Bureau, since it had to continue to monitor the radio traffic of foreign air forces just as before, because there was no possibility, either in intercept technique or in methods of evaluation, of separating the monitoring of traffic of foreign armies from that of foreign air forces.

A little while before the outbreak of World War II, the control station of the German intercept service was again split up; this time by

assigning one half to the High Command of the Army while the other half was left with the High Command of the Armed Forces. Instead of creating one great, competent, central intercept organization, one was thus breaking up the little old organization more and more from year to year, and was filling out the gaps by engaging unsuitable personnel. At the outbreak of World War II there were intercept organizations in Germany with the High Command of the Armed Forces, with the High Command of the Army, with the High Command of the Air Force, with the High Command of the Navy, with the Forschungsamt, with the Security Service, with the Ministry of the Interior, with the Police, with the Ministry for Propaganda, with the Foreign Office, and with a whole string of other agencies and offices. Only in very rare instances could one speak of any sensible cooperation among them, In general, they worked at best side by side with an enormous amount of superfluous and avoidable duplication.

The same dissipation of energy was also found within the Cipher Bureau, which was supposed to be the control point for the entire intercept service of the armed forces, but which in reality had not the slightest authority to impose its wishes on the intercept services of the three branches of the armed services. The old organization, which had been tested and proved adequate, was loosened more and more, and new subsections were constantly being created to set apart an appropriate independent sphere of activity for gentlemen who were newly hired. All those areas, which had hitherto been intermeshed, were now separated from one another and each went its own way.

In the middle of 1939 the personnel strength in all branches of the German intercept service was 18 times the number employed in 1932, but there was not even a remotely corresponding increase in tangible, useful results.

THE "INTERCEPT COMPANIES"

The six fixed intercept stations which existed in Germany in 1932 for monitoring foreign radio communications were even then scarcely sufficient for carrying out the most necessary tasks. It was inconceivable that they would be in a position to cope with the enormously expanding requirements in the case of war. Even in peacetime the observation of maneuvers could only be carried out if the fixed intercept stations detached troops and sent them forward to the border. However, this always entailed a temporary neglect of other assignments. A new way had to be found of creating mobile formations which could be employed in case of need (primarily in war) wherever this might prove necessary. They had to exist in time of peace and become thoroughly familiar with the prospective opponent.

For these reasons it was decided to set up an intercept company, to which a second was soon added. In and of itself the idea was doubtlessly good, since a motorized unit which was kept constantly in practice and was trained to monitor the army radio traffic of a specific opponent, could achieve good results at once, if things became serious.

The practical carrying out of the training of these intercept companies, however, went against all reason. Instead of occupying these formations constantly with the monitoring of foreign radio traffic, they were only rarely employed in monitoring foreign exercises to give them "practice"; in the main they were used to intercept and follow the radio traffic of German units carrying out exercises. Now the way the German army radio traffic was handled was not comparable with the method of any of the other armies of Europe. The "practical work" of the assignment and of its evaluation resulted, therefore, in a distorted picture and was utterly senseless. Of course, under these circumstances it was possible to get practice in fixing a radio station and determining its geographical position; but one could not learn the characteristics and peculiarities of the traffic which would have to be monitored in case of war. The intercept companies, on the other hand, were more interested in listening to their own traffic than to foreign traffic because the characteristics of their own traffic were known to each of the men in all details, so that the work was easy. Moreover, the personal contacts often made it possible to find out a great deal about "the other side" over a glass of beer; this was of value for the intercept company involved.

So it was no wonder that these companies, which were later increased to six, fell down in the monitoring of foreign maneuvers. This forced people to recognize that these companies would not, in case of war, be in a position to supply useful intelligence, until they had had a month of training under war conditions, assuming, of course, that they were assigned well qualified evaluators to work over the results of their monitoring. Precisely in this regard, however, very little was done.

If we consider this development from the standpoint of a factual testing of its value, we are forced to the conclusion that the intercept companies under these circumstances would cause more harm than good in the event of war, since the intercept service is a two-edged sword. If it works precisely and with scientific accuracy, then it can be of great use to its own command. If it does not do this, and if the work in such a complicated field is carried on by inadequately trained people, then the results may cause the command to make fateful errors in judgment.

THE LITERATURE ON THE INTERCEPT SERVICE

The interception of technical means of communication had its beginning in World War I and was developed into a significant military instrument. The number of battle actions, operations, plans, and diplomatic measures which were based on the results of actual intercepts became very great.

That one was silent about this during World War I seems self-evident. By way of limitation, I must remark that even then some things trickled through to the general public, but were not given much attention. For instance, a few weeks after the battle of Tannenberg a Berlin paper carried an article in which attention was called to the fact that Russian radio traffic made it possible for the German command to carry through the

operations in the way it did. Two years later a Frankfurt paper carried a similar article which had reference to the results of the intercept service in the west. The article in the Berlin sheet gave the Russians a warning and resulted in their paying more attention in the future to the security of their radio messages. The article in the Frankfurt paper also turned out to be very incautious and unfortunate.

When World War I came to an end, literature on this war began to appear slowly in public. The various generals expressed their opinions regarding the operations they had conducted or regarding the war in general, and here and there offered very interesting details on the practical application of the intercept service.

This question was treated in a far more detailed fashion by General Max Ronge, in his book "Military and Industrial Espionage," in which he gave a large number of examples from the actual work of the Austrian intercept service. So far as I know, this book remains the only one which occupied itself with this theme to any great extent. The other things which appeared on the subject were either relatively short treatises on single topics or official memoirs, sometimes there were rather brief articles in newspapers and magazines.

Among the treatises on individual topics was a brochure by the well-known Austrian cryptanalyst, Figl, under the title "Systems of Decipherment." The French colonel, Givierge, expressed himself on the same theme. The then American ambassador in London (Page) expressed himself on the subject of the Zimmerman telegrams in his book of war memoirs. Regarding the battle of Tannenberg, an article appeared first in Sweden. To sum it all up, during the entire period between the First and Second World Wars only three men - so far as I know - expressed themselves in brief form on this theme. These were Colonel Calvel in France, Colonel Szieszynski in Poland, and Major Vasiliu in Romania.

Calvel's memoir was intended as a textbook for the French communication service. It did contain a number of very interesting examples from the period of World War I, but the chief stress was on technical questions, on what had been learned by experience, and on directives for the security of one's own communications against hostile interception.

The Pole, Colonel Szieszynski, was a pupil of Calvel and on his return from Versailles composed a memoir which included all the examples which had become known to him in France, as well as additional noteworthy examples from the period of the Polish-Russian war. Szieszynski's memoir, which appeared under the title "Interception and Direction Finding Service as a Source of Intelligence Regarding the Enemy," contained many exciting examples from the past. This little volume - like Calvel's brochure - was not published but was intended only for instruction within the Polish communications service.

The Romanian, Major Vasiliu, had attended the courses in France along with Szieszynski, and had likewise brought home a number of things which he had heard and seen there. In the same way as Szieszynski, he composed

a memoir in which he stressed primarily events in the Balkans and gave at great length directives for carrying on a methodical intercept service.

In Germany they tried to permit as little as possible to appear in public on this theme. After 1933 there was even a decree forbidding anyone to touch on such matters in the press.

THE ARMAMENT OF EUROPE AFTER 1933
AS REVEALED BY THE INTERCEPT SERVICE

It would be a great mistake to assume that the rearmament of Germany did not begin until the autumn of 1933 after Germany left the League of Nations. It would be also wrong to believe that in the preceding two years there had merely been a certain amount of preparation for rearmament. With respect to the preparation for the production of weapons and of technical equipment, the beginnings of rearmament in Germany reached back into the first years after the end of the First World War. However, people abroad noticed virtually nothing of this. Even within the country nothing was known about it outside a small informed circle.

The early stages of this effort became visible early in 1929. At this time a remarkable development began both among the various staffs and also in the Ministry of Defense. Everywhere so-called "employees" or "civilian employees" appeared, who were employed at first in simple tasks, but then in more and more important ones. These were all former officers. They were engaged as "spectators" or "assistants" at drills and maneuvers, and attached great importance to being addressed by their former title. A series of new subsections was set up in the Ministry of Defense and in the seven military districts.

If one engaged one of these men in intimate conversation, one soon got some insight into their trend of thought. At first they expressed their satisfaction at having escaped from the inferior status of an agent or traveling salesman and once more at finding employment suitable to their station. Soon they would admit that things were moving toward rearmament and that their present occupation as employees was merely an intermediate stage.

If one observed the entire radio traffic of other European countries, it could be recognized that in all countries, without exception, military armament had reached a certain standstill. To be sure, organizational changes were made here and there, or antiquated weapons were replaced by new ones; even the training regulations were revised now and then. But there was virtually no real change in effective strength and in respect to the training and preparation of reserves, or with respect to the quantity of arms available.

In 1932, and indeed early in this year, German propaganda for the creation of a 300,000 man army took shape openly. In reality the effective strength of the German armed forces had already expanded far beyond the 100,000 man limit set. If one counted in the numerous

"employees" and assumed that they were to serve as a skeleton for a new officer corps, one reached the conclusion that all that was necessary was the induction of a corresponding number of recruits, whereupon the entire 300,000 man army would be complete. The arms, tools, and equipment had long since been at hand.

The monitoring of military, diplomatic, and internal radio traffic of all the European countries, which in general gave very good and sometimes very extensive information, did not afford the slightest proof that at that time there was any building up of armaments abroad, not even in the spring of 1932 when a flood of placard and postcards poured out all over Germany showing in graphic form how defenseless and unprotected Germany was against any hostile attack and what the military strength ratio of all adjacent countries to Germany was. These postcards, which were produced in many variations, were sent out through Germany by the millions. Corresponding large placards could be seen in every government office, in every station, and in the corridors of all public buildings. There was not the slightest doubt that this wave of propaganda emanated from the Ministry of Defense.

Immediately after the assumption of power by National Socialism, a greatly increased activity began in the German armed forces, especially in the then Ministry of Defense. There seemed to be no financial or budgetary difficulties connected with the employment of civilian employees. In all parts of the building on Tirpitzufer they shot up like mushrooms after a rain. Numerous new organizations were set up, and new sub-sections were created; there was an anxious shutting of oneself off against other sections; the requisitioning of men from the army by the Ministry of Defense and vice versa assumed ever greater proportions. The numerical strength of the military district commands doubled within a very short time. The creation of the Air Ministry was for anyone at all acquainted with the situation an open indication that this was the first step toward the creation of a larger German air force.

In the summer of 1933 in the diplomatic radio traffic of various countries could be noted the first indications that people abroad were beginning to pay some attention to this development. This occurred primarily in Great Britain and in Czechoslovakia, then to a certain extent in France and Poland. With respect to the Soviet Union nothing could be ascertained directly, since the entire diplomatic traffic of this country remained undecipherable; conclusions could only be drawn indirectly from the radio traffic of other countries. From this it appeared that Russia was the first and at that time the only country in Europe to recognize quite clearly the development which was beginning in Germany and to take counter-steps of a military character. With regard to the other countries of Europe, nothing of this sort could be noted, not even when Germany quit the League of Nations on 14 October 1933. There was, to be sure, a great deal of talk in diplomatic circles to the effect that Germany was beginning to arm on a large scale. Moreover, columns in the newspapers abroad began to be filled with articles dealing with this topic. In the parliaments questions were introduced and debates were conducted. But from a practical point of view nothing was done in the armies of Europe

which could be designated in any way as an increase in armament, let alone an increase in military strength, which would threaten Germany. Only in the Soviet Union was the military budget increased.

During the course of 1934 German rearmament took forms which could no longer be overlooked by the public. The mere building of barracks was calculated to give information. However, only one who had some insight into the doings of the Ministry of Defense could get an approximate idea of what was really being prepared. Here events and plans began falling all over one another.

Immediately after the assumption of power, Hitler had issued the directive to make all preparations for setting up a 300,000 man army. These plans were easy to carry out, since they coincided with the previous trend of thought and with the preliminary measures already taken. Shortly thereafter instructions came from the Chancellory to make plans for a 500,000 man army. A quarter of a year later Hitler issued a directive to work on the basis of a 700,000 man standing army. After a while this number was increased to 900,000 and later to 1,200,000.

Later on, after 20 July 1944, after he had had him strangled, Hitler spoke of former Colonel General Beck as a miserable weakling who got a nervous breakdown and cried like a fellow with a hangover everytime he had something extra to do. Beck, during that critical period of German armament, was the Chief of General Staff and was regarded in wide circles as a second Moltke. Beck's military ability - at least in the matter of organization - is beyond all question. However, Beck was a very conscientious man who was accustomed to give all his plans the stamp of precision. The constant changes in directives, the increases of numbers at short intervals, the new instructions constantly issued by Hitler, these always upset Beck's previous plans. It is probably true that many times Beck sat at his desk not knowing what to do and was more inclined to weep than to laugh. The reason, however, was not a wretched weakness of this man, but was the impulsive action and orders of Hitler which excluded any conscientious planning. Hitler's trends of thought doubtless made possible the quick setting up of a great numerical strength but not the solid foundation which is needed for a large modern army. No one knew this better than Beck, and in this fact is found the explanation of his occasional want of composure when he found himself facing the ruin of his previous plans and arrangements.

The first indications that people abroad were beginning to take into military account the situation resulting through German rearmament were found in the summer of 1936, i.e., after German troops occupied the western demilitarized zone. But even now such measures in the European armies were limited to a very meager, not to say pitiful extent. Only the Soviet Union began going ahead in two directions: in the direction of building up a strong armament industry, and in the direction of training a strong military reserve. Otherwise, the situation in almost all the countries of Europe remained practically the same as it had been in 1929. This was particularly true with respect to France.

When in the early days of February 1938 Hitler carried out his sweeping change in the Ministry of Defense and made himself Supreme Commander of the German Armed Forces, and when he dismissed Colonel General Baron von Fritsch, who had been opposed to any aggressive war, there was no doubt left in the minds of the initiated whither this development was going. This development was also recognized in political circles in most of the non-German countries of Europe. This was most clearly the case in England. Here they began increasing their armaments in the air and to some extent on the water. Czechoslovakia increased the number of its divisions and their effective strength. In Poland the air force was likewise strengthened and a partial rearming of the field army was carried out. Otherwise, practically nothing changed.

Hitler asserted later that increased armament everywhere abroad had forced him to increase armaments and finally to strike. That is totally untrue since the intercept service, which really sized up the situation in foreign armies and air forces down to small details, did not give the slightest support to the claim that increased armaments abroad were forcing Hitler into an armaments race.

HITLER AND CZECHOSLOVAKIA

There were two countries against which Adolph Hitler made thorough preparations for war from the very first days of his activity as leader of German policy: Poland and Czechoslovakia. Hardly ever in all history has a country been so systematically and deeply undermined and prepared for external attack by the employment of spies, agents, and confidence men (so called V-men), as was here the case. The starting point for this work was afforded by the German speaking element in these countries. By using their attachment to all that was German, in all circles of the German speaking population so-called confidence men were recruited as purveyors of information, partly directly, partly through the VDA (Volksbund fuer das Deutschtum im Ausland or People's League for German Culture Abroad). There was a preference for persons in official positions or in the Czech armed forces but business men, travelers, and the like were also gathered in. It was most valuable when they succeeded in winning an officer of the Czech armed forces as a confidence man, and this happened repeatedly.

Already by the end of 1934 the situation was such that almost nothing that occurred in the Czech armed forces, administration, or industry remained concealed from the German espionage service. The number of individual reports on Czechoslovakia reaching the counterintelligence unit in Berlin averaged from five to ten daily. Often there were microfilms of original documents including information on the most secret matters.

Eavesdropping on telephone conversations played a particular part in this spying on the Czechoslovak state. For this an entire system of listening stations had been set up. The results were sent to the counterintelligence offices in Breslau, Dresden, and Munich, or to their advance branches, and passed from here to Berlin. All cable lines leading out of Czechoslovakia which touched German, Austrian, or Hungarian territory were

monitored. For this purpose there was close cooperation between the German, Austrian, and Hungarian espionage and cryptanalytic services.

Much energy was devoted in Germany to setting up the radio intercept service against Czechoslovakia. However, in this field there was little success. As early as 1933 there was collaboration between the German intercept service and that of the Austrian and the Hungarian armies, but the Czechs were so cautious in their use of radiotelegraphy that the results were only moderate.

A very clear indication that the Czechs had been selected by Hitler as the object of a military attack was to be had on 24 December 1936. On this unusual day there occurred at the Cipher Bureau in the Ministry of War at Berlin a discussion with officers of the Air Ministry. The subject was a new organization and a strengthening of the intercept work against Czechoslovakia. The main theme was a surprise attack. The Ministry for Air took the initiative and it looked as if the air force were to play the chief role. Not until later was it clear why the Ministry for Air took the lead in this and later conversations: Göring and his staff favored the plan. Colonel General Baron von Fritsch, Commander-in-Chief of the Army, was opposed.

PART III

THE WAR WITH POLAND AND WHAT PRECEDED IT

Doubtless there will appear numerous books, articles and other publications dealing with the war between Germany and Poland which began in the morning hours of 1 September 1939. These will cover the course of the operations, the events preceeding the war and many other details. We do not intend to discuss these things here but to deal with some of the preliminaries of this war into which relatively few people had any insight.

The question as to when preparation for the war against Poland began is difficult to answer but the preliminary period is longer than is generally assumed. We can state with certainty that the earliest preparations date back to about 1923. From then on, there began a systematic penetration of the entire Polish state by the German espionage service using so-called confidential agents.

The first part of this work consisted in current coverage of all events in Polish official agencies, in the armed forces, in the government, in industry, in transportation, and in all other aspects of public life. The second part of the activity of the confidential agents consisted in infiltrating and undermining the military power of resistance of the Polish state.

Conditions were especially favorable in the Poland of those days. Many Germans had become Polish citizens, although at heart not in sympathy with the Polish state. It was now a question of enlisting these people for the work, by playing on their feelings as Germans. A special subsection "Poland" in Section 1 of the Counterintelligence Group of the Ministry of Defense began intensive work about 1923. Using agents and official and semi-official agencies, it endeavored to spin a net over all Poland and in two years there was hardly a place of any size in that country which did not have a confidential agent or at least a purveyor of information.

Early in 1926 espionage against Poland was intensified, possibly because some very useful agents had been enlisted. One worked in the Regulations Office of the Polish War Ministry and from 1926 on sent photographs of service regulations to Berlin. Two others were in the so-called D.O.K. (corps areas) from which they supplied photographs of tables of organization, service instructions, strength summaries, etc. Consequently German espionage was very fully informed regarding every branch of the service and nearly every troop unit. Regulations and instructions for maneuvers were also obtained in this manner. The first important shipment from the agent in the Polish Ministry of War was a lengthy set of instructions for the Polish Air Force which was then holding its first large scale exercise.

Sometimes deserters from the Polish Armed Forces brought all sorts of information. During seven or eight months in 1931-1932, three officers of the Polish General Staff appeared in Berlin and offered most welcome information.

In addition to this work of the spies, the Germans carried on very active intercept work against Poland, using the stations in Königsberg, Frankfurt on the Oder, and Breslau, which devoted half their time to Polish traffic. Of the military successes, the most important were those against the Polish Air Force which by 1926 had virtually completed its organization. The Poles had a network of high-powered stations for their weather service, reports of take-off and landing, and for administration of the Air Force. The Poles made liberal use of these stations, ten in all, and the German intercept service monitored them day and night and passed the results to Berlin. By the end of 1925 the cryptographic system had been solved and by the end of 1926 nothing regarding the Polish Air Force was any longer a secret. Every Polish plane was known by its type, serial number, and individual number. This was possible because the Poles announced by radio every start and every landing of a plane, giving the direction of flight, time of starting or landing, type, serial number, and individual number of the plane - all in plain text. If a plane flew from Lemberg to Lida with an intermediate landing in Warsaw and returned to Lemberg by the same route, it was reported not less than eight times by radio. There were normally 60 to 80 of these reports a day and all planes mentioned were carded. After a few months every plane was recorded, together with its assignment to one of the six air regiments. Moreover, the condition of the plane was known and after a few years its serviceability could be determined precisely using coefficients of depreciation. While the Polish Air Force used radio freely and thus gave away plenty of information, the Army was very reserved in its use of radio. Only at drills and maneuvers could anything be learned. The first German success was with the Polish maneuvers near Lida in 1929, the course of which could be reconstructed almost completely. It was a question, to be sure, whether the Army radio was cloaking itself in an excess of security at the expense of the transmission of information. In case of war the need for rapid communication might upset the whole system of radio camouflage, which was quite complicated. Each station worked with three call signs simultaneously and on its own wave lengths. Both call signs and wave lengths changed daily, sometimes twice a day. It was inevitable that war conditions would severely try this system.

While speaking of German cryptanalytic activity against Poland, it may be stated that a large part of the diplomatic exchange of information between the Polish Government and its representatives abroad could be read. This gave excellent insight into the activity of the Polish diplomats and into the relations between Poland and the Western Powers.

The German intercept service was concerned not merely with interception of Polish radio traffic but also with wire communication. The Polish Corridor and Danzig afforded a fine opportunity for getting at the Polish wire networks. It goes without saying that telephone conversations of the Polish Embassy in Berlin and of all Polish consular representatives were listened to and evaluated by the Germans.

Beginning in 1934, German espionage was intensified, as was the effort to undermine the power of resistance of the Polish forces. An army of agents was recruited, often by coercion, and all offices of the Polish

armed forces, police, railways, and postal services were infiltrated. The rewards paid were surprisingly small but from 1934 on virtually nothing regarding Poland's national defense remained hidden.

It is generally known that the war against Poland began at 0545 hours on 1 September 1939. It may be less well known that the attack had been planned for 27 August and that all preparations had been made for that date. Late in the evening of 26 August it suddenly occurred to Adolf Hitler to postpone the attack. What induced him to make this change is not known to me. Perhaps his astrologer was responsible or it may have been one of his well-known whims. In short, about 10 o'clock in the evening telephones began to ring, teletypes to rattle, radio stations to function, and a flood of thousands of orders tried to reach the advance units in time to take account of the new situation and to prevent the troops from launching an attack. The fact that it was possible to get these orders through in time was a masterful achievement of the German communication system.-

Without doubt the Polish communication service must have noticed this activity on the German communication network. It must have been a serious warning for the Poles. Any specialist knows what such a change of decision means in modern warfare where there is an intercept service. This naive change in a plan long since precisely worked out, together with all the dangers inherent in such a change, was the first indication of the primitive quality of Hitler's thinking in military matters.

It is not necessary to recount the invasion of Poland. Thanks to the information available, it was all over in a matter of weeks; that is to say all over save for the repercussions in other countries.

THE CAMPAIGN IN THE WEST

The campaign in the West in the summer of 1940 appears to many people to be the master stroke of a military genius. Even when we take into account the German superiority in numbers and materiel and appraise adequately the spirit of the German troops, many things still remain inexplicable - in particular the swift drive through the northern continuation of the Maginot Line. On the basis of what I was able to learn, I shall attempt to throw a few side lights on this campaign, without pretending to be able to explain everything.

I have already reported on the situation in the intercept service. Conditions for successful intercept work were as favorable as one could desire in France, Holland, and Belgium.

From intercept traffic the French assembly and the Belgian and Dutch frontier defenses could be recognized so clearly both in respect to organization and geographical distribution that the information was fully adequate for making German dispositions. It was a pleasure for the German command to be able to enter the enemy's troop dispositions on its own situation maps on the basis of the results of the intercept service. In

the present case, however, this did not suffice. Before the war the great question was: how good will the mighty defense system of the Maginot Line be? Will it be possible to break through quickly or will a war of position on a large scale develop here? Will modern heavy artillery be able to crack these defenses? Who could answer these questions?

Earlier we reported how Poland and Czechoslovakia were thoroughly reconnoitered by the German espionage service. In France there was no such degree of success although the German intelligence service did receive current reports and single notices. France had no extensive German minority and conditions were less favorable. Nevertheless, in the summer of 1939 the German Secret Service succeeded in pulling off something which absolutely made up for the previous years. In August it was possible to get a photograph of a French map showing all forts, barriers, obstacles, communications routes and communications points of the Maginot Line and of its extension to the coast. This showed how imperfectly the French had developed their system of defense along the Belgian frontier and one did not need to study the map long in order to put his finger on the weakest point in this system of defense. This map was reproduced in Germany and was the basis for planning the campaign in France.

In order to drive at this weak point in the French system of defense, it was necessary to advance through Holland and Belgium. Consequently, this move was decided upon in Germany without hesitation. The prospect of overrunning the French line swiftly was too inviting and it was impossible for the French to build up this weak point within a few months to match the strength of the Maginot Line proper.

The campaign against Poland was followed by a period of calm. Only in the air and at sea did some minor engagements take place, which no one regarded very seriously. People were already beginning to crack jokes about the "phony war". Many thought there would be no serious conflict and that France and England were in a state of war merely "to save face" with respect to Poland. Peace would surely come in the spring.

The monitoring of French and English traffic, however, did not indicate that people in those countries were concerned with "saving face". War production was under way; they were arming for battle, though only for a defensive struggle. The whole system of land defense for France since 1919 had been based on the invincibility of the Maginot Line, while England was convinced that economic measures directed against Germany would not fail. Anyhow, one could not count on a conciliatory attitude in either France or England.

On 27 January was broadcast Churchill's speech in which he said: "Hitler has already lost his best opportunity".

On 9 April the German people were surprised by the information that "German troops have undertaken the protection of Denmark and Norway". The National Socialist Government tried, naturally, to throw all blame on the English and Norwegians. Of course no mention was made of the fact that the invasion might not have been successful, if the intercept

service of the German Navy had not ascertained the position of the British naval forces and calculated the time so that no surprises need be feared from that quarter. Despite heroic resistance, all Norway was occupied within four weeks during which the German intercept service played a notable role against both land and naval forces. At Narvik, both the British and the Norwegians used radio very incautiously. The course of British ships could be followed perfectly at all times. Several Norwegian units were encircled and captured because of their incautious use of radio, and the capture of Bergen with its war stores was possible only because of frivolous use of radio.

Of course the Germans sometimes made mistakes, too, and the British followed German ship movements.

Simultaneous with increase in military radio traffic at the beginning of these operations was the enormous increase in diplomatic and press traffic. It was interesting to see how the German advance against the two northern countries affected neutral lands. While the German press tried to characterize the whole action as a "British Crime" against which the entire press of the world was clamoring indignantly and while German papers were printing quotations from foreign papers, which had been paid for with German money, intercepts from foreign countries gave a very different picture. British action against Norway had been started only after Germany's intention had become known to England at the last moment. Consequently it was not England but Germany that had attacked, and this unjustified attack in defiance of all international law lost Germany the respect of the world and laid the groundwork for her defeat.

On 9 May, one of the leading German newspapers carried the headline: "Stupid British Diversionary Maneuver." The content was to the effect that the discovery by Germany of ostensible British plans had produced such an impression in England that they were resorting to diversionary maneuvers; news was being spread abroad that Holland was sorely threatened by Germany. There was a false report that two German armies were moving toward Holland, but of course that was nonsense, an old wives tale of the Ministry of Lies in London. But the next day at nine o'clock Doctor Goebbels delivered a long talk on the German invasion of Holland, Belgium, and Luxembourg. The war in the west had begun.

The attempt to attribute the blame for the outbreak of hostilities to the Dutch and Belgians was ridiculous. From everything that could be observed by monitoring their traffic, it was clear that both countries did everything possible to maintain neutrality. On 14 May the Dutch army gave up the hopeless struggle and a break was made in the extended Maginot Line at Sedan. On 16 May came a break through the Maginot Line on a front of 100 kilometers. On 17 May German troops entered Brussels. Soon Hitler's threat: "We will put them in a panic which will spread!" was made good.

This creation of panic was carried on by all modern technical means. Leaflets were dropped by the hundreds of thousands and served to spread the wildest rumors. Agents deposited by parachute behind the enemy front cut in on the telephone wires, called up all sorts of government offices,

gave false instructions to civilian offices and troop units, and by reports of panic caused a chaotic flight on the part of the civilian population, which resulted in a hopeless blocking of the highways. Captured radio stations were likewise put into operation and issued alarming reports. With events moving so rapidly, the French command had no possibility of effectively counteracting these activities; moreover, the French did not catch on to these methods until too late. In several cases, whole divisions were forced in this fashion to surrender. A number of German agents equipped with small shortwave radio had been deposited behind the French front and were working from there with excellent success. These people watched everything that went on and reported each of their observations immediately to one of the three control stations by which their work was directed. For the first time in history a combat instrumentality was employed here, which in the later years of this war was to give it its special character and which was to be turned in catastrophic fashion against Germany.

On 3 June the frightful slaughter known in history as the "Battle of Flanders" ended with the capitulation of the Belgian army and the encirclement and annihilation of British and French forces. These troops fought bravely but succumbed to superior force. The name Dunkirk became for the Germans the symbol of a decisive victory over England and for the British the symbol of a most successful evacuation, carried out with the aid of the fleet. Both were right - everything depends on the point of view.

Once again there came a period of tense expectation. What would happen? Would the Germans turn south and attack the French divisions on the Aisne and the Somme, or would they follow British troops across the Channel? The word "invasion" began to spook around. The German High Command diligently spread the news that it was preparing to invade at once. In any case the fate of France was virtually sealed. This seemed to be a suitable time for Italy to enter the war. Pressure was put on Mussolini. A feverish exchange of telegrams between Berlin and Rome began. And finally it happened. On 10 June 1940, from the balcony of the Palazzo Venezia, Mussolini proclaimed to the Italian people and to the world Italy's entry into the war on the side of Germany. This was speculating on a cheap victory, on sharing the spoils after France had been completely subdued and England had pulled out of the war, as it was expected to do.

But even in this seemingly so favorable situation, the true attitude of a large part of the Italian Officer Corps, in particular General Staff Officers, was and remained adverse both to the war and to Germany. A not inconsiderable group of officers was outright anti-German in sympathy to such a degree that this could be clearly recognized from intercepted Italian traffic. We shall have occasion to speak of this later. For the moment, however, the chances seemed to favor the two Axis Powers and for the moment this outweighed everything else.

The battle along the Aisne and the Somme began and in a few days the French army was split into four groups. On 15 June, German troops

crossed the Loire. On 18 June Hitler and Mussolini met in Munich to discuss the terms of an armistice. On 22 June, the armistice was concluded in the Forest of Compiègne; the French fleet remained in French harbors.

France was beaten. Hopelessly beaten in an astoundingly short time. How could this country, protected by the most modern line of fortification and with its strong army, be conquered so easily? For one thing the Germans, contrary to French expectation, had not hesitated to attack two neutral and almost defenseless countries, Holland and Belgium, and thus to reach the French frontier where it was least well protected. Moreover at the beginning of the war France was distinctly inferior in materiel. There was lack of planes, armoured tanks and other war equipment. Despite all warnings, including repeated reports to the Deuxieme Bureau regarding German armament, those in control refused to believe there was any serious danger.

When the campaign in the west began, the French greatly underestimated German strength, while espionage had revealed to the Germans the weak points in the French line of defense. Another unexpected factor was the systematic spreading of panic. In a very short time, millions of French and Belgians were in flight, blocking roads and bridges so that French troops and supplies could not get through. On top of all that, there was the German radio intercept service. Most of the French army cryptographic systems and two systems of the French Foreign Office were known to the German cryptanalytic service. Countless messages with highly important content could be read. Moreover, diplomatic representatives of various countries were transmitting by radio important information and were doing this in systems already solved in Germany. From a purely military angle, the system of French army traffic resulted in revealing to the German Intercept Service in a very short time the relation between the higher and medium units. The organization of the French front was known at all times. No movement and no dislocation remained concealed from the Germans. The French Air Force was most incautious in its use of radio and the ground stations gave countless clues. The picture was the same as that observed during French maneuvers from 1930 to 1939.

The map of the line of fortifications, the intercept service, the cryptanalytic service, the creation of panic, the blocking of highways, air superiority, and superiority of numbers and materiel on the German side, coupled with an ineffective intelligence service on the French side - nothing more was needed to gain a crushing victory in the west.

The campaign in the west had ended. Throughout Germany bells pealed and flags fluttered. People were convinced that victory in the west meant the end of the war; now it was up to the diplomats to find a way to bring about peace. It was incredible that England, the last remaining antagonist, would dare to continue the war. Goebbels organized a mighty reception for Hitler when the latter returned from the front; the rumor was spread that America had intervened and England would make peace. Plans for demobilization were worked out and a few people were discharged from the armed forces.

But although people were convinced in Germany that England would now try to get out of the war, longboats, light sailing vessels, motorboats and other craft began moving northward on special vehicles; they were to carry German troops across the Channel and few people doubted that this enterprise would shortly be crowned by success. Yet week after week passed and nothing happened. On the contrary, the German intercept service was obliged to report again and again that England had no thought of submission. Moreover, voices from America also had to be taken seriously.

While the public was thus forced to settle back and wait for the invasion which Hitler said was coming, it was remarkable that all preparations for invasion were carried on in the open instead of being carefully camouflaged as usual. Details which normally would have been strictly secret could be heard everywhere, until one almost had the impression that the invasion was nothing but a bluff.

Interception of English traffic, however, gave the impression that the British were counting on an attempted landing. Their air reconnaissance of points where the Germans were concentrating small boats became intensive and the assemblies were bombed constantly.

Meanwhile the air war against England began. It was supposed to break the will of the people to resist, but it soon brought two disappointments: first, the British fighter defense proved far stronger than expected; second, the effect of the bombs was by no means as great as had been expected. Furthermore, German aircraft losses increased rather than decreased - some days a hundred or more machines were lost.

Careful monitoring of all radio traffic between Great Britain and the U.S.A. showed no indication of any letup in England's will to resist. Week by week the United States was growing closer and closer to Great Britain. Unmistakably there was a resolve to put an end to the conquest of one country after another by National Socialism. The attitude of the U.S.A. was expressed in a speech in Philadelphia on 18 August by Mr. Bullitt, former ambassador to France.

Since the air war was not achieving its purpose, the German Government proclaimed in August a "total blockade of England". This step was aimed primarily at the U.S.A. but its effect was like pouring oil on a fire. It really betokened German weakness rather than strength.

While the German press printed long-winded articles on the effect of German air attacks on London, only small type was available on 10 September for the news that the House of Representatives had on the day before accepted the Bill for Compulsory Military Service. The question was no longer, "Will the U.S.A. fight?" but, "When?"

Supposedly, the invasion was to take place during the night of 15-16 September 1940 but the English fighter defense was still too strong, the Navy was still intact, and German preparations were too inadequate. Only a few of the 1,000 large transport gliders called for had been completed.

The espionage service had almost completely failed to function, in particular the establishment of a network of radio agents had never gotten beyond very modest beginnings. The intercept service provided virtually no information regarding the military situation in the British Isles.

Of course the decisive factor was Hitler himself. He did not seriously believe it would be necessary to invade by force; he expected England to make peace and Ribbentrop held the same view. Not until four weeks after the conclusion of the campaign in the west did Hitler realize that this assumption was not correct. Hitler could pursue a goal with great obstinacy but he was an easily influenced, emotional character and now he shifted suddenly and ordered the General Staff (or at least part of it) to make plans for a Russian campaign which had never been mentioned before. He thought that England would change its attitude immediately, if Germany should attack the Soviet Union. Hess entertained the same opinion. Points of difference between England and the Soviet Union were well known, likewise Churchill's aversion to Bolshevism. If the English attitude took the course they expected, then invasion was superfluous.

It is true there was a dilemma; Hitler must say one thing to the Germans and another to the English. It was necessary to explain to the German people why the invasion did not come off: first there was fog, then there were storms, then it was said spring was the only proper time, and then when at Headquarters the idea had long since been dropped, "preparations for the invasion" were carried on in an ostentatious manner. The British were to get the impression that the invasion was imminent and the bombing attacks continued, although their intensity decreased. The main activity was confined to threats.

Amid this tense expectation there was concluded with great pomp on 26 September 1940 the so-called Three Power Pact between Germany, Italy, and Japan. This act was purely theatrical. It was the first confession of the fact that from now on the whole threat of an invasion was merely a bluff, because if there were an invasion and England were defeated, then there would be no need of exerting pressure on England in the Far East. The fact that this step was taken proved that the German Government had no illusion regarding the invasion, even if it should be carried out. Actually the plan had already been given up. It was interesting to see how they reached the same conclusion in England; this was revealed by the mass of intercepted diplomatic messages of other governments, Poland in particular.

The Polish Government had fled to London and was in close contact there with all organs of the British Government and with the British armed forces. The English on their part esteemed this cooperation since the Polish element all over Europe gave a unique basis for the organization of a large scale spy net work for the English secret service. The reverse of the medal lay in the fact that the Polish Government in London talked too much out of school in its exchange of telegrams.

The cryptographic systems of the Polish government in Exile for the most part had been solved in Germany. Consequently, insight was obtained

into the thinking and the plans of influential English offices. It could be seen that the British took the invasion seriously for only a short time. In any case, they were ready to accept it and were resolved, in case it succeeded, to continue the struggle from overseas. The fleet was to go to America and the struggle would be organized anew from there. Africa was to constitute the starting point for the attack on the Axis Powers. There were similar revelations in the intercepted traffic of diplomats representing other nations.

The German plan aimed, by threatening British possessions in the Far East, to force Britain to change her military dispositions. The idea appeared very clever and in those days Ribbentrop was considered in Germany a very competent and clever diplomat. However, he had neglected one important factor: should Japan try to disturb the balance of power in the Far East, this would inevitably arouse opposition in the U.S.A., and relations between the two countries were already tense due to the conflict in China. When the Japanese raised this objection, Ribbentrop assured them that the U.S.A. would not be in a position to employ its whole strength against Japan because Germany would, in case of conflict, declare war on the U.S.A.; this would mean for both the U.S.A. and Great Britain in splitting up of forces and the Americans would be too weak to threaten Japan seriously.

At that moment, what Ribbentrop said was valid, but one factor was omitted: in September 1940 we had from intercepted traffic a fair picture of war production in the U.S.A. with production estimates for the two ensuing years. Compared with German production these figures were enormous. Hitler and Ribbentrop said these figures were pure pipe dreams. What induced them to take such an attitude is not known to me. The figures were not based on propaganda speeches but were carefully compiled from authentic sources. On this occasion Hitler displayed a characteristic trait; he would believe only what accorded with his ideas, everything else he rejected abruptly.

HITLER'S BALKAN CAMPAIGN IN 1941

This book cannot deal in detail with the preliminaries of the Balkan War. Basically there is no preliminary history, for this campaign was simply plucked from a tree like Hitler's other martial enterprises. All the Balkan states had endeavored to maintain peaceful relations with Germany. However, even before the French Armistice, Hitler and Mussolini had agreed that Italy should be compensated for participation in the campaign in the West, not at the expense of France but in the Balkans. There would be two spheres of interest: Romania, Serbia, Bulgaria, and Turkey in Europe should belong to the German sphere; Croatia, Dalmatia, Albania, and Greece to the Italian sphere. This meant that a division of the Yugoslav kingdom was even then being considered. When the armistice had been signed, preparations began in Berlin and Rome for "the settlement of the Balkan question".

On 27 July, at Salzburg, Hitler received a Bulgarian delegation headed by the prime minister. Close collaboration between the two states was agreed upon, extending even to military matters. The division of Yugoslavia was likewise discussed and the Bulgarians claimed certain specific areas. The cession to Bulgaria of Greek Macedonia was also discussed. Close cooperation in intelligence matters was agreed upon, especially in the intercept service. Soon a German intercept station with cover name "Borer" was set up in Sofia. It was staffed with German military personnel in civilian clothes and had direct teletype connections with Berlin. Actually this station had existed since January 1940 on a somewhat smaller scale and had been tolerated by the Bulgarians. Originally it intercepted army traffic of Yugoslavia, Greece, and Turkey but now the work was extended to cover diplomatic traffic.

A few days later, Rome really started something. They had a report sent in from Tirana that the Albanian population under Greek domination was in a state of terror because of the frightful political murder of Daut Hoggia. Rome raised an outcry about the "unliberated" Albanian territories under the Greek yoke and about Greek persecution. A sharp note was sent to Greece to which the Greeks made a factual reply stating that the murder was in no ways political. The Italians, however, accused Greece of fomenting trouble along the frontier and of being a silent ally of a great power (England) which was now sinking into oblivion. Intercepted Greek traffic did not reveal anything to justify these reproaches. Greece was trying to remain strictly neutral. Border incidents had occurred in this region for centuries, but to try to deduce from these a hostile attitude on the part of the Greek Government was clearly an intentional distortion of the facts. On the other hand, it is certain that Italy began sending troops and war material to Albania long before this murder. Italy was ready to seize upon any pretext and an article in the "Giornale d'Italia" left no doubt as to Italy's attitude.

With the Italians beginning to take action in "their" zone of influence, the Germans could not be idle. The chief obstacle was the attitude of King Carol of Romania. It is certain that Carol was friendly to France but this attitude did not in and of itself signify hostility to Germany. The extremely correct and benevolent treatment by the Romanian Government of the Germans in Transylvania bears this out, but Carol declined to allow his country to come under National Socialist domination. As a result he had to be overthrown. The so-called "Iron Guard", modeled after the National Socialist SA, was to accomplish this. On 6 September 1940, Carol's abdication was announced and Prime Minister Antonescu and Horia Sima telegraphed greetings to Hitler which were cordially returned. On 8 September, Sima openly stressed indissoluble unity with the German-Italian Axis. This meant that the Axis had already reached the mouth of the Danube. Southern Dobrudja was immediately ceded to Bulgaria, thus establishing friendly relations, as Germany desired.

A few days after he had seized power, Antonescu began reorganizing the Romanian army and asked Hitler to send instructors. Soon German military personnel had permeated the armed forces and the country as a whole. Hitler had attained his first goal in the Balkans.

Almost overnight, Germany had reached the frontier of Turkey. On 9 September, Turkish territory in Europe was declared a military zone. The German ambassador, von Papen, tried in every way to make Turkey favorable to the Axis but it was soon clear that Turkey would fight if its neutrality were threatened.

But before southeastern Europe could supply a favorable jumping off place for Hitler, it was necessary to settle the boundary dispute between Hungary and Romania. Hungarian claims could not possibly be accepted by the Romanians and the matter was to be submitted to arbitration by Germany and Italy. The decision rendered in Vienna in September 1940 probably fixed the most impossible frontier Europe ever saw. Both sides accepted the decision, even though they knew it was only a temporary settlement. For the moment all territorial differences between Hungary, Romania, and Bulgaria had been disposed of and an absolutely pro-German block had been created.

Amid these developments in the Balkans, one country had been left out of the picture entirely thus far and that was Yugoslavia. There was, to be sure, a marked display of German-Yugoslav friendship. On 4 October Prince Regent Paul opened an exhibition of German architecture in Belgrade. Two days later Mussolini ostentatiously reviewed the Army of the Po which was stationed along the Italian-Yugoslav frontier and to which belonged Italy's most modern, fully motorized divisions. Under the circumstances Mussolini's visit was obviously meant to impress Yugoslavia.

In mid-October 1940, German troops occupied Romania "at the request of the Romanian Government", but the Germans began to set up naval bases on the Black Sea and to ship in submarines in sections. Russia began to fortify her western frontier.

In Bulgaria the people were divided; some favored Russia, some favored strict neutrality, and some favored France; hence it was imperative that those officials and officers favorable to Germany be protected and supported. Since the police were likewise divided in sympathy, this job was given to the Gestapo. Berlin already was talking about occupying Bulgaria.

Mussolini had decided on war in the Balkans. Von Papen's warnings made Hitler averse to any immediate action there, but he was only able to restrain Mussolini to the extent of limiting Italy to war with Greece. In less than two months the Italians, who had the advantage in everything save morale, were badly beaten. The political leaders were terribly surprised and the Chief of General Staff, Marshal Badoglio, and numerous other high officers were relieved of their duties. This did not help matters.

One of the most decisive factors during those weeks was the manner in which the Italians employed radio. The set-up was the same as that used in maneuvers of previous years. They employed open circular traffic; that is, they used one uniform frequency for a group of stations belonging to the same unit (e.g., the stations of three infantry regiments of a

division for traffic with one another and with the divisional station) and each station used only one call sign for all its traffic. The call sign was supposed to change daily but was often used for several days; not infrequently a change in call sign was followed by errors which betrayed the change. Traffic was so heavy that the enemy always had a chance to take bearings and fix locations. Frequently messages were sent in clear. Several units of the Italian Eleventh Army distinguished themselves in this respect. Moreover, the Greeks had obtained at least two Italian army cryptographic systems, how I do not know, but it is certain that in the very first days of the campaign they could decipher a large part of the Italian messages. This enabled them to learn promptly most of the dispositions of the Italian command and to take appropriate action. The superiority thus gained was utilized cleverly and a series of military actions took place which heretofore would never have been deemed possible.

In January 1941, Turkey began sending away German citizens. It had become an El Dorado for the German espionage service, which was not only spying on Turkey itself but endeavored to cover the Near East from this base. Moreover, German spies attempting to enter the Soviet Union were usually sent through Turkey. Since December 1940, the German General Staff had among its plans one for an attack on Turkey in Europe. In January 1941, large and small orientation pamphlets dealing with Turkey were prepared - a sure sign that things were reaching a critical stage. Turkey and the USSR were discussing the possibility that the latter should supply Turkey with arms in case of a German attack.

On 2 March Bulgaria officially adhered to the "Three Power Pact". On the following day German troops marched into Bulgaria "as a security measure".* This alarmed Yugoslavia and disquieted the U.S.A. Roosevelt announced that the flow of war material to Great Britain and Greece would increase until it was adequate for all needs.

Threatened on all sides by German and Italian troops, the government of Yugoslavia yielded to pressure and on 25 March signed an official adherence to the Three Power Pact. This action was bound to evoke resentment among the Yugoslavs and particularly in the officer corps. That this was not unexpected is clear from other negotiations. Long before the war at a time when "the best of relations" existed between Germany and Italy on the one hand and Yugoslavia on the other, and when it was ostensibly Germany's aim and ambition to live in friendship with Yugoslavia, the so-called Ustashi were being organized, trained, and equipped in Germany and Italy. The Ustashi were revolutionary bands under the leadership of Dr. Pavelic. Their numbers ran up to several thousands. Some were in Croatia and immediately after the outbreak of the war were active behind the front as saboteurs and partisans.

* Actually, Bulgaria officially adhered to the pact on 1 March and German troops occupied Sofia a few hours later. (Ed)

At the very time when Yugoslavia was adhering to the Three Power Pact, a verbal agreement was being made with Dr. Ante Pavelic and General Kraternik for the secession of Croatia from Yugoslavia "at the appropriate time". There were two possibilities here:

1. Either the adherence would meet with resistance (as it did), would be dropped, and there would be military action; in this case Croatia was to secede at once and operations of the Yugoslav Fourth Army were to be hindered as far as possible by sabotage; or

2. The agreement would "go smoothly", in which case Croatia would secede after the "peaceful occupation" of Yugoslavia by German and Italian troops. Incidents could be engineered to give the necessary grounds for this "new arrangement".

Before the signers of the protocol got home, a coup was pulled off in Belgrade and the Pact of Vienna became invalid. The new government made it clear that it entertained no hostility to Germany but it was also clear that there was now no chance of sending German troops through Yugoslavia to aid the Italians. Nevertheless the occupation of Greece was prerequisite to other measures that had been planned.

The Nazi press printed all manner of angry accusations and on 6 April 1941 Germany declared war on Yugoslavia and Greece and the open city of Belgrade was severely bombed. On 9 April Salonika and Skoplje were occupied. On 14 April the main body of the Yugoslavia army had been beaten and Belgrade had been occupied. On 17 April the Yugoslav Second Army capitulated at Sarajevo. Three days earlier at Agram the newly formed Croatian Government of Dr. Pavelic and General Kraternik had been set up. It immediately sent greetings to Hitler and Mussolini with a request for recognition, which was granted.

The reasons for the swift collapse of the Yugoslav defense lay in the great superiority of the Germans in men and materiel - primarily in the air - but also in the fact that the Yugoslav forces had no time for a regular mobilization. Furthermore, on the first day of hostilities, dive bombers destroyed the Ministry of War between 7 and 8 o'clock in the morning and the General Staff thereafter had no contact with the armies it was supposed to direct. On 10 April the Commander-in-Chief sent the following order to army groups and independent armies.

"All subordinate troops, wherever they come in contact with the enemy, have to fight in all directions on their own initiative, without waiting for orders from the higher commands."

During the ten days of fighting, the Commander-in-Chief had to rely entirely on a small portable radio set. The entire telephone and telegraph network was either smashed by the air attacks or crippled by the Fifth Column. The seven Yugoslav armies had to rely exclusively on radio and now a defect in peacetime training proved fateful. At maneuvers, radio had been used hesitantly, hence no great practical experience in the development and camouflaging of traffic had been acquired. Moreover,

in communications - as in other matters - the French pattern had been followed and the weaknesses found in French communications were also found here, only aggravated due to lack of practice. Consequently, the German and Italian intercept service had the best imaginable results, especially since the Germans were already reading all the Yugoslav cryptographic systems. The German command had from the first hours of the war a complete picture of the assembly, movements, and intentions of the Yugoslav armies. This was a decisive factor, at least for the speed with which operations could be carried out.

In Greece events moved rapidly and on 4 May 1941 Hitler delivered a great speech in Berlin, which closed with the prediction that the Nazi State would endure for a thousand years.

As early as September 1940 Hitler had decided upon war with the Soviet Union. He knew this was no trifling matter and that careful preparations must be made. He had his eye on the oil fields of the Near East and his strategic goal was not Greece or Crete but the area around Mosul, Iraq. He would attack in two directions: from the Balkans through Turkey or Crete and Syria, and from North Africa via Egypt. These plans were revealed to the German intercept service when radio traffic of the Near East became the center of interest. The two intercept stations of the OKW were instructed to give priority to the traffic of Turkey, Iran, Iraq, Syria, Palestine, Trans-Jordan, and Egypt. Cryptanalytic activity became feverish, while in Turkey a vast espionage and propaganda organization was set up. The Arab population was to be turned against England and, if possible, a "Holy War" let loose. For success it was necessary to have Axis troops at the Suez Canal.

In September 1940 Graziani started his offensive against Alexandria from Cyrenaica. In a fortnight it had bogged down. On 9 December General Wavell began his counteroffensive and smashed the Italian front very quickly. On 6 February Benghazi fell. Then Wavell's offensive came to a halt on the frontier between Cyrenaica and Tripolitania. Italy had suffered its first great defeat in this war.

This eight week campaign attracted great attention. People were guessing as to where the British superiority might have lain. Certainly not in numbers, since the Italians were far stronger. Certainly not in materiel, since the Italians were well equipped and had had twenty years of experience in desert warfare; they knew the country far better than the English did. Of course General Wavell was a first rate military leader, but Graziani was no novice. In fact he was the Italian specialist in colonial warfare and from 1926 to 1932 he had fought all over Tripolitania and Cyrenaica and conquered them. How could this colonial strategist suffer such a disgraceful defeat?

The answer is simple. Back in 1926-1932 the German intercept service had been able to follow currently from Munich each of Graziani's operations including all preparations therefor, all dispositions and measures (whether regarding supply, equipment, transportation or what not) from Italian traffic. This was from a distance of many hundred

kilometers. At that time people in the German intercept control station in Berlin were astounded at the frivolous manner in which the Italians used the radio. Moreover, observation of Italian maneuvers had proven that they had not learned much subsequently.

When the Italian campaign in North Africa began in September 1940, our monitoring revealed conditions similar to those during Graziani's operations against the natives. Not quite so bad, it is true, but nevertheless "bad enough." No doubt Wavell had a smoothly functioning intercept service. The Italians radioed in a way that would warm the heart of any intercept operator. Consequently Wavell was very well informed regarding the situation on the Italian side. He could learn not only how many divisions were available but also all details regarding the disposition of units, their strength, their equipment, the number and type of planes, stocks of fuel, etc. After a few weeks all this could be learned by monitoring. Consequently, Wavell must have known the constitution of the Italian front and its effective strength down to the last detail by the time his offensive started. No matter what Graziani might do, he had not the least chance of success in the face of the compromising work of his own radio stations.

Early in January 1941 an agreement was reached between Hitler and Mussolini to send German troops to North Africa; the German "Afrika Korps" was to be set up under General Rommel. By mid-January troop trains began rolling over the Brenner Pass.

On 24 March 1941, a few days before the attack on Yugoslavia, Rommel launched his attack from El Agheila and immediately overrun the British front. Tobruk was reached on 12 April and Sollum on 16 April.

Viewed from a distance, Rommel's offensive was an astounding success. But it had been possible only because the British had a long supply line and because Wavell had had to give up three divisions out of his already weakened force for service in Greece. Germany and Italy had done everything possible to induce England to send these troops to the Balkans, because it was Rommel's mission to push through to the Suez Canal. German military circles were sure that after the departure of these three divisions, the African front would be so weak that a drive through northern Egypt would be possible. But an astonishing thing happened: Rommel did not get beyond Sollum. The British had not evacuated Tobruk and the encirclement of this city tied down too many of Rommel's forces, which should have been used to continue the offensive.

As has been stated, it was Rommel's mission to push through to the Suez Canal and appear opposite the Arabian peninsula. Simultaneously, an attack from the Balkans was to be launched across Turkey in the direction of Iraq. Meanwhile, by months of effort, the ground had been prepared in Iraq for the outbreak of a "Holy War" the moment Rommel reached the Suez Canal and German troops entered Asia Minor.

There was one man who warned against this campaign, just as he had warned against the campaign in the Balkans; that was the German ambassador.

in Ankara, von Papen. As a result the decision was made to attack via Crete and Syria rather than through Turkey.

In some way the English must have received and deciphered the telegrams passing between von Papen and Ribbentrop. It is certain that they had knowledge of the German plans from January 1941 on. Consequently they directed all efforts to the Near East.

In Iraq, a powerful friend, Raschid Ali el Gailani, had been won over and everything had been prepared for a coup d'etat.

In Iran, Reza Khan was friendly to Germany and had been reducing English influence in the oil fields of southern Iran. Numerous Germans had entered the country and had been enlisted in the intelligence service; after the beginning of the war, additional agents had been sent to Iran by way of Turkey. In the spring of 1941 the situation was such that Reza Khan was ready to act with Germany, once German troops had crossed the Suez Canal and the Bosphorus.

In Afghanistan there were numerous German agents engaged in shaping up the political situation.

In Syria things were even more simple. As a French mandated territory it was under the control of the German - Italian Armistice Commission. General Dentz, who commanded the French occupation troops here, was loyal to Vichy. No opposition on his part to the landing and transit of German troops was expected.

Realizing that the majority of the people in the Arab countries can be reached only through religious leaders, Germany had enlisted the Grand Mufti of Jerusalem. He had been in Berlin, had called on Hitler repeatedly, and was prepared to unleash a "Holy War" whenever Germany desired.

Only in Trans-Jordan was the government friendly to England. In gratitude for English support, the ruler, Emir Abdullah, had placed at the disposal of the British two corps. But since the two together had scarcely 1000 men and since the territory was small, no serious resistance was to be expected.

While preparations for a large scale action were going on in the Near East, a diversionary action was started to give the impression that Germany planned an attack on Switzerland and another on Portugal either in cooperation with Spain or at least with Spanish consent. This was done so successfully that the countries concerned and Great Britain seriously counted on such military operations. On 4 April came the German attack on Yugoslavia; on the same day Rommel pushed forward to Benghazi; on the same day there was a coup d'etat in Iraq.

Although the new government of Iraq proclaimed a desire to remain friends with Great Britain and Turkey, both countries received these protestations with skepticism. The British were monitoring Near East traffic and no doubt had broken the cryptographic systems. In any case,

German intentions could not remain concealed forever and England decided to act.

On 17 April strong British units landed in the harbor of Basra. Early in May the Government of Iraq handed the British Government an ultimatum requesting immediate removal of all British troops from the country. After it expired on 14 May, several airfields were surrounded and the pipe line to Haifa was cut. The Mossul oil fields were removed from British control and placed under guard. This interruption of the oil supply for the British Mediterranean fleet was one of the principal objectives of the operations directed from Germany. Without oil the British fleet would be incapable of action and the Italian fleet, in spite of severe losses in March, would dominate the Mediterranean, and be able to safeguard German landings. There were anti-British demonstrations in other Arab countries. German planes with officers and technicians landed in Syria and German troops occupied the island of Milos, midway between Athens and Crete. Rommel was at the Egyptian frontier. The end of British domination in the Near East seemed at hand.

On 10 May, Rudolf Hess flew to England to induce the British Government to reverse its policy on the basis of these facts and of the preparations being undertaken against Russia. He went not "Officially" but "Unofficially" with Hitler's knowledge.

On 14 May the German air attacks on Crete began, but the struggle for the island turned out more difficult than expected; it involved heavier losses and required more time than anticipated. Some 400 air craft were lost and almost 16,000 German soldiers lost their lives. Rommel did not get beyond Sollum. The British appeared at the Syrian frontier; General Wavell restored calm in Egypt; the Hess affair failed utterly. President Roosevelt proclaimed an unlimited state of emergency and was authorized to give unlimited aid to England. While German troops were fighting on Crete, the British moved into Syria. The picture had changed fundamentally. The campaign in the Near East was abandoned and the Balkan campaign became a mere episode. In Rome the Duke of Spoleto was proclaimed King of Croatia but did not deem it advisable to go to his new kingdom.

I cannot conclude this chapter without a few more words regarding the struggle for Crete. This was one of the decisive factors in the collapse of the plan for a leap in the Near East. The Germans had counted on taking Crete quickly in a surprise attack. The troops, aircraft, and ships that were made ready were intended primarily for the landing in Syria. Unexpectedly a large part was used up in the struggle for the Island of Crete.

How can we explain the unexpected resistance on this island?

I can offer no proof in support of the assumption I am about to set forth, but all my observations indicate that the garrison had precise knowledge of the impending attack. Possibly treachery was involved. The German preparations in Athens could not be kept secret in

the long run. Moreover, from all previous preparations one could easily conclude that an attack on the island would follow soon. All this, however, merely permitted one to recognize the intention to attack, hardly the points selected for the attack. For various reasons, I consider it probable that the British intercept service had obtained precise knowledge of details of the action. Churchill said himself in Commons, that the British Command was informed of the impending attack.

The resistance of the Allied troops, which almost everywhere gave the impression that they had been waiting impatiently for the German attack, the events off Cape Spatha where the German convoy was scattered and almost destroyed, these admit of no other explanation than that the defenders of the island were fully informed by radio of all details. Possibly there were English radio agents in Athens who got their information from high German sources but it is quite as likely that the German cryptographic systems had been solved and that German traffic was being read. This question only the British can answer.

THE CAMPAIGN IN THE EAST - 1941

While all the other campaigns of Hitler had some consistent, realistic basis, something dramatically theatrical attaches to the campaign in the East. This runs through the entire course of the enterprise, beginning with the planning of the campaign, the six documents put out by the OKW to throw the blame on the Russians, and ends - well it ends with the end.

On 22 June 1941 at 0530 Dr. Goebbels read over the German radio a long appeal by Hitler, to the German people. "Condemned to months of silence, the hour has now come when I can finally speak openly," thus the proclamation begins. Then follow all the old arguments: England's trickery, the dagger-in-the-back story of 1918, the efforts of the National Socialist Movement for unity, the Jewish-Bolshevist rulers in Russia, the treacherous Russian arming, the imperialistic aims of Moscow, and the Jewish-Anglo-Saxon instigators of the war. Many words and many untruths.

At 6 o'clock in the morning, in the hall of the Council of State in the Foreign Office, Ribbentrop revealed to representatives of the German and foreign press, who had been dragged from their beds, the note of the Foreign Office to the Soviet Government. The effect of this Sunday surprise on the German people varied. The National Socialists were enthusiastic. Some people had foreseen something of the sort and were not surprised; others believed the broadcast and found therein at last the explanation of the non-occurrence of the invasion of England; so Russia was to blame for everything! At last the story was out!

But a very large part of the German people had a dull feeling of great anxiety. A German author, who was well-informed in military matters, said to me that day: "The war in the East is no sign of German strength, rather it is the first serious sign of weakness!"

Then the German radio became silent. While everyone waited feverishly for news from the Eastern theater, all sorts of things were recounted over the German radio, only nothing about the war in the East. After a full week Goebbels pulled a theatrical stunt by having read at half hour intervals some eight or nine special reports, some were four or five days old. It was a downright childish attempt to increase the tension in order then to bring relief through these special reports as if by a clearing-off shower.

When the campaign in the East began, the German radio intercept service by months of observation had obtained a relatively clear picture of the Russian assembly. This gave the German command very valuable hints for planning and executing its operations. Moreover a captain of the Russian Air Force was captured about two weeks after the war started who betrayed the Russian air key so that Moelders' fighter squadron dealt the Russian Air Force several serious blows - in particular by shooting down more than 100 machines in a battle in the vicinity of Minsk. The Russian cryptographic system was changed shortly afterward, to be sure.

The German Air Force got another surprise during these early weeks. The German espionage service had learned before the out-break of the war that the Russian Air Force could throw some 10,000 planes into the struggle. There were also reliable reports that the Russian aviation industry was even then capable of fairly high production. In the General Staff of the German Air Force no credence was given these statements. It was decided to assume that the number of machines ready for action was 3,000.

Within a few weeks, more than 3,000 Russian machines were shot down but the Russian Air Force was still well represented in the air. The German General Staff began to mistrust its figures for planes shot down. Several commissions were sent out to count the remains of Russian machines, whereby more were found than had been reported. It was soon apparent that the German General Staff had thoroughly deceived itself. On 11 July 1941 the OKW report announced that 6,233 Russian air craft had been put out of action.

In the first week of July came the celebrated double-encirclement battle near Bialystok and Minsk, at the conclusion of which the OKW figured the total number of prisoners taken on 11 July at more than 400,000. This was an enormous number and the numbers subsequently reported were not too modest; they had only one out: they did not quite agree with the truth, or rather they consisted of a mixture of truth and fancy. Not only soldiers but also male civilians picked up in the battle area had been counted.

When the campaign began, the Germans expected not only the Russian Army but also the political structure of the Soviet Union to collapse. Hitler called the struggle a crusade against Bolshevism and claimed it was not directed against Russia as such or against the Russian people. Russian emigrants in Germany supported this version and claimed that

the Russian people as a whole was longing for the overthrow of the Bolshevik system.

The German troops were ordered not to fire on the demonstrative processions which would come to meet them, bearing banners with pictures of saints and in the Russian national colors (blue - white - red). So false was the picture entertained in influential German circles of political conditions in the Soviet Union and of the psychology of the Russian people!

Thoughtful people were asking themselves five questions:

1. What will be the effect of the vast space of Russia on fast moving units? The Sino-Japanese war afforded some clues but the terrain of European Russia was different.

2. What will be the effect of the Russian winter with its low temperature and snow fall and of the condition of Russian highways on operations of an attacker relying chiefly on motorized warfare?

3. Is the internal structure of the Soviet Union firm enough to endure severe initial defeat? Or is there danger that - as in 1917 - unrest will result in a chain of defeats? Is there really a broad stratum in the population which is suitable and is in a position to start a counter movement?

4. Will the German attack evoke a new awakening of national feeling on the part of the Russian people? Russian history shows several such cases: once early in the 17th century under pressure from the Poles after the House of Rurik had died out; again in 1812; and a third time in 1921 in the war against the new Polish Republic while Russia was itself in the midst of civil war!

5. What is the defensive strength of the Soviet Union in personnel and materiel? What is the capacity of the munitions industry?

These questions could be discussed but only the course of events would give valid answers. The German High Command had answered them all in advance in Germany's favor, especially number 3. By leaflets and by radio reports were spread repeatedly that Russian units had killed their political commissars and surrendered. Day by day the Finnish radio broadcast in Russian the admonition: "chase out the commissars and clean house in Russia; then the Germans will readily come to an understanding with you!"

The Russian people is not a hot-blooded race which it is easy to inflame. The Russian people has often been characterized as a sluggish mass.

This is not correct. The Russian people has a quiet dynamic force of its own. If this force is aroused - and that can only happen under extraordinary circumstances and even then not over night but only by slow degrees - then it gains momentum and moves toward its goal as

irresistibly as a gigantic steam roller, having regard for nothing, shying at no danger, sparing no sacrifice. Once aroused in this war, this force would not ebb until the last foe had been driven from the sacred soil of Russia.

What those really acquainted with Russia knew and expected, came to pass. To the political fanaticism of the mass of the Russian people, which would never have proven decisive by itself, was added what Tukhachevski had striven for four years earlier, although in a different form. In the Soviet Union, the land of the Internationale, of the Comintern, of cosmopolitan Bolshevism, arose the idea of a national struggle for liberation. The watchword was not: "Proletarians of all countries, unite! This struggle is being waged in your behalf!" but rather: "Rise for the battle of liberation to preserve the inviolability of the homeland!"

Instead of bringing on demoralization, each German victory increased the determination of the Russian people to see the struggle through to the end.

Just what released this force in Russia? It was the fact that the National Socialist German Command had unmasked its true intentions prematurely. The propaganda of a "holy war against Bolshevism" had retreated into the background and quite frank talk about "space in the East" had taken its place. The gospel of "space in the East", which had been pounded into the heads of the younger German generation on all occasions, meant the occupation of the holy soil of Russia.

Anti-Bolshevist Russian emigrants in Central and Western Europe turned away from the "holy war against Bolshevism". This went so far that in August 1941 leading members of the White Guard in Paris, who had risked their lives fighting against Bolshevism, were arrested by the German Gestapo because they openly advocated defense of Russian soil. Even Gortshakov, who had been appointed by the Germans chief of Russian emigrants in German occupied territory, finally turned away from Germany.

By the middle of July 1941, the "Blitz" in the East was at an end. There followed a struggle against an opponent who fought bitterly and tenaciously. Every city was defended desperately. The German timetable was already wrecked.

The losses on both sides were enormous. On the German side at the end of July 1941 almost a million men had dropped out. The Propaganda Section thought it expedient to combat the "rumors" of heavy German losses. By mid-August, the Germans reached the Dnieper, south of Kiev, and were approaching Odessa, while the advance on Leningrad was under way.

On 16 August the OKW issued an official communique stating that the resistance of the enemy had everywhere been broken; the Russians were throwing in hurriedly-assembled reserves.

On 20 August a battle in the Gomel area terminated, in which parts of 25 Russian divisions had participated. Gomel was occupied but Odessa and Leningrad were preparing for stubborn defense. The degree to which the Russians were prepared to defend their cities had been shown at Smolensk: most of the city was destroyed and of its 160,000 inhabitants only 15,000 were there when the Germans marched in.

By the end of August the German advance was growing slower and slower even though individual victories could be reported.

Many may still recall the communique of the OKW in the second half of August which said that the Russian front was in a state of dissolution; no unified command could be recognized any longer. Behind this pronouncement, which was couched in propagandistic style, there was more than appeared at first sight. It is intriguing to look into this last statement.

Under the fury of the first German assault, which caused the entire Russian front to waiver, the system of Russian army radio traffic had likewise been badly shaken, especially in the matter of camouflage against the foreign intercept service. The Russian radio service had operated in such fashion that, with the systems employed, the relations of the radio stations and therefore of the unit staffs with one another were kept far from transparent, and in many cases could not be recognized at all. The breaking of the front at various points; the encirclement of entire divisions, corps, and armies; the swift retreat of the Russians at many points; the bringing up of reinforcements and replacements; the necessity of closing gaps; reconnaissance over large areas; the lack of any wire net of their own - all this forced the Russians in countless cases to use radio without considering whether the enemy would derive benefit therefrom or not. "Results take precedence over concealment" - that is an old military maxim which had to be applied in this case. In consequence, the German intercept service got a well rounded picture of radio connections and also of the command relations extending from regiments and divisions up to the highest staffs. The phenomenon was similar to that manifested in the campaign in the West.

Now when the Russians had overcome the first disasters and had begun an orderly retreat according to plan, while gaps in the front began to close, order returned slowly in the Russian radio service. The old system, based on link traffic with multiple frequencies and call signs, cautious handling of messages, avoidance of plain text, etc., again came into its own. With this, the connecting lines on the radio charts of the evaluators and of the intercept service disappeared more and more and a chaotic picture resulted, consisting of single radio links without any connection. Viewed on the map, this could only give the impression of a progressive dissolution of the organic subordination hitherto observed. The conclusion drawn was that the Russian system of command was breaking down more and more and that the front everywhere consisted merely of resistance groups without connection with one another. "No unified command could be recognized any longer."

In reality the reverse was true. That which represented a strengthening of the Russian front was erroneously evaluated as a phenomenon of dissolution.

Such a capital mistake was only possible because in the expansion of the German intercept service one had neglected to increase correspondingly the number of qualified evaluators. Instead of training and assigning people of the highest intelligence with a precise knowledge of the organization of the Russian army and the Russian radio service, recourse was had to non-commissioned officers who had no operational background and knew little or nothing about specifically Russian military affairs. So far as I know, there were at the beginning of the war two or three German evaluators who had had experience with the radio situation in the East! Ten times that number would have been necessary. Recourse was had to evaluators trained for work in the West. The first - abnormal - radio picture these men got of the Russians was taken by them to be the normal picture, because it corresponded to the normal picture in the West. Then when the situation changed and the normal Russian radio picture was revealed, these men - using western norms - were misled into drawing conclusions that would have been appropriate in the West. This was a fateful error.

Leningrad held out and Odessa fought heroically until mid-October. The battle for these two cities was a preview of what was to come.

Meanwhile Hitler and Ribbentrop were trying eagerly to draw Japan into the war against Russia but Japan had other interests - it cast its eyes toward the south.

Moreover, war production in the U.S.A. had gotten under way and deliveries to the Soviet Union began to flow via Iran and the Caucasus.

The National Socialists still maintained that the Russians were fighting so stubbornly only because the political commissars forced them into battle with drawn pistols. Few stopped to think that one man - even the wildest, with a pistol in his hand - cannot possibly dominate and drive forward the 4000 men of a Russian regiment on the battle field. No, it was not the commissars who caused the increasingly fanatical resistance, it was the national conscience, it was the will to protect the homeland. Unit after unit fought to the last man, few prisoners still had a weapon. Such resistance to the point of annihilation was not due to commissars threatening with revolvers. Of course, the commissars did work tirelessly with propaganda to support the discipline and fighting spirit but the decisive factor was the will to defend the sacred soil of Russia.

Such resistance was something the German troops had not met before. Even on Crete, where it had been toughest, resistance had not assumed these forms. German operations were slowed up in comparison with progress in the west, north, and south. This explains repeated reference on the German radio and in the press to the "criminal and senseless resistance of the Soviets"; it is also the reason for Hitler's remark on

3 October 1941 that in the East they faced an enemy consisting not of men but of animals and beasts.

Significant was the first statement in that speech: "I say it today for the first time, because today I can say it, this enemy is already broken and will never rise again".

This abysmal self-deception may be without parallel, at all events it was fateful because followed by a second statement: "We have been so forehanded that in the midst of this mighty war of materiel I can now cut back production in many lines, because I know there is no longer any opponent whom we cannot overcome with the stock of ammunition on hand." This was not propaganda, production in many lines was cut and many a German soldier subsequently suffered in consequence.

On the night from 1 to 2 October the decisive battle began and into it Hitler threw all he had. On 18 October the double battle of Briansk and Viasma ended with the destruction of 8 Russian armies and the capture of almost 650,000 men. The road to Moscow appeared to lie open.

On 23 October the German papers triumphantly published the news that Marshals Voroshilov, Timoshenko, and Budennyj had been relieved of their commands and turned over to the GPU. "Great Purge", "They are Silent in Moscow" were among the headlines. It was no purge, however, and Moscow had good reason to be silent. These experienced commanders had been sent to the East to train new units.

During August, September, and October 1941, the German army intercept service had been monitoring radio traffic of Russian stations east of Moscow (in the area Jaroslavl - Kostroma - Vladimir - Rjasan - Kolonna - Moscow - Kaljasin - Jaroslavl), which was becoming more and more active. From this it appeared that there was being set up in this area an army reserve of some 40 divisions. This was not tactical or operational or practice traffic of these divisions; the troops radio stations were sealed and were not allowed to put in an appearance; only procurement traffic for this reserve was involved. It was kept in cipher but the Germans were soon able to decipher and read it completely at the intercept control station in Lützen. These deciphered messages revealed:

- The numbers of the divisions being formed,
- Their type (tank, infantry, motorized, cavalry, or other divisions),
- Their composition and organization,
- Their numerical strength,
- Their equipment with arms and ammunition,
- Their subordination.

Colonel Kettler, Chief of the Intercept Control Station, composed an exhaustive report and sent it through General E. Fellgiebel, Chief of the Armed Forces Signal Troops (the man murdered by Hitler after 20 July 1944), to the General Staff, Section Foreign Armies East, General Matzky, who passed it on.

What was set forth there met with immediate rejection, however, and a few days later the report came back to Fellgiebel with the following marginal notations:

"They ought to put this "Hosenscheisser" Kettler out of business.

(signed) Jodl."

"This is also the opinion of the Führer.

(signed) Fegelein."

(Fegelein was Superior Group Leader in the SS and later Hitler's brother-in-law; he was a near relative of Eva Braun and was shot shortly before the end of the war by order of Hitler.)

Fellgiebel sent the report back to Kettler and that was the end of the matter. But the "Hosenscheisser" was given a command at the front. Late in October this traffic ceased and at Hitler's Headquarters they were firmly convinced that it had been a Russian hoax. The "Führer" had been right - as always.

Nevertheless, the early days of November were marked by increasingly stiff resistance in front of Moscow. Without the German intercept service at the front having been able to notice anything, the Russians had brought up fresh units and assembled them in a mighty arc northwest and south of Moscow. They now achieved their first great victory in the ether.

On 3 November the fifth German offensive had bogged down without even approximately reaching its goal.

Among German army commanders a light began to dawn. They now recalled numerous reports by X 49, X 33, and V 100, mentioning potential reserves of the Soviet Union, the time table of Russian mobilization, and the capacity of the munitions industry beyond the Volga. Brauchitsch recommended withdrawing the German front for the winter to the line Riga - Kiev - Nikolajev. Hitler's answer was the order for the sixth German offensive against Moscow, although even in his mind the magnitude of the risk was beginning to dawn. On 9 November in Munich he no longer promised the greatest victory of all times but declared anything was possible, save that Germany would ever capitulate. He also insisted that a German officer who did not defend himself would be courtmartialled. The sixth and last drive on Moscow began.

Conversation of officers in Germany revealed that the immediate goals of the campaign in the East were Moscow and the Caucasus. Both must be achieved this year; then there would be a breathing spell, and in the spring the whole area would be cleared of partisans.

Yes, the partisans! The German public rarely heard of these fighters for freedom. According to the National Socialist press they belonged to the "worst scum of the Bolshevik criminal world". They were not

considered to be soldiers. Gradually word trickled through that these were not roving single bandits but very considerable groups who attacked German rear communications according to plan. But it was quite a while before the German intercept service established the fact that these fighting groups were equipped with radios and that their activities were controlled by radio. By the time this was ascertained, the extent of this traffic had taken on stately proportions.

The observation of these transmitters and especially the task of locating them proved very difficult, not merely because they changed their position almost daily but also because the transmission strength was relatively low, in any case far lower than the strength of the army stations intercepted. Since the facilities and personnel of the intercept companies (which were monitoring the enemy's army traffic) and of similar monitoring units of Radio Counterintelligence (which were supposed to cover agent traffic) were by no means sufficient for the task, there arose a jurisdictional squabble between the two organizations, each asserting that this new type of traffic belonged to the task of the other.

Actually each was right from its own point of view but that did not help matters and the result was a vacuum which was just beginning to close when it was already too late.

Toward the turn of the year a terrific number of partisan radio stations blanketed both battle fronts in a broad band. The control stations were behind the Russian front, the partisan transmitters were behind the German front.

Not until the spring of 1942, when Russian partisan traffic had assumed tremendous proportions, was the Commander of Intercept Troops Center (in whose area were found the most partisan stations) given two "platoons" (groups of about 40 men each) of a monitoring company just trained for observing Russian partisans. Two "platoons" to watch hundreds of stations! A pitiful solution! And when in the summer of 1942 the two platoons were expanded to a company, their strength was still not equal to the task.

One cannot comprehend the slowness of the German command in reacting to any new problem and in taking effective countermeasures. And even then the measures were inadequate. We may anticipate here by stating that the failure throughout the campaign in the east to combat Russian partisan radio properly was astounding.

But to return to the events of November 1941.

On 22 November the sixth German offensive against Moscow had bogged down hopelessly and instead of reaching the Caucasus, German troops had to evacuate Rostov, which they had meanwhile conquered. Behind the center of the German front, partisans were disturbing communications and supply.

In Washington President Roosevelt ordered the Army, Navy, and the Office of War Production to work out a "victory program" with an annual outlay of 50,000,000,000 dollars. Meanwhile, supplies for the Soviet Union were already rolling through the Near East.

On 22 November the last German offensive against Moscow came to an end. In the following night the first great Russian winter offensive began. From Voronezh to Lake Ladoga the German lines were pushed back. Mighty wedges ripped the German front so that in a gigantic zig-zag line. Only heroic efforts on the part of the German commanders and troops could prevent a catastrophe. Only by prompt withdrawal could units be saved from annihilation and commanders had to act on their own responsibility; following principles of modern strategy. But Hitler would hear nothing of such tactics. He ordered them to hold out, no matter how the situation might shape up. Yield a line they had reached? - never! Military tactics must be subordinated to the requirements of politics and propaganda. Commanders who had withdrawn to more favorable positions were disciplined by Hitler. With his own hands he tore the decorations from their necks, degraded them, and threw them out of the army. By the dozens! Had these men acted as Hitler desired and allowed themselves to be encircled, then the German front in the East would have collapsed at that time. The German Air Force was able to supply the group encircled near Demjansk for months but it could never have supplied three or four such groups. Twenty-five German generals were relieved of their command but without their action the entire Eastern army might have been destroyed during that frightful winter.

The two fronts became enmeshed. German support points, divisions, and corps were encircled. Already 1,300,000 German soldiers lay buried in Russian soil; 3,500,000 had been wounded. Fresh troops were hard to find; the Class of 1923, which had been called up in August and September 1941, was shipped to the eastern front and the occupied territories in the east were almost stripped of troops. Mussolini refused Hitler's request for more Italian divisions. German propaganda took a new turn. There was praise for the bravery of the Russian soldiers, for Russian strategy and materiel, while the political leadership was decried. Hitler hoped to prepare the ground for a decisive offensive by the spring of 1942.

The course of the winter offensive 1941/42 took the whole world by surprise. Most surprised was the German command. Any attempt to explain these events solely by errors of the German command will prove inadequate. Of course, Hitler deceived himself regarding a collapse of the Soviet regime, he underestimated Russian strength and productive capacity in a fateful manner, and it was serious for German troops to have to undergo this Russian winter without proper equipment. Moreover the verve of Russian attacks was astounding, a surprising factor after the serious defeats they had suffered. This does not mean that the morale and fighting strength of the German soldier failed during those weeks and months. In spite of the severity of the winter, to which he was utterly unaccustomed, the heroism displayed by the German soldier far exceeded all previous performances.

What was it then that enabled the Russians to turn around after such defeats and bring the northern half of the German front to the brink of destruction? The reasons will be dealt with in the following sections. The real reason was radio espionage, by which we mean the equipment of spies and agents with small portable sets.

By the middle of January 1942 the northern half of the eastern front began to be stabilized. The Russian counter-offensive was stuck. The German front was holding and Hitler was beginning preparations for the summer campaign of 1942. This time the decision was to be sought in the south. Vast masses of war material rolled to the Balkans. Repair and workshop material, including special sections for Ju 52's* as well as speed boats in sections, were shipped to the south, mostly to Salonika and Cavalla, likewise two complete airborne divisions. The plan of the preceding year was revived. Boats prepared for the invasion of England sailed up the Rhine and at Mainz were loaded on trains for shipment to the Danube. New transport gliders with a span of 55 meters were constructed to carry 150 men with equipment. People in OKW were convinced that the Russians had thrown their last reserves into their winter offensive and that these would soon break down under the powerful blows of the German armed forces.

How badly the Germans still misjudged the enemy situation was shown by the formation of so-called air force field divisions. They thought the Russian air force was so weakened that they could afford to cut down their own air force to form field divisions from the personnel. This was done when the Russians were just getting mass production of planes under way in Magnitogorsk and Chelyabinsk.

In order to leave its own higher commanders in the dark regarding the situation in hostile countries, the Führer's Headquarters, toward the end of January 1942, ordered the cipher section of OKW, as the control and evaluation center of the intercept service, to cease multigraphing and distributing the daily summaries of the situation as revealed by the intercept service and to bring these results to the knowledge of only a small group of persons, using very few copies. One was becoming fearful about letting the actual situation in Germany and on the enemy side be known.

JAPAN ENTERS THE WAR

At this point something of great significance occurred which was calculated on the one hand to divert attention from the course of military events in Russia and on the other hand to bring the war as a whole into an entirely new phase. This was the Japanese attack on Pearl Harbor on 7 December 1941 and the ensuing Japanese declaration of war against the U.S.A. and Great Britain, followed by the declarations of war by Germany and Italy on 11 December.

* Junkers 52 - transport plane.

At first sight it seems incomprehensible that these declarations of war should result at the very moment when the military picture was for the first time turning against Germany. Had the Japanese attack come three or four months earlier, coinciding with the German victories in the East, it might have appeared intelligible. In December, when the entire northern half of the German eastern front was in a serious situation, such a step could only appear incomprehensible. Nevertheless, there was a causal connection between the turn in the fortunes of war in Eastern Europe and the beginning of the war in the Far East.

The sequence of incidents is interesting. Starting in August 1941 when the war in Russia ceased to be brisk and merry and became bitter and serious, Hitler repeatedly invited the Japanese Ambassador, Hiroshi Oshima, to the eastern front - naturally to those points where the situation was favorable for the Germans. In October these visits ceased and efforts to influence Oshima to encourage Japan to enter the war became obvious. There were also incidents in the Atlantic.

From 1934 to 1938 Oshima had been Japanese military attache in Berlin. It was then that the collaboration of the Japanese secret service with the counterespionage section of the Ministry of War in Berlin began. Oshima was well acquainted with Admiral Canaris. Oshima's house - a ten minute walk from the Ministry of War - became a "center of social and comradly association." In other words Oshima knew how to cultivate social connections which appeared worth while for his work.

Early in 1935, Admiral Canaris ordered the head of Group I of the Counterespionage Section to send to him (Canaris) for transmission to Oshima one copy of all information referring to the Soviet Union which might be of interest to Japan. In return, Group I received from Oshima questionnaires which were translated and passed to X-49 (Dosto) and these were answered by the latter to the best of his ability.

At that time the question of cooperation between the Japanese and German cryptanalytic services was brought up for the first time but was soon dropped again because this cooperation was expressly limited to the front against the Soviet Union and here German cryptanalytic results were very slim. Oshima was unwilling to reveal anything regarding other cryptographic systems. Now and then he received - without indication of the source - bits of information which were based on German cryptanalytic work.

Down to 1938 this cooperation remained within very modest insight into the organization of the German intercept service. There was even talk of sending German intercept personnel to Japan to collaborate there (In Manchuria).

When Oshima was appointed Japanese ambassador in 1938, mutual confidence had reached the point where collaboration in the field of general intelligence was relatively close. But it was based solely on the person of Oshima and when he was replaced by Kurusu in October 1939

it soon ebbed away. Relations between the two countries remained close and the Three Power Pact was concluded on 27 September 1940 but contact in the field of intelligence practically ceased.

This was undesirable for Japan, especially since the war had entered a phase of uncertainty following the campaign in the west. In the Far East, on the other hand, the causes of conflict were increasing. Meanwhile Japan began looking to the south; i.e., to a front against Great Britain, the United States, and the Netherlands. Hence Japan wished to reestablish relations in the intelligence field but with reference to the countries just mentioned. For this Oshima was the suitable person.

On the other hand, Hitler had begun his encirclement of the Soviet Union and needed Japan to complete his ring. In the Wilhelmstrasse a desire for strengthened relations was manifest. They remembered Oshima and thought he would be the right man. Kurusu was recalled in February 1941 and Oshima appeared again in Berlin. Late in March Matsuoka, the Japanese Foreign Minister, appeared and walked with Keitel and Ribbentrop along the front of the Guard Company before the Anhalt Station. Matsuoka's reception was pompous and was intended to emphasize Germany's military strength.

But the results of the negotiations were not "binding". Contradictory purposes were too apparent. However, this did not prevent each party from pursuing its course and entertaining hope of attaining its goal.

Cooperation in the field of intelligence was quickly reestablished but in the main covered only the Soviet Union. Oshima's interest meanwhile had turned in a different direction.

The moment was favorable; various British cryptographic systems had been deciphered in Berlin. Feller's telegrams were already being read.* Some other American systems had been solved. The naval cryptanalytic service had secured a good idea of the radio systems and cryptographic systems of the British navy. The Poles were supplying excellent information regarding the situation in England and elsewhere. Thus Oshima found the ground well prepared and reestablished his connections. In his new dwelling he soon saw the old circle of acquaintances about him.

On 22 July 1941 Hitler opened the struggle against the Soviet Union. At first all went according to plan but from August on the situation began to grow more serious.

Oshima was invited to the eastern front and shown the most impressive points. This did not help; Japan's goal lay in another direction. Beginning in September Hitler became ever more anxious for Japan to enter the war on Germany's side. Oshima let it be known that

* See: "Rommel up to El Alamein", page 153.

the British and American ciphers would be of great value to Japan. They smiled at one another, talked about Japanese art and European technology, of the Order of the Chrysanthemum, of the submarine war - and waited.

In Eastern Europe the picture was growing less pretty from day to day. To wait, you need time, and in Hitler's case time was getting short. He had to use this chance while the myth of the power of the German armed forces was not yet shaken. Today his credit was unlimited, but no one could tell how it would be in six months.

When it became clear that Japan did not intend under any circumstances to enter the war against the Soviet Union but was looking for a front in another direction, they intimated to Oshima that they were ready to give Japan the solved American and British ciphers and to collaborate in this field in case Japan's declaration of war against the two countries followed at once.

Oshima telegraphed to Tokyo. The telegrams were long and there were many of them. They were intercepted by the German intercept station, deciphered by OKW, and translated in the Foreign Office. What Oshima radiocoded was known. Also what he received by radio. The message indicators were:

KOSHI and GAJMUDAJIN.

Moreover, telegrams with the address RIKUGUN TOKYO were not to be despised. Hence it was known how and where to apply pressure. Day and night before Oshima's eyes dangled the bait of the solved ciphers as well as the possibilities of listening in on the radio conversations between Churchill and Roosevelt. "Now or never!", said the Germans, but Oshima said: "First the ciphers! Complete cooperation in the field of cryptanalysis! Declaration of war by Germany and Italy against the United States within a week after the beginning of hostilities in the Pacific!".

It was a hard deal. But it came about. On Germany's part, challenges now began. On 17 October the American destroyer "Kearny" was torpedoed in the Atlantic, shortly after the American destroyer "Greer" had been attacked. On 1 November Hitler's Headquarters issued a sharp official statement referring to a speech by Roosevelt. Goebbels let loose a wild press campaign against Roosevelt. The articles in German papers from 1 November on can only be evaluated correctly in connection with the intention to worsen a situation and to spur Japan to attack.

Further incidents followed. On 9 November Hitler delivered a flaming speech in which he violently attacked Roosevelt, Wilkie, and the United States. German submarines were ordered to display the utmost activity. Japan was to have a good impression. The British carrier "Ark Royal" and the battleship "Malaya" were torpedoed. Collaboration in the field of cryptanalysis got under way. The prerequisite exchange of "information" for the struggle was already established.

On 7 December followed the Japanese attack on Pearl Harbor.

RADIO AGENTS

The first phase of Adolph Hitler's Campaign in the East was at an end. The world held its breath and listened attentively. We, too, will pause briefly in our description of the campaign and listen attentively to other things which will be mentioned here for the first time.

Later we shall show in connected fashion the manner in which, and the extent to which, the radio agents, who appeared for the first time during World War II, decisively influenced the entire course of the unhappy struggle. At this point we shall merely anticipate by saying that the Soviet Union, recognizing what was to come, began promptly to span all Europe with a network of agents in order to get current reports on military, political, and industrial situations in Western Europe in the event of possible military complications.

These agents were equipped with radio apparatus so that they might pass their reports to Moscow as safely and quickly as possible. One such agent center had been organized in the summer of 1941 in Switzerland. This network, which spread from Switzerland to Germany, had three radio stations, all located in Swiss territory. The traffic was soon spotted and monitored currently by the German intercept service but for a long time it was not possible to decipher the radiograms. This radio net was called the "Rote Drei".

We shall have a great deal to say about the "Rote Drei". Here we shall merely tell how this set-up worked during the early days of the Russian campaign.

Naturally some time elapsed before this espionage service got established. The first messages were intercepted in September 1941, and they had numbers running from 200 up; i.e., the first 200 radiograms escaped the German intercept service. Probably this organization began to function immediately after 22 June 1941.

While the German troops were storming forward in the east and special reports of their victories were being broadcast, in Switzerland (and in other countries) an intensive Russian espionage activity began. Day by day radiograms went to Moscow and supplied the intelligence section of the Russian General Staff with the basis for conducting its operations. It was an invisible struggle that was developing here.

Typical examples of the message which were to undermine the efforts of the German High Command were these messages from Switzerland to Russia, which were not deciphered until too late.

According to a High German Officer in Brittany, 30 divisions are being transferred from the West to the East Front.

From Chinese diplomatic circles:

1. 400,000 Germans are holding strategic points in Italy as guarantee against a separate peace by Italy. Feeling in Italy increasingly anti-German.
2. Germany willing that Finland conclude a separate peace after occupying Leningrad since this would shorten the German front and ease supply and transportation.

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Description of an anti-aircraft cannon.

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Immediate aim of the Germans is to cut communications of U.S.S.R. with Anglo-Saxons by taking Murmansk.

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Swiss Military Attache in Italy reports increasing tension between Italian Army and Facist Party.

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From Domei representatives in Berlin:

Opinion spreading in high officer circles that, due to failure of Blitzkrieg, German victory is impossible and all Europe will be Bolshevized, unless peace is concluded with England.

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Formulae for new German poisons.

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Hitler's order based on capture of Leningrad and Odessa by 15 September. All information of Swiss General Staff comes from a German Officer located at OKW. Shall call intelligence section

of Swiss General Staff "Luise".

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Germans concentrating troops between Munich and Brenner because of possibility of upheaval in Italy. Italians continue fortification of northern frontier.

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Via Long from Luise from OKW.

1. Due to losses most German divisions on the eastern front have lost homogeneity. Along with people completely trained they have men with four to six months training and less.
2. Leading generals in OKW now count on 30 months duration of the war after which compromise peace possible.

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1. Tanks of propaganda companies in Brjansk awaiting entry into Moscow first was set for 14 then for 20 October.
2. On 17 October arrangements for possible long siege of Moscow. Heavy coastal and naval artillery under way for days from Königsberg and Breslau. German press forbidden to write about conquest of Moscow.

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From Berlin from Luise.

New attack on Moscow not result of strategic decision but due to discontent in army because since 22 June no new goals have been attained. Plan 1 Ural, Plan 2 Archangel-Astrakhan, Plan 3 Caucasus, abandoned because of Soviet resistance. Supply

suffers most through these changes of plans.

1. Stock of German Aircraft now 22,000 machines of first and second line, also 6,000 - 6,500 Ju 52 transport planes.
2. At present 10 - 12 dive bombers built daily in Germany.
3. Bomber units formerly in Crete being transferred to the East: part to Crimea, rest distributed over remaining front.
4. Number of planes lost on east front averaged 45 daily from 22 June till end of September.
5. New Messerschmitt ground attack plane has two cannon and two machine guns. All four mounted laterally on wings. Speed 600 km per hour.

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Germans threw all they had into struggle for Moscow and Crimea. Drill grounds and barracks in Germany almost entirely empty.

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High officers of German occupation in Paris estimate duration of war at two more years and expect defeat of Germany; German people weary of war and resigned. Masses still believe in final victory but intellectuals and high military circles skeptical regarding outcome in east. Hitler's death or defeat at front would mean end of Nazi rule by military dictatorship.

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Victories on east front cost elite of German army. Russian tanks often superior. Lithuanians and Esthonians convinced

Soviets are coming back.

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Generals, General Staff men, and Goering no longer consider German military victory possible. More than 12 tank divisions destroyed by end of October. Men weary, officer corps shows signs of discouragement.

WHERE DID THE RUSSIANS GET THEIR INFORMATION?

No one can tell today whether, when, and to what extent the Russians may someday release the archives of the Information Section of the General Staff of the Red Army and let the public know some of the things contained therein. This would doubtless bring to light many things of which no one dreams today.

If, in what follows, I venture some observations on the subject of the Russian information service, I am well aware that I can offer no proof and that what follows is only my personal opinion. This opinion is based upon more than 25 years of experience. If I now speak of things for which I cannot produce documentary proof, this is not a flight of fancy but the results of deductions from many symptoms which, taken collectively, forced me to these conclusions.

From the spring of 1942 on, it could be observed that the Russians were increasingly well informed about the German order of battle, strength, equipment, armaments, communications, and supply. Not only that, they were in most cases informed of German operational plans and preparations. This was much more serious.

Undoubtedly part of this knowledge was to be explained by the activity of partisans behind the German lines. Certainly the Russians had obtained much information from the statements of deserters and from captured soldiers and officers as well as from papers found on the latter. Certainly they learned a great deal through the activity of individual spies in areas occupied by German troops. Air reconnaissance also supplied much trustworthy information regarding enemy situations, troop concentrations, movements and the like. Added to this were the front reports of German propaganda companies, whose radio transmissions often afforded the enemy valuable hints. All these taken together gave the Russians very useful and enlightening material. Nevertheless, these do not by any means account for all the knowledge the Russians had of German operational intentions, plans, and preparations. They do not account for Russian knowledge of details of the German situation which were top secret and not always known even to high officers. When - very much later - it was positively established from deciphering radiograms of Polish agents that the Russians had knowledge of many German

Please remove pages 163 and 164 from your copy
of SRH-002 and insert the attached pages 163, 163A,
163B and 164. (1 Dec 81)

operational plans, the opinion arose in Germany that there must be a traitor at Hitler's Headquarters who was sending current information to the Russians. The cry of treason was often raised later on, especially in the east.

I do not believe that this was true to the extent and in the form generally assumed, but this question will be examined somewhat more closely later on. As for myself, I have no doubt that the Russians drew a very essential part of their information from their intercept service; i.e., from the interception and decipherment of German messages sent by radio and by wire.

I do not know when they succeeded in breaking into the German cryptographic systems. In my estimation, they were able by early March 1942 to read currently at least one or two of the cryptographic systems used by the German High Command. That put them in a position to recognize all details of the German initial assembly in the Kharkov area and the underlying operational ideas. For there is no doubt that they knew all this long before the beginning of the fighting. And it testifies to their confidence in the strength and striking power of the Red Army - this army which Hitler was supposed to have broken long before - that as soon as they knew of German intentions and preparations, they decided to undertake a strong concentration of troops in the opposite area and to strike the German assemblies with great force.

The "Kharkov case", which will be clarified later in another way, was not an isolated one. There were numerous indications that the Russians on all sectors of the front were well informed regarding the situation on the German side. I have already said that my view of this matter rests on the symptoms observed and deductions therefrom. I might illustrate this general statement by an example.

The cipher machine had been introduced by the German army for radio traffic about 1927. After years of work the so-called "Enigma" was developed, a cipher machine which was operated like a typewriter and automatically transformed plain text into cipher text by a system of wheels, ring settings, and pluggings. By changing the wheel order, the ring setting, and the plugging a vast number of variations could be introduced into the cipher text and the key could be changed daily. In the view of the cryptanalytic experts, messages enciphered with the "Enigma" could not be deciphered by unauthorized parties and were therefore secure against foreign intercept services.

Some experts of the German intercept service had warned from the very beginning against attributing excessive significance to this machine, since it would suffice if the enemy reconstructed a considerable number of the machines - which was possible at any time - and then typed off in a purely mechanical manner the various possibilities - which could be done very rapidly. With one machine it would be possible to test four variations in a minute; i.e., 5,500 to 6,000 possibilities in 24 hours. By using a greater number of machines this total could be increased correspondingly.

When Czechoslovakia was occupied by German troops, evidence was found in Prague that the Czechs had deciphered messages enciphered with the "Enigma". How this was done remained unknown. But this proved that unauthorized decipherment of Enigma messages was possible. One of the German cryptanalytic experts then undertook to check the machine and found that solution was possible given a minimum of 25 messages enciphered with the same setting of the machine. Now it is quite easy to find 25 messages in 24 hours, consequently foreign cryptanalytic

services had a good chance of reading enciphered German army traffic. The "Enigma" was then altered somewhat by increasing the number of wheels from three to five, whereupon the cryptanalytic experts in Berlin declared that henceforth messages enciphered with this machine would be secure.

Years passed. The Second World War brought Germany three years of great victories and two years of equally great defeats and reverses. During all this time the German military staffs had worked to their heart's content with the Enigma. And hundreds of thousands of radiograms had been shot out into space. Then in the spring of 1944 the following happened:

A German office in France inquired via Paris of the cryptanalytic unit of OKW in Berlin whether messages on a Polish agent network with a certain characteristic were being deciphered and read. Due to some disturbance of the teletype network, the answer was sent by radio; it was affirmative and was enciphered by the daily key of the "Enigma". Before 24 hours had elapsed the Polish cipher ceased to be used.

Someone may object that there might have been intentional or careless betrayal on the part of the German military office in France and that the content of the Berlin answer was revealed to the enemy after it had been deciphered at the office to which it was addressed. Of course this is a possibility. However, I consider it unlikely. I am convinced that the messages enciphered by this "Enigma" were currently deciphered and read by both the English and Russian cryptanalytic services.

In spite of this obvious warning, nothing changed in Germany. Any idea of doing away with the "Enigma" met immediately with resolute opposition. In the competent offices there was no longer the vigor or the possibility of carrying out the long chain of measures and changes which would result from abolishing the "Enigma." Total mobilization resulted not in the total utilization of our material and spiritual forces but in their exhaustion. Hence even in this field its results were negative. Here, too, people did what they had learned and practiced for years; they strewed sand in their own and in each others eyes so as not to see things as they really were.

I said earlier that I was not in a position to offer proofs; this applies simply to the question whether the Russians could or could not decipher German cryptographic systems. I can readily offer proof that they were well informed in other ways regarding events on the German side. This has already been done in the brief description of the work of the "Rote Drei". Now a second case of the kind.

THE OTWOCK CASE

In anticipation of the danger which threatened, the Russians some time before the beginning of open warfare had built up an information service in the so-called Government General. It must have been shortly after the Hess affair when, one starlit night in spring, two men parachuted from a Russian plane. It was in the area south of Warsaw. Both men were Poles, former Polish officers who had been captured during the Russo-Polish War of 1939. They had been won over by the Russians and trained for espionage. They were Captain Arcyszewski and Reserve Lieutenant Meyer. They had been equipped with an agent radio set and told to spy out all transport traffic on the railways in the area occupied by the Germans and to report their findings to Moscow. That was a tremendous task which presupposed the setting up of a gigantic organization. For this task they were furnished the sum of \$2,000.

With this "operating capital" the two men went to work. Their activities could never have been of great extent, had it not been certain from the very beginning that they could count on the ready cooperation of almost the entire Polish population.

They began their work in Warsaw. The transmitter was set up in a little town called Otwock, south of Warsaw.

Arcyszewski undertook the organization of the spy net while Meyer composed the messages, enciphered them, and transmitted them to Moscow.

By months of tedious effort, Arcyszewski succeeded in spinning a gigantic spider web of purveyors of information over the entire "Gouvernement General" and the occupied Russian territories - since the war with Russia had meanwhile begun and German troops had quickly occupied extensive areas in the East.

Soon the two began to transmit their reports to the Moscow control station; these were rather scanty at first but became richer from week to week.

Somewhere around Christmas 1941 or early in January 1942, the network of informers had been so expanded that it reached from the Baltic

almost to the Black Sea, from Breslau to Orel and Kursk. In the director's office of each railway, at every junction point, at every relatively large station, sat an agent who reported to Arcyszewski in an especially secure manner everything having to do with transportation.

Every report on train delay, sabotage of railway installations, trains cancelled, the work of partisans, and the like went to Arcyszewski.

The terrible winter of 1941-1942 was drawing to a close. German preparations for a decisive summer offensive in 1942 were getting under way. Transports of troops, arms, ammunition, tanks, motor vehicles, motor fuel, etc., began to roll from West to East, and reports began to come from all sides to Arcyszewski who sent them to Moscow via Meyer. Every transport was reported in this way with a precise statement of what it contained, with course and destination, with strength and number of unit contingents, with a statement of the number and type of arms, tanks, etc.

About September 1941 the German radio monitoring service first noticed the transmitter in Otwock without being able to locate it definitely. Meyer worked very cleverly so that the coverage could only be imperfect. The cipher used was so good that it defied all efforts to break it. Since the German intercept service was monitoring several dozen such transmitters currently and had no idea of the dangerous character of this Otwock station, this traffic did not receive the attention it really merited. Furthermore, the strength of the German "Radio Defense" in the East was slight and in the main was limited to the organs of the German police.

Not until June 1942 was it possible to pick up the station in Otwock and to arrest the two men, along with a number of other persons. All the keys were found and the Germans could finally decipher the previously intercepted messages.

And now for the first time a light dawned on German "radio defense". Now they saw that here they had been dealing with men of consequence, with an organization which had functioned in a manner calculated to bring destruction to the German armed forces. All for \$2,000 in the course of one brief year!

It was now necessary to decipher almost 500 radiograms - a long, wearisome task. When it was finished, the content - entered on a chart - gave a complete picture of the assembly of the German and allied armies for the great summer offensive. The Russian General Staff had an easy time making its dispositions, and the thrust against the German assembly area near Kharkov could not fail to have far reaching consequences. It did!

But what happened on the German side? Was the attention of the German command called energetically to the full magnitude of the danger threatening the armed forces from radio agents? Was the German command shown clearly that there were dozens of these transmitters which must be combatted by all available means? Was a mighty organization set up to take up the struggle with these radio agents? Did any expert of the

German "radio defense" appear at Hitler's Headquarters to deliver a lecture on the Otwock case and, on the strength of this example, to draw the obvious conclusions? Nothing of the sort. The man who worked on the case composed a report to be presented to the Führer. It was regarded there as "too long-winded" and returned because "the Führer is not fond of long reports". A shorter report was composed, but now the anxious question arose: "What will the Führer say to this?" This was a dud, and the Führer "didn't like duds". No one found the courage to present the case with the appropriate emphasis. They were afraid. Moreover, the drama of Stalingrad was now appearing on the stage.

The report wound up in some safe or "in channels". The agents' game continued.

A WORD REGARDING THE RUSSIAN INTELLIGENCE SERVICE

The organization of the Russian strategic intelligence service in World War II was, in general, known in Germany, although many details of its work escaped the German intelligence service. In my opinion, it was burdened with a minimum of bureaucratic and formal restrictions. It must have worked with an uncanny precision to meet the needs of the Russian military command. Beyond that, I must pay the Russians a compliment: in this war, Russia was the only country whose cryptographic systems remained practically unbreakable throughout, although first-rate experts in other countries were attempting their solution. In particular, the cryptographic systems of the higher military commands and those for diplomatic traffic remained for foreign cryptographic bureaus a "book with seven seals". Of course, the systems were recognized, but solution proved out of the question. After years of vain effort, the copying of Russian diplomatic traffic was stopped in Germany. Exaggerated as it may sound to outsiders, I would like to venture an assertion; Russia lost World War I in the ether and won World War II in the ether. By this I do not by any means intend to belittle the importance of its people's war, its armaments, the capacity of its officers and the death defying courage of its soldiers.

We can summarize as follows:

1. In the spring of 1942 the Russians knew the German operational plan for the thrust toward the Volga and the Caucasus.
2. They knew the exact area of initial assembly of the troops destined for these operations.
3. They knew the numerical strength and the table of organization of the German and allied armies involved.
4. Long before the battle of Kharkov they knew the numbers of all the German and allied divisions which were to take part in the operation.
5. They knew the names of all the higher unit commanders.

6. They knew the precise number of tanks, guns and planes available on the German side.
7. They knew the attack plans of all armies employed on the German side in the great summer offensive.

WHO WERE THE "RADIO AGENTS"

Espionage has always played a great role in wartime. The difficulty in carrying it on successfully lay less in the procurement of information than in passing the information in good season to the military or political leaders of the country involved. The best reconnaissance results were worthless unless they reached the interested parties at a time when effective countermeasures could still be planned, instituted and carried out, or when it was even possible to plan an operation on the basis of the information gained regarding the enemy situation. Since a country tries in wartime to secure its frontiers in all directions against leakage of information of a military, political or economic nature, or at least greatly to delay the exploitation of such information, a major part of the intelligence work of foreign agents in earlier wars was in vain; their reports generally reached the enemy command much too late. In the long run, only a fraction of the work was of any real value. Thus literally as well as figuratively, narrow limits were imposed on the activities of spies. This problem could only be solved if it were possible to find a means of transmitting the information obtained in a way which would break down all barriers and bring the report speedily from the sender to the recipient.

The invention of radio telegraphy did not at first signify a solution of this problem. The long-wave apparatus used was far too big to be operated inconspicuously in living rooms and the like; furthermore, it was easily spotted by direction finders and consequently exposed to the risk of being quickly discovered. Consequently, this manner of communication virtually did not come into account for spies during World War I. Not until the discovery of radio telegraphy on short-wave and the construction of small portable transmitters and receivers were the conditions created for a complete revolution in the field of practical espionage. Now it was possible to equip the agents with easily operated, easily transported, and easily concealed radio sets for transmitting their reports and for receiving instructions, or they could be assigned special operators.

The Soviet Union, Germany, and England were the first countries to prepare for the employment of such agents, even before World War II, and to put this system into practice to some degree. For purely military reconnaissance Germany was the first country to commit radio agents, first in the Polish campaign and then - on a much larger scale - in the campaign of the west.

When describing the campaign in the west, only a few words were devoted to the radio agents. In reality, they represented one of the main factors in the German intelligence service. Everything that the

intercept service could not supply was reported at that time by radio agents dropped from German planes in the French rear areas. They were committed by the dozens and gave a very good account of themselves.

We must deem it a remarkable phenomenon that in the course of World War II Germany employed means and methods of warfare which later were employed with all their weight against their originator. Germany taught its opponents those methods of conducting a war which led to its own defeat. Germany invented bombing warfare and was itself laid in ruins by it. Germany invented motorized warfare and it later became fateful for Germany. Germany discovered atomic energy and in the final phase of the war this was turned with annihilating effect against its strongest ally. Germany was the first to make use of radio agents and they laid the foundation for its military defeat.

Following the German model, the British, Poles, Russians, and Americans introduced radio agents on a large scale and increased their commitment to such an extent that their activity attained a significance of the first order. The German "Radio Defense", which was supposed to concern itself with combatting these agents, faced during the entire war a gigantic task, the complete solution of which would have called for many times the personnel and means that were actually made available.

Slowly but irresistibly during the course of World War II the network of agent radio stations expanded over all Europe. It began in Poland and France. It extended into Belgium, Holland, and the Balkans. Wherever a German soldier was stationed, everywhere he was surrounded by this invisible, intangible net in the ether.

Everything he did or failed to do, everything connected with his life and work in occupied territory, was constantly watched and reported on by hundreds, thousands - yes, hundreds of thousands - of spies, agents or confidence men.

No troop movement, no transport of arms or ammunition, no construction of fortifications escaped these watchful eyes and ears. Everywhere the German soldier was watched and eavesdropped. And everywhere - often in the house in which he lived - stood those little short-wave sets by means of which these observations were passed on. But the German soldier noticed nothing of all that. He went through the streets unaware that he was ensnared in an enormous spider web - a vast network of invisible, fine, unbreakable threads. Only a very small group knew about all this and watched the efforts in the ether.

The radio traffic of the Russian partisans was especially lively. It was also developed with great skill and became so extensive that hundreds of German soldiers, organized into monitoring platoons or companies, were busy day and night trying to get a clear impression of the constantly changing picture.

The cryptographic systems used by the Poles were very good; those of the Russians were excellent. Messages of the Polish network could

frequently be read by the Germans, but by no means always. Of course, even the best operator sometimes made a mistake; it was merely a question of watching patiently for this mistake. Generally it came. Then it was possible to fix locations, establish identifications and break into cryptographic systems.

In general, it was a hopeless fight against the agent radios, since for each transmitter which was seized and for every operator who was arrested a new one appeared at a new location, with new characteristics and with a new cryptographic system.

THE GERMAN "RADIO DEFENSE"

Long before World War II, people in most European countries were convinced that in a future war the battle in the dark between the espionage service and kindred organizations on the one hand and the intercept service on the other - in this case, therefore, a battle in the ether - would assume gigantic proportions. It was clear that this struggle would not be simple and that it was necessary to create in good season an organization which would occupy itself with spotting and evaluating espionage traffic in order to bring the results to the knowledge of one's own command.

Actually nothing much was done until the outbreak of World War II. Only in the Soviet Union was some attention given to the matter and an attempt made to gather experience which might serve in the event of war for the development of a large organization to combat radio agents.

The Germans should have had special reason to occupy themselves with this problem - and in a purely theoretical way - they did. But since armament and the preparation for war went ahead at too rapid a pace and the German intercept service was weakened rather than strengthened by the constant transfer of trained men, this preliminary organization did not even come into being before the war.

I said above that there was special reason for Germany to occupy itself with such matters; I shall add some details:

Long before the war, the German counterintelligence service (Abwehrrdienst) had set up abroad a network of radio stations (the so-called A-net), which was to be used by German agents for transmitting intelligence in the event of war. At various points in Germany control radio stations had been set up to handle traffic with the agents. Before the war this traffic was limited to occasional tests of transmission and reception, lest the network be unmasked prematurely. Moreover, in peacetime there was always some other way of getting a report to Germany speedily. The A-nets had been set up in Czechoslovakia, in Poland, and in France. To what extent they may have been organized in other countries is not known to me.

Along with this A-net a so-called J-net had been prepared, which was located within the country and was to function if certain parts of German territory were occupied by an enemy. In that case the J-net would start transmitting reports and have a function similar to that of an A-net.

The rapid advance of the German forces in World War II soon left the A-nets behind, whereas the foreign equivalent of the J-net in the territory occupied was now behind the German lines. Thus the occupation of great areas brought foreign radio agents into German controlled territory and the further the German lines advanced, the more foreign spies came into the zone of occupation. They were able to work under favorable conditions, since the attitude of the population in the occupied areas was consistently anti-German and every agent found aid and support whenever he needed it.

It was not until vast areas had been occupied that it occurred to those in authority in Germany that other countries might have built up organizations similar to the A-nets or J-nets. Now the agency which directed the German networks was charged with finding out how to detect and combat such enemy organizations. The so-called "Radio Defense" was created. The only organizations available at that time were the radio monitoring stations of the police, which had been responsible for watching illegal amateurs. These monitoring stations were now obliged to shift to a new field. Meanwhile people on the other side had not been asleep. The little networks organized before the war were now located within the German sphere of influence and were strengthened in every possible way. New agents with their sets were either smuggled through the lines or dropped by parachute so that little by little a very considerable number of radio agents had been introduced who were able to go about their work without worry. On the other hand "Radio Defense" faced an assignment which grew from day to day, while its resources did not suffice to cope with the situation or to gain adequate experience. As more and more territory was occupied, the frequency band to be monitored grew wider and wider and the number of radio agents at work became greater and greater. The year 1940 saw no notable successes and not until the end of that year was an army intercept company assigned to "Radio Defense". This company had to be entirely re-trained. When committed in the west it soon found that the task assigned was far greater than had been expected. Finally two more intercept companies were assigned to "Radio Defense" which also set up an evaluation system of its own. Direction finding bases of the Navy were placed at its disposal.

By the time "Radio Defense" began to work effectively, i.e., in the summer of 1941, the British had 25 recognized circuits in the west running as far north as Norway; there was a widely ramified agent network in Western Poland which was controlled from England; in the "Protectorate" (Bohemia and Moravia) an extensive net of the Russian intelligence service was functioning, while another Russian net covering all Europe had more than 20 stations in May 1941 and 78 stations in June. This Russian network had been built up before the war but had been kept absolutely concealed by radio silence.

Some idea of the problem can be gained from the fact that in the Soviet Union alone from June 1941 to June 1944 some 120,000 agents, including some 30,000 operators, were trained for use in German territory. About one-third of those committed succeeded in carrying on their work for a longer or shorter period. The Western Powers made no such mass employment but in general the intelligence and quality of the agents employed was higher, hence the danger was greater.

LOCATING AGENT STATIONS

A basic requirement in combatting agent transmitters was the location of these stations by direction finders. For technical and tactical reasons this broke down into:

- a. Long-range direction finding,
- b. Close-range direction finding,
- c. Work in the immediate vicinity of the target.

First of all, the German long-range direction-finding set-up had to be changed to correspond to the new situation. A network of long-range direction-finders was located far beyond the German frontier, then these stations were placed under coordinated control in order to get synchronized systematic readings on the same transmitter by as many long-range direction-finders as possible so as to get dependable fixes.

In October 1943 the following short-wave D/F - bases were available to "Radio Defense":

1. For the west: Middlekirk, Wilhelmshafen, Hannover, Langenargen, Bodensee, Bordeaux (Partly controlled from Giessen).
2. For the east: Reval, Lemberg, Nikolajev, Pillau, (Controlled from Cranz).
3. For south and southeast: Pulsnitz, Varna, Athens (Radio controlled from Pulsnitz).

In February 1943 instruments in Rome, on Sicily, and on Sardinia were added to this system.

For close-range work conditions were as follows: close-range D/F apparatus for fixing the ground-wave had been developed long before the war and sets had been constructed which were suitable for use in the field. After the search for enemy agents began in the west in the fall of 1940, the first such transmitter was located in Antwerp in April 1941. This was accomplished after the area in which the transmitter must be located had been determined by long-range direction-finding.

Even in this first case, it was manifest that the close-range direction-finders must be of such a nature that the operator could approach the location of the transmitter unnoticed. Consequently even then it was only possible to pick up the transmitter by using a special suitcase set which was operated by a man dressed as a locksmith. With this device he narrowed the choice down to a few houses.

In the immediate vicinity, the work was more difficult because the agents usually had watchers posted. The problem was not solved until early in 1943 when a belt D/F set was developed which could be worn under the operator's clothing.

The use of Fieseler-Storch planes as "flying close-range direction-finders" dates from the summer of 1941. The first experiments began in May while the first successful commitments began in September. In April 1942 three machines were used and the number was later increased to 12.

Despite all the successes of German "Radio Defense" and despite all the stations picked up, the number of hostile agent circuits in the German sphere of influence increased constantly. The means and personnel of the German "Radio Defense" during the war were in no wise commensurate with the magnitude and importance of the task; they remained totally inadequate, quite apart from the fact that they were not employed effectively until much too late.

"RADIO GAMES"

Picking up an agent's transmitter often afforded the German intelligence service a chance to enter actively into the network of foreign espionage. The first requirement was that the raid be a surprise and that all written material fall into the hands of the raiders; traffic schedules and cryptographic materials were absolutely necessary for further operation of the captured transmitter.

A second requirement was that no member of the agent group should escape and warn the enemy. If both conditions were fulfilled and it seemed worth while to attempt a radio deception - a so-called "radio game" - permission was secured from the competent agencies and the deceptive traffic was carried on by personnel of "Radio Defense".

There were two motives involved: in the first place, the enemy might be led to believe that its agent network was functioning normally in the area in question; this was a safeguard against the setting up of other agent networks. On the other hand, it might be possible to mislead the enemy with false or falsified information to disguise the actual situation. Reports on the strength, movement and assignment of troops, on arms, fortifications, transportation matters, morale, intended military measures, war production and economic matters (in cooperation with the competent authorities of the economic command) could be imparted to the enemy in a way calculated to give the desired impression.

Carrying on such "radio games" called for great skill and perfect adaptation to the system of reporting hitherto employed by the agents. In composing messages it was necessary to follow precisely the wording previously employed. Linguistic usage in general and the use of particular expressions, technical words, and designations must not show the slightest change. A single expression used falsely could jeopardize the success of the entire "radio game".

Sometimes it was possible to "convert" the agent and get him into the game. Without doubt this was the best solution but it assumed that no secret signal had been arranged between the agent and his employer to indicate that he was working under compulsion. The possibilities varied widely and so did the results. In some cases it was possible to deceive the opponent for years and thus avert serious damage to one's own side; in other cases the success was of short duration; sometimes the opponent quickly recognized the deceit and either broke off communication at once or else played along for a time to delude us into thinking the deception was successful, while he was quietly building up a new network of agents which would have to be tracked down by "Radio Defense."

The first German deception was carried out in March 1941. The transmitter LOM, which had been picked up in southern Belgium, was continued in operation with German personnel and captured material. The game worked. The English control station announced the dispatch of additional agents who were to land by parachute in the night of 9 - 10 May in the vicinity of Liege. They were promptly apprehended; their radio equipment with all documentary material and keys was secured.

Dozens of these "radio games" were carried on by all parties during World War II. One of the most grandiose was the "North Pole Case" which will be described at length later. At this point we shall give only a little example from the last phase of the war.

At a time which was very critical for the German military situation, an effective deception was carried out successfully in the East. On 14 August 1944 the German police in Riga arrested the Russian agent, Lieutenant Jakushov, and his wife who was acting as his radio operator. After tedious "interrogations" the two were finally induced by the Germans to make frank statements, whereupon traffic was resumed again by the Germans on 20 August. In the course of two months a large number of false, but apparently very important reports were transmitted which made such a great impression that Lieutenant Jakushov received by radio the "Bogdan-Chmielnizki Order, Class II" while his wife received a "state decoration."

THE "ROTE KAPELLE CASE"

Let us state at the outset that this case has nothing to do with a religious chapel. Neither was such a chapel used for setting up an agent's transmitter nor were clergy involved. The designation resulted from a whim of German officials in Belgium who applied to every case of

radio agents the general term "Kapelle"* and gave each individual case a particular designation. Thus there arose in the course of time a "Schrammel-Kapelle", a "Zither-Kapelle", a "Blas-Kapelle", an "Ardennen-Kapelle", a "Kapelle-Etterbeck" and one day a "Rote Kapelle", where the color referred to Bolshevism, since this "Case" had been controlled by and worked for Moscow. The story was as follows:

Even before the outbreak of the German-Russian war in 1941, the Russians had set up a network of agents which expanded over all Central and Western Europe. It was intended for espionage and was to become effective in a large way only in the event of an armed conflict. When the war with Russia broke out, this agent radio net was by no means completely developed and thoroughly organized. Only individual portions were so well organized that they were fully capable of functioning .

Among others, the Russians had set up such a center for radio agents in Brussels. The head of this spy center had become a partner in a large Belgian commercial enterprise and thus had provided himself an opportunity for making extensive journeys without attracting attention and of establishing contact with many leading personalities. In this way he could gain insight into a number of things and gather information. At first he sent this information to Moscow through Russian diplomatic and commercial representatives. This route, which ran via Berlin, ceased to function shortly before the outbreak of the war between Germany and Russia. They now resorted to radio to transmit to Moscow the results of their spying.

The radio traffic itself was soon intercepted by German stations, for the first time on 26 June. However, it was not possible to solve the cryptographic system and read the contents. Furthermore, it was a long time before the German D/F service was able to fix the station.

Not until November 1941 was it ascertained that the station was certainly in Brussels. Now the close-range search began. On 12 December the transmitter was fixed definitely so that steps could be taken for picking it up. On 13 December it was captured by representatives of the German counterintelligence in Brussels. This was the first transmitter of its type that had been spotted in Western Europe. The villa in which it had been set up and from which it operated had been rented during the summer of 1941 by the Russian espionage service and was cared for by a Belgian housekeeper. The building served not only as the location of the radio station but also as shelter for members of the agent group and as calling point for agents and informers.

At the time of the raid six persons in all were arrested, among them an operator who came in the following day, two Russian officers,, and a Polish woman who had come from Paris and served as cipher clerk.

* Kapelle also means orchestra, hence a group which works together! (Ed.)

However, this was merely the crew of the radio station; the chief and actual head of the agents was not caught.

Among the material found were some 500 enciphered radiograms forwarded by this transmitter, hence there was no doubt that the encipherment and decipherment had been done in the house and that the cipher keys must be there somewhere. Until these were found, nothing could be done with the traffic. It was only possible to learn that a grille system was involved which was obviously reenciphered with a so-called book key. As book key, any book may be used by agreement between sender and recipient. From the text an "additive sequence" is derived and decipherment is not possible without having the book used.

With all the egoism and eagerness to advance its own interests that characterize official agencies, the Brussels counterintelligence office decline "for security reasons" any further cooperation with representatives of "Radio Defense" after the transmitter had been picked up. The villa, which had been confiscated momentarily, was released after a short time and six weeks later "Radio Defense" received a final report from which it appeared that those arrested had stubbornly refused to make any statements, except the housekeeper, and that she knew nothing of consequence regarding the organization which had operated there. Attached to the report were photographic copies of the material found and a statement that an attempt by the cipher section of OKW to decipher the radiograms had not proved successful.

These photographs were subjected to a careful check at the central office of "Radio Defense" and it was discovered that one of the scraps of paper which had been photographed contained a so-called "Caesar" key, such as is employed by the Russians for enciphering plain text. This scrap of paper showed several rows of the encipherment of the radiogram and this proved that encipherment had been carried on within the house. Hence the books used must also be there.

Some notes in secret ink and certain letters contained hints that the organization had branches in France and Holland.

A study of the groups of the cipher text on the scraps of paper revealed that the book must have been in the French language. For the moment this did not help much since only a knowledge of the entire content of the book would afford a possibility of current decipherment.

By carefully questioning the Belgian lady who had run the house it was possible to learn little by little the titles of eight or nine books which might have been used by the Russian agents. Now it was a question of getting these nine books. The only way was to purchase them on the open market, since the villa had meanwhile changed hands and the entire library had disappeared. Even though the titles of the books were now known, there was no guarantee that the proper edition would be found in a book store, i.e., the edition which corresponded exactly in pagination and in text to the one used.

The cryptanalytic section of the central office of "Radio Defense", which meanwhile had become acquainted with all cipher systems hitherto known to have been used by radio agents in the east, attempted to solve this one by analytic methods. A half destroyed sheet used in encipherment was the critical factor. After some six weeks of work the make-up of the additive sequence was learned. On the basis of other agent traffic it was finally possible to turn these digits into letters and the short sentence obtained contained a significant name "Proctor." This name was found in one of the novels which had been procured and thus the key book was revealed and the system broken.

Now some of the captured radiograms could be deciphered. The addresses of a number of agents were disclosed and an opportunity was opened for penetrating a widely ramified Russian agent network extending over the west and into Germany itself. The deciphered messages proved that "Radio Defense" was on the trail of a very clever man who must have connections in the very highest command, since he transmitted in November 1941 the intention of the German command to carry out an attack in the Caucasus in the spring of 1942. Furthermore, his reports on gasoline consumption and existing stocks of fuel and planes showed that he must have contact with the Air Ministry or with the High Command of the Air Force. He even transmitted to Moscow the prediction of an impending extremely cold winter which had been made by German astronomers and weather experts. He even gave a clear calculation of the time when German fuel reserves would be exhausted.

This principal agent in Brussels, always referred to by the cover name "Kent", was on the road a great deal of the time. Deciphered messages made it possible to follow his journeys to Czechoslovakia and throughout all Germany. Kent received his principal information from an agent designated in the messages by the cover name "Coro." Now it was a question of trailing this source. Chance provided the following opening.

When the war began, the Russian intelligence service had not finished building up its foreign organization. Radio connections from Germany were not functioning. The call signs and the traffic schedules had not been fixed definitely by days but were to change from one transmission to the next, so the transmitters got out of step and could not get adjusted again. This accidental maladjustment was the reason for a radiogram giving the Belgian group the names and addresses of three collaborators in Berlin who were to be instructed to establish radio connections with the Center in Moscow. Of course this went counter to the most elemental principles of conspiracy and can only be explained by the exigencies of the situation.

Kent came to Berlin to reestablish the contact of the "Coro" group with Moscow. This was late in October or early in November 1941. However, the contact remained inadequate and Coro continued to send most of his material by way of Kent.

The radiogram had mentioned three groups in Berlin. At first nothing could be done with one of the Berlin addresses; more than six months had passed and the dwelling had changed hands. Only after a long search did one get on the right track, but this proved of secondary importance. There was more success with the second address. Here investigation led to a first lieutenant of the Air Force who was employed in the Press and Information Section of the Air Ministry, later in the Attache Group of this ministry. In civilian life he had been a teacher at the University of Berlin and before 1933 had taken an active part in politics; he had good relations with the Foreign Office and contacts with a large circle of acquaintances and men of similar political belief. He was a man of outstanding intelligence, openly opposed to National Socialism and sympathizing with the ideas of Communism and with the Soviet Union. Through his activity in the Air Ministry he came into contact with most of the higher officers of the department as well as with many other high officials and with industrial plants. This man, a certain Schulze-Boysen, was a relative of the Tirpitz family. Using masterful disguise he had become the head of a widely ramified German resistance organization which was trying to overthrow National Socialism at any cost. In contrast to other German resistance groups, whose activity was exhausted in preparing plans or in waiting, the Schulze-Boysen group was geared for action both inside and outside the country.

"Coro" or "Schulze-Boysen" - was now watched unobtrusively by the Gestapo, as were his acquaintances and his whole intellectual circle. Among other things it was established that at definite times he met Superior Councillor Dr. Harnack of the Ministry of Economics in the Berlin Tiergarten and openly exchanged information with him. Dr. Harnack later turned out to be one of Coro's most important co-workers. He also appeared in the messages under the name "Arwid" which was actually one of his given names.

Tracing down Schulze-Boysen's circle of acquaintances and checking their connections brought a long sequence of surprises.

For instance, a man, whom we shall call "Z", was head construction man in one department of the Löwe Radio Company. He had long been a convinced Communist and had been in Moscow, but had cleverly concealed his attitude. He was a clever technician and was head of the section engaged in developing television, radar and other electronic devices for the Air Ministry. In essence, the principle of radar had long been known but thus far little had been done to adapt the invention to military purposes. During the war this question had become prominent and such space scanning devices were proving important in detecting approaching enemy aircraft. Bomber warfare was being developed and the recognition of attacking planes at night or in fog had become indispensable, if they were to be combatted successfully. The Loewe Company was supposed to assist in developing and building the apparatus.

Anyone who knows German conditions must realize that the moment German authorities began to concern themselves with these matters there

began a busy air of secrecy. Instead of entrusting as many people as possible with the development of this important apparatus and thus achieving a highly successful product, the whole project was cloaked in an utterly superfluous veil of secrecy. There were cover names for everything. The number of participants was kept as small as possible. No one was permitted to talk with anyone else regarding the problem as a whole. The result was that only a small circle of engineers was engaged in the work and the director of this section at the Loewe plant - consequently in virtual control of the progress there - was "Z". The fate of this important invention rested in his hands.

"Z" knew the importance of the task entrusted to him, but at heart he was not merely a Communist but also a bitter foe of National Socialism. He desired its destruction; here was an opportunity. By sabotaging development of the radar equipment he could keep it from benefitting the National Socialist State, at least for some time.

"Z" had good fellow workmen. Whenever one of these men made any progress on the device, "Z" had the fact reported to the Air Ministry, but he also saw to it that the engineer disappeared from the plant. Either his deferment was cancelled and he went to the front, or he was entrusted with "more important" tasks, or he was merely transferred. The man who replaced him was sure to be more or less a stranger in this field. For almost two years, "Z" managed to sabotage this important work and England and America got a head start, with the result that the German submarine was soon driven from the seas.

For the time being, the Germans hesitated to arrest Coro because they wished to learn as much as possible about his relations with other persons and offices. A remarkable circumstance forced them to strike before the time was ripe.

Readers of detective stories know how strange accidents and complications, obviously dragged in by the hair, serve to clear up or to complicate a situation. And every reader has probably assumed that such accidents can only be invented by an author. I should like to remark that the best author is a bungler at inventing such accidents in comparison to what real life can do.

The cryptanalytic group of the station monitoring agent radio had just been reenforced at that time; among the gentlemen engaged were two students of the University of Berlin whom we shall call "A" and "B".

There are some 80,000,000 Germans; the cryptanalytic section for monitoring agent radio consisted of some 15 men; these 15 men had been chosen at random. And, sure enough, among them were two who were in contact with Coro!!! "A" had agreed to go sailing with Coro one Saturday afternoon at Wannsee. At the last moment "A" was detained by his work and tried to inform Coro of the fact. In order to telephone unobserved, he went to the room of another analyst which was then empty because the man had already left. "A" called Coro's number but did not find him at home. He left his name, telephone and extension with the

maid, requesting that Coro call him immediately when he came home. This did not happen for Coro had already gone to Wannsee and did not return until Monday. Then he found the urgent note of the maid, which gave the telephone number he was to call but not the name.

The telephone had just been installed and the man who normally occupied the room was none other than the analyst who during the preceding weeks had worked on and deciphered the radiograms picked up in the Brussels station! This was a Dr. "V", who knew about Coro from the messages and also knew that efforts were being made to trap him.

Imagine Dr. "V's" surprise when Coro called him that Monday, saying he had been instructed to call the number because someone urgently desired to talk with him. This call was interpreted by the authorities to mean that Coro must have gotten wind of something. In reality it was a perfectly harmless coincidence. It was decided to act at once. Coro was arrested. And gradually all those with whom he had been in contact were arrested.

Schulze-Boysen (Coro) was a man of exceptionally high mentality, great initiative and energy, and of such amazing intellect that his collaborators were only slightly disturbed by the arrest; they were convinced that this man would betray nothing and that the Gestapo might easily be convinced of his innocence.

After eight days of grilling they had not gotten anything out of him; he had a credible explanation of everything and maintained his composure and mental alertness so that he never became entangled in contradictions. In spite of the fact that the man was proven guilty by the radio messages, experienced criminologists repeatedly doubted his guilt, especially as he was regarded very favorably by his office and by his comrades. He himself said nothing but some of the others arrested talked out of school. More than 120 persons now became involved, including a very high official of the "Foreign Office".

Little by little the organization was revealed. There was a gigantic trial ending in the execution of some 60 persons in December 1942. This was a serious blow to the Russian intelligence service. The Germans continued to operate the radio network and were able to pick up newly dispatched agents on arrival. However, it is a question how far or how long this deceptive traffic was really able to mislead the Russians for at that time the "Rote Drei" was already working at top efficiency. In my opinion, the Russians did not allow themselves to be deceived for very long but then cleverly continued playing the game with Germany in order to give the impression that the trick was a success. Actually they set up unnoticed a new spy net which passed reports to Moscow chiefly through the "Rote Drei."

From those arrested leads were secured regarding the people connected with the third Berlin address. The Germans were able to pick up a second Russian agent station in Breslau, taking it by surprise. Among those arrested was a certain Hermann Wenzel, who had

played a role in the burning of the Reichstag. The man was rendered submissive and continued to work under German control and guidance until the summer of 1943 when he escaped by a bold trick. He reappeared in Holland, contacted the British secret service and through London reported to Moscow, but the Russians no longer trusted him.

Meanwhile in June 1942 another transmitter had been picked up in Paris. Nothing much was elicited from the operator and his wife, but it was noted that the messages were composed with the same agent key as those emanating from the Brussels station. This led to further revelations. A special detachment was sent to Brussels to try to penetrate into the Belgian, Dutch, and French groups. Ultimately five stations were taken by surprise in Belgium and used in radio deception. Nevertheless, it had hitherto been impossible to clear up two matters. The principal agent in Brussels had been able to avoid arrest. No one knew who he was, only his cover name "Kent" was known from the messages. In the second place, it had not been possible to make connections with the Paris group and to penetrate it.

In August 1942 the Germans seized and interrogated very thoroughly an agent who maintained contact between the Dutch and the Belgian groups. When cornered, a remark escaped him that he had once been in the dwelling of the principal agent, Kent, which he also pointed out. Investigation revealed that Kent had lived in the dwelling but had fled immediately after the raid on the Brussels radio station. Kent had been active as part owner of the Simex Company in Brussels, a commission house which did business on a very large scale with various representatives of the German armed forces and also of the "Organization Todt." From here a trail led to a similar business in Paris which was the headquarters of the French group.

Kent had as lady friend the widow of a Hungarian; she and her child lived with him and under no circumstances did he wish to separate himself from this woman. That proved fateful for him. Since his friend was a striking beauty, it was possible to follow his trail and eventually to learn his address in Marseilles - at that time still unoccupied. Since Kent traveled on a Uruguayan passport, it was necessary to negotiate with the French Government before he was picked up in Marseilles in October 1942.

Although close watch was kept on the Paris firm and although an attempt was made to negotiate big deals through the Organization Todt, the German agents did not at first succeed in coaxing the cautious head of the French group (cover name Gilbert) out of hiding. Finally they succeeded in arresting several intermediate agents who were picked up so quietly outside of Paris that the firm noticed nothing. In this way they discovered the name of Gilbert's dentist and he was later arrested in the dentist's chair. The arrest of several collaborators followed promptly. Further investigation showed that the transmitter picked up in June belonged to the Gilbert group of agents and it was learned that this group was in contact with the French Communist Party. Gilbert had arranged to set up four additional radio circuits. Moreover Moscow had

sent through a radio key for another important agent with the cover name "Harry." With the aid of the French Communist Party, new operators - two of them Spanish Reds - had been provided for the Gilbert group. The radio schedule for Gilbert had not arrived; however, Gilbert's secretary, who had decoded the radio schedule for "Harry" four weeks earlier, was able to give from memory some information regarding the call signs. It chanced that German monitors had been listening to a Russian transmitter which regularly gave its calls and waited for an answer. An attempt was made immediately to establish contact with this transmitter, since the German agencies were very anxious to use Gilbert, who was highly regarded in Moscow, in a deceptive way in order to get clues respecting other persons in the Russian intelligence service who might be in territory occupied by Germany. For the moment any attempt to enter into communication with Moscow appeared almost hopeless because the wave lengths on which transmission would be effective were not known; the wave lengths suggested by Gilbert's secretary had proved false. To everyone's surprise, the improbable happened at the second attempt and - to be sure - by pure chance. The Moscow Center, whose calls were monitored, suddenly ordered a change and gave the new wavelength. In such cases the number was usually enciphered but this time it clicked. The agent transmitter used by the Germans was heard in Moscow, whereupon a message was dispatched to Moscow saying that the radio schedule had arrived in garbled condition and requesting a repetition. Even now it was a question whether contact would ever be made again but in the very next traffic period Moscow ordered a new alternate wave, again using plain numbers, whereupon a message was put through with a new schedule for traffic to Moscow and another for traffic via London. Thus the connection was definitely assured.

Now it was possible to work in a new connection for agent Kent who had been arrested. This was very important because the Germans had to keep the Russians from building up a new secret spy net. By tying their activity to the Gilbert transmitter, northern France was henceforth protected against the Russian intelligence service; the same thing was accomplished in southern France by using the Kent transmitter with German operators.

The reports which now went to Moscow showed Kent - long since in safe custody - to be a man with good connections in France. His outfit included, among other things, a "spy organization" headed by a former Latvian General. This general had been won over by intermediaries and was made to believe that he was working for a French resistance movement. He organized a spy ring directed against Germany without knowing that his work was guided and financed by the Germans. His reports were valuable and interesting because they gave insight into the weaknesses of German security and because they could be used in part to provide the Center in Moscow with credible reports and thus string it along. At the same time the Germans were penetrating further into the organization of the French Communist Party and were learning the goals and reports which were especially important to Moscow. Since Moscow must believe that the Kent organization was still working unchanged, the Germans were keeping the Russians from setting up a new and stronger intelligence group.

This was the time when the German offensive before Stalingrad and in the foothills of the Caucasus had bogged down hopelessly; it was the time when it became clear to every rational being that Germany could not win a military decision. It was just the time to sound out the political situation so as to lay the foundation for a tolerable conclusion of the war. It was a favorable moment for Germany because the German armed forces were still strong and there were certain frictions between the Soviet Union on the one hand and England and the U.S.A. on the other.

The captured Kent transmitter offered a wonderful opportunity to touch cleverly on questions the clarification of which was of importance to Germany. Under what conditions would the Soviet Union be ready to enter into negotiations? On which questions was there antagonism between the U.S.S.R. and the Western Allies? Did the Soviet Union aim at a penetration of Central and Western Europe? In view of the character of the Kent Organization, it would have been easy to put such leading questions in an innocent and unobtrusive manner because Kent had already brought up and discussed all manner of questions. Certain experts of German Radio Defense promptly suggested such a course but in Berlin they had cold feet. They considered the idea original and not unattractive but they did not have the courage to do anything. "What would the Führer say if he should find out that we were in communication with Moscow? He would have us all hanged!" that was the general attitude. The utter lack of freedom on the part of the German authorities - even the highest, the pettiness of their thinking, and their fear of responsibility found expression here.

The "Rote Kapelle Case" - or we might more appropriately say the "Kent Case" - was one of the most interesting cases of the entire war. The principal agents had been quietly introduced and established in the countries concerned long before the war without arousing the slightest suspicion. Through their position as managers of important commercial enterprises they had excellent connections with leading people in industry and trade, with the political parties, and even with the German Armed Forces, so that they could get a wide survey of the entire situation. The principal agent, Gilbert, had exact information regarding the landing of Allied troops in Algeria three weeks before it took place, whereas the Germans were taken completely by surprise.

THE RUSSIAN RADIO AGENT SERVICE TO 1942

The work of Russian radio agents has been adequately described and we shall now review the subject and show the extent of this activity during World War II. Communist Russia was the first country to undertake radio-controlled espionage on a large scale. The story goes back approximately to the year 1931, i.e., to the time when it became clear that National Socialism was gaining ground in Germany and a collision with the Soviet Union entered the realm of possibility. Such a clash might have come sooner or later anyway but it was inevitable if

National Socialism seized power. Watchfulness was necessary. Therefore the Soviet Union began setting up a widespread short-wave radio network with the control station in Moscow and a dozen subordinate stations distributed all over Europe. At that time the German intercept service failed to get any insight into the content of the messages exchanged; it was assumed in Germany that this was a control net created by the Communist Internationale to guide Communist propaganda throughout the world. How mistaken this was became apparent only when German radio defense was able to get extensive insight into the work of the Russian intelligence service.

It turned out that the "Comintern Net" - really a network of the Russian intelligence service - constituted only a very small portion of the Russian spy net. The net of agent stations, which had been established all over Europe but had remained silent until the war began, was much greater and now appeared in an all the more dangerous form. The number of agent stations in Europe increased very sharply in 1940 and by May 1941 some 25 Russian stations were heard. By June 1941 there were 78 circuits in the Russian "WNA" Net, as the Germans called it, after the call sign of the control station in Moscow. Just before the outbreak of the German-Russian War the exchange of telegrams in this net increased enormously: in August 1941 the German intercept service copied no less than 600 radiograms.

The aims of the Russian Secret Service were:

1. To seek information in all fields connected with the armed forces and armed strength of all European countries, of the U.S.A., of Japan and of a few other states.
2. To seek information in all fields of industry and economics in those countries.
3. To seek information on all political happenings in those countries which might have any reaction on the political life of the Soviet Union.
4. To infiltrate the secret service of those countries and gather information regarding any measures planned against the Soviet Union.

By using its diplomatic and commercial representatives and by employing special radio agents, the Soviet Union organized an intelligence network which functioned splendidly. It comprised agents from all branches of the Russian secret service: officers of the General Staff, agents of the People's Commissariat for Internal Affairs (NKVD), Party functionaries, diplomats, etc. The procurement of information on military, political and economic developments in foreign countries was carried out on a grand scale and by all possible means. The central offices set up abroad, the branch offices, and individual agents were equipped with special short-wave sets and were in direct contact with Moscow.

"DIE ROTE DREI"

During the course of World War II there were many groups of dangerous agents. The Germans were able to render some innocuous, some they could not. I think the most dangerous group of all was one they could not render harmless. This group could only be cleared up in slight degree and that much too late. Beginning in June 1941 the German intercept service noted three radio circuits from Switzerland to Moscow; the three stations were located in the vicinity of Lake Geneva. It was soon recognized that these were agent stations and that they belonged to the Russian military espionage system. No further essential information could be secured, especially since the cryptographic systems employed were not broken. Month by month the traffic was copied and studied. The net was called "Die Rote Drei" and gave a lot of people a headache, including some in Switzerland.

Not until December 1942, after the arrest of Agent Kent, did the Germans find any clue for breaking into the network of the Rote Drei. Kent stated that in 1940 he brought a cryptographic system to Geneva and delivered it in the Rue de Lausanne. Now the Swiss central office of the Comintern was located in the Rue de Lausanne. The transmitters had been fixed close to the French border. Through confidential agents in Switzerland and the German counterintelligence office in Dijon, France, an attempt was made to get at this organization, above all to get some clue to the cryptographic system, so as to be able to read the tremendous volume of traffic over this net.

Not until the summer of 1944 was Germany able to read those messages. The contents were enough to take many a person's breath away.

During the entire eastern campaign, during the first German offensive in 1941, during the preliminary stages of the campaign of 1942, during the critical period of the battles around Stalingrad and in the Caucasus, and later in 1942 when the eastern front was being pushed back and one hoped to make a stand, possibly on the Dnieper, and check the on-rushing tide of the Russian armies, precisely during those days, weeks and months the most secret information regarding the German military situation in the east - troop units, tanks, assembly areas, intentions - was being passed currently through Switzerland to Moscow. This was information which must have come from the highest level of the German military command.

The sender always signed "Dora"; the sources were designated as "Werther", "Sissy", "Teddy", "Fernand", "Taylor", "Lucie", "Pakbo", "Maud", "Eduard", "Alfred", "Jim", "Salter", etc. The man who directed the work from Moscow signed "Director."

Direction-finding indicated that two transmitters were in Geneva and the third was in Lausanne. Now the work of German agents in Switzerland began. They soon discovered the point where the transmitters were located and the organization which they served. In Geneva, at 133 Rue de Lausanne, sat as chief of the organization a certain Rado who was

officially director of the Geo-Presse in Geneva.

Alexander Rado was a private scholar and a citizen of Hungary. He had lived in Berlin prior to March 1933 and then gone first to Hungary and from there in 1934 to Paris, where he was active in cartographic work on behalf of the Soviet Union. He was a fanatical adherent of the Communist idea. In 1926 he had gone from Berlin to Moscow for nine months and then returned to Berlin. He was a member of the KPD and of the Association for the Study of the Soviet Planned Economy. After 30 January 1933 he was again active for the KPD and placed his dwelling at its disposal.

His wife had been secretary of the Communist Woman's Movement and was the sister of a well-known Communist, Gustel Jansen; for a time she had worked in the Soviet Embassy in Berlin and later she spent some time in the Soviet Union.

It is certain that Rado was already active as a Soviet agent in 1939. He must have been in contact with Gilbert in Paris. It is uncertain when Rado came to Switzerland, probably early in 1940 or even earlier. In Geneva he had two transmitters directly at his disposal, one of them in the Rue de Soleure No. 5.

The one in Lausanne was in the house at No. 2 Chemin Longeraï. The occupant of the house was A. A. Foote who appeared under the cover name John. He did the cipher work himself, sent the reports, and also had an intelligence organization of his own which worked independently of Rado. The Swiss authorities knew nothing about this.

In the course of time the Germans were able to clarify many points. They knew who the "Director" was, who Rado was, who the operators were. In the end they were able to read the messages. But, for all that, the most important point could not be cleared up. Who were the informers whose connections extended into the Führer's Headquarters, into the OKW, into the Air Ministry, into all industrial plants? Who were these people who knew how to secure the most important information with such masterful skill? Above all, who were the final sources from whom they drew their information?

The Germans tried by every means to get behind this secret. Hundred of people were watched. In December 1943 in the grounds of the Führer's Headquarters, of OKH, of the Ministry of Foreign Affairs and other offices, special detachments of Nahfeldsuchtrupps (troops charged with policing the air in areas close to the front lines) were brought in from all directions. All in vain. Not a bit of this secret was ever revealed. It was and remains the most fateful secret of World War II.

Late, in the summer of 1944 when the "Rote Drei" had long since ceased to operate and their shades were no longer spooking far away in the east on the Volga and the Don but were close to the borders of the Reich in the east and in the west, at the time of the clumsily-

organized attempt on 20 July 1944 to dispose of the man who had brought misfortune to Germany and all Europe - at that time the ghost of the "Rote Drei" rose once more from the grave. Another convulsive search for traitors swept over Germany. Close-range intercept detachments watched Hitler's Headquarters for weeks, but again no trace of any suspicious radio connection was found. It could not be found, for it had never existed. The information for the "Rote Drei" had gone to Rado by other, simpler ways.

KHARKOV AND SEVASTOPOL

Hitler said that once the German soldier got firm ground under his feet again he would again storm forward and drive the enemy before him. He asserted that nothing the future might bring could be worse than what the previous winter had brought. Along with a mighty levy of his own, almost one million foreign troops were committed, including one Italian and one Hungarian army. One goal was the Volga near Stalingrad, the other was the Caucasus with its oil wells. First the Crimea was to be cleaned up; Sevastopol was to follow.

This last decision wasted an undue number of troops on a secondary goal, since if the Caucasus fell into German hands the peninsula would automatically drop into Hitler's lap like a ripe plum. But "the General" would have it so and the struggle in the Crimea began which lasted for months and involved tremendous sacrifices.

While German transports rolled to the east and Hitler delivered his speech calling for all-out efforts, he issued an order which wiped out every trace of human freedom and every vestige of law - insofar as either still existed in Germany. This was the official beginning of organized terror within the armed forces and throughout the entire machinery of the state. It signified that for the first time Hitler felt the ground shaking beneath him and realized that his officers did not always share his opinion and were rebelling against his "generalship" - something Hitler could not endure. He was resolved to govern with the lash and to oust leaders who opposed his orders in the slightest degree.

The newspapers were reporting the conquest of Singapore by the Japanese, but they said nothing about the fact that upon occupying Hong Kong the Japanese raped hundreds of European women and girls in the open marketplace and declared an entire Chinese quarter a brothel without regard for its inhabitants.

Early in May the struggle in the Crimea began. On 12 May the breakthrough near Kerch was completed. The Russians fought bitterly but were defeated. On 20 May the peninsula was occupied up to Sevastopol and the OKW reported 150,000 prisoners, 1100 guns, and 250 tanks captured.

But at the same time Timoshenko was hurling his armies against the German concentration south of Kharkov. He sent his troops into

battle fully aware that he was sacrificing them, that he must sacrifice them to upset German plans. On 28 May the battle was decided. Timoshenko's armies were crushed, but the German advance had been stopped and German losses were tremendous. Who won?

It was a full month after the battle of Kharkov before the German troops could start the summer offensive. Now timoshenkov proved himself a real strategist: whereas hitherto he had required his troops to hold every yard of ground, beginning in July he called for mobile warfare, for the avoidance of encirclement and for infliction of heavy losses on the enemy. That gave the Germans new territory but the price was dear, very dear. Speer had to appeal to German war industry for "more and better arms!" One hundred million zinc small coins were called in. For there was a shortage of zinc - and of many other things.

THE SIGNIFICANCE OF THE BATTLE OF KHARKOV

In judging military actions people are accustomed to use the word "victory" or "defeat" according to the obvious outcome. Nevertheless, a lost battle may be decisive for the victorious conclusion of a war. A classical example is the Battle of Borodino in 1812 in which the Russians were defeated but Napoleon's army was so depleted as to decide his fate. I am inclined to believe that historians will regard the Battle of Kharkov as another classic example, since it was not at Stalingrad and not in the Caucasus that the war in the east was decided but much earlier at Kharkov, where the Russians inflicted severe losses and upset the German timetable. Viewed superficially, this was a severe defeat for the Russians; actually they gained their objective. The ultimate results were not immediately apparent and German divisions moved forward toward the Kuban area, the Caucasus, and the Volga.

FROM KHARKOV TO STALINGRAD

In Germany, people were now convinced that decisive blows were being struck in the east and that autumn must bring a collapse of the Soviet Union. On 12 August the German press reported an "annihilating blow" in the great bend of the Don. Two Soviet armies had been virtually wiped out. From then on, no further great success was reported. Of course minor local successes were stressed but in reality the great offensive had bogged down. For the second time the Russians had been able to put up a resolute resistance and by the end of August 1942 it was already clear to some people that the turning point of the war in the east had come.

You may think what you will about German National Socialist propaganda in World War II; one thing must be admitted: it was favored by fabulous good fortune. Whenever things began to look rotten somewhere, something happened elsewhere to furnish marvelous propaganda material. Whoever will take the trouble to examine the German newspapers published between 15 August 1942 and February 1943 will be

astonished at the multitude of things triumphantly announced in the German press to drown out the funeral dirge which was beginning to sound from the East, faint at first, but then louder and louder.

In the morning hours of 19 August a reconnaissance detachment of Allied troops to the strength of approximately a regiment landed near Dieppe. Nine hours after the landing the enterprise was beaten off. And now Dr. Goebbels and the press began shooting off fireworks. The mixed detachment was turned into a great "British-American landing corps"; the reconnaissance thrust became an "invasion attempt"; the orderly retreat after its mission was accomplished became a "catastrophic defeat." For weeks this enterprise was talked about and the east was almost forgotten. Then on 9 September the papers reported that one of the greatest battles of all times was raging at Stalingrad. Then there was silence, - not at Stalingrad but in the papers. Then all sorts of strange things were heard: A German-Indies company was founded, the craze for (patent) medicine must be conquered, the social order was secure. All with fat headlines. With small headings other reports appeared: about the battle in the ruins in Stalingrad, about terrific hand to hand fighting, and about the fact that Germans never capitulate. Quite different from the big mouthed speeches of other days.

On 30 September 1942 Hitler spoke in the Sportpalast in Berlin. He assured the German people that nothing worse than the winter of 1941/1942 could ever happen. Regarding Stalingrad he said: "you may be convinced that no human being will move us from this spot." He didn't say much about the new military situation in the east but he did tell in detail how many kilometers of rails had been re-laid; what organizational measures had been taken in the occupied territories; and that they were on the point of setting up plants to make preserves and noodles. All this, naturally, on the premise that the areas occupied in the east would remain in German possession for all time.

Stalingrad! The name first appeared in August; in September people began to feel surprised that the city had not yet been captured; in October the name had become for the Russians a symbol of resistance and for the Germans a subject of concern. In November it became clear that the city could not be taken. While German troops were shedding their blood before this unhappy city and in the foothills of the Caucasus, the British and Americans had a chance to arm.

Winter came. The German troops suffered frightfully. The fighting became more and more stubborn, more and more bitter.

It was at this point that German propoganda began a grandiose but mistaken effort to sow mistrust among the Allies. The propoganda mill ran full speed but to no avail. Meanwhile the mighty assembly of Russian armies was being completed.

The order to the defenders of Stalingrad to hold out to the last man did not signify a senseless sacrifice. While they were holding the ruins, the Russian High Command was preparing a counter-blow which was destined to crush the attackers. Something unparalleled was happening deep in Russia. New armies with millions of men, thousands of tanks, and tens of thousands of guns were rolling westward. In Russia harbors great British and American convoys were discharging their cargo. Hitler paid no attention. His eyes were fixed as if in a trance on Stalingrad.

On the evening of 8 November Hitler declared he had no intention of making a second Verdun of Stalingrad but that he intended to conquer the city by using small attack units. He went on to say: "Our troops are attacking Stalingrad and they will take it; on that you can rely".

In the following night the Russian encirclement began. Ten days later the German Sixth Army was encircled and dug in. The second act of the bloody drama of Stalingrad began.

Once again the Russians had succeeded in executing an enormous assembly of troops in such a way that German reconnaissance, in particular radio reconnaissance, had not been able to gather adequate information.

The more German intelligence results in the East dried up, the better the Russian intelligence service functioned. Mr. Rado, Chief of the "Rote Drei" in Switzerland, maintained a very animated exchange of messages with the "Director" in Moscow.

STALINGRAD

As if they had sprung up out of the steppes, Russian divisions appeared and hurled themselves repeatedly against the German positions. The German principal front was pushed back slowly, farther and farther from the encircled Sixth Army. Hitler refused to let the Sixth Army try to escape. He ordered it to hold out in the ruins of Stalingrad, because Goering had promised to supply the encircled Sixth Army by air. His attempt was frustrated by the Russian Air Force. With heavy losses the Germans did fetch out some 50,000 men by air but 280,000 were left behind.

The losses of the encircled Sixth Army were heavy. From the 19 to 25 November it lost 47,000 men killed and 51,000 captured, also 1164 guns, 430 tanks, 4,000 trucks, 3,000,000 shells and 18,000,000 rounds of infantry ammunition. Under a terrific rain of fire the men of the Sixth Army put up an un-paralleled fight.

On 29 January total war was proclaimed. It was only a cramp of propaganda which was intended to calm but only created new unrest.

On 3 February 1943 the battle for Stalingrad came to an end. It had cost a quarter of a million dead and 90,000 prisoners, including

24 generals.

Over the German radio sounded the immortal melodies of Beethoven and Schubert and words in memory of the heroes of Stalingrad. The Russian radio also honored its dead. In the eyes of the whole world, however, the myth of the invincibility of the German army was extinct, while the danger conjured up by that unhappy attack on 22 June 1941 became threatening.

Neither Dr. Goebbels nor the German radio nor any newspaper brought word of the last radio message sent from Stalingrad by General Paulus:

"My Führer, in the future follow more often the advice of your generals!"

There was no one who ventured to hand this message to Hitler personally. The cryptographic officer at the Führer's Headquarters brought it with palpitating heart to the adjutant of General Field Marshall Keitel who was on duty, and departed hastily. The adjutant read it through and his heart likewise began to pound. Then he laid the telegram in the portfolio and carried this into the room of the Chief of the Supreme Command of the Armed Forces.

The Field Marshall was sitting stiffly at his desk; he received the portfolio, opened it and read the item, while the adjutant departed. After a short time, a lamp flashed in the antechamber, the adjutant hastened into the room of his chief. Keitel was standing erect; deep wrinkles lay on his brow; he looked sternly at the officer who entered. "Unheard of!" he snarled. "Lay this before the Führer! Absolute secrecy! Thanks!" With this the adjutant was dismissed. He carried the telegram to his comrade in Hitler's antechamber, laid it along with other papers on the table without a word, as if it were a matter of no concern, and left the room.

The Führer's adjutant read the message. Once! Twice! He leaned back in his desk chair and stared at the sheet; the letters began to dance before his eyes. He began to count them in order to calm himself. Then he glanced furtively at the door leading to the room of that Heaven-favored, greatest general of all times; he knew what the effect of this telegram on him would be. Should he? Should he not? But he had to! He picked the message up gingerly as if it were a hot iron and laid it in the leather portfolio with documents that had to be laid before the Supreme Commander of the Armed Forces; he looked up at the ceiling as if hoping for help from above and carried the portfolio to Hitler. Then he left the room.

For a few minutes there was calm, while the adjutant anxiously looked out the window at the driving snow. Then what he had expected happened. The adjoining room came to life. A marble blotter whizzed against the wall and broke. A vase followed and crashed in splinters. A chair was overturned. The Führer began to rage. He wanted to rescind the appointment of General Paulus as Field Marshall, which had been made

the day before, and to degrade him. But that was impossible: the press had already announced the appointment; it would have caused a catastrophic sensation.

Hitler tore the telegram to bits. General Field Marshall Keitel, who meanwhile had hurried in, stood a few steps away; his face portrayed regulation sternness but was turned away from the Führer. Some thousands of kilometers away, tens of thousands of German soldiers were marching away shivering into captivity, with them General Field Marshall Paulus.

NEW TONES FROM THE ETHER

The tones of the "Eroica" and of the "Unfinished Symphony in D-Minor" had long since died away but in the soul of the German people there echoed for a long time, tremulously and oppressively, the unwritten symphony of the German sacrifice at Stalingrad.

The name Stalingrad had become for every German a symbol, the symbol of tragic heroism. And millions of thoughtful people sought desperately for an answer to the questions "Why?" For the first time during this war, doubts arose among the German people, doubts as to the infallibility and the surpassing generalship of Adolf Hitler.

But there was another group of people who felt this "Why?" with an almost physical pain. These were the men who had fought and suffered at Stalingrad and had escaped alive from the hell of insanity. The 90,000 men marching hungry, bleeding, and freezing into Russian captivity had experienced in their own persons that fabulous generalship of Hitler, and sought desperately for an answer to that question "Why?" What they had seen differed from the picture Goebbels had drawn for the people in Germany. Slowly but logically they became spiritually alienated from a system built upon force, deception, and incompetence. They could no longer be deceived; they had become hard realists.

In the prison camps beyond the Volga something new came into being - the "Free Germany" movement. General von Seydlitz-Burbach, who had been captured at Stalingrad, assumed the chairmanship. Other generals and officers joined him. Tens of thousands of German soldiers followed and the movement was mentioned in Russian broadcasts. Whereas hitherto the German language offerings of the Moscow stations had had little to attract the German listener, the latter - if he had courage - now began to listen attentively to foreign stations, particularly when German officers and generals appeared as speakers on these broadcasts.

Of course, it was fully a year and a half before this movement was mentioned in the German press and it was then represented as a piece of base treachery on the part of a few officers. When the "Free Germany" movement started, the eastern front ran along the Don and the Donets; now a year and a half later, it ran along the Carpathians and the frontier of East Prussia. For the war had been going on.

ROMMEL TO EL ALAMEIN

How slight and unimpressive are often the initial causes which lead to great changes in the course of events! How our picture of great men varies according to what we know about them and the point of view from which we regard them! How easily the fame of great generals grows pale when we know the secret of their successes!

Any history of World War II will doubtless mention one name on the German side with particular respect: Rommel! This name has become a symbol of German generalship. In the deserts of North Africa he and his men won astonishing victories and boldly chased the British to the gates of Alexandria. Actually he wanted to chase them further: out of Alexandria, across the Nile and across the Suez Canal. But suddenly his victorious march stopped. At El Alamein, almost within sight of Alexandria, it was suddenly all over.

What had happened? What was the secret of his unexampled victories, and what was the secret of their sudden cessation? There is no question but that in Rommel's case we are dealing with a man of great energy and distinguished military capacity. It would have been hard to find a better general early in 1941 when it became a question of stopping Wavell in Africa. In the fall of 1940 the Italians had crossed the Egyptian frontier and advanced to Marsa Matruk but had been forced to halt and had gone over to a war of position. On 9 December 1940 General Wavell started his offensive against the Italians and by mid-March 1941 had thrown them back to the border of Tripolitania.

Meanwhile the Germans decided to help the Italians. The German "Africa Corps" was formed and transported to Tripolitania and General Rommel assumed command over all German and Italian forces in Italian North Africa.

Rommel went to work with great energy. On 24 March 1941 with his Africa Corps and some fresh Italian divisions he attacked the British, who were weakened by three months of combat and an extremely long supply line, and within 18 days drove them out of Cyrenaica. However, approximately on the line Sollum-Djarabub the operation came to a standstill and from early April 1941 on the front was generally calm. Nothing noteworthy occurred. At least nothing outwardly noteworthy. In reality, something was being prepared quietly which belongs among the most interesting chapters in the history of this war.

A certain Fellers, whose military rank I do not recall and whom I shall therefore call by name only, was stationed in Cairo as United States military attache. Experience has shown that when many people suddenly display a lively interest in a new field of endeavor they merely cause mischief. Fellers had come to Cairo; the significance of the North African Theater had been stressed by Rommel's actions, and the entire Near East seemed about to become the focal point of the war. For an ambitious young man that seemed to be just the right post. So Fellers decided to act. But how can a military attache act? He writes

reports. And how are these reports conveyed nowadays? By radio.

So Fellers set to and sent one radiogram after another to Washington. Reports on the political situation and, above all else, reports on everything connected with military preparations and operations. They were enciphered, of course, but the death of any cryptographic system is found in its frequent use. All Fellers' radiograms were intercepted by the Germans. They bore the address "milid wash" or "agwar wash" and hence were easily recognized. By early July the system had been solved in essence and parts of the messages could be read. They proved to be a mine of important information. Fellers reported to the War Department in Washington regarding the reenforcement of British forces in Western Egypt, regarding their equipment with modern arms, regarding each transport of war materiel that arrived, regarding the withdrawal of the Australian 9th Division from Tobruk and its replacement by British and Polish units, and regarding preparations for an offensive with the aim of encircling and annihilating the Axis troops.

All these reports were passed currently to General Rommel who was able to plan correspondingly. The reports were not complete, to be sure, for the cryptographic system had not been solved in its entirety, but they were adequate to keep Rommel posted. Hence it was no surprise to him when in the grey dawn of 18 November 1941 the British offensive under General Sir Alan Cunningham broke loose along the entire front. Rommel had made good preparations and was able to hold his front for a time. He could not prevent the British from making a break south of Sidi Omar and thus throwing the southern part of the Axis front off balance.

He was able to send an Italian armoured division which met the British thrust at Sidi Rezegh and Bir el Gobi.

On 19 November the British took Sidi Rezegh and on the same day Churchill proclaimed the impending destruction of the Axis troops in North Africa. Both sides brought up all the troops they had. Slowly but surely the British drew a ring around the Axis divisions. Nevertheless, despite all tactical successes, it seemed that the first onrush of the British had not achieved decisive results. Wherever the British started an action, Rommel immediately sent forces to oppose them. He even sent a column behind the British in the direction of Halfaya and broke their connections. He always did the right thing at the right time. Small wonder, for in each phase of the battle he knew the grouping and the intentions of the enemy.

Fellers was sending one telegram after another to Washington. He fairly outdid himself in his reporting. He ranged all over the battle area, saw and heard everything, knew all preparations, every intention, every movement of the British forces and transmitted it all to the United States. The German intercept station promptly copied his message, sent it by teletype to Berlin where it was deciphered and sent by the speediest possible route to Rommel. That took only a few hours. By now the system had been completely solved.

The British were much surprised. Preparations for the offensive had been so thorough that the destruction of the Axis troops in the very first phase had been considered certain. Something did not click. General Auchinleck, Commander-in-Chief in the Near East and Wavell's successor, flew from Cairo to Cunningham's headquarters and on 26 November relieved him of his post. A young general of 44 years, General Ritchie, was appointed commander of the British Eighth Army.

The Battle of Sidi Rezegh continued. Rommel was trying to break the British ring both from within and from without. The garrison of Halfaya Pass maintained its position and forced the British to transport their supplies across the desert. On 6 December Rommel began regrouping his forces. He had recognized a weak point in the British encirclement and on 8 December he pushed toward the west, disengaging his troops without being detected. Before the British recovered from their surprise he had escaped. On 11 December Churchill stated in the Lower House that the Libyan Campaign had not gone as expected.

In the days that followed, the British occupied several towns and captured some 25,000 men. Meanwhile Rommel had established his units near El Aghaila and received dependable information regarding his opponent (Fellers had seen to that). On 21 January he advanced 16 km into the British line with 3 armored columns. The British were taken by surprise and had to retreat. On the 27th Rommel was north and northeast of Maus. On that day Churchill declared "We are facing a very bold and clever foe, and I may well say - a great general!"

On the 29th Benghazi was taken. Rommel was promoted to Colonel General. On 10 February operations came to a standstill 100 km west of Tobruk. Rommel was not strong enough to break through the new defensive front of his opponent. Moreover, Fellers had failed him; he had lost contact and had to get oriented anew. That took a certain amount of time. Till then he could supply no useful information. Rommel waited for reports; they did not come.

A pause in the fighting ensued. Rommel received reinforcement and supplies. For the second time OKW turned its glance toward the Near East. Rommel was to be made so strong that he could drive to the Suez Canal - yes, he was to go beyond Jerusalem and Damascus and upset Northern Arabia and Iraq.

The German offensive from Southern Russia was to roll over the Caucasus, over northern Persia. Near Bagdad or Mosul the two armies were to meet. The days of British predominance in the Near East appeared to be numbered; the great British lifeline through the Mediterranean and Red Sea was to be cut. Once the oilfields of the Caucasus and Iraq were in German hands, the hour of final victory would be at hand.

A gigantic plan. And it appeared capable of execution. OKW already was issuing dozens of orientation pamphlets for the troops. On Iran, Iraq, on Syria and the Arabian peninsula, on Trans-Jordan

and Palestine, yes, even on Afghanistan and India. Perhaps the day was not far away when the Germans could shake hands with their Japanese allies. The brigade "Free India" was set up and trained. Compared with this operation, the campaign of Alexander the Great would some day appear very modest.

Now there was excellent information once more regarding the situation in North Africa. Fellers had found his speech again; he wrote until his fingers were sore. He radioed everything he could discover. The German operators were listening. Again and again messages to "milid wash" and "agwar wash" were received. Two great stations had both been copying these messages since the beginning of the year in order that none should be missed and their intercepts were transmitted as "urgent" by direct wire to Berlin.

I should like to illustrate the precision with which the Germans were working. The British had carefully planned and prepared an action against Rommel's airfields. They meant to drop parachutists during the night who would destroy everything by means of the explosives they took along. The action had been so carefully planned that it could not have failed its objective. Fellers, radiant with joy, radioed this to Washington. The message was sent about 8 o'clock in the morning by the station in Cairo; was received in Lauf immediately and transmitted to Berlin. At 9 o'clock it was on the cryptanalyst's desk; at 10 o'clock it was deciphered; at 10:30 it was in the Fuhrer's Headquarters; and an hour later Rommel had it. He had a day to warn his airfields. The British project was executed shortly after midnight. The parachutists got a warm reception; the action miscarried. Only one airfield disregarded the warning - here the British met with success.

Now Rommel knew precisely how matters stood on the British side; their supplies and equipment, their strength, their plans. February, March, and April passed quietly. Both sides were bringing in reinforcements. After the middle of May the British began to spot extensive German movements and counted on an offensive in the near future.

On 26 May Rommel's famous offensive broke loose. He advanced in two columns, employing seven divisions. A battle developed at Acroma and advanced troops pressed forward to Sidi Rezegh. But it soon appeared that Rommel's frontal attack was a ruse to divert attention from the southern sector of the front. German tanks broke through at Bir Hakim and heavy tank battles raged for days near Acroma. Approximately 1,000 tanks and 2,000 to 2,500 motorized guns were engaged on the two sides. Heat and sand storms made a hell of the battlefield.

On 10 June Bir Hakim, the key to the British defense system, was taken. General Ritchie now adopted a line of resistance consisting of individual hedgehog positions. But the Axis troops drove through in three columns. Sidi Rezegh was taken and on the 19th the Egyptian frontier was reached. The next day Tobruk was encircled and on the 21st it was taken, along with 25,000 prisoners. This had been a bold masterstroke.

On 25 June 1942 Rommel had occupied Sollum, the Halfaya Pass and Sidi Omar and was in front of Sidi Barani. Fellers was still radioing his reports and Rommel was receiving precise information every hour, while his opponent had only such information as could be picked up at the immediate front. The British were amazed; Rommel seemed to have "second sight". No matter what the British undertook Rommel always intervened as if the British High Command had been keeping him posted.

On 27 June General Ritchie was relieved as commander of the Eighth Army; Auchinleck assumed command in person.

Quickly the British retreated to Marsa Matruk. Here were the fortifications Wavel had laid out when Graziani was at the gates of Egypt. Now Rommel was at the gates of Egypt. In less than 4 weeks he had chased the British out of all Cyrenaica. Their only hope lay in the Kattara depression between Marsa Matruk and Alexandria which stretches 60 kilometers inland from the coast. This is an area of nothing but sand and great blocks of rock, unparalleled heat and absolute lack of water. The British were resolved to hold the rectangle Alexandria - Port Said - Suez - Cairo. Would they succeed? They were determined to hold Singapore, but had lost it. They had been determined to hold the Balkans, but had to withdraw. They were afraid of German parachutists. On 1 July Rommel was near El Alamein. The threat to Alexandria had become immediate. British domination in the Near East was threatened.

Then the miracle occurred. No, it was no miracle, it was a tragicomedy. It was so comical, so idiotically funny, that it had the effect of a passage from a dime novel. Or it was like a bad joke.

It was Saturday, 27 June 1942. I had turned on the broadcast of the Deutschlandsender and was listening toward 6 o'clock in the evening to the announcement of a radio drama. "We are offering a drama with scenes from the British or American information bureau", the announcer said. "Well, this is going to be good", I thought, but left the apparatus tuned in while I occupied myself with some work. Suddenly, I pricked up my ears; the drama had as its subject "Events in North Africa" and political and military matters were involved. One of the characters represented the American military attache in Cairo, and now there followed a discussion of his extensive supply of information and the way he sent it on to Washington.

I was speechless. To think that the German broadcast was putting on something that countless people were trying to censor! The drama was genuine. It was only too well played. But how did these people get the information?

On 29 June, 36 hours after this radio drama, the messages from Fellers to Washington suddenly ceased. The German intercept operators tried their best; they listened and searched - in vain. No further "milid" message and no "agwar" message was ever heard. When messages began to flow again, the Americans had changed their system and were

using a machine which defied all our efforts at solution.

While the new German offensive swept forward in southern Russia and the world waited the outcome with bated breath, Rommel remained without information. The British regrouped their forces; he knew nothing about it. They introduced new units - this remained hidden from Rommel. New weapons were unloaded in Alexandria and Port Said; Rommel did not find out about it. Henceforth no messages signed "Fellers" gave information regarding the enemy. The great general now had to rely upon himself and his reconnaissance at the front.

On 3 July Rommel tried a strong thrust to the south. It failed. The next day, using all available troops, he tried a major attack near El Alamein. After heavy fighting and initial successes Rommel had to withdraw. Since 26 May the British Eighth Army had lost 75,000 men, plus 1100 tanks and 450 planes. It was in bad shape, but now it held. Auchinleck was now personally conducting operations in the front line. Both sides dug in. Both sides brought up reinforcements. American tank forces arrived in Egypt and were given intensive final training. New contingents arrived from Italy. German troops were brought in from Crete. Alexandria was attacked by German planes. Decisions of great historical moment seemed to be impending. All eyes were fixed on Rommel. Mussolini betook himself to the Egyptian front in order to be present at the entry into Cairo. Rommel was appointed General Field Marshall. But Rommel no longer had any reliable reports concerning the enemy.

Churchill journeyed to Moscow and had a long conversation with Stalin. German troops stood before Stalingrad and at the foothills of the Caucasus. Everything seemed to portend a climax to military operations in the Near East. On his way back from Moscow, Churchill visited Cairo. Lieutenant General Montgomery was appointed Commander in Chief of the British Eighth Army; General Alexander was named successor to Auchinleck.

For the second time during the war the Near East became the center of intrigue. There was great tension throughout the Moslem world. In the bazaars and in the oases of the desert, Mohammedans gathered and discussed the question of their future in connection with the war. The Grand Mufti of Jerusalem issued over the broadcasting station at Bari a flaming appeal to the Moslem world and to the population of India to rise against Great Britain and its Allies. The Jewish population was torn between fear of an Arab revolt and the approach of the war. Nationalist elements in Egypt tried to mix water with the gasoline in British tanks and to throw sand in the motors.

But the Allies were not idle. In June 20,000 Americans landed in Basra. New equipment factories in the Near East began large scale production. In August another 50,000 men landed in Iraq. The British Ninth Army was in Syria and Palestine. In Iraq and Iran was the Army Group of General Maitland Wilson, formerly of the Ninth Army. Army Group Wavell was in India. Eight Russian Divisions had been brought

to Iran and three Polish divisions were there also. The Near East was preparing for the struggle. Then, about mid-August 1942, the German offensive in Russia began to bog down. In those days Rommel might well have been thinking "a kingdom for one good Fellers message". But this source of information had dried up. Rommel decided to attack without Fellers' aid. In the morning hours of 31 August he advanced against the southern flank of the British position at El Alamein but immediately encountered strong resistance. He threw in his last tanks and had all available trucks drive around in the rear to kick up a dust and give the impression that a strong tank force was advancing. But even this trick did not work.

There was hand fighting but after two days Rommel had to retreat. He had 12 divisions and at least 600 tanks, but he missed the Fellers telegrams. Rommel's operations came to a standstill, as did those before Stalingrad and in the Caucasus. The dream of a campaign through Asia Minor had come to an end. Mussolini returned to Italy. The period of Rommel's great victories was over.

On 4 November the British began a smashing offensive against the Axis front. On 8 November the front had been broken, the Africa Corps was beaten, and the Italians were cut off. Rommel's great retreat began; his star had set. On that same day, the Americans and the British landed in Algeria and Morocco. The Second Front had come into being over night.

- THE "ROTE DREI" AGAIN

Immediately after the encirclement at Stalingrad and the break through the German front, the Russian intelligence service faced a new problem of the utmost importance, for it was now a question of keeping precisely informed regarding the enemy situation. The Russians had succeeded in striking a heavy blow, but how were things on the German side? What reserves did they have? What were their intentions? Would they and could they prepare a counter blow? Did the Russians on the southern front perhaps face the risk of falling into a trap?

One of the great hours for the Russian intelligence service had arrived. Its best source was the "Rote Drei" which reached up to the highest German commands, up to OKW, up to the Führer's Headquarters. And this time, too, the "Rote Drei" did not fail. It worked feverishly and its reports went to Moscow night after night.

Supported by such reliable reports, the Russian offensive rolled on. Almost the entire Eastern front was in motion. In two months the Russians crushed or threw into confusion 102 German and allied divisions, many of which were practically annihilated. In two months the Russians took 200,000 prisoners (not counting those from Stalingrad) and 13,000 guns. In the south they advanced 400 km.

The German sacrifice at Stalingrad had been in vain. England and America had been arming.

AFTER STALINGRAD AND EL ALAMEIN

Stalingrad and El Alamein were fanfares of a shift, of a shift from an attack to defense, from offensive to retreat, from the intoxication of victory to propaganda for holding out. Dr. Goebbels, who had played the melody of intoxicated power and racial hatred, who had trampled under foot every elemental feeling of right and justice, now decided on a shift in the propaganda work. Whereas hitherto the philosophy of absolute force had been radiated out into the ether, there now ensued a slow but unmistakable change. The wavelengths remained the same but over them there began to go out something new. In place of the concepts of power, hatred, force, suppression, and the claim to leadership, there now appeared as guarantee of German victory the philosophy of "history." Germany must win "because there is justice in history," but this was not sufficient for the Ministry of Propaganda, which now gave the German people a new watchword born of satanic infamy and filled with such cynicism toward the German people as to fairly take your breath away. It ran: "if we are to lose the war, then the people at home are to blame. The attitude of the people at home is of decisive importance!" They said this to a people which for ten years had enjoyed no other right than the right to make sacrifices and to accept patiently whatever was imposed upon them.

Stalingrad and El Alamein were military defeats which, viewed superficially, might not be of vital importance. Such reverses occur in every war and need not have a disconcerting effect. The enemy need not even know that they were decisive. The man who unintentionally told the German people and the rest of the world the truth was none other than Dr. Goebbels. Abroad they soon noted his new tune and knew how to draw advantage from it. Foreign broadcasts soon revealed this. A wave of activity passed through enemy countries which was occasioned less by the battles of Stalingrad and El Alamein than by the battle waged by Dr. Goebbels in the ether. For this battle likewise was lost, slowly and hardly noticeably, but with a crippling effect on Germany while it spurred the enemy to greater effort. What the front had not yet revealed to the enemy, that Dr. Goebbels now revealed the incipient collapse on the home front of the mighty German war machine.

ALGERIA, LIBYA, AND TUNISIA 1942-1943

Military events in North Africa during the winter 1942/1943 and the following spring will give future writers of history plenty of material and the operations in this theater will be discussed from every possible point of view in all the military schools of the world. Merely the landing of the Americans in the night of 9 November 1942 will receive consideration, whether it be from the standpoint of naval warfare, of water transportation, of supply, of air security, or of the planning of the actual operations from Algeria to Tunis. There is no doubt but that the landing of the Allies in Algeria was a masterpiece but the outstanding feature, in my opinion, was neither the mighty armada of 850 ships nor the safeguarding of this fleet against submarine and air attack, neither the solution of the supply problem nor the execution of

the landing in the shortest possible time, but rather the complete assurance of the factor of surprise. The landing in North Africa literally had the effect of a bolt from a clear sky.

The intercept service of the German Navy as early as the end of August 1942 had found ever-increasing indications of preparation for a large-scale landing operation by the Western Powers. By mid-October, it was certain that this operation would be carried out in the Mediterranean. The exact point for the landing remained unclarified. Men in the German navy thought it would be in the Balkans; the possibility of an invasion of Sicily was likewise considered.

By the end of October 1942, the German naval intercept service was sure that the time for carrying out this operation was no longer far away. All units of the intercept service were instructed to be extremely watchful.

The moment for the entry of the invasion fleet into the Mediterranean was clearly recognized by the German naval intercept service. However, the extent of the impending action could be recognized. But the point at which this action would be carried out remained an open question to the very end. Some still thought that the Balkans were in danger. The possibility of a landing in Algeria and Morocco was not taken into account at all. Everyone was greatly surprised when the troops were actually disembarked there. No clues as to the areas selected for the landings were obtained from intercepted traffic down to the very end. In this perfect camouflage lay the prerequisite for the success of the entire Allied undertaking and of the future campaign in Africa.

I have already tried to describe the manner in which General Rommel was supported in his Libyan operations by the intercept and cryptanalytic services. It was a serious blow for him when Fellers' help dropped out one day. But misfortunes rarely come singly.

To Rommel's army belonged an intercept company which functioned admirably and supplied excellent results. Everything that Rommel could not ascertain by way of Fellers was furnished him by this intercept company. Now when the great Allied attack on Rommel's position at El Alamein succeeded, this company fell into the enemy's hand early, with bag and baggage. The British attack came so suddenly that the intercept station had no time to destroy the most important and secret documents pertaining to its work. With one swoop the Allies here deprived General Rommel of his sole remaining source of information. Not only that - the Allies were now shown for the second time the mistakes they had been making.

In the Fellers case they had reacted immediately. They did so again now. Their radio service could not have been given a better lesson. And they learned quickly and thoroughly.

Rommel learned something too. He learned what the intercept service means in modern war. He learned to know what it is to face an otherwise

equal opponent without this service. He learned to bow to the changing fortunes of war. The Axis front at El Alamein consisted of gigantic mine fields with numerous fortified support points. A continuous trench system existed only on the norther flank.

On 24 October the Eighth Army began its attack. Behind a continuous wall of chemical fog, the infantry advanced after heavy artillery preparation, and the tanks followed. Slowly, methodically, and surely the attack cut into the Axis lines. Violent fighting raged for days but on 5 November the break-through was completed. The Axis troops withdrew to Marsa Matruk but had to occupy prepared positions at Sollum and the Halfaya Pass on 10 November. The fury of the British attack increased. Most of the Italians had either fallen or been captured. The British occupied Derna on 16 November; Benghazi was evacuated on the 21st; Agedabia on the 23rd.

Rommel's losses already totaled 80,000 men. Eighty thousand in barely four weeks!

On 24 November the British were before El Agheila, where Rommel had constructed a new defense line. All Cyrenaica had been lost again, this time for good.

Montgomery was a methodical man. He could push forward at once, for Rommel was hard hit; but he did not like bold strokes of the Rommel type. He did not like a 51% chance; he was all in favor of a 90% chance. So he decided to sit tight and do some shifting. That took three weeks. But then the supply problem had been settled and he was ready. New troops were ready, new tanks, artillery, and planes, planes, planes. Rommel suspected all sorts of things but no longer had any reliable information regarding the enemy. In view of the British superiority in the air, his few remaining planes could not supply him with the necessary reconnaissance reports. Only the intercept service might perhaps have done this, but this source was cut off. The intercept company was already on its way to Canada and the great general was forced to rely entirely on himself and his intuition. But intuition without intercept service is a very uncertain thing.

On 14 December 1942 General Montgomery began his attack on the El Agheila position. Soon the once famous Africa Corps had to withdraw. Rommel hoped that the great, waterless Syrtes Desert would check the enemy but on 4 January Montgomery was at Buerat and had the entire desert already behind him. At the same time, General Leclerc was pushing up from the south and soon the entire Fessan area was in the hands of the Free French. Soon Leclerc made contact with a French Camel Corps operating from Algeria. Yes, from Algeria, for there was already a second front in Africa.

In the night from the 9th to the 10th of November 1942, the British and Americans had landed on the coast of North Africa. They soon had possession of the country from Oran to Bone and were preparing to occupy Tunisia which was the key for any further operations. But once more, for

the last time in this war, the air superiority of the Axis powers was to make itself felt.

With hundreds of planes, troops and weapons were hastily thrown into Tunisia; positions, passes, roads, and support points along the western frontier were occupied, while other units landed in Tunisian harbors under the protection of fighters and bombers. A new intercept company was also shipped over and hardly had it taken up its position when its receivers were deluged! The Americans radioed away in a gay and carefree manner that was a joy to the company.

Shortly the enemy situation was clear. The great Allied attack, the Christmas tank battle in Tunisia, ended in favor of the Axis. In the north the British withdrew. By the beginning of January some 80,000 Axis troops - mostly German - were already in Tunisia.

And now a struggle began which lasted three full months. It was hard to understand how the relatively weak Axis forces could withstand the attack of far superior American and British Forces. This was a puzzle to those who did not know the circumstances but was clear to one who did. From the coast down to Lake Shott el Djerid there was a continuous front. In the north was the British First Army, south of it the American Fifth Army, and farther south were the French. All three tried to outdo one another in supplying the German intercept service with useful material. General von Arnim, who commanded the Axis forces in Tunisia, could be satisfied. Scarcely anything on the enemy side escaped him. "With the security of a sleep walker" - to use a favorite expression of Hitler - he could do the right thing at the right time. On 10 January the Germans thrust forward south of Pont du Fahs into the assembly area of the enemy, dented the Allied Front and forced a retreat. On 20 January the Germans and Italians attacked the junction of the American and French forces. A local success was achieved.

On 27 January at Casablanca Allied statesmen conferred. In connection therewith, the British, and particularly the Americans, started a new push on the central front. They wanted to reach Susa and split von Arnim's forces in two. They reached Kairouan and almost reached the coast but the intercept service had learned of their intentions and preparations so that von Arnim had time to prepare countermeasures. The thrust was parried, the break-through was sealed off.

Meanwhile, on 9 January Montgomery attacked Rommel. On 23 January he entered Tripoli. Then he prepared to advance against Tunisia and Rommel retreated behind the Mareth line. It was decided to hold Tunisia, cost what it might, and reinforcements were sent from Italy. But the first serious tension between the military staffs of the Axis was already appearing. On 3 February the Italian Chief of General Staff was relieved of his position.

On 9 February an Axis offensive began for which the intercept service supplied adequate information. The success was immediate. The Allies were astounded and blamed their previous want of success on the dual

command. General Eisenhower became sole Commander-in-Chief of all American, British, and French troops in North Africa. But even that did not help. South of Kairouan, German armored forces broke through near Faid and advanced 35 kilometers toward Sbeitla. This threatened American positions north of Cafsa and the retreating Americans were badly cut up by divebombers. Eisenhower had been on the point of regrouping the North American troops. The German intercept service had discovered this and the German attack broke right into this movement.

On 18 February the Americans had to evacuate Gafsa hurriedly. Kairouan was in German hands. Two days later German troops took Sbeitla and on the following day occupied Kasserine Pass.

The Mareth Line consisted of three separate positions lying one behind the other in a depth of 15 kilometers. Each of these lines was supported by a number of forts built in the cliffs of the desert and reinforced with concrete. There were countless barbed wire entanglements, tens of thousands of anti-tank obstructions, tank traps, built-in positions for anti-tank defense, disappearing guns, subterranean sleeping quarters and water tanks. The chain of forts filled the territory between the sea and the mountains. Behind the Mareth Line is the Gabes Gap which is only 20 kilometers wide.

About 15 February incautious French traffic began mentioning British reconnaissance aiming to by-pass the Mareth Line. At first these were rather small patrols, then stronger formations appeared. They were never mentioned in British traffic. I doubt if any such reports reached the German command in North Africa; if they did, they were surely not taken seriously. The region is a desert of stones and rubble, entirely without water, and was considered utterly impassable. Nevertheless, it could be deduced from the reports that the area in question was passable, at least for small units.

On 25 February came a violent Allied attack on the Kassarine Pass. It did not find the Axis troops unprepared, thanks to the intercept service. The main body of Axis troops withdrew because the superiority of the enemy was too great. Three days later the rear guard gave up the pass. The British and Americans employed a terrific number of divebombers. On March 1st the Germans launched an attack on the British First Army and moved forward 25 kilometers to Bescha. More bitter fighting occurred on the Bescha-Mateur road. Then both sides dug in. On 3 March the Americans took Pichon, 32 kilometers west of Kairouan and even the French became active and attempted an advance toward Gafsa.

Meanwhile it had become clear that the British Eighth Army was preparing a large scale offensive against the Mareth Line. The Germans decided to anticipate the attack and moved out from the Mareth Line in the morning hours of 6 March. After heavy fighting they had to withdraw to the Mareth Line on the second day and on the same day the French advanced to the railroad line Ferina-Gafsa and occupied Toseur on the northern shore of the Salt Lake where they were stopped by the commitment of fresh Axis troops. On 18 March, however, the French advanced

again in the direction of Gafsa which they took the following day. The next day they were 80 kilometers west of Sfax and the situation was beginning to look bad.

On the morning of 21 March the British attack on the Mareth Line began. The Germans were expecting it but the exact time had remained a secret because radio reconnaissance against the Eighth Army had been crowned by little success. So the attack came as a surprise. The line was penetrated but was then restored and to all appearances the situation was favorable. Then came the biggest surprise of the entire Tunisian campaign: without being detected, the British moved south, turned the Mareth Line and advanced toward El Hamma. The French messages which might have given warning had not been monitored. Now the German flank and rear were exposed. On 28 March the British were at El Hamma; on the following day "due to mobile operations" the Mareth Line was abandoned. The British gave the Germans no time to establish new defense positions. Rommel himself left the theater for new duties in Italy. Von Arnim was in command in Tunisia but there was not much left to command. His army was split first into two parts, then into three, and finally into four. The masterly turning of the Mareth Line had decided the fate of Tunisia. German and Italian troops saw how hopeless the struggle was and entire units surrendered.

On 13 May 1943 that campaign came to an end. It had cost 76,000 dead, 248,000 had laid down their arms, three-fourths of them Germans; 28 generals, 17 of them German, surrendered to General Alexander. Thus the catastrophe was even greater than that of Stalingrad. But this time in Germany they dispensed with playing on the radio Beethoven's "Eroica" and Schubert's "Unfinished Symphony." They did not dare reveal to the German people the full extent of the tragedy. They passed on to new business, as if the catastrophe in Tunisia were merely an episode without special significance. And they were right. With this, the entire campaign in North Africa had become an episode - without significance! At least there were no entries on the credit side of the ledger for the Axis powers. On the debit side stood in flaming letters:

1. The loss of almost a million fighting men,
2. Renunciation of the thrust toward the Near East,
3. The beginning of the collapse of Italy.

It was not merely the German public that was surprised by the collapse of the Tunisian front. OKW was also greatly surprised. They were convinced the Mareth Line could hold and had organized a supply service on a lavish scale both by air and by sea. Up to that last moment great transports of supplies were arriving. These were repeatedly undamaged by the British. Von Arnim's troops were given supplies and equipment but the situation had become hopeless and for that reason they surrendered. It is not true that they fought till the last cartridge was gone and no food or water was left. They surrendered because they saw how hopeless further resistance was and because they knew about the tragedy of Stalingrad.

It is difficult to determine who was to blame for the fact that French radiograms which betrayed the danger of a flank movement around the Mareth Line did not receive the attention they deserved. Had this been done, there would have been time to protect the flank and frustrate the movement. This daring stroke might then have prepared a grave in the desert for the British, since it was a very dangerous undertaking. Military history will doubtless regard it as one of the most daring maneuvers of its kind.

SICILY 1943

Several times I have spoken of a duplication of cases, meaning a purely accidental coincidence of events of similar character which had no causal connection with one another. For instance, if the Germans in 1914 intercepted Russian messages and in consequence won the Battle of Tannenberg and at the same time on the Western Front made almost the same mistakes as the Russians and thus allowed the French to win the Battle of the Marne, then two similar events are involved but causally they have nothing to do with one another; they are fateful coincidences. Such coincidences are involved in the case of the two "Zimmermans". We can ascribe them to the obscure "law of the duplication of cases".

There is also something else, namely an apparently existing "law of the repetition of the same mistakes" and, to be sure, by one and the same actor.

Here we are no longer concerned with coincidences; instead the cause lies in the character of the person concerned. Hence, if in World War I the Russians kept on making the same mistakes in their use of radio telegraphy and finally lost not merely battles but the entire war in consequence, that was neither an accident nor fateful duplication of cases. The simple fact was that in this enormous army insufficient attention was given to the training of the signal troops - perhaps nothing more was possible under the circumstances.

The "law of the repetition of the same mistakes" remains valid in World War II; this time the Germans kept making the same mistake "with all the assurance of a sleepwalker."

The radio play about the Fellers messages may properly be called a madhouse incident. It was so crazy that I could hardly blame anyone for not believing my statements. It sounds fantastic. But if anyone should believe me, he would agree with the familiar song: "That can happen only once; it can't happen again!" Well, even in this case there was a sure enough repetition!

The battles in Africa had come to an end. The Allies had landed on Sicily. The first wave of the invasion was slowly rolling over the island. It was a bitter struggle, which suggested the form that a future battle in the West could assume. The Italians began to drop out of the picture and the role of the German units became more important. They were numerically inferior to the Allies and any help was doubly important. A dependable intelligence service represents such a help by telling about the grouping and intentions of the enemy.

After the catastrophe in Tunisia, a German radio intercept platoon was established on Sicily and quickly began to provide useful information - especially against the Americans.

I no longer recall the exact day, but one evening during the second half of the struggle for the island four short reports were broadcast, of which one dealt with the battles in Sicily. And lo! the reporter at the front said frankly and with obvious pride that the Germans were very well informed, thanks to intercepted radio messages.

There was an extensive investigation, but the damage had been done. Three days after this man's report, all keys of the American troops in Sicily were changed and up to the conclusion of the struggle for this island none of the new keys was solved.

THE SPRING OF 1943 IN THE EAST

In April 1943 the great Russian offensive, which had begun at Stalin-grad, faded out just before reaching the Dnieper. Kharkov had been taken by the Russians after hard fighting but in the south, on the Sea of Azov near Taganrog, the Russian advance had come to a stop. Soon the Germans struck back but their new advance was of brief duration. Then the front became rigid, somewhat to the west of the line reached in the first advance in 1941. What next? Hitler was trying to discover reserves, while some of his commanders secretly hoped there would be no further attack that summer.

The German counteroffensive had left something like a gigantic nose sticking out from the Russian lines north of Belgorod and southeast of Orel. By 20 July intercepts revealed that the Russians were concerned with the assembling of German troops in these areas to clip off this "nose." The German intercept service was able to report that the Russians were well informed regarding German preparations - they knew all the units at the front and those in reserve. It was clear that they were reenforcing their own endangered positions. What remained concealed from the Germans was an enormous concentration behind the Russian front in and south of the "nose". German air superiority had been lost and the Russian air force permitted no German air reconnaissance worth mentioning. The intelligence work shifted more and more to the intercept service and the Russians knew it and did everything possible to shape their traffic so that it would betray as little as possible. The cryptographic systems were good and the operators rarely made compromising mistakes. Consequently the results of the German intercept service could not be remarkable. The Russian blows almost always came unexpectedly and were attended by success.

Both sides were preparing for a decisive struggle and tanks, guns and troops were rolling up from the rear areas. Hitler appealed to his troops and spoke about the last decisive battle which was to annihilate the Soviet state and its Red Army. And then the German divisions began what was to be their last offensive in the east.

STILL THE "ROTE DREI"

At this critical point the Russians had an ally. An ally who was not mentioned in the papers or on the radio. An ally of whom no one knew save the few who were in on the secret. An invisible but uncanny ally - the "Rote Drei."

It had been working for a year and a half and it was working well. If we read the messages which had passed to Moscow and realize fully their significance, then such terms as "espionage" and "treason" are no longer adequate. This was something new and unique, something which in its effect had no parallel in history. However you look at them, Tannenberg, the Marne, Zimmermann, and Fellers were fateful coincidences due to human inadequacy, but what about the "Rote Drei"? Was it the inspired performance of a spy? Was it the work of a traitor who sat at the source of most important intelligence and perhaps sold it for money or the favor of a woman? Was it the work of a group of agents employing blackmail and terrorism to procure access to these most precious secrets? - No! Nothing of the sort! The "Rote Drei" was not a clever individual act; it was not an accident but a symbol. It was a product of the times. The "Rote Drei" was the quintessence of the spiritual revolt of a people against a system of government based on force and suppression. The frightful psychic pressure to which the German people had been exposed for nine years was seeking a vent. The "Rote Drei", the "Rote Kapelle" and all the rest became a vent. I feel sure that not a single German who supplies information to this organization was working for money. Only the organizers and gatherers of information received money from Moscow. Rado with all his agents could never have gathered even a fraction of that information had not the psychic state of the German people prepared the way.

In Germany they were breaking their heads over these questions: whence came the material superiority of the Russians? How did it happen to be greatest just where the Germans attacked? How did it happen to be greatest just where the Germans attacked? How did it happen that the Russians knew the weak points in the German front and struck at these? Can one still wonder after reading the messages of the "Rote Drei"?

I have said in my preface that the era of great generals is past. Even the Russian commanders were no heaven-sent geniuses. They - like all others - were little wheels in the war machine of their country. They knew how to utilize their opportunities and these opportunities were given them by the "Rote Drei" with all that stood behind it.

And the complex of the "Rote Drei" was only a single case. During World War II there were dozens of such cases and the number of spy messages transmitted by them ran high into the thousands.

THE LAST GERMAN OFFENSIVE IN THE EAST AND WHAT FOLLOWED

On 4 July 1943 the German offensive north of Belgorod and southeast of Orel broke loose. It was not a surprise to the Russians; the Rote Drei had been predicting it with precision for three months. Actually, the

Russians wanted it. They knew that one-third of all the German armored forces on the eastern front was assembled here and to this they were opposing artillery and tanks of their own. On the very first day of the battle it became evident that the Germans had misjudged the defensive power of the Russians. Breaks into the Russian front line were made, of course, but each break was immediately sealed off. The losses on both sides were enormous. On the Russian side they could immediately be replaced from inexhaustible sources but on the German side they weighted heavily. The "nose" was dented a little at the top and bottom, but that was all. During the first two days the Germans lost almost 1,000 tanks and 300 aircraft. On 8 July the losses had mounted to 15,000 tanks, 650 planes, and 30,000 men. The Germans had committed 15 tank divisions, one mobile division, and 14 infantry divisions in the greatest tank battle in world history. Strangely enough the German press said little about it. And when, with perfect timing, the Allied troops under the command of General Eisenhower landed on Sicily in the morning hours of 10 July, there was plenty to divert attention from the Russian theater and the hopeless contest still raging there.

Of the million Italian, Romanian, Hungarian and other vassal troops of the previous year, only a scant 100,000 men are still available, not more than 25,000 of them at the front, the remainder in the zones of communication. The German divisions, which had hitherto comprised three regiments each, were reformed into divisions with two regiments. And the Russians knew it. They knew much more. How short German manpower was getting was suggested, among other things, by a decree granting German citizenship to so-called Volksdeutsche (people of German blood) from foreign countries who would serve in the SS, Organisation Todt, or some other German organization or in a unit of the armed forces. This lure did not achieve much but did betray many things and conceal many dangers.

The high-sounding catch words of the earlier years were replaced by others: "It is a matter of life or death!" "Victory or destruction!"

On 13 July the German offensive was definitely halted; two days later a strong Russian offensive began. On the 17th the German lines had been pierced in places to a depth of 50 kilometers.

While a few Germans clung undismayed to the old braggadocio and some other intentionally closed their eyes, a few correctly sized up the situation and began to offer overt or covert opposition to the regime. The vast majority, however, felt only a dull resignation. Hitler thought it necessary to take energetic measures against "defeatism".

When on 19 July Hitler and Mussolini met in northern Italy, "military questions were discussed" according to the official report. There was no more talk of complete agreement, of confidence on victory. One week later, on 26 July, Mussolini was deposed and Badoglio took over the government.

On 5 August the Russians occupied Orel. On 23 August Kharkov fell and the German front began to waiver. On 31 August Taganrog fell.

Perhaps the Germans never before fought so bravely and with such disregard for death. The number of dead was enormous, the number of prisoners was small indeed and most of these were wounded.

Even the Dnieper could not hold up the Russians. On 6 November 1943 Kiev fell, the Holy City of the Russians and the Ukrainians. Gomel, the most important rail junction in the northern Ukraine, fell on 27 November.

During this entire period the Russians handled their radio traffic so that it afforded the German intercept service very little useful intelligence material. The German command was inadequately informed regarding the enemy, who time and time again threw unexpected "final reserves" into the struggle. Tactical details - sometimes very valuable ones - were obtained often, but from an operational point of view the picture of the enemy situation remained obscure. On the other hand, the Russians were surprisingly well informed regarding the situation on the German side. They even felt so sure of themselves as to announce in German language broadcasts the numbers of identified German units, along with the names of the commanders; yes, they even told the German preparations. They could afford to - for the "Rote Drei" was working for them. As the final blows were falling in the east, this organization outdid itself and its reports became more complete than ever before. They covered all military events not merely on the eastern front but throughout all Europe; they touched on politics, industry, agriculture, transportation - on everything Russian intelligence must know. Any change in Italy, France, Norway, the Balkans or Germany could influence the situation on the Eastern Front. Therefore German divisions elsewhere must be watched just as closely as those in Russia. The destruction of German industry by the RAF interested the Russians quite as much as it did the British. The political situation in Hungary and Italy had to be followed closely. So the "Rote Drei" worked feverishly.

1944: THE YEAR OF DECISION IN THE EAST BEGINS

The year 1943 drew to a close with no halt in the Russian offensive which had begun in July. The new year not only brought a continuation of this struggle but also the beginning of a new one. On 15 January the Russians started a new offensive between Leningrad and Ilmensee; on the 19th they took Novgorod. On the northern section almost 40,000 Germans were killed in the first week. The Russian superiority on the ground and in the air became frightfully clear. On 29 January the Russians began a mighty encirclement in the Ukraine south of Kiev. On 3 February 10 divisions of the German Eighth Army were encircled. Again the offensive was a surprise because the German intercept service had not been able to recognize the preparations. A few units succeeded in escaping, but 70,000 men were killed and 12,000 men were captured. This left a mighty hole in the German front, a result of the strategic ideas of the "greatest general of all times," who naturally had to find a scapegoat and relieved the commanders of Army Group Center and Army Group North. Meanwhile, from the lower bend of the Dnieper five divisions of the new German Sixth Army were encircled near Nikopol and seven others

were crushed by Russian frontal attacks in the same area. On 9 February Nikopol was taken by the Russians and the German bridgehead on the left bank of the Dnieper was eliminated. Twelve German divisions were crushed and more than 15,000 dead were left on the battlefields. The retreat across the Dnieper became precipitate. From then on one disaster after another befell the German forces along the entire front.

In the light of these events, there was a change of attitude in Finland and Romania. Later on, people in Germany claimed that the defection of these two countries came as a surprise and that the collapse of the northern and southern sectors of the eastern front was due to this treachery. That is not true. As early as September 1943 it was clear from radio traffic that Finland was preparing to get out of the war. In the first part of February 1944 a Finnish delegation arrived in Stockholm to negotiate with the Russian Ambassador Mrs. Kollontaj. Traffic between Sweden and Moscow increased sharply and was very revealing. The diplomatic representatives of the U.S.A. in Stockholm and Moscow began to talk out of school. Similar observations were made in respect to Romania beginning about mid-February and early in March the former Prime Minister Stirbey went to Cairo to discuss with the Allies Romania's withdrawal from the war. Early in March Russian terms for an armistice with Finland became known and on the 15th the Finnish Parliament debated the terms in a secret session. All this was known from radiograms more than 6 months before these two countries finally withdrew from the war. The only surprise was for the German people from whom the real situation was concealed as far as possible. The tragic thing was that Hitler, with characteristic obstinacy, refused to see and comprehend things which did not fit in with his ideas. It was dangerous to bring him reports which he did not wish to hear or believe. Only too late were measures taken and in consequence an entire German army was sacrificed needlessly in Romania.

SEVASTOPOL ONCE AGAIN

The great Russian offensive which began in July 1943 ended nine months later in April 1944. It freed all of the Ukraine and White Russia. It cost the German army terrific losses in men and materiel. One major task remained in the south: to free the Crimea. On 8 April the Russian attack began and within a few days the German defense crumbled like a house of cards and the Russians took 20,000 prisoners. The Germans succeeded in holding the ruins of Sevastopol for three weeks, but on 9 May these ruins were captured and the remnants of the German Seventeenth Army, some 30,000 men, were compressed on Cape Kharsones, a tiny peninsula. This was all that was left of an army which numbered nearly a quarter million men when it was in the area of Kuban and the foothills of the Caucasus. What followed was a slaughter which beggars description. On 13 May the last remnants of the 17th Army surrendered. On the same day, the official communique reported that German and Romanian ships had carried out an unparalleled evacuation. In reality, barely 30,000 men were saved. What the communique failed to state was the fact that just the final phase of the struggle in the Crimea had cost almost 60,000 dead and more than 70,000 prisoners (Germans and Romanians).

THE CASE OF VERMEHREN AND COMPANY

The Second World War was a war of surprises. And not merely military surprises. They were encountered everywhere at almost every turn. Especially if you were sitting at a radio apparatus. If you turned the dial, whether intentionally or lost in thought, you could be sure of finding on some frequency or other something absolutely new, sometimes of such a character as to take away your breath, at other times to force a laugh. I recall one evening in February 1944. It was about the 8th or 9th and I was sitting at my radio running over the whole world, figuratively speaking. Suddenly I ran into a telegram being sent by Cairo. It was in plain text. What caught my attention was a mention of the German Embassy in Ankara. With my interest thus aroused, I continued the reception and what I heard then and in the next few days reminded me vividly of the Hess case several years earlier. Three members of the German Embassy in Ankara had abandoned their posts and placed themselves under the protection of the local British Embassy. They were specialist of the so-called counterintelligence service of the embassy. To clarify what follows, it may be mentioned that all German official representatives and organizations abroad had been drawn into the espionage service. You could suspect of espionage any German organization, even a club of stamp collectors in Buenos Aires or Santiago, for in every case at least one person was directly or indirectly working for the counterintelligence section of the Ministry of War in Berlin. This was almost certainly true of offices which could claim a limited or unlimited extra-territoriality. Extra-territorial rights were misused as a matter of principle. And so under the aegis of the ambassador, von Papen, and under the direct guidance of the military attache, a German spy center for the entire Near and Middle East had been built up in Ankara. It had connections with dozens of big and little agencies and sources of information. It disseminated propaganda among the Arabs, Persians, Egyptians and Indians. Here, information regarding Allied military, political and economic measures in the Near and Middle East was collected. This was also the gateway by which spies entered the Soviet Union, but this gateway was like a mouse trap - it almost always closed when anyone ventured inside.

Turkey had become a focal point and the espionage staff at the German embassy had been increased gradually until it numbered several thousand persons early in 1944. Each of these specialists possessed a dangerous amount of information. The defection of one individual could destroy the whole network of German espionage, counterespionage, and propaganda in the Near and Middle East. So it was noteworthy, or - if you will - amusing, that first one and then two more specialists quit their jobs and went over to the enemy. They were not mere workers or clerks but relatively high officials who were well informed regarding everything. One had just married a cousin of Ambassador von Papen. What they took along in the way of papers, documents, photos or plans will probably never be known. They surely did not appear at the British Embassy with empty hands. They placed themselves under the protection of the Allies and were soon taken over the frontier. These men were Dr. Erich Vermehren, Willy Hamburger, and Carl von Klekowski with his wife; the last two were Austrians. It was a nice catch for the Allies.

Picture, if you can, the impression this made on Ribbentrop and Hitler! The military attache in Ankara, General Hans von Rhode, was ordered to fly back and with him went four section heads of the embassy espionage service. But no cries of rage did any good. The damage could not be repaired. The Allies took care not to reveal what the three men had betrayed to them. The English did not react "like a flash" as National Socialism loved to do. Gradually but surely the whole German system of espionage, sabotage, and propaganda was lifted off its hinges. The German position in the Near East was hopelessly damaged.

But the German press printed not a word on the subject.

On 2 August 1944 Turkey broke off diplomatic and economic relations with Germany. Even before that, far reaching measures had been taken to abolish German espionage and propaganda on Turkish soil. The German espionage and propaganda net in Asia Minor ceased to exist.

ITALY

So far as I know, modern history records no alliance between two states which was more pathetically stressed than that between Nazi Germany and Fascist Italy. Nevertheless, rarely has there been an alliance with so feeble a foundation. It rested solely on the personal friendship of Hitler and Mussolini. Even the contact between the dominant parties of the two countries was very loose, while between the armed forces of Italy and Germany there was nothing approaching a cordial collaboration; in fact between these armed forces there existed a deeprooted distrust, which was sometimes hidden from view by festivities but was always present.

Italy is the only country in Europe whose diplomatic systems were read by the Germans without interruption from the end of World War I to the end of World War II. We have spoken of the results of the military intercept service; what was learned by reading all the Italian diplomatic messages was even more extensive but played no decisive role down to 1933.

When in 1933 and 1934 the bond between Hitler and Mussolini began to assume concrete form, the German counterintelligence service was instructed to stop all espionage against Italy immediately. Only the intercept and cryptanalytic services underwent no change, and in 1935 actually increased their activity. The "Forshungsamt" was monitoring and deciphering all the telegrams and cablegrams of the Italian Embassy in Berlin.

Much might be said regarding the results of this monitoring of a "friend and ally" but we must limit ourselves here. One thing was clear the Italian Officer Corps in general and the General Staff in particular were not favorable to Germany.

A few days after the war began, Admiral Canaris, Chief of Counter-Intelligence in the Ministry of War, called together all group leaders, specialists, and some representatives of the counter-intelligence out-stations, and delivered a lecture on the political and military situation

from the viewpoint of the counterintelligence service. While most of what he had to say was not particularly significant, that passage in his speech which dealt with Italy was very interesting. He said he knew that among the officers of the counterintelligence service the opinion prevailed that Italy would prove a most unreliable ally and that, no matter how things developed for the present, Italy would side with the opponents of Germany when things became critical.

Canaris said it was not the business of the counterintelligence officers to deal with such questions; that was the function of the political leaders. Of course he was right; but the statement that a majority of those officers who knew the situation in Italy felt that, in spite of all the agreements and the alliances with Hitler, Italy still inclined more to the other side was quite revealing.

At first this attitude was not obvious because National Socialist propaganda was busily trying to convince the German people that this alliance was firm as the Rock of Gibraltar. An outward confirmation was seen when Italy entered the war. Up to that point the German-Italian Alliance had not been subjected to any strain. This came only after the failure of the air attack on England in September 1940 and again in connection with the Balkan campaign in April 1941.

From October 1940 on, Italian radiograms revealed throughout the Italian armed forces and diplomatic circles a turning away from the so-called Axis policy. I shall endeavor to prove that the German government knew about this attitude of important Italian circles and that it acted in spite of this knowledge when it continued to speak of a hearty accord with its Italian ally, seeking in this way to throw sand into the eyes of the German people. On the other hand, I shall show that by their too frank handling of radio traffic the Italians were affording German statesmen an advantage of which they had no notion. This is all the more astonishing because there was collaboration between the German and Italian cryptanalytic services. The Italian Ministry of Foreign Affairs was informed that the German cryptanalytic service was quite efficient and should have figured that Italian diplomatic traffic would be intercepted. Actually, all Italian traffic was monitored and all "esteri" and "italdipl" messages were currently deciphered.

The first Italian efforts to pave the way for a separate peace could be observed early in September 1941, that is to say, at a time when the German armies in the East were still advancing victoriously. At about the same time, serious tension arose between leading officers of the Italian armed forces and high officials of the Fascist Party. The military men were convinced that the Blitzkrieg in the East had failed and that a victorious conclusion of the war had become impossible.

In October 1941 things had gone so far that German troops were held in readiness in case the Italian Government should be overthrown. In November 1941 the "Rote Drei" could report to Moscow that the Germans were more hated in Italy than in the occupied territories.

There was opposition to sending Italian divisions to the Eastern front in the spring of 1942 and contingents selected were all recruited from southern Italy and Sicily because the North Italians were in a revolutionary mood.

After the catastrophe of El Alamein, the shift in the attitude of influential military circles and of royal household was completed. It had long been known in Germany that Crown Prince Umberto was anti-German at heart. Now the King openly turned away from Mussolini and late in December 1942 held conversations with the aim of creating a new government. This became known in Germany early in January 1943. The presence of strong German contingents in Italy and the slim success of the Allies in North Africa, made the King hesitate. In February the Italian government declined to send additional specialists to Germany.

On 13 May 1943 the Tunisian campaign ended. During the final eight days only three thousand men escaped to Italy. The Italian High Command stopped all work on coastal defenses in Eastern Sicily and withdrew coastal defense units. German commanders in Italy had to force the Italians to take defensive measures.

On 28 June 1943 Italy expressed to the British ambassador at the Vatican, Osborne, its readiness to get out of the war and to open all its territories to the Allies. There were two conditions:

- a. The invasion of Italy should be delayed to coincide with the Allied landing in the West.
- b. The Allies were to refrain from demands or actions which would make it impossible for the Italians to hold off the Germans until the Allies were ready to attack on the Western Front.

This action by Italy and Italy's attempt to get similar offers for Romania and Finland were revealed to the German Government by deciphered radiograms. Steps were taken immediately to safeguard the German position in Italy against any Allied invasion and against the Italian armed forces. Soon afterward the Allies landed in Sicily; in Berlin, they figured in mid-July that Italy would desert them by the end of August and OKW planned accordingly. On 25 July Badoglio took over the government; Mussolini was arrested. The new government immediately entered into preliminary conversations with representatives of the Allies to bring about an armistice.

On 29 July the OKW informed Badoglio that the Germans reserved the right to take all appropriate steps to prevent the allies from establishing themselves in Italy or in areas occupied by Italy. Goering went to Northern Italy. In answer, the Italian government requested Germany to return 200,000 Italian laborers. The German answer took the form of new reinforcements and regroupings in Italy. On 3 September Italy signed an agreement for an armistice which should take effect at the moment most favorable for the Allies. This happened on 8 September, but the favorable moment had been missed. The Germans had made preparations. The Italian Fifth Army waited until 11 September for the promised Anglo-Saxon aid and capitulated when this failed

to appear. Numerous Italian units were disarmed by German troops. The goal of the Italian government to prevent Italy from becoming a theater of operations had not been achieved. Italian radio traffic had betrayed all plans prematurely and Italy had become a battle field, for a year and a half.

AGENT TRAFFIC IN CZECHOSLOVAKIA

Beginning early in 1941 one could note in the so-called "Protectorate" area of Czechoslovakia an increasing agent traffic which was controlled from England and worked for the British intelligence service. Even at that time the traffic was well established. There was other traffic which served the Russian intelligence service.

On 3 October 1941 the Germans took by surprise an agent transmitter in Prague which had been in constant communication with Moscow. Disclosures resulting from this seizure led to the arrest of 73 people, among them a former Major of the Czech army, who was working as head of the Russian intelligence service in Prague. The other net working with England was the more important and more dangerous. It was operated by a group of Czechs who belonged to the Czech resistance movement for the purpose of maintaining contact with the government in exile in London and transmitting espionage material. The traffic was so well camouflaged that only rarely could one break into this network. Peculiarities of German traffic were utilized as a disguise.

The attempt upon the life of Heydrich had been planned and directed over this network. That was a big mistake on the part of the English and Czechs because it afforded the German radio defense a complete disclosure not only of the plot itself and those directly participating but also of all the connections within the Czech resistance movement.

In 1944 German cryptanalyst succeeded in breaking the cryptographic system of the Czech resistance and emigre organization. Radiograms from London, Kuybyshev, Istanbul, Haifa, Cairo, and Bagdad were deciphered. The content gave interesting information regarding efforts of General Gak, leader of the Czech Legion in the Near East, to cooperate in a military way with Russia on the basis of the Benes agreement. These messages gave details of the organization and strength of the Slovak army and of German forces in Slovakia.

Late in 1943 the Germans succeeded in carrying on for a considerable time a radio deception with Moscow after picking up a Russian radio agent in Bohemia.

Beginning in May 1944 an increased commitment of parachute agents of the English-Czech resistance movement could be observed in the Protectorate. Most of these groups of agents were picked up at once. There were some 15 well-trained groups which were to establish direct connection with London and actively support the resistance movement.

In Slovakia, which "allied" with Germany and where, according to statements in the German press, such a thing was least to be expected, the resistance movement flared up in the middle of 1944 and in this connection the traffic of agents and bands played a special role. Late in August the revolt broke out openly. Even before that, increased radio activity of agents from to this area could be recognized. The revolt had been prepared long before by the Czechs and Russians. On two radio links, which were monitored by the Germans, the English-Czech intelligence service of the Benes Group had made contact with officer circles hostile to Germany. The two radio stations were in Neusohl and Sillein. The uprising was directed from these areas. Moreover, a Czechoslovak legion in the Soviet Union had dropped parachutists with radios in the areas Mucacevo, Uzhorod, Neusohl, Rosenberg, and Povaska Bystrica; they were to report on the status of Slovak preparations and on all matters of military importance to the government in exile in London and to the Czech military mission in Russia.

In part, the traffic was developed very clumsily so that the German radio defense was informed of events during all phases of this revolt. Thus it was possible to suppress the rebellion, although it had been well organized, and to uncover all its ramifications. This revolt, like that of the Poles in Warsaw, turned out to be a tragedy for the rebels.

In December 1944, Germans in the neighborhood of Polonka picked up an Anglo-American mission of 14 men with complete radio apparatus and other material for handling traffic. It had been dropped by parachute in September, was supposed to observe the revolt and later to smuggle through the lines the crews of any aircraft shot down.

PRETTY MILKA

There are pretty women all over the world and probably the women of every country are convinced that their own country has produced the most beautiful type. But just as there are experts on radiotelegraphy, there are also, ostensibly, expert at judging female beauty. Such an expert once assured me he was ready to be boiled and baked if it were not true that the prettiest women in the world were in the Balkans.

Meanwhile he has lost his life in an auto accident and the death he was willing to undergo can no longer be inflicted on him. But perhaps his idea was right after all and possibly the countless wars which have been waged in the Balkans since the creation of woman are connected with this fact. Who knows? I do not. I am no expert in this field. But I have seen a picture of a woman which inclines me to grant that the "specialist" was right. It was the picture of a Bulgarian woman with the melodious and significant name Milka.

Milka means "the lovely one." She was beautiful, that is true. Whether she was always lovely - who can judge?

Thus far I have spoken only of the women; fairness compells me to say a few words about the men of the Balkans. They are just as different

here as in other parts of the world. But - along with their indubitably good qualities - they usually have one characteristic in common; they do not like to occupy much of their time with work. They go on the assumption that man was not created to work restlessly to reshape the world but was created to enjoy what nature produces, if one merely helps out a little. They take the attitude that the penalty imposed on man when he was expelled from Paradise, namely to live by the sweat of his brow, has long since been paid and is passe and that we can now lay claim to a condition slowly approximating life in Paradise.

This view was entertained by the young Bulgarian, Stoinoff. He was a man of good mental ability and, confiding in his intellect and his lucky star, had considered it superfluous to ruin the golden period of his youth by too zealous study in school. It was enough for him to have learned a little reading and writing and arithmetic; anything else seemed to him excess ballast and he thought it unwise to render life difficult with too much baggage.

Since he was a consistent fellow, he stuck to this attitude, even after leaving school. He contented himself with working a little now and then, so as to earn what was indispensable for his existence, and was heartily glad when at a dance he became acquainted with pretty Milka who, like himself, was far more inclined toward the joyous than toward the serious side of life. The two young people took a liking to one another and the hot sun of southern Europe did the rest. They married and were convinced that heaven would grant them a carefree life just as it does the birds in the air and the fishes in the water. But it turned out that heaven was often obscured by heavy clouds and the sun did not always shine. That induced the two to consider the course of the world and, since the sun rises in the East, they turned their glances toward the East and decided to journey some day to the region where some people claimed that Paradise on earth and the golden age of mankind had dawned.

They didn't consider long but resolved to act. And since you can go from Varna to Odessa by ship in 24 hours, their resolve one day became an accomplished fact.

But it turned out that even in the East ripe fruit did not fall into the mouth of the hungry if one made no attempt to climb the tree and pick it, and that in the Soviet Union, even more than elsewhere, people are of the opinion that work makes life sweet. Since the two had arrived in a strange country without money and had to learn to their regret that you cannot live in a Communist state without cash, they adjusted themselves to the new situation with heavy heart and accepted the job which was generously offered them.

That was in the year 1935.

Stoinoff would have been untrue to his philosophy if he had not sought some comfortable escape from this uncomfortable situation. And since the Bible says one must seek in order to find, he sought and also found one day a connection with a man who held out prospects of living

an agreeable life with very little labor. In making this acquaintance pretty Milka had helped somewhat; this does not mean that I would like to say anything unlovely about the lovely lady.

With a good letter of recommendation from the Russian in question, the two journeyed to Moscow, where they were well received and were housed in a building which looked like a school and turned out to be one.

This time, however, it was not so easy to regard as a joke the instruction to which the two had to submit. The Russians turned out to be strict schoolmasters. They learned the Russian language, learned geography; they learned technology - in particular radio technology; they received instruction in the law of Bolshevism; they learned the Morse alphabet; and one day they were told that they would now receive the assignment of returning to Bulgaria and working there for Russia as radio agents. There would not be much to do, they need only gather information in certain ways, make friends (in this, pretty Milka could help) and then transmit to Moscow at specified times and on the specified wavelength the information obtained.

Stoinoff and his wife assented gladly; they got some supplemental training in military matters, industry, communications, and economics; a few weeks later, equipped with a nice little shortwave radio, technical material, and money, they found themselves back in Plovdiv in Bulgaria, where they moved into a little house and for the moment made some acquaintances on the basis of addresses given them. Meanwhile their family name had changed. Their name was no longer Stoinoff but Mirtscheff.

That was the year 1939.

Meanwhile World War II had broken out and Moscow entertained no illusions as to how things would develop. That the Balkans would sooner or later be in flames - as so often in their history - was clear. It was time to get busy. And Mirtscheff went to work.

In him the Russians had not made a bad catch. He took a liking to his new job. The radio connection functioned well, nobody disturbed him; the task of making contacts and acquaintances and the gathering of information just suited him and his young wife.

Mirtscheff was a clever boy who soon succeeded in recruiting for the new job his brother Stoino Stoinoff and his brother's wife, Zarah, who were in Varna. Stoino was a technician and so had a good foundation for radio work and was in other ways a "smart boy." His wife likewise did not come into this world asleep and so there was soon a first-rate community of effort. Milka undertook to train Zarah as radio operator, while Stoinoff undertook the technical maintenance of two sets which had meanwhile arrived from Russia. His main job was gathering information.

The Bulgarian people at that time were politically divided; one party was definitely pro-German, the other pro-Russian. The two brothers could use both groups in their work; one as a source of information, the other for conscious cooperation.

After a year of very intensive activity in establishing connections, Mirtscheff and his wife had a circle of collaborators and informers which reached up into the highest positions of the Bulgarian government and of the military command, yes, even into the General Staff. The radiograms which he or his wife and Zarah sent in cipher to Moscow and Tiflis had more and more content.

But it was not until the autumn of 1940, when the campaign in France ended and Hitler was actively preparing for his campaign in the Balkans, that the messages of the two brothers began to be really valuable. Meanwhile two more agents with radios had joined his working group and these were followed in the spring of 1941 by three more. They worked from Sofia, Plevna, Varna, Burgas and Plovdiv; also from a village near the Turkish border in the vicinity of Adrianople.

Hitherto the German intercept service had not noticed these circuits; it had been too much occupied with assignments in Poland and in the West. But the Mirtscheff group was working all shifts. Mirtscheff was the leader and soul of the entire organization but in the gathering of news Milka was the leading spirit. All reports on German troop movements, on German auxiliary airfields and naval bases, on gasoline supplies, radio stations, German staffs, on diplomatic negotiations, on the cooperation of Bulgarian officials, organizations, and individuals with the Germans, went to Russia. All events within the Bulgarian army and government, reports on popular feeling, on the work of parties, organizations, industrial output, deliveries to Germany - all this was carefully spied out, reduced to radiograms and transmitted. After Romania and Hungary had been occupied by German forces, there was plenty of material and plenty of sources. They merely had to represent themselves as friendly to the Germans in order to secure useful information.

Behind Mirtscheff's entire organization stood, as protector, Vinogradoff, Russian Vice-Consul in Varna, while the Russian embassy in Sofia put up the cash.

Not until the autumn of 1941, when the war in the East was in full swing, did some of the German intercept stations repeatedly hear suspicious traffic emanating from the Balkans (presumably from Bulgaria). However, they were too pre-occupied with their Russian opponent to find any time for monitoring. The war in the East went on and the multitude of partisan radio stations which appeared occupied the German monitoring service to the full. A system of intercept stations running on a north-south line from Riga to Nikolaev was established in order to have a good base for hearing and locating Russian stations. So it was not until the autumn of 1942 that careful observation of these mysterious Balkan stations began. In November there were already twelve which worked with the characteristics of Russian agent stations. Now a systematic coverage began.

On a rainy January day in 1943, when the Battle of Stalingrad was at its dramatic height, great excitement reigned in the central office of the German intercept service on Matthew Square in Berlin. They had succeeded in breaking the cipher used by the suspicious stations in the

Balkans and had deciphered a few dozens out of the many hundreds of messages picked up during the preceding months. From these it was evident that the radiograms not only contained highly important information, but that high Bulgarian statesmen were clearly cooperating with Russia, yes, that even ministers and generals were conspiring with this group of agents. The decipherment of additional telegrams proved that an organization was involved which comprised two groups covering the entire country, with collaborators in all Bulgarian offices.

Now it was certain that these stations must be sought in Bulgaria. But since the German D/F base in the east ran from north to south, the resulting angles were so acute that the location could not be fixed. Orders were issued by telegraph for other D/F stations to cover the Bulgarian stations constantly and finally the approximate localities were determined. Early in February 1943 a short-range D/F platoon was dispatched to the Varna area, which soon learned that one of the principal stations must be located on the northern edge of the town. The house and room were soon spotted. It was a mansard room in the third story of an apartment house.

Meanwhile, pretty Milka was going quietly about her work. Her circle of acquaintances was getting larger and larger. She received invitations and fluttered from one pleasure to another. But all these pleasures were hard work for her, especially when it was a question of getting proof of some important piece of news or of getting proof of some important piece of news or of getting confirmation from various sources. Milka became the Mata Hari of Bulgaria and Mirtscheff's organization became the "Rote Drei" of the Balkans.

Milka remained modest in her manner of life. She bought herself neither costly clothes nor expensive jewelry. Her only weakness was for silk underwear, nice, fine silk underwear with lots of lace. Such things were expensive in the Balkans; they were easier to get in Germany, and so were dainty, thin silk stockings. And it was a piece of irony that she, who was working against Germany, was getting these things from Germany. Not directly, but in roundabout ways. By diplomacy. As diplomatic baggage.

Slowly the German net closed about Mirtscheff and his stations. The first blow was to be struck against the station in Varna; it was Zarah's.

For a long time the Germans deliberated how to call in the Bulgarian police to pick up the station, because it was likely that the agents had confidants among the police. Finally the leader of the German unit requested some Bulgarian secret police and did not reveal the actual purpose until the very last moment.

You can hardly call the action of the Germans clever in this case. Interception of agent messages in Bulgaria had shown that they must be interconnected and have personal contacts with one another. In such a situation it would have been appropriate to pick up all the stations at

the same time. Since the counterintelligence forces were not sufficient for that, they contended themselves with picking up one station after another. The raid on the station in Varna was scheduled for 21 February 1943. It was known that this operator put through his traffic with Moscow every morning at 4 o'clock; this was the time chosen for the surprise.

The German and Bulgarian officials approached the house cautiously by night and took up concealed positions. The house lay in deep darkness. At 0345 hours an electric light flashed in the mansard room. Immediately afterwards the heavy curtains were drawn together. A few minutes later two German radio operators, who had brought along a set, heard the agent send a rather long message. Now they tried to break into the house but were so unskillful in opening the locked door that a pane of glass broke. The men climbed the three flights; one soldier climbed to the roof and noiselessly removed the antenna to prevent the agent from sending out a warning signal when he became aware of the intruders.

Now all was ready. They gathered before the door of the apartment, not without some noise in the silence of the night. When they tried to pick the lock they found the key was in it and that the door was also bolted. Making up their minds quickly, they broke a pane of glass and reached in to open the door. Noisily they forced their way into the kitchen in order to get to the living room. At the same moment, both Zarah and Stoino Stoinoff appeared with blank astonishment on their faces to ask the cause of this disturbance. Both were completely dressed and showed no signs of the sleepiness which might have been expected when people were suddenly awakened at 4 o'clock.

The Bulgarian police told the couple it had been ascertained that they had a radio apparatus in the dwelling and had just transmitted a message. Zarah and Stoino looked at one another in amazement and then declared there must be an error because they had no transmitter in the apartment and had only gotten up to go to the doctor because Zarah had suddenly been taken ill.

However, Zarah did not give the impression of being sick but looked extremely well. And when the German soldiers went into the bedroom they noticed on the lady's night table an alarm clock set for 0345 hours, i.e. a quarter of an hour before the normal transmission time. Hence it was quite unlikely that Zarah knew when she went to bed that she and her husband would have to get up at 0345 on account of a sudden illness.

Now the whole dwelling was searched but no trace of a radio was found. They went through the coal box and stove, emptied the kitchen cabinet, pulled beds apart, climbed on tables and chests, and created chaos in all the rooms, but they found no radio. On the other hand, they did find some tools and parts of a radio set. From this they could conclude that work on such an apparatus had been done in the apartment. But Stoino denied this, while his wife said she knew so little about technology that she couldn't tell a transmitter from a broadcast receiver. It was all a ridiculous mistake and she wished they would be so good as to leave them in peace.

Now the man was interrogated and it came out that he worked daily until 1630 hours in the German seaplane harbor, 7 kilometers southwest of Varna. He was able to prove this statement at once. Consequently he could not be the operator since the station was heard every afternoon at 1500 hours. His wife asserted she had no idea of how to send radiograms and knew the Morse alphabet only from hearsay.

Now the two were separated and the man was threatened with all the tortures of Dante's Inferno if he did not confess. Meanwhile the dwelling had been searched again with no success. After long denial, the man decided to confess that his wife was the operator and that the transmitter was in a hiding place he had built under the floor of the living room. A rug covered the spot but even after it was removed it was hard to detect the cover of the secret compartment. When the hiding place was opened they found not one transmitter but two, of which one was intended as a spare. Moreover, they found the message which had just been sent and a list of call signs and operational signals.

Now they set up the antenna again; the uninvited intruders departed with the couple they had arrested, leaving a Bulgarian and a German behind to receive possible visitors.

Three hours later there arrived, all unsuspecting and in the best of spirits, a reserve officer of the Bulgarian airforce who was bringing with him, in addition to some interesting papers and sketches, the sum of 50,000 leva. This was a sum which he would hardly be carrying around with him ordinarily, but the young man asserted that that was nobody's business and refused to give any information. The Bulgarian secret police, however, remained curious; they locked the officer up in a dark cell, gave him nothing to eat for the time being, and fetched him out every two hours for questioning. They suggested certain disagreeable consequences, smoked some good Bulgarian cigarettes in his presence, without offering him any, and drank "sliowitz."

After two days, he made a comprehensive confession. From this it appeared that the radio fixed by the Germans in Plovdiv had been in very close contact with the station in Varna. There had been close personal contact between the two stations. He gave the exact address of the Plovdiv station.

An automobile filled with members of the German armed forces immediately dashed off to the address given. They stormed into the dwelling but in spite of careful search found not the slightest trace of the transmitter, although this time they did not forget to inspect the flooring. What they did find was an inordinate amount of the finest silk and lace underwear and a pretty young lady who seemed to go with it and who complained bitterly at the disturbance, holding out in prospect all the torments of heaven and earth for the intruders, if they did not clear out at once.

It was Milka and she was not unduly surprised by this sudden visit. She had really been expecting it. For the following reason.

On the day after the Varna station was raided, Milka planned to visit her sister-in-law, Zarah. When she saw the broken pane of glass in the outside door of the house she became suspicious. Cautiously she went upstairs. In the door of the apartment she noticed another broken pane and was now certain something unpleasant might have happened. She left the house in a hurry. She hunted up a couple of her go-betweens and another radio agent, warned them, and took the next conveyance home. Mirtscheff immediately removed the radio and antenna and lit out. Milka remained in the apartment although she was the one who had operated the set. She felt absolutely secure, however, and decided to await calmly whatever might come.

There was a long hearing, since Milka denied everything. She had no idea that the Bulgarian reserve officer had betrayed her. Not until she was told this did her resistance cease.

Meanwhile, Zarah had been induced to tell something about the encipherment and decipherment of the telegrams. With these hints, all messages intercepted by the Germans were deciphered, both those from the two stations raided and those from stations not yet discovered. On the basis of this information the remaining agents of the group could be picked up one after the other.

By now things were really moving. The deciphered messages yielded deep insight into the entire spy net. The Bulgarian Government was informed. But Hitler had to be told, too. This revelation placed the entire Balkan situation in a new light. Hitler raged. Ribbentrop wore his most stupid expression. Serious demarches were made to the Bulgarian King. Czar Boris journeyed to Hitler's Headquarters with a heavy heart. The Bulgarian government was made over. King Boris bestowed a couple of dozen high orders on German officials and officers, which were pinned on the corresponding breasts and bellies or hanged about their necks. These were supposed to work like essence of valerian on the mood of the German government.

Now Milka was taken over by the German monitoring service. They had all the necessary materials for a little deceptive game. Moreover, they felt certain the raid had been executed so cleverly that Moscow and Tiflis could not have been warned. They tried to persuade Milka to take part in the game. At first she refused, but later she consented and a little game began which cost the Germans much time and effort since the Russians had been informed promptly of the arrest. Milka's observations in Varna and her prompt warning of the other agents had sufficed to tip off the Center. The pretty lady played her role admirably to the end. Soon one of the agents who had been arrested succeeded in escaping to Russia. Then Moscow got a clear account of what had happened.

In Bulgaria there were wholesale changes of personnel but this finally stopped and there was no change whatsoever in the general situation. The information which had gone to Russia had been sufficient to cause the Germans serious damage. However, the Germans now

recognized that Bulgaria was no longer any real asset.

NOTABLE HAPPENINGS IN HUNGARY AND ITALY

When the history of World War II is written, some odd things will be discovered regarding Germany, particularly in the second half of the war. It will often be found that the beginning or the development of this or that was known to the Germans in good season, but rarely will one be able to ask: "What happened then?"; rather one will mostly have to ask: "What failed to happen then?" Typical are the cases of Bulgaria, Romania, and Finland. However, there were cases when the Germans actually did something. Even at the proper time! We have already mentioned the case of Italy. The second such case - although less dramatic and much less significant - was that of Hungary.

In February 1943 the German intercept service learned for the first time that the Hungarian Government was putting out feelers through the Vatican for a separate peace. Provided Hungary's boundaries remained intact, the country was ready to support the Allies in case of a landing in the Balkans. At the same time, Hungary called for the return of 30,000 woodworkers from Germany. The negotiations brought no result at that time.

Early in 1944 it was obvious from decrypted traffic that the Hungarians were cautiously putting out feelers to find some way to escape from their difficult situation. To bring about a change of attitude in Hungary, the Chief of State, Horthy, was summoned to Hitler's Headquarters in mid-March. Here it became apparent that Horthy himself was in favor of these efforts. The Germans decided to act at once. In the night from 19 to 20 March, "at the wish of the Hungarian Government and in cordial collaboration with it", Hungary was occupied by German troops and Sunday morning (20.3.) the people of Budapest rubbed their eyes with astonishment as the Germans marched in. Horthy was subjected to pressure and Hitler succeeded in inducing him to continue the struggle on the side of Germany.

The Kallay Government had to resign and the Sztojay Government replaced it on 22 March. Kallay fled to the Turkish embassy in Budapest, was granted sanctuary and remained there despite all efforts to get him.

Dome Sztojay had been Hungarian ambassador in Berlin and his name had been Stojakowitsch. He later changed his name into Magyar but continued to be regarded as a convinced advocate of German - Hungarian friendship and collaboration.

The ever more unfavorable situation in the east and the obviously impending defection of Finland, Romania, and Bulgaria created for the new Hungarian Government ever more serious difficulties, which led to a new change of government. On 29 August the Lakatos Government was formed. Now influential military circles, individual members of the government, and Horthy himself began to think of a separate peace. The

German collapse in France decided matters. Beginning early in September, decrypted Hungarian messages exchanged between the government and some of its representatives abroad revealed clearly that the Hungarians through their representatives at the Vatican and Ankara, were seriously seeking an armistice and a separate peace. This time it was not a question of feelers but of unmistakable preparations for getting out of the war. Not only this, the commander of the First Hungarian Army, Möklos von Dalnok, was already conferring with representatives of the Russian army facing him.

The National Socialist government immediately consulted with leaders of the Hungarian Pfeilkreuz (Arrow Cross) Party and prepared a coup d'etat for the overthrow of Horthy after the model of the action in Austria in 1938. The Hungarian Government was to give the signal itself. And it did. On Sunday, 15 October, Chief of State Horthy made over the Hungarian Broadcasting Station his famous declaration renouncing the former policy and saying it was unworthy of Hungary, in view of the changed military situation, to continue to serve as protective bumper for the Germans and to expose the country to destruction. He already had the main terms of an armistice.

Now the moment had come for active intervention. In the night before 16 October the coup was pulled off. Horthy was taken into custody and Szalasi took over the Government. German troops and officials rendered active aid. Horthy was forced to declare his proclamation to the Hungarian people null and void and to announce his retirement.

The German people did not learn of the event until two days later.

It seems strange that the two countries which for years had collaborated most closely with Germany in the matter of interception and cryptanalysis, and which therefore must have known the risk involved in the use of radio and must have been able to figure that the Germans were intercepting their wire lines and who knew about the work of the German intercept service in deciphering foreign systems, - it seems strange that these countries made the incomprehensible mistake of compromising their most secret messages by transmitting them by radio in blind reliance on the security of their own ciphers. There is hardly anything more ironical in world history than what went on here. The two allied nations which worked most closely with Germany in deciphering the radiograms of other nations had no idea that they were being watched by the Germans and that their secret telegrams were all being read. An explanation may be found in the fact that countries ruled as these were permit only an orientation which converges in the top command. I should like to term it vertical orientation. Horizontal orientation, on the other hand, is not only neglected but consciously suppressed. A classical example is the well known "basic order" of Adolph Hitler dated 11 January 1940 in which we read:

1. No one, no office, no officer is to learn of any matter which is to be kept secret, if such knowledge is not absolutely essential for official reasons.

2. No office and no officer is to learn more of matter which is to be kept secret than is necessary for the carrying out of its or his assignment.

At first sight this order appears quite correct and proper. In practice the result in countries ruled by terror is that in the face of such orders from the top a sort of fear psychosis results and people act on the principle: "better tell five offices or people too few than one too many."

No wonder that in such countries the left hand did not know what the right hand was doing, when what had been learned by one office was carefully kept secret from all others. Wholesale errors and failures were inevitable.

Secrecy is good; only it must not be overdone within one's own organization.

POLISH RADIO AGENTS IN THE EAST

When the Polish Government fled to London in 1939 it began building up a new Polish state underground. The main supports were members of the former administration who had remained in what had been Poland. England supported the exiled government, expecting that Polish activity would tie up considerable German forces; furthermore, the intelligence network required to direct the Polish resistance movement functioned in the interest of British intelligence. Since the exiled government was so completely cut off from Poland, and since speed and accuracy of transmission and adequate camouflage were necessary, the radio became all important.

German intercepts showed that even in 1940 the Poles had an intelligence network which covered all Europe. It depended in the main on radio and was so well camouflaged that it eluded German observation for a long time. The net was constantly expanded but German "Radio Defense" did not recognize its nature and structure clearly until the latter half of 1941.

Polish radio intelligence assumed a more or less dual character. Leading personalities scattered over all parts of the world had to communicate with one another in order to safeguard their interest and to keep their leaders informed. The control station was in London. Ultimately there was both diplomatic and agent traffic, although a clear differentiation was not always possible. The diplomatic stations were in neutral or Allied countries, while the agents were usually in areas under German control or in neutral countries.

The discipline of these stations was commendable. Traffic was so well disguised that it could be recognized as Polish only after long observation. Of course on a few occasions the operators betrayed themselves by using Polish words and abbreviations but it was almost a year before the Germans realized that they were listening to a net of the Polish espionage service. Eventually the cryptographic system was broken. It was astonishing to see how the Government in Exile had built up a service with its very limited means. Fifty links were recognized. The

stations were in London, in unoccupied France, in Russia, in the Near East, in the Balkans, in Scandinavia and, above all, in Poland itself, where there were stations in Warsaw, Lemberg, Bialystok, Stanislau, Jaroslav, Lublin, Krakow, Zamose, Bilia, Podlaska, Petrikau, Tschenstuchau, Kielce, Sandomierz, Deblin, Kowel, Vilna, Grodno, Novogradek, Kamienna, Ostrowiec, Random, etc. In the Near East there were stations in Istanbul, Cairo, Teheran, Bagdad, and Jerusalem.

The Polish organization inside the Gouvernement General was split up into various cells, with no personal contact between them. Communication was only via London. Even the agents employed in Warsaw usually had no contact with one another.

In September 1942 came the first major German raid in Warsaw. There were numerous arrests and instruments and documents were confiscated. Even then, close range action in Warsaw proved very difficult because the Polish population was clearly working closely with the radio agents and warned them. When German D/F detachments approached, traffic was broken off at once and often transmission went on without any break from another transmitter at a different location.

The next major blow against Polish agents came in December 1942 when several transmitters of the resistance movement were picked up in Warsaw and other places. Among those arrested was the head of the radio technical section of the illicit communication service.

The organization in Warsaw was almost fantastic. If one station was picked up and the personnel arrested, it was immediately replaced by another and operations went on unchanged. No matter how many arrests the Germans made, the organization was unshaken and went on working. After every raid a new operator with a new set took over the old traffic. At times 15 or more transmitters were being watched in Warsaw alone.

This net was planned to assure communications for the Polish military resistance movement. There was also a special radio net for military espionage of the Polish General Staff in London. Coping with this traffic was difficult, because after each transmission the operators changed their location and because they also had watchers posted. To disguise their traffic they frequently changed their manner of handling it. It should also be noted that women were used as operators, watchers and couriers. The organization had its own workshops, high-speed telegraph installations, etc.

Whenever the Poles made use of wireless they were exceedingly cautious. The operators received the messages in enciphered form; if one was captured, he was not in a position to tell anything about the cryptographic system used.

In the summer of 1943 a change was noted in the radio situation. To the former radio network two new ones were added:

1. An alarm net with transmitter in England and receivers in occupied Poland, and

2. An operational net with a considerable number of transmitters and receivers in Poland which communicated with one another only through the control station in England.

The German radio defense did not always raid a station when its location was known; it often proved more profitable to read the traffic and thus gain extensive insight into the structure and activity of the illegal Polish organization. Thus the plans for the August revolt in Warsaw had been learned by the Germans long before the revolt occurred.

The year 1944 saw the following developments in Polish agent traffic:

1. Preparation for the general revolt;
2. Touching off the revolt in Warsaw;
3. Shift in the traffic after the revolt.

In May it was already clear that the movement was receiving increased supplies and equipment by air. In June it was possible to get a picture of the preparations for opening the revolt and it was no surprise for the Germans when, on 25 July at 1600 hours, transmissions began over the "Polish alarm net" which signified the impending start of the revolt. Certain watchwords were to be sent out over the alarm net as signals for the preliminary stages "watchfulness" and "readiness". The "watchfulness" stage might last as long as 14 days, while the "readiness" stage must be followed by the revolt within 48 hours.

The watchwords sent out beginning 25 July all suggested that the "watchfulness" stage had been proclaimed for both zones. Beginning 30 July changes were noted in traffic which were interpreted as cancellation of the "watchfulness" order for the protective zone and one thought this was explained by the rapid advance of the Russians. In reality it was a cleverly executed manner of proclaiming the readiness stage, and the Polish revolt began precisely 48 hours later.

It was soon noticed that, following the appeal of General Bor for support of the Warsaw revolt, there was a concentration of agent radio stations around Warsaw. Intercepted traffic revealed flights of supply planes.

It was asserted later that the English left the Poles in the lurch and did not supply them with arms, ammunition etc. This is not quite true. Supply was well organized but prompt warning of the coming of supply planes by German radio intelligence made it possible to keep a large part of the material from benefiting the insurgents.

During the Warsaw revolt, traffic on the Polish diplomatic net also increased sharply. It was interesting to see how the Poles tried to form in London a government which would be generally recognized. The conflicts between the special interests of the U.S.A., England, and the Soviet Union were revealed, while jealousy, ambition, distrust and discord among Polish leaders prevented any positive steps. The Poles had started a revolt on their own responsibility. They had merely made

arrangements with the English for supplies but they had not discussed the matter with the Russians. Consequently the latter emphatically disclaimed any interest, did nothing to support the insurgents, and claimed the revolt merely aimed at winning the political favor of the Soviet Government.

The Warsaw revolt, which was intended to be Poland's most heroic action, finally became one of the great tragedies of the war. On 2 October 1944, on the 63rd day of the struggle, came the surrender. The city was destroyed; the blood of thousands had been shed in vain.

Information regarding the background of the revolt and the political attitude of the Government in Exile was obtained from intercepted messages of the Polish Civil Delegation. Traffic of the resistance movement continued undiminished during the Warsaw revolt but after this had been crushed general changes were noted, suggesting re-groupings and displacements of forces within the AK. Radio activity tended to concentrate in the general areas of Kielce-Radom, Krakow and the foothills of the Carpathians.

The attitude of the Polish AK had, toward the end, become in part definitely anti-Soviet and attacks on the Germans from their rear were stopped. On the other hand, the attitude of the AK was very undecided. However, the further course of events in the East soon rendered this unimportant.

WHAT WAS HAPPENING MEANWHILE IN THE WEST

Having occupied ourselves at some length with the east and southeast, we shall now cast a glance toward the west where - according to Hitler - the war had ended on 22 June 1940. Looked at superficially, that was true - save for the air war which was becoming ever more violent. France had become an El Dorado for the troops stationed there. There one found things to eat, drink, and purchase which had long since disappeared in Germany. Every German soldier hoped to get to France and share in the good things for a time. But behind the scenes something had been going on since late 1940 of which very few people knew anything. This was the prelude to that which was to prove fateful to the German forces three and one-half years later. It was the development of the resistance movement and of the radio agent service, which we shall now discuss.

THE POLISH AGENT RADIO SERVICE IN FRANCE AND BELGIUM

After the collapse of Poland, part of the officials and of the general staff officers who fled to England via the Balkans, remained in France and began gathering together all Polish elements. The immediate purpose was to smuggle Polish citizens to England via Spain and Portugal for service in the Polish Legion. Since among the prominent Poles in France there were many former members of the II Section; i.e., of the Polish intelligence service, and since the attempt to evacuate Poles was not very successful, the "out-station France of the II Section of the Polish General Staff" was ordered by the Government in Exile to set up

an espionage network for the benefit of the Allies. At the same time, an exceptionally smooth-functioning radio network was set up for purposes of control and to forward the information gathered.

The Polish intelligence service in France had the following tasks:

1. Spotting concentrations of the German army, air force and navy.
2. Transport by land and sea and naval movements.
3. Ammunition dumps; coastal fortifications, especially on the French coast after the occupation of Northern France.
4. Selection of targets for air attack.
5. Ascertaining and reporting everything which demanded immediate action by the military command.
6. Details regarding the French armament industry working for Germany, with reports on new weapons and planes.

The Poles carried on their work from southern France which had not been occupied by the Germans. Beginning in September 1942 it was certain that Polish agent stations were located in the immediate vicinity of the higher staffs of the French armistice army.

In March 1943 German counterintelligence was able to deal the Polish organization a serious blow but after a few weeks it revived, following a reorganization. Beginning in the summer of 1943 messages could be read. They contained military and economic information. The Poles in southern France worked as an independent group and received instructions from England, partly by courier, and partly by radio. They collaborated closely with the staff of General Giraud in North Africa and with American intelligence service in Lisbon. Official French couriers traveling between Vichy and Lisbon were used, with or without their knowledge, to carry reports (in the form of microfilm concealed in the covers of books).

The Poles had a special organization to check on German rail traffic to France. It watched traffic at the following frontier points: Trier, Aachen, Saarbrücken, München-Gladbach, Strassburg Müllhausen and Belfort. They also watched the Rhine crossings at Duisburg, Coblenz, Düsseldorf, Köln, Mannheim, Mainz, Ludwigshafen, and Wiesbaden. Ten transmitters were used for this purpose.

All the Polish organizations in France were directed by General Julius Kleeberg. They worked primarily against Germany and in three fields:

1. Espionage and intelligence;
2. Smuggling (personnel);
3. Courier service.

Head of the "smuggling service" until 1.6.1944 was the celebrated Colonel Jaklicz, followed later by Lt. Colonel Goralski. Jaklicz tried to penetrate all Polish organizations and send all available man power via Spain to England for service in the Polish Army.

The "courier net" in France served the "Civil Delegation", the smuggler net, and the espionage service by forwarding reports. The function of the Civil Sector of the "Civil Delegation" in France was to prepare the Poles in France to fight for an independent Poland by setting up action groups, to combat Communism among the Poles, and to fight against the occupying Germans. The tasks of the military sector of the Delegation were to organize groups with military training to carry on sabotage, to take part in the invasion, and to recruit Poles for military service on "D-Day". The "Civil Delegation" was particularly concerned with Poles in the German O.T. (Organisation Todt) or in the armed forces. It sought to set up cells which would encourage desertion and to supply information.

Early in 1944 this spy net shifted to Northern France and the Channel Coast. The Poles sought to camouflage this development by sending their messages from the Grenoble area and permitting transmitters in Northern France to send only occasional operational chatter. The center asked primarily for reports and figures on German troops, tanks and planes, the production of parts in France, strength at airfields fuel deliveries from Germany, French police, constabulary, concentration camps and control offices, as well as rocket aircraft, rocket bombs and unmanned aircraft.

In February 1944 the Germans found that Polish agents were getting very important information by tapping the army telephone cable in Avignon.

In March 1944, the Germans made a successful raid and obtained important radio and cryptographic material. Quite a few agents were arrested and the structure of the organization was fully revealed.

Beginning early in June, increased activity of Polish radio agents in France became noticeable. They covered German control points and tried to report currently all troop movements. German counterintelligence was able to clarify the organization, its members, and its activity, by reading some 3,000 intercepted messages in connection with traffic analysis. With the aid of the Security Police preparations were made for the action "Fichte" which was carried out on 13 July 1944 and netted over 300 prisoners in all parts of France.

This, together with preliminary and simultaneous actions, affected:

1. The intelligence service of the Polish II Section,
2. The smuggling service,
3. The courier service with its wide ramifications.

The importance of the work of the Poles in France is indicated by the fact that in May 1944 Lubicz and two agents were commended by persons very high in the Allied command "because their work was beginning to surpass first class French sources." These agents had supplied the plans of all German defense installations in French territory and valuable details regarding weapons and special devices.

Decrypted messages revealed to the Germans that a director of the Creusot plants was supplying the Poles with very important information for England, primarily on plane production. The bombing of the electric

power plant in Chalons sur Saone was due to information supplied by him.

Down to the middle of November 1944, Polish agents reported no less than 162 launching points for flying bombs directed against England. When the German occupation of France collapsed, the Polish agent stations reappeared in November 1944. The organizational framework was maintained and instructions were given to find ways and means of setting up a new intelligence service in the West German industrial area and in other parts of Germany where Poles were employed or permanently settled. Meanwhile the Polish II. Section had moved from Chambery to Reims.

In contrast to the radio net of the II. Section, that of the sabotage organization "Monika," subordinate to the "Civil Delegation," did not cease transmitting after the events in France. Its purpose now was to gather all able bodied Poles into the Allied forces. When France was liberated, the "Civil Delegation" moved to Paris and as official representative of Poland to the French Government maintained radio communication with London and with an out-station in Lyon.

CHURCHILL TALKS WITH ROOSEVELT

Representatives of the Fascist and National Socialist states have claimed that the personality of a great statesman can be fully effective only in a totalitarian state, whereas in a democratic system the energies of a leader are dissipated in fruitless negotiations with parties and in various parliamentary debates. Only a dictatorial leader can proceed consciously toward his goal.

Probably few people will be inclined to dispute the statement that Churchill and Roosevelt during World War II were statesmen of great stature and that they purposefully went their way and so represented their countries that once could say: Churchill is Great Britain and Roosevelt is the United States of America.

Nevertheless they stood at the head of consistently democratic countries. They had not usurped power, had not come to power through a revolution, and needed no SS and SA to remain in power and no Gestapo to control the attitude of the people.

Hitler knew that these two men represented the will of their countries and therefore reduced his theory to an absurdity. Since he knew this, he hated them. And since he hated them, he could not think logically. Consequently, his impulsive actions led to mistakes. And since one mistake always engendered another, his system could only end in disaster.

Churchill and Roosevelt represented two world powers in a common struggle against doctrinaire Fascism. They led two groups of states which were so widely separated geographically that personal conferences, such as those between Hitler and Mussolini, could take place only rarely. However, such discussions were necessary, indeed even more vital in the case of democracies than between the "leaders" of totalitarian countries.

It was important that there be facilities available at any time for an exchange of ideas over a space of thousands of kilometers and that this exchange should not be overheard by a third party.

This was a problem for technicians and the problem had already been solved before World War II. The principle of scrambled radio telephony was already known. Just imagine you are standing on the edge of a seething volcano with a dozen yelping dogs just behind you and with a few wolves and lions howling and roaring on the other side of the crater. Add a gentle whistle to this sound mixture and you have an idea of what scrambled speech is like. It is obvious that one can make nothing of a recording of such sounds.

Even before the United States entered the war, it was known in Germany that the two western statesmen often talked in this way. When Hitler found it out, he gave orders to develop, without regard for cost, a device which would make it possible to understand such conversations.

Group III of the Cipher Section was ordered to construct such a device. It was a question of unscrambling these waves so as to restore the original form of the spoken word. It was not easy, but within a few months a complicated apparatus was constructed at great cost, based on the recognized rhythm of the known distortions. Now it was possible to listen to the interesting and significant conversations of the two men. A special unit was set up and the results were transmitted to Hitler with the least possible delay.

Just as Zimmermann had been convicted twenty years before that his telegrams to von Eckard were not known to any third person, so Churchill and Roosevelt felt secure in their conversation. Had they known that a few hours after they were talking, Hitler had the text of their conversation neatly typed on his desk, it might have taken more than a pill to enable them to sleep. It is well if statesmen do not know too much about the secrets of technology, otherwise they would hesitate to make use of them or even to open their mouths.

Hitler was satisfied and saw in this new German invention a sign that Providence was on his side. He bestowed a few decorations but one day his joy came to a sudden end.

As I recall it, it was some time before the invasion that the system of scrambled telephony between the British and the Americans was changed. Whether it was an accident or whether treachery played a part, I do not know. In any event, the voices could no longer be unscrambled by the new device and henceforth all conversations between the two statesmen remained a "book with seven seals." This splendid source of intelligence had dried up. Perhaps London knows the reason?!

STRUGGLE BETWEEN RADAR AND THE INTERCEPT SERVICE

The invention of radar was the death knell for German submarine warfare. However, radar apparatus did not come into being overnight and its final form was the result of years of development and experimentation. During the phase when radar had not reached its destructive perfection and the Germans were still ignorant of its existence, some very tense and interesting contests were going on in the field of technology in which neither of the opponents knew the sources of information of the other.

At a time when U-boat successes were falling off noticeably, the intercept service of the German Navy picked up radio traffic of a large Allied convoy in the Atlantic and plotted its course. Some 30 German submarines then in the Atlantic were ordered to take positions along the expected course of the convoy. Everything was prepared for destruction of the transports.

Suddenly, the naval intercept station in Neumünster picked up a message instructing the convoy to change its course to the north because several packs of submarines were lying in wait.

People in Berlin were dismayed and thought at first that the enemy had solved the U-boat cipher. A new message was sent in a spare cipher commanding them to take battle positions on the new route. The very next day Neumünster picked up another message instructing the convoy to change course again. This last message gave the precise location of all thirty German submarines.

In Berlin they were mystified. The assumption that the cipher had been compromised would not explain this situation. People slowly began to realize that the German submarines were no longer invisible but that their locations and movements were observed by the enemy, even when they were submerged. Again the U-boat packs were ordered to take new positions; hardly had this been done when the convoy for the third time was instructed to change course, and again the location of the U-boats was given precisely. This happened a fourth time before the two opponents finally met in what proved a costly attack for the submarines.

There were other similar cases, in fact Neumünster intercepted messages giving precisely the location of German submarines at sea; e.g. : 10 subs in that area, 20 in this, 15 in a third, 3 returning home, seven just putting out into the Atlantic, etc. Now the Germans realized that the submarines were no longer invisible and soon had to realize that submarine warfare as hitherto conducted would no longer be successful.

BRITISH RADIO AGENTS IN FRANCE 1939 to 1943

In the summer of 1939, before the war began, the British intelligence service started to set up a special radio network in the west. This did

not expand greatly, even in the first half of 1940, and the German advance soon left it behind. It then began working in a new way, undisturbed by German countermeasures. The latter half of 1940 was used to expand this network on the basis of past experience with the aid of newly developed small short-wave transmitters.

When the German radio defense got on the track of this traffic late in the year there were already twenty agent stations. The control station was in England near Bristol. Almost all the operators were French, Belgian, or Dutch. They worked separately and their only contact with one another was through go-betweens. Traffic was only slightly disguised. In general the agents felt sure their transmitters could not be located. They were stationed in both occupied and unoccupied France, in Belgium, and in Holland. In March 1941 there were 25 stations; new ones were added constantly. This network now became the chief target of the radio defense. In October 1941 there were 56 stations, some of them outside of France, because this set-up had begun to expand over all Europe.

Spain soon became the door for agents of every sort. Consequently, despite the watchfulness of the Spanish police, various control stations were set up (e.g., Madrid, Barcelona, and Cartagena) which corresponded with France. In November 1941 and in March 1942 radio defense succeeded in making its first major breaks into the net of the English agents in France. A number were picked up with their sets, in some cases with full documentary material. This led to the arrest of four additional agents. As a result agent activity shifted during the summer of 1942 more and more to unoccupied France. Information was brought from the occupied areas. To combat this, the Germans decided to undertake raids in conjunction with French police in unoccupied France. This "Operation Donar" was pulled off on 21 September. Everything depended upon the loyal cooperation of the French police who had to make the arrests and screen the material. In the course of three months 12 transmitters were picked up, thus disclosing the organizations back of them. Now the Germans were able to proceed on their own initiative and matters were speeded up.

The close connection between the British Agents in France and the preparations for the invasion became apparent, when traffic increased noticeably from 16 to 20 August before the landing at Dieppe. Soon after that the traffic of several English transmitters in France showed that there were two organizations in France preparing for an Allied invasion and maintaining close contact with the French resistance movement "Armee Secrete." The Chief of Rayon I of this secret army was apprehended on Lyon. At the same time plans for the landing of airplanes fell into German hands.

Repeated German defeats in the East and in Africa, the American landing in Algiers, and the decreased effectiveness of the German submarines in 1943 convinced the population of the occupied areas in the west more and more that the invasion and their liberation were at hand. People daily became more willing to aid Allied intelligence and to join resistance movements. Those Frenchmen who had been inclined to work with Germany withdrew, especially as they had to fear vengeance from their

compatriots. Work for Germany was sabotaged and the labor supply was reduced as young people disappeared into Maquis camps. The FFI (Forces francaises de l'interieur) and the sabotage groups of the KPF (Communist Party of France) were strengthened. In some sections single vehicles of the radio defense could no longer travel the roads. Collaboration with the French police also ceased and the police sided more and more with the underground.

At the same time Allied influence increased, more arms and supplies were dropped, and the espionage organizations, now supported by the population, expanded. Although all France had been occupied since November 1942, the number of spies and saboteurs, controlled partly by the English and partly by De Gaulle, had become enormous. The SOE (Secret Operations Executive), a subdivision of Military Intelligence headed by General Gubbins, handled supplies.

In June 1943 the Germans dealt British intelligence in France a heavy blow. A surprise raid revealed the whole Paris set-up and resulted in the seizure of 11 stations. At one place all the documents for the operation of Paris stations were found, along with unknown plans. All told, 49 complicated radio plans fell into German hands. Close range direction finding had already revealed a large number of shifting transmitter installation in the Paris area which made German counter measures ineffective. Actually, messages were sent by a number of transmitters operating in a variable sequence. The center sent out the operators daily with their messages, plans, and crystals to work with the appointed transmitters.

The so-called "Vichy-wave" caused the Germans much trouble. Various links had been observed on wave lengths normally used by Vichy. The character of the traffic showed, however, that this could be only agent work and after much effort the Germans succeeded in July 1943 in breaking into the central office of a number of French resistance groups in Paris. Many of the groups were now picked up. Thirteen transmitters were seized and operators, agents, and numerous leading personalities of the resistance movement were arrested. At about the same time deciphered messages revealed much of the activity of the groups known collectively as "Mouvements Unis." It was also possible to penetrate "Ceux de la liberation" operating in the North. The composition of the groups around Lyon was recognized and a number of leaders arrested, including General Delestraint (alias Vidal) and Prefect Moullin (cover name "Max"). This was a hard blow to the movement in that area. In August 1943 a depot was seized in Paris which yielded a number of radio sets, including two ultra-short wave sets.

Shortly thereafter, the Germans in Marseilles uncovered an organization associated with the Deuxieme Bureau and disguised as "Service Radio Electrique de Securite Territoire." It had been forbidden by the German military commander but reestablished in secret as a military establishment. It had 40 stations with over 300 trained operators. It also had a number of trucks and plenty of money.

A few weeks later the Germans struck at the organization of Colonel Faye, arresting him and several others. This eliminated one of the

outstanding agents of the Franco-British intelligence service. He and his station had been pursued all over France but had hitherto avoided arrest.

The frequent raids, followed often by the escape of agents after they had been interrogated, called for extensive security measures. Aside from frequent change of location and the use of watchers during the second half of 1943 there was an ambitious change in the handling of traffic, which aimed to make the monitoring and fixing of stations more difficult. Sometimes two stations worked with the same system and the same traffic plan. Spare instruments and operators, sometimes spare organizations, were held in readiness so that even after extensive raids service was resumed after a brief time. An instance in point was the breaking up of Colonel Faye's organization in 1943 which was replaced a month later by the organization "Alliance" headed by a certain "Bernard."

The Germans had one unusual experience with the "Alliance". The head was a French count with the cover name "Bernard" and his secretary was the daughter of a French colonel, whom we will call Miss M. She was a woman of unusual intelligence, energy and - beauty. When the count was arrested, Miss M immediately took over and built up the organization anew. Later she went to England and served as contact for this movement.

One day she reappeared in Marseilles and was picked up in a raid. At first she could not be identified. She was placed in the custody of the naval unit in Marseilles for the night. The man who was to guard her, quickly took a liking to the pretty woman and thought to spend a pleasant night. However, he was a cautious fellow and locked up all the lady's clothing in a closet in the next room, to guard against unpleasant surprises.

Meanwhile the German officials had been studying photographs and learned to their surprise that they had made a good catch. In the morning, when they came to the naval unit to take the woman away, they found the guard fast asleep. Miss M. had disappeared stark naked and was not seen again.

The activity of the resistance movement in France began to unfold vigorously in the summer of 1943. In August there were some 20 different organizations and the radio traffic was correspondingly lively. Although these organizations differed greatly and sometimes were politically antagonistic to one another, there was in England an overriding organization, the BCRA (Bureau Central de Renseignement et d'Action), which guided their efforts and provided them with material and money. This supply service employed several parachute organizations of which the BOA and SAP were the most important. They saw to it that the materials dropped were properly distributed. France was divided into a north and a south Zone. The BOA (Bureau des operations aeriennes) operated in the north, bringing supplies from England. The SAP (Service d'atterrissage et parachutage) supplied the South Zone from North Africa. Few of the cryptographic systems were broken. In November 1943 the Germans scored a great success. By raiding a single station in Paris they got enough information regarding the "Liaison Terrestre, Aeriennne, Maritime, Radio" to pick up 68 persons and 34 radio sets by carrying on a series of radio deceptions.

THE BRITISH RADIO AGENTS IN BELGIUM

During the entire year 1940 not a single agent transmitter was picked up in Belgium although the Germans had evidence that a number were working in this area. Not until February 1941 could they make two successful raids but even then secured little valuable information. The first really good catch was in May 1941, when a transmitter was fixed in the vicinity of Brussels. The location was finally narrowed down to a row of houses which were searched until the instrument was finally discovered hidden under coal in a cellar. The arrested agent, named Martiny, had been dropped in Belgium on 13 October 1940 with two transmitters. One transmitter was secured in a raid in February 1941 but Martiny escaped with the second. When he was captured, he had abundant material which gave a good picture of his espionage activity which included important military reports to England.

Sometimes droll incidents occurred in connection with raids. Once, when after much effort the house in which there must be a station had been spotted and the police were just about to enter two men emerged. When they were stopped, one of them showed an identification paper issued by the German General M, top signal officer in Belgium. They let the fellow go and did not learn until the next day that he was working for both sides, so to speak. As a precautionary measure, he had entered the employ of the signal officer and received the identification papers while on the side, he was spying and using radio sets to transmit his reports to England. When they tried to find him again he had disappeared.

One peculiarity of the radio agent work in Belgium was that it was not limited to Belgian territory but almost always reached over into France or Holland or Luxembourg. The number of "Kappelen" was extremely large, since the British, Russians, French, Belgians, Dutch, and Poles all used this country as a base of operations. The "Rote Kapelle" case has been reported at length elsewhere; here a few other cases will be mentioned.

"Lagerkapelle." A raid on the station in January 1944 yielded information on the connections between various Belgian espionage services and their relations to French groups and the "Service Luxembourg."

"Patriarchenkapelle." This was related to the "Lagerkapelle." It worked chiefly in Luxembourg but had connections with three German groups in the Eifel, Hunsrück, and Saar areas. The Germans made a number of raids and arrests.

"Depot-Kapelle." Careful D/F-ing and a surprise raid in Brussels by radio defense in May 1944 afforded the first information regarding the "Belgian Secret Army."

In Belgium as in France the activity of radio agents increased and reached its peak just before the invasion. All movements of troops and supplies, every depot, in fact every headquarters down to company level, was reported to England.

The raids in Belgium afforded considerable insight into the organization of the British agent system. Control was exercised by the "Special Operations Executive" (SOE) which was set up for the duration within the "Military Intelligence Service." There were sections for the following countries: France, Belgium, Holland, Denmark, Norway, Greece, Yugoslavia, Czechoslovakia, Poland, Hungary, Spain, and Germany. "The Military Intelligence Service" and the SOE made the necessary preparations for undertakings in other countries by procuring the necessary information and equipping non-English military auxiliary forces with agents, money, arms, and equipment.

In Belgium, which was divided into 5 zones, the SOE made use of the so-called "Belgian Secret Army" which was made up chiefly of members of the former Belgian Army led by Belgian officers. At the top were the headquarters in Brussels, to which the zones were subordinates; the zones comprised individual fighting groups.

AMERICAN RADIO AGENTS IN FRANCE

The United States even before the beginning of World War II had a central intercept station for monitoring illicit radio links. It belonged to the so-called Radio Intelligence Division (R.I.D.) and had first class equipment. According to its own statements the R.I.D. had discovered by the end of 1944 nearly 9,000 illicit transmitters in the U.S.A. and had identified more than 200 transmitters of Axis agents in South America. Quite a respectable number - if correct! Because the Axis Powers during World War II did not have anywhere near 200 agent stations in America.

After American forces appeared, American radio agents were employed in much the same fashion as the English agents. By the end of 1943 the American intelligence service had spread out, in Spain especially, and thus was able to draw information from France by various routes. Down to November 1943 only an English radio agent service had been observed in Western Europe but now an American service appeared which was supplied from Spain. Late in 1943 the Americans had an organization extending from the Spanish frontier to Nice. It was manned by American officers and its duties were to ascertain troop movements, support points, mine fields, etc. Its stations at that time were in Lyon, Valence, Montelemar, Marseilles, Toulon, Chambery, Narbonne, on Corsica and in other places.

During the first six months of 1944 the American agent network was expanded to 42 links. The control station was in Algiers. It made use of arrangements of the former French 2me Bureau controlled by General Rivet or Major Paillole and Major Lejeune, while Major Lafont, alias Verneuil, occupied the leading position in southern France. American officers were gradually introduced into the organization and after the removal of General Giraud a network was organized along the lines of the BCRA (Bureau Central of Renseignements et d'Action) and officers were detailed from London. Supply by parachute was chiefly from Algiers. (Beginning in June 1944 the 2me Bureau and the "Securite militaire" were combined in Algiers and the "Securite militaire Algiers" henceforth controlled the employment of radio agents in German territory - especially in Austria - using German prisoners of war by preference).

The American organization which trained agents was the O.S.S. (Office of Strategic Services) which was set up like the Secret Service in England. The head was General Donovan. The entire American secret service for North Africa, the Near East and Europe was directed from Algiers. The O.S.S. had a school in Naples training men to set up illegal organizations in hostile territory and another school in Brindisi training radio operators. Italian officers were used here. Camouflage and security measures were in general like those of the English but sometimes procedure was adapted to that of American armed forces in attempt to deceive the German intercept service. Just before the invasion the various groups of agents were combined more and more and single agents were attached to existing organizations. They did valuable work in preparing for the invasion. Beginning in June 1944 monitoring of these stations in southern France was largely neglected by the Germans, since most of the intercept units were assigned higher priority missions in northern France. Contact with the traffic was lost and this was one of the reasons for the German catastrophe two months later in southern France.

THE NORTH POLE CASE*

The episode about to be recounted had nothing to do with the geographic or magnetic North Pole. The scene was remote from both and lay in the Netherlands. But German officials had the habit of giving a cover name to every "case" and that frosty designation was selected for this particular affair. Just how they hit on North Pole I do not know since in reality the term "equator" would have fitted better, inasmuch as those concerned got pretty warm. However that may be, "North Pole" was the name given and is therefore the title of this chapter.

In the spring of 1941 the British began building up an espionage organization in Holland which was then occupied by the Germans. The Government in Exile handled the matter under British guidance; the practical execution lay with the organization "Inlichtingendienst." This was the official information bureau of the Dutch Government, comparable in a way to the English "Secret Service."

During the summer of 1941 the German intercept service spotted two agent transmitters in Dutch territory which communicated with a control station in England.

At that time the Germans knew little about any Dutch espionage service but the German Security Police had recently apprehended an agent by the name of Tuin who was said to have a transmitter. After an auto accident, Tuin had been placed in a hospital in Amersfoort, from which he

* The Washington STAR for 4 Feb. 1953 (Page A8) has a notice of a book recently published in London: "London Calling the North Pole" by H. J. Giskes, ostensibly the chief of the German counterintelligence unit involved. (Ed.)

was abducted one day. Since the doctor had found that in addition to injuries sustained in the accident Tuin had a serious kidney trouble and must be operated on at once, the Germans assumed that he had been done away with by his own espionage organization in order to leave no trace.

The two transmitters, which had been spotted and which because of their characteristics seemed to belong to one and the same organization, were to be picked up simultaneously, if possible. The raid on the transmitter in the Hague misfired due to poor organization; the local German counterintelligence office was anxious to make the raid itself and the D/F platoon used to pin-point the transmitter was expressly forbidden by the counterintelligence people to make an arrest; consequently the leader of the D/F platoon had to stand idly by while the radio agent and his assistants escaped from the house.

After this incident the second transmitter was seized by representatives of radio defense two days later in Bilthoven near Utrecht. That was 31 August 1941. Along with the operator the Germans apprehended an important agent and found a suitcase with some 800 individual reports ready for delivery to England.

This immediately revealed the extent of the espionage organization in Holland, which had ramifications reaching deep into German territory. There were clues to existing and projected transmitters and from scraps of paper it was possible to recognize the cipher system employed. Moreover, in the library of the house the key books used for enciphering the messages were discovered.

The operator obstinately refused to talk and the Germans were unable for the moment to make complete use of the material. Various harmless looking notes, letters, travel expense accounts, etc., yielded important clues to cover-names and residences of other agents. This permitted the Germans to interrogate in one night more than 20 persons and to arrest 12 of them. This meant a swift and significant break-up of the organization.

After the other agents, who had momentarily gone underground, were arrested, plans for an internal Dutch radio service were discovered and steps were taken to prevent Philipps engineers from setting up transmitters. In this connection the man who had abducted Tuin was discovered among the agents arrested. Tuin had been placed in a small sanatorium in Bilthoven. The sanatorium was searched by the German Security Police without success; Tuin had dressed as a sister and, thus disguised, remained another 18 months in the same sanatorium before being arrested again in the breaking up of a Dutch-Belgian organization.

The breaking up of the Dutch intelligence service after the seizure of the Bilthoven transmitter enabled the German signal intelligence service to establish itself successfully. It was decided to carry on a deceptive game with the captured transmitter.

The first transmitter seized could not be used because the keys could not be solved promptly. The transmitters picked up in the following raids could be used at once and eventually all the intelligence

and sabotage work of the "Inlichtingendienst" lay in the hands of the German counter intelligence and the messages were enciphered by representatives of the German radio defense. At times as many as 11 Dutch transmitters were being operated simultaneously and all the agents dropped by parachute or landed by speed boats for five different rings were picked up immediately after landing. Within a short time the Germans picked up one after another the members of the English spy net and also took over little by little the radio system and continued operating it without the change being noted in England.

This had to be done very cautiously to avoid arousing suspicion. It was necessary to send many truthful reports to England but all sorts of things were introduced which did not correspond to the truth. Thus the Germans reported greater troop strength and greater quantities of weapons than were actually available, told of incoming troop units, fortifications, etc., to make their military position in Holland appear more secure than it was.

The British must have been delighted with the activity of their "agents" during the next year and a half, for things really were moving in Holland! The Dutch Freedom and Resistance Movement was enthusiastically organized. There were local groups everywhere. Members flocked in from month to month. Acts of sabotage were carried out everywhere, buildings were blasted, cables destroyed, German sentries were drowned in canals or otherwise disposed of. All these were reported by the previously arrested agents and the reports in no wise corresponded to the facts, because all these reports were manufactured at his desk by the head of this grandiose deception who had the several radio stations send them out strictly according to plan.

All these reports were composed and transmitted in such "Genuine" fashion that London did not become suspicious. That was clear from the fact that all requests for arms, ammunition, explosives, sabotage material, yes, even for coffee, cocoa, chocolate, cigarettes, and cigars were promptly complied with. Everything asked for was delivered by parachute. It was even better: visitors from England were announced. New agents, new operators, new couriers. They were received promptly, taken to the comfortable lodgings of the "Chef", where they were entertained and were able to send their reports to England by radio. Only then did the Germans reveal the true situation and arrest the agents.

All told, several hundred planes dropped several thousand tons of arms and other material for the benefit of the Germans, and over 50 new agents and operators were taken into custody upon arrival.

This game, which lasted fully a year and a half, pleased the Germans greatly and many of the messages occasioned great hilarity.

The game was played faultlessly until late in the summer of 1943. It might have gone on even longer, had it not been possible for four

of the captured agents to escape from the special prison in Haarlem. When two of them reached the Swiss frontier the deception was revealed.

Anyhow the Germans had succeeded for two years in completely crippling the enemy intelligence service in Holland and avoiding untold damage by sabotage. Moreover, early organization of resistance in Holland was checked by the prompt arrest of all those sent from England as leaders. In consequence the resistance movement in Holland was not able to assume proportions comparable to the development in France or Belgium.

Even before the four agents escaped, the English apparently got wind of the matter somehow and realized that something was not in order. Without informing the old group of agents, the British began in April 1943 to build up an entirely new network. The Germans soon discovered this through the appearance of new radio stations and did not wait until the English broke off traffic but sent them one day a message thanking them for all the information, cigars, cigarettes, and coffee, and good humoredly bade them goodbye.

IN PREPARATION FOR THE INVASION

The year 1944 was marked on the Western Front by the preparations for the invasion, its execution, and the forcing of the German front back to the frontier.

At the very beginning of the year English agent traffic showed increased interest in the development of camouflage measures. Nevertheless, the German radio defense succeeded again and again in breaking into agent centers and putting out of commission numerous control stations of the different organizations. In view of the fact that more than 20 organizations were working in France and that many of them had tens of thousands of collaborators and adherents, it was, of course, impossible to pick up all of them; nevertheless, their activity could be crippled for a time.

It may be assumed that the Germans picked up some 10 per cent of the agent operators in the course of a month, while in many months the numbers of sets seized was roughly equal to the number of stations in operation. However, it was not difficult for the enemy to replace the agents, since they had at their disposal most of the trained operators of the navy and army and of the police. And since these men were protected in their work by the populace they were happy to be employed at good wages in their own line of work when unemployment was general, especially since they would also be performing a patriotic duty.

We may look briefly at a small selection from among the large number of "cases" which occupied the Germans during 1944:

"Jade case." In January 1944 the Germans broke up an organization in France which worked directly for British intelligence. It was directed from Paris and had stations in Reims and Bordeaux. The head was a certain Lamirault, alias Roy. When he was arrested, keys and radiograms were seized, which revealed a very significant espionage activity. The

organization was widely ramified and had many agents; on the side it also worked for Russia.

"Cognny case." In February near Melun a station was raided which belonged to the "Cognny" organization. Decrypted messages showed that this was a sabotage organization which operated primarily in Brittany and the Vosges.

"Helios case." A raid on 8 March 1944 in Rouen had to do with a group working with the R.A.F. in planning attacks on electric power plants. It resulted in the arrest of numerous heads of ground crews and sabotage groups.

"Burgundy case." In a raid in Bordeaux in March a number of members of the American intelligence service were arrested. A widely ramified organization was involved with headquarters in Tarbes. Records showed espionage missions had been assigned covering coastal fortifications in the Hendaye - Verdon area as well as harbors and airfields.

"Baltimore case." In April 1944 some 30 persons were arrested who belonged to a group working in Toulouse and Bordeaux for the Inter-Allied General Staff in Algiers.

"Danilo case." At the same time a ground organization for parachute enterprises was picked up in Nemours. It distributed supplies and equipment of all kinds from England to different resistance organizations.

"Raymond case." Immediately afterward an organization was crushed in southern France which was supposed to set up a special radio net for the invasion and to discover landing places for gliders and planes along the Cote d'Azur.

"Monika case." In the same month the Germans obtained information regarding the structure and intended employment of the "Monika" organization. This group comprised Polish workers in France and Belgium who were to aid an Allied invasion by strikes and active measures.

"Normandy case." (French Section) When German radio defense picked up two agents in Montlucon on 1 May 1944, an Englishman, Major Southgate, fell into the net. Since January 1942 he had built up in France in the areas of Tours, Poitiers, Vichy, Limoges, and Toulouse special transmitting groups and had organized numerous parachute deliveries of arms and explosives. A study of the captured material enabled the Germans to identify 62 places used for parachute drops.

"Mithridate - Sorbonne case." In May radio defense picked up an ultra short wave station near St. Omer. An exceptionally clever and active agent, Lt. Colonel Donnet, was arrested who had for sometime been occupied primarily in reporting on the German "secret weapon." The "Mithridate" organization was completely smashed.

"Seraphim case." A raid on a station in Bordeaux enabled the Germans to gain insight into the organization of the Giraud intelligence

service ("Nile" later "Mithridate"). This last named was taken up into the BCRA. Arrest were made and numerous messages and keys fell into German hands.

"Alliance case." In June 1944 the Germans raided the command post of the "Alliance" espionage organization in Paris and among those arrested was the chief of the "Region Nord." His statements revealed that the "Alliance" was subordinate to the 2me Bureau of General König who had taken over the leadership of French forces in England after Giraud had been deposed.

The situation developed during the summer of 1944 in such fashion that in July the Germans made almost a raid a day in France, but any effective combatting of the resistance movement was out of the question.

The British intelligence service relied on some 20 organizations which worked independently of one another and were controlled from London through the BCRA (Bureau Central de Renseignement et d'Aviation). Some were originally Giraud organizations operating chiefly in southern France but gradually they were joined to DeGaulle groups after Giraud had left.

The French Section, led by English officers, worked primarily in the coastal areas. It was supplied primarily by the B.O.A. (Bureau des Operations Aeriennes), while in the south the S.A.P. (Service d'Atterissage et Parachutage) flew in supplies from Algiers. These organizations handled the airborne landing (Lysander) and parachute supply service and worked very closely with the BCRA. 500 planeloads were dumped in the average month.¹

Beginning in May 1944 it was noted that the so-called "Equipes Jedburgh" exercised control over military preparations of the resistance movement in France. These were rather small groups of officers dropped by parachute and their appearance was an unmistakable sign that the invasion was impending, but those Germans in responsible positions did not heed it.

The mass appearance of new agent transmitters of Franco-British intelligence in the Vosges-Grenoble-Lyon area during March 1944 showed clearly that the groups of saboteurs there were to destroy communications between Germany and France when the invasion came. This was also clear from

¹ It may be assumed that about 30% of the material dropped was picked up by the Germans on the basis of radio games and decrypted messages. Generally the transmitters of the several organizations could be recognized by radio characteristics, so that, before a transmitter was seized, one knew the agents for whom it worked and also which other transmitters in the network were still active and which had already been picked up. This facilitated interrogations, since those arrested reacted quicker to specific questions and were less inclined to be evasive when they discovered that details of their organization were already known.

from numerous orders of the Chief of the F.F.I. (Forces Francaises de l'Interieur). This was confirmed in full five months later.

The English, who had set up a wonderfully organized spy network in France, had in July 1944 espionage centers with radio equipment in almost all the larger cities of the country.

These intelligence units were seconded at the time of the invasion by airborne troops of the S.A.S. (Special Air Service) who were dropped in partisan areas behind the German front. They were to carry out certain sabotage missions, relying on members of the F.F.I. who were familiar with the country. They contributed materially to getting the F.F.I. into real activity and to harrassing German rear communications and confusing re-treating columns.

THE SILENT NET OF THE U.C.R.

In preparation for the invasion the British intelligence began late in 1943 to set up a brand new radio organization. Using existing resistance groups with their operators and instruments, new radio networks were projected along the coast and in several lines parallel to it at distances of about 100 km. Each of these U.C.R. (Unites de Combat et de Renseignement) was an independent military intelligence center whose chief was the local leader of the resistance organization with the greatest strength in the particular area. The members of all other resistance organizations in the district were directly subordinate to him and sent their reports to this U.C.R.

The purpose of the U.C.R. was to provide, under the direction of its chief, direct connection with the staff of the Allies whenever Allied operations on French soil should begin and also to assure transmission of all information gathered by agents of "fighting France." Beginning on the critical day the chief was responsible for all military intelligence communications in his area.

The personnel at his disposal included intelligence agents and scouts, likewise one or two operators with instruments, and men to guard communications. He also had a certain number of concealed quarters with secure addresses and "letter drops". Special schedules were assigned to the transmitters, which were not to function until the critical day. Till then the net was to maintain absolute radio silence and the cryptographic system was not to be employed.

The command expected the U.C.R. to report as quickly and precisely as possible on enemy movements in its sector. It was not to take part in combat. Members were strictly forbidden to shoot unless in self defense or to escape capture.

The chiefs of the U.C.R. were instructed to transmit as promptly as possible precise information regarding the strength and movements of the enemy in adjacent territories. This included assemblies and movements of troops and air units, the construction of fortified positions, the

location of mine fields, munition depots, hospital stations, etc.

In June 1944 the Germans obtained by accident the keys for the "silent net of the U.C.R." along with the authenticators of six agents. This would have meant a wonderful opportunity if the organization had been functioning like all the rest, but instead it was silent.

Whereas in the case of all the other agent links the German were dealing with an opponent whom they could hear, observe, locate and eliminate, here they faced a foe who was not merely invisible but inaudible and intangible, a foe who, in a sense, didn't exist at all, who put in an appearance only when it was too late to combat him effectively. The Germans knew the general area in which he was located but they did not know a single transmitter location, a single go-between, a single letter-drop. They stood before an impenetrable wall of mist and all they knew was that behind it, slowly but purposefully, preparations were going on which would mean the turning point on the western front.

THE INVASION

If ever a military undertaking was prepared for down to the least detail, then it was the Allied invasion in the night from the 5th to the 6th of June 1944.

We have already shown how British intelligence was informed of all details it needed to know regarding the situation in France. The work of the various French resistance organizations made it probable that, insofar as the German forces were concerned, all France resembled a bog which gave way wherever one might step.

Sabotage had so damaged communication lines that they could not be depended on. Even before the invasion started, defense of the occupied areas in the West had been so shaken and undermined that - in spite of the Atlantic Wall - only a few powerful thrusts were necessary to cause the entire structure to collapse. Shortly after the invasion of Northern France started, the English and Americans employed special groups (Equipes) consisting of two men with an ultra short wave telephone set and shortwave radio for telegraphic communications. These groups worked under the direction of the BCRA, were meant for purely military reconnaissance in connection with operations of German troops, and were especially interested in German retaliatory weapons. Working far in advance of the invaders, each group recruited some 10 local informers, screened their reports, and radioed condensed versions.

The ultra short wave traffic of British intelligence increased rapidly with the beginning of the invasion. The German intercept organization was nowhere near adequate for interception of this traffic; in some instances interception was not technically possible, in other cases the service was swamped. Since it was impossible, to cover all traffic systematically, it was necessary to concentrate on certain links

which appeared important - a pitiful solution in view of the tremendous opportunity.

When one station was raided in July 1944, important information on the VI was found. It enabled the British to attack many depots and launching sites effectively.

In August of the same year ultra shortwave messages showed that very important reports on the VI and on military operations were going to England.

For almost two months it looked as though the invasion were making no progress. The Germans had not succeeded in driving the invaders into the sea, but a stabilized front had been formed which seemed to defy every attack. Until the breakthrough near Avranches which lifted the German west wing off its hinges! Just as the Russian offensive came to a halt, the front in the West began to move. The German west wing was penetrated on 3 August; on 7 August the Americans advanced via Mayenne and were 200 kilometers from Paris. They had taken Laval and Chateau Gontier and had also occupied Vanna in Brittany. They reached the coast on both sides of St. Nazaire and thus cut off Brittany. Since the landing, 85,000 German troops had been captured. Of 35 German divisions, 13 had been destroyed.

In Germany a bloody purge was raging which had begun on 20 July. Hitler solemnly received the newly appointed NS commanders and Himmler issued an order of the day on the creation of "the National Socialist Peoples Army of the Fuhrer and his Reich", while Goebbels proclaimed "far reaching measures" and release of vast reserves of power.

In the German armed forces the "German greeting" was introduced in place of the military salute.

SAS TROOPS IN THE WEST

When the invasion began, it was observed that the British Broadcast station in Daventry introduced a new special service. Before or after the entertainment program, sometimes even in the midst of it the speaker called several times: "Hello Pierre!" or "Hello Lulu!" etc. and then gave enciphered or disguised instructions.

As soon as the invasion started, the English dropped so-called SAS units behind the German lines. These were two military units of about regimental strength, of which one comprised two groups with the call names "Pierre" and "Sabu" while the second had three groups "Jeannette", "Jojo" and "Lulu". Each of these groups corresponded roughly to a battalion. These were sabotage units. Groups "Pierre", "Jeannette" and "Lulu" received their instructions in French, while the others got their in English. Orders and information for all SAS units went under the name "Romo"; those for all "Lulu" units were sent with that name, etc. Enciphered messages on the other hand were addressed directly to the individual unit.

The organization was very rigid and the work intense. It caused the Germans much trouble and among other things hopelessly crippled the French telephone and teleprinter lines upon which the German command relied. All that was left was the radio and we have already seen how dangerous that can be.

After the Allied advance had overtaken the first SAS regiment, which was employed primarily in Brittany and Normandy, it took little part in further operations. Its main body was withdrawn from the front beginning in September 1944.

The second SAS regiment was not employed to any great extent until late August. As the Allies approached the German frontier its employment increased. Its main body was dropped in the Vosges, chiefly in the forest of Senones, north of St. Die. This was the area where the Allies made a surprise thrust a few weeks later which overran the area between Nancy and Strassburg in four days and resulted in the capture of Strassburg on 23 November. Here again the SAS units had solved their problems brilliantly.

ENGLISH RADIO AGENTS IN ITALY

Immediately after the defection of the Badoglio Government, British intelligence took over all Italian command agencies, in particular the SIM (Servizio Informazione Militari) and used them to set up its own agent radio service in Italy. From then on this service played a considerable role.

The SIM was absolutely a British service and its chief task was to provide British intelligence with agents. The central office was set up in Brindisi with Colonel Massaioli in charge. Agents were recruited among officers, in work battalions, and in prisoner camps. Some were Italians who had been drafted for the Canadian Army and were now sent to Italy for employment as agents.

When recruiting, the SIM did not reveal the character of the work; some persons were not recruited but were selected and detailed to British intelligence which then trained them in schools for agents and finally delivered them behind the German lines, either by parachute or by submarine. Their radio control station was in Bari.

At first the Germans were able to hinder the development of the hostile radio agent service. Even in the early months of 1944 when the British employed more and more agents, most of them were arrested or remained quiescent since many simply went home to their families.

Beginning in April 1944, however, there was a marked increase in agent traffic since British intelligence tried to make up by quantity for what was lacking in the quality of the agents. Following a raid on a station in Rome late in April, captured documents and interrogations disclosed that an organization was involved which worked mostly with

the illegal parties (known collectively as the "liberation committee") which had access to material in the highest German military offices. The Germans gained valuable information in this case by playing a radio game and were able to learn the structure of the liberation committee and prove its collaboration with Allied intelligence.

The organization "Otto" was dealt a serious blow in Genoa in April 1944. Its function was centralized supply and military leadership of partisans in Piedmont and Liguria. Several groups of radio agents were picked up along with a mass of radiograms, many of which were later deciphered. These gave a terrifying picture of the true situation in Italy. A control station, which issued espionage assignments, was located in Bari and communicated with fully a dozen stations in those parts of Italy occupied by the Germans. There was a second control station in Tarentum which communicated with partisans in upper Italy.

Early in July an agent station was picked up by the Germans near Pisa which had been an important link of the partisan organization in Tuscany. The purpose of the group was:

1. To combine resistance forces into partisan groups.
2. To select dropping points and regulate supplies of all kinds.
3. To transmit military reports.
4. To pass agents and important documents to Allied headquarters.

In time Bari became an important junction point for all sorts of intelligence services. The Russians set up a radio station, as did the Poles; the latter communicated from here with 21 stations in German occupied Poland.

British intelligence was not able at first to set up any sizeable organization in northern Italy because many agents were arrested upon arrival.

On the other hand, the Germans were able to use the documents found on agents to carry on several deceptive games with the control station in Bari. But in spite of all the German successes the number of agent transmitters in northern Italy increased to 42 in July and 63 in August. This was largely due to the fact that the agents operated in territory held by partisans where raids could be carried out only by large detachments.

Early in 1945 the radio agents were told to attach themselves to the political organizations and partisan formations from which they were to gather military information and to spy out worthwhile targets for air attacks. They were also to report on the situation and strength of partisan groups and arrange for supply by parachute. Moreover agents slipped across the northern boundary and a regular courier service between Italy and Switzerland was established.

AMERICAN RADIO AGENTS IN ITALY

American intelligence, directed by OSS (Office of Strategic Services), set up the ORI (Organizazione Resistenza Italia) and recruited radio agents. To facilitate the work, most of those employed in the OSS were Italian Americans. Radio communication was directed by the control station in Naples. The agents were generally trained in American uniform and put in civilian clothing only when they were sent out.

Although there was some collaboration between the English and American services, it was apparent that both followed the same goal but thought to reach it in a different fashion.

In May 1944 the Germans succeeded in picking up an American station in Milan after an exchange of fire with the agents. When the material and traffic had been sifted, it was clear that this group was part of an organization extending all over northern Italy and down to Rome.

By following up the clues obtained, the Germans eliminated a large number of persons charged with important espionage missions. The Germans discovered the regular communication routes used and prevented very important material from slipping through: e.g., a report by Marshal Graziani to Goring on the newly created Italian army and its new positions, together with a complete reconnaissance report on the German line of defense from the Adriatic to the Tyrrhenian Sea (the so-called Gothic Line).

In September the Germans picked up another American group near Genoa. This raid proved the most profitable of all those made in Italy. The principal agent had exercised control over all the groups and single agents of the intelligence service of the American Fifth Army. He was also concerned with the organization of the resistance movement, with sabotage (as far north as the Brenner Pass), and with the recruiting of agents. As a direct result of this raid five other groups were picked up.

The control station of the American radio agents was initially in Naples but was later moved to Bari.

With that all the radio agent work of the Allies in the south was united in one place and was directed as a unit.

Late in 1944 two centers of English and American agents were noted: the Milan-Genoa area (where collaboration of the Italian Maqui with French troops along the frontier could be noted) and Udine-Venice area. Here agents were instructed to reconnoiter highways, bridges, the width and depth of rivers, supply etc. This was in preparation for the swift advances of the Allies in the spring of 1945 which caused the entire southern front to collapse. A net of radio agents had been set up which reached far into Austria and, as a result, anything that took place behind the German front no longer remained a secret.

A COLD BATH, A CRAMP IN THE CALF, AND OTHER NOTEWORTHY MATTERS

What person who knows life will deny that one of the most beautiful components of which a woman is put together is a pair of shapely legs? And who will maintain that a bath in a bathtub with water just a little above the freezing point is something everyone desires?

I once saw a photograph of G. B. Shaw taken just as he was bathing in a frozen pond through a hole cut in the ice. I saw the picture 15 years ago but when I think of it even today I get goose flesh and am grateful to the engineers who invented the water heater for bathrooms.

And what does all this have to do with "War Secrets in the Ether"? - A great deal!

In my youth I had a teacher who often asserted that the Middle Ages with their applied cruelty were gone forever. I am glad he died long before World War II, otherwise he would have had to admit that his theory was the greatest mistake of his life and in the philosophy of the 19th century.

But you still inquire what connection there is between "War Secrets in the Ether" and my philosophical remarks. Pardon the digression, my dear reader, I will tell you.

We have already spoken several times of the fact that agents or their operators were arrested by the German police and that some of them made statements which afforded considerable information. Thus far, however, we have said nothing about the way in which such people were induced to talk. For it is clear that as a rule they were not at all inclined to give information regarding their organization and to betray their own cause. On the other hand, the whole system of agents constituted for German intelligence such a serious danger that one tried by all available means to get these men and women to talk.

The organs of the German Security Service (S.D.) - corresponding to its nature - had a very simple recipe. Those arrested were cruelly mistreated. The result was generally very slight. The abused person roared with pain and then grew silent. Or he fainted. After this treatment most of these men were so embittered and fanatical that they would have preferred to be executed rather than say a single word. The agents of the armed forces had in such cases a "more humane" method of interrogation. Essentially there were only two methods, but they were quite effective. One was used principally with women, and the other with men. In the case of women they applied to each calf a clamp with a fairly wide surface which could be tightened by means of a screw. The result after a short time was a cramp in the calf which could be endured for a few minutes, perhaps, but not for long; it became torture and - especially in the case of women who were concerned with the beauty of their legs and did not care to get varicose veins - quickly opened the mouth. If the clamp was removed, the cramp soon let up and the leg showed no trace of abuse. In the process not even the sheerest silk hose would be damaged.

Equally "considerate" was the method employed with men. The delinquent was stripped, bound hand and foot, perched on the edge of a bathtub filled with ice cold water. With the open hand, water was splashed on the man's back. The effect was like that of an electric shock. If this didn't suffice, the man was laid or seated in the tub and that had a more powerful effect. However, it did not always suffice to break the person's resistance. In such cases the man was immersed and held under water until his tongue was loosened and he was ready to talk. Frequently brief electric currents were sent through the water to stimulate the bather.

Many of those arrested tried to commit suicide in the tub by throwing themselves into the water and violently swallowing and breathing water. They were then fished out promptly and none of these "guests" ever made a second such attempt at suicide.

The "cold bath" almost always worked and, like the cold bath had the advantage of leaving no marks. Along with the cold bath and the cramp in the calf there was another - and indeed more humane - way to get the desired statements from the apprehended agent. He was put in a sort of trance by a narcotic and specific questions were put to him again and again. This recipe did not always work but it did in many cases.

It is well known that people are not exactly gentle in the Balkans when they get an enemy in their power. German close-range detachments who had to raid agent stations often got into difficult situations. And woe to those who fell into the hands of the partisans. It happened more than once and then there were tortures such as the German Gestapo never dreamed of.

A favorite method was "lighting up the soles". They suspended the prisoner by his hands with his naked feet some 30 cm above the ground. They then placed burning candles beneath them and patiently waited for the results. By fettering the legs one could prevent the tormented victim from pulling them up away from the heat.

There were other methods of bloodless torture but I do not wish to enumerate them here. The human race is bad enough; I do not wish to teach it any more evil tricks.

ENGLISH AND RUSSIAN RADIO AGENTS IN NORWAY

Norway had been occupied in May 1940. The Government, with King Haakon at its head, had gone to England. The Storting in its final session had decided that if an independent government within the country were not possible, it should go outside the country for the time being.

Thus the cabinet with Prime Minister Nygaardsvold continued to be the legitimate government of the country. It issued ardent appeals to the people for passive resistance. Daily broadcasts in the Norwegian language gave the people all they needed to know. The armed conflict was at an end. The spiritual conflict was beginning. And the man who had

undertaken to represent the Norwegian people and the Norwegian state, Vidkun Quisling, had firm ground under his feet only so long as he was under the protection of German arms. Beyond the range of German guns he had no power and his name had become throughout the civilized world a symbol of treason and a term of opprobrium.

As early as February 1941 some agent transmitters appeared in Norway, which obviously belonged to the British intelligence net. It could soon be recognized that British intelligence was proceeding here as in France to build up an agent network, utilizing the Norwegian resistance movement. Thanks to the geographic peculiarity of the country, these agents found ideal protection in the mountainous regions which were difficult of access.

During the year 1941 this agent network spread over the whole country so that British intelligence could get reports from all parts of Norway. Among other things there was developed an organization called "Scorpion" for reporting on shipping. It was directed from Drontheim by ship's engineer Rolf Lystadt and shipyard director Groen. Reporting units were set up along the entire coast of Norway; they observed ship movements and reported them to England by radio.

To safeguard the traffic one soon resorted to short traffic periods and clever disguise, just as was done in France. Agents were often able to avoid arrest by frequently changing their location.

The Germans tried to locate these transmitters by long range and short range D/F-ing, and D/F readings taken from Storch planes, but rarely, was a raid successful, and if one did succeed a new devotee of freedom immediately stepped into the gap.

In May 1944 the Germans raided an agent station on the island Onoye where the transmitter was located in a cave from which shipping could be observed readily. An abundance of apparatus and documentary material was secured. All observations had been passed to England. It was virtually impossible for a German ship to enter or leave a Norwegian harbor or even to sail along the Norwegian coast without a signal going to England immediately.

By picking up an agent station in Norway in March 1944 the Germans secured information on the military organization of the resistance movement and of the English radio intelligence service in all Norwegian territories. It was directed from London by the "Defense Command". In Norway there was the central control unit which issued orders to the several districts, sectors, and areas. An extensive intelligence net was being built up in Norway which was intended to start functioning when military operations began or in connection with a possible German withdrawal.

Until May 1944 the number of radio agents working in Norway averaged 15. From then on the network was expanded greatly. In June the number of transmitters had doubled and early in September another large increase in number was noted. In October there were not less than 86 stations.

In view of the character of the terrain, the German radio defense encountered great difficulty in its efforts to suppress them. Not only were the agents protected by inaccessible locations, they also had a chance to get what they needed either by water or from Sweden with virtually no interference.

Most of the agents were charged with watching shipping and reporting their observations to England. However, there was an increasing number of agents charged with preparations for sabotage and with support and furtherance of the Norwegian resistance movement. A supply service by parachute was organized which at times assumed great importance in the area around and southwest of Oslo.

Late in September 1944 an agent station was picked up not far from Bømlø and the operators, Ragwald Mack and Rolf Kjoz Hansen, were arrested. Decrypted radiograms found there contained reports on fortifications in the Stavanger area, on troop transports, troop organization, and submarine reports. The chief agents, Ernst Arkildsen and Artur Bakka, succeeded in escaping in a speed boat.

In October 1944 the English Major Adamson was captured near Bodo. He was leader of a detachment of "Special Forces" which had been sent in to carry on sabotage and reconnaissance. He had landed with some 15 parachutists to look up suitable sea and air landing places in the Helgeland district, to block Highway 50 - possibly by destroying bridges near Viskiskja and Krokstranden - and later to cut the Northern Railway. The purpose was to interfere with German withdrawal.

A raid by the German radio defense in November 1944 disclosed an organization which worked across the frontier into Sweden and was concerned with reporting on shipping and weather. (Loedinggen-Narvik case).

Almost without exception the agent transmitters were located in the southern half of the country (south of Drontheim). The majority were near the coast. From this fact one could conclude that they were working exclusively on shipping. It is true, of course, that most of them were carefully watching the shipping along the coast day and night and reporting their observations to England and that for this reason they had to be located in coastal areas. It is also true, however, that the concentration of radio agents in these areas can be explained by the geography of the country and the fact that the interior is thinly populated in comparison with coastal areas. Wherever fairly densely populated areas were to be found in the interior, e.g., in the area of Oslo, one also noted an increased employment of radio agents.

In addition to this net of radio agents controlled from England there was a similar net of Russian agent transmitters which also handled their traffic very skillfully and constantly manifested a desire to mislead the German radio defense. The central station was in the Murmansk district and the control station was in Kola.

During the first half of 1943 it was noted again and again that the Russians were very quickly and very accurately informed regarding shipping in the north of Norway since ships would hardly have put to sea before hostile aircraft would appear and attack them. It became clear that Russian intelligence had planted radio agents along the Norwegian coast who reported currently on German sea transport to the Murman coast. The agents were put ashore by submarines and since the distance was short, wave lengths of 80 to 100 m with low output were used which could not be picked up by the German monitors.

In the fall of 1943 the Germans succeeded in raiding several Russian agent stations and the ensuing radio game with the Russian control station was successful. The Germans succeeded in enticing in and probably sinking a Russian submarine, as well as in apprehending agents when they were landing. Apparently the Russians did not become suspicious and the deception went on for some time.

RADIO AGENTS IN DENMARK

English and Russian radio agents appeared in Denmark too, but were not of great importance. The number of agents there was small and not until October 1944 was any great activity observed. In November there were twice as many agents active as in the month preceding and the volume of traffic swelled rapidly.

A raid on a Russian agent station in Copenhagen in December 1942 was the first step in unmasking a large Danish Comintern organization. A raid in November 1944 crippled a sabotage group which operated against the railroads. Just when a sort of barrier of sabotage detachments and radio agents had been set up in Alsace and in the Burgundian Gateway - a similar phenomenon was noted in northern Denmark. Here three groups of radio agents were noted: one in northern Jütland, a second in eastern Jütland, and a third near Copenhagen. The last was the most important and exercised some influence upon the other two; its traffic with England was very active. The purpose of these groups were to reconnoiter military objectives, to transmit messages and to prepare and carry out acts of sabotage. The speed with which things happened in the spring of 1945 did not give this organization a chance to accomplish much.

RADIO AGENTS IN HOLLAND

Holland is the only country in which the English radio agent service had downright bad luck, simply and solely because of the arrests in the "North Pole Case." Not until 1943 did the English begin slowly and gropingly to develop a new net. In August three transmitters appeared on the west coast but again the Germans carried out several successful raids.

On 3 February 1944 the Germans picked up an agent station in Amsterdam. That led to a major break into the newly organized Dutch spy

organization "Ordre-Dienst." The principal agent, von Borsum-Builsman, was arrested. Documents seized revealed that the former radio deception become known in November 1943 when Dourlein and Ubbink escaped to Switzerland.

Later the Germans made further raids but did not succeed in breaking up the new organization. A new invisible spider began spinning its net over the country. Before the invasion started, the work of the British agent stations in Holland had expanded enormously. That remained true after the new western front had stabilized for a time. Moreover, an absolutely new organization of the entire Dutch resistance movement had resulted. The three major groups

Ordre-Dienst
Raad van Verzet
Knock-Ploegs

now combined to form a triangle, the so-called "Delta."

Beginning early in September 1944 the military forces of the Dutch resistance movement (including those in German occupied territories) were placed under the unified command of Prince Bernhard, who in turn was directly subordinate to Eisenhower. At the same time the Dutch Government proposed to recognize the resistance organizations officially as Dutch armed forces.

Orders were then issued to the resistance organizations to protect important public works, such as water works and electric power plants, the docks at Rotterdam, Amsterdam, Ymuiden, the broadcast transmitters, telegraph offices, and repeater stations. They were also to seize a number of bridges and prevent the Germans from blowing them up. Minefields were also to be marked and advancing Allied troops were to be aided by agents familiar with the locality who were to report in pairs with a password to the signal officer of the nearest brigade.

The Government also tried to induce experts on harbor administration and the regulation of rivers to agree to be smuggled to Eindhoven by agents. One route ran via Culemborg - Piel. Later agents were ferried across by canoe.

Of course the Germans raided some of the agent stations but they merely succeeded in getting a picture of the organization and work of the "Delta" without being able to combat it effectively. Partial success was achieved, in particular in respect to the famous English parachute action near Arnhem which turned out disastrously. Now all the resistance movements in the country were assigned to intelligence work in order to procure dependable information. This required time, naturally, and never assumed great proportions, although at times some 30 stations were working.

Late in 1944 the transmitters working in Holland might be divided into two groups:

1. A group with some 15 radio stations of the "Delta" triangle,
2. Another group of about 15 stations which apparently belonged to a British organization for airborne and parachute troops.

What now ensued on the German side was a hopeless struggle, just as hopeless as the one a year before in France.

Of the more important "cases" on Dutch soil the following may be mentioned:

"Gerhard case." The seizure of an agent station in Zaandam in March 1944 dealt the "Ordre-Dienst" a serious blow. 14 sets were seized, along with cipher data and operation schedules.

"Fallschirm case." In October 1944 the German radio defense seized an agent station in Leiden which worked on ultra-short wave and had sent to England reports on the use of the V1 (Vergeltungswaffe). Only part of the clever group of agents was apprehended.

"Rotterdam case." In December 1944 a station was raided in Rotterdam and a complete plant for the production of false identification papers with numerous rubber stamps of German military and party offices fell into German hands. In this case an organization was involved which supplied resistance groups and sabotage units.

POLISH RADIO AGENTS THROUGHOUT THE WORLD

Aside from their agent nets in Poland and France, the Poles had a great system of agent networks which covered all Europe and extended into the Near East. It is obvious that because of its central location and neutrality Switzerland afforded favorable conditions for setting up such a net. An organization was developed here which increased in importance, especially after the end of 1943. The connections of the Poles with Switzerland were more extensive and varied than those available to the various French organizations. Moreover the local chief, Captain Choynacki, was one of the best Polish intelligence officers. Over a transmitter in Switzerland espionage reports were sent currently to London. Beyond a doubt the British "Secret Service" is one of the best secret services in the world. There are people who claim it is the very best and I am willing to believe it. And even if it didn't work with poison, murder, bombing, safe cracking, and burying people alive, as National Socialist propaganda claimed, it undoubtedly had pulled off many a clever stunt with the result that over the decades the British Government has been one of the best informed in the world. It was that way before World War II and it was that way during the war. However, twice during World War II its work was outshone as the moon is by the sun. Once by the work of the "Rote Drei", which has been described in detail. And the second time it was again by a group working in Switzerland. This time it was by the work of Captain Choynacki in collaboration with the office of the Polish military attache in Berne.

In the "Rote Drei" case proof has been offered. In the Choynecki case I should like to omit such proofs. If I were to give all the messages - or even the most important ones (and who can say which message was not important?), if I tried to give all the telegrams from the Marne to Brest-Litowsk, from the "Rote Kapelle" to "Otwock", from the North African Theater to Stalingrad, then it would make not a book but a sizeable library!

I hope, therefore, that the reader will believe without proof that the "Berne case", as we shall call it, belongs alongside the "Rote Drei" as one of the most sensational cases of World War II. What was sent out from here by the Polish secret service was of great, in many cases decisive importance for the Allied conduct of the war.

The fateful thing for the Germans - just as in the "Rote Drei" case - was the fact that the intercepted telegrams were deciphered much too late. When they were deciphered and laid before influential persons in Germany, it was well that the office chairs of these gentlemen were sturdily constructed, with stout broad arms which kept them from falling from their seats and allowed them to rest the hand lamed by terror on those broad arms and say with resignation: "Ben Akiba lied! Such a thing never happened before."

The gentlemen were right, even though they were often wrong.

As a sample of this Berne case I should merely like to mention the fact that that dramatic final German offensive in the East, which began on 4 July 1943 near Orel and showed in the very first hours that it must inevitably fail, had been betrayed in all details back in the spring of 1943 by this Polish group! Three months before the first shot of this offensive was fired, every detail had been transmitted, including every division, every tank, and every gun! All this and much, much more!

The content of decrypted Polish telegrams revealed two things:

1. That the man who supplied the information was undoubtedly in Hitler's immediate vicinity;
2. That the content of foreign diplomatic and military messages decrypted by the German cryptanalytic service was known to that man.

The German Chief Signal Officer, Fellgiebel, Chief of the entire German Intercept Service and Signal Service (who was hanged by order of Hitler for participation in the conspiracy of 20 July 1944), then issued orders that decrypted foreign messages should be shown to only a limited number of persons. This number was cut down more and more. The Chief of German counterintelligence, Admiral Canaris, personally conducted an investigation for the purpose of discovering the mysterious source of this Polish information. All in vain! The riddle remained unsolved!

In June 1943 the transmitters of the Polish agents were distributed as follows:

England	5
France	6
Switzerland	3
Italy	1
Poland	15
Hungary	2
Romania	1
Turkey	2
Iraq	1
Egypt	1
Iran	1
Palestine	1
Algeria	1

The Polish agents in Romania pulled a hot one in 1943. Two Poles employed by the Japanese attache in Bucharest used the transmitter of the Japanese military attache to transmit their messages in a feeling of absolute security. In addition they installed two additional sets, one of them concealed in a large broadcast receiver. These transmitters caused the Germans a headache for a long time but at last a surprise raid was pulled off with the consent of the Japanese, who were not a little astonished to find they were harboring Polish agent transmitters in their own quarters.

The Poles were arrested; the material confiscated. This gave considerable insight into the organization of Polish espionage in Romania.

Subsequently Major Ziemianski, the principal Polish agent in Romania, was apprehended and the organization broken up, at least for a time. It had been directed by the Polish espionage service in Istanbul. The craziest thing about the whole crazy affair was that the two Polish operators were cleverly using the couriers of the Japanese embassies in Bucharest and Istanbul to carry their reports.

THE NEW FRONT IN THE WEST

After the new front in the West was formed and had stabilized in the fall of 1944, the Germans began intensive intercept activity for the purpose of learning the grouping and intentions of the enemy forces. In this connection it is very interesting to study the extent to which the several Allied armies gave the Germans information regarding their situation by their use of radio telegraphy.

The Canadian First Army was extremely cautious in its use of radio so that the Germans learned almost nothing.

The English Second Army was a little more generous but even here the results of the German intercept service were rather modest. The American

Ninth Army was very silent and usually gave the Germans little to work on, so little that on many days the German intercept service had nothing to report.

Conditions were similar in the case of the American First Army.

The most profitable target for the German intercept service was the American Third Army; it sent an exceptional number of radiograms and was very incautious.

The American Seventh Army, on the other hand, could be compared with the American Ninth since it was very careful and sparing in the use of radio.

The French First Army was also very cautious at first, but in November shed its reticence and later supplied the Germans with very good intercept results.

AGENT RADIO AS INDICATION OF OPERATIONS PLANNED

The monitoring of agent traffic, when combined with careful evaluation, often made it possible to recognize the area in which the enemy was planning new operations. If a considerable number of new agent stations appeared in an area occupied by German troops, it could be assumed with certainty that this area had been picked for a major operation. Hence the mere fact that such stations appeared was enough to justify far reaching conclusions. For instance, in the spring of 1944 there was considerable increase in agent traffic along the northern coast of France. On 6 June followed the invasion of Normandy.

Beginning in May 1944 an increase in the number of English stations in southern Greece and on the islands of the Aegean was noticeable. In October most of these islands were occupied by the Allies.

Beginning early in June 1944 it was noted that a center of agent activity was developing on the French coast between Toulon and Nice and in the Grenoble area. Five weeks later came the Allied landing.

In the very early days of August 1944 agents were dropped by parachute in Holland, primarily around Eindhoven, where British airborne forces were employed in September.

Moreover, the intention to shift the focal point of operations in the east to Hungary was revealed early in this manner. There was a regular parachute invasion by agents.

On 30 June 1944 the Germans captured the Russian parachutist Beatrice Markovich south of Budapest. Shortly thereafter the operator who had dropped with her was arrested. Beatrice M. was supposed to use her knowledge of the language to contact German officers and gather military information.

On 9 July along the Slovak - Hungarian border east of Humenne a group of Soviet agents was dropped and all efforts at apprehension proved vain.

In the night from 26 to 27 July, 13 Russian agents (10 men and three women) were dropped with two radio sets, explosives, ammunition, maps, etc., near Sarkad - Hokviese (east of Beresaba). Some were arrested or shot but most of them escaped.

In the Banat southwest of Novi Bejee, two English officers parachuted down in a uniform with Soviet stars. They had four radios along and were assigned to the English military mission to Tito, for which they were to gather information from the Banat and Belgrade.. Both escaped.

On 17 August nine parachutists were dropped east of Grosswardein. Two were arrested, one operator was shot in the melee, and another operator was apprehended.

All these cases indicated clearly areas which were to be focal points of action in the near future.

Beginning in mid-July 1944 a considerable increase in the number of English agent stations behind the then southern front was noted. This was a sure sign of impending major operations in the area.

The most striking example of the extent to which impending enemy action could be recognized by watching the employment of agents was to be found on the east front between August 1944 and 12 January 1945. This was the initial phase of the final Russian offensive.

Beginning in August 1944 the Germans noted in the western part of Poland an increased employment of Russian reconnaissance groups with radio equipment; they worked with the characteristics of partisan radio. The individual groups were well armed and combined into bands of several hundred men. They were in contact with radio control stations in the Russian front area.

As the Russian front approached the frontier of East Prussia, the Vistula and Slovakia (late October 1944) there was a change in the employment of Soviet espionage and reconnaissance. Ever since summer there had been a noticeable decline in reconnaissance in depth and in strategic espionage on the part of the highest Russian authorities. Apparently the reason was that a large number of raids and German radio games had caused the value of this type of long-range reconnaissance to sink in the estimation of the Russians. Moreover, military operations had already prospered to such an extent that the Russians could now dispense with strategic long-range reconnaissance, since for final success purely military means, supported by tactical and operational reconnaissance, were adequate.

The approach to the German frontier had overtaken and left behind most of the partisan bands (except in Slovakia) and thus eliminated one of their principal sources of intelligence. Moreover, the Russians

could no longer count to the same extent as before on the cooperation of the natives.

Espionage now became primarily a concern of the front staffs and served chiefly for operational aims. Agents were employed in areas where military operations were planned and this shift in the use of agents was soon recognized. The missions assigned by the front staffs and the general staffs included reconnoitering basic factors in the enemy's military defense. Few sabotage missions were assigned. The groups employed were to limit themselves to pure intelligence work.

The Russian front staffs now received reconnaissance results from the following sources:

1. From agents: (groups of scouts beyond the main line of battle ranging to a depth of almost 300 km.)
2. General reconnaissance by the troops (air and ground).
3. Signal Intelligence (intercept service and cryptanalysis).
4. From evaluation of own sources (captured documents and statements by prisoners).

The employment of agents before the great Russian offensive did not take place all at once but started slowly about August 1944 and long before the front stabilized in October it indicated the focal points of coming operations. Three principal periods of time could be distinguished:

- a. To mid-October,
- b. From mid-October to early December,
- c. From early December to the beginning of the offensive.

If we examine the groups of agents employed in these periods and their work, we see clearly the focal points and lines of thrust proposed. It was interesting to see the almost unbroken sequence in which the Russians reconnoitered military objectives, supply routes, fortifications, etc. in the areas of interest to them. It was patent that in East Prussia where the German counterintelligence network was closer meshed, any groups eliminated were always replaced by new ones. That was proof that the Russians were especially anxious to spy out this area.

Since the Russians used a large number of these scout groups (average strength some 6 men with one operator), it was frequently possible for them to check reports of several groups against one another and eliminate some of the false statements which consciously or unconsciously appeared in agent traffic.

When groups were dropped, they were given the usual set "Sewer" (output about 2.5 watts, range about 500 km); the supply of batteries was generally used up in two months; consequently if a group was still operating after two months it was clear that it had been supplied from the air. That meant that the Russian staff stressed the achievements of this group, since only those groups whose work came up to expectations were supplied by air; others were either recalled or left to their fate.

By concentrating on areas of importance for impending operations, the Russian spy net became so dense that in such sections as East Prussia, the Posen or Krakow area, virtually every bit of railway was under constant observation; other important military objectives were likewise constantly checked by radio agents.

Regarding their conduct in the areas of commitment we should note the following: groups employed in the summer of 1944, in particular on the 3rd White Russian Front, had some fighting strength. They generally consisted of some 15 qualified agents under the command of a Russian officer and moved about in their area of commitment in the manner of a small partisan detail. The results of their reconnaissance were very comprehensive, as was seen from decrypted messages.

By a very clever adaptation to the situation and by staying in inaccessible areas, several individual groups were able to carry on their work successfully for months. If such a group found conditions favorable, it would recruit informers among the local population or would use local people as watchers to warn of any danger. The missions of these groups included, along with spying out military objectives and reporting on transportation, reports on the morale of the population, subversive activity and - occasionally - sabotage. They were also to watch German administrative measures, the use of identification papers, police regulations, the economic situation and details on all leading personalities.

When a great mass employment of scout groups began in October 1944, these groups had fewer people and their missions were more precisely defined. They were forbidden to contact the local population. German prisoners of war were often assigned them for the procurement of provisions. The missions were generally to be completed by the time Russian troops arrived.

How successfully the Russians had prepared for this final, wholesale employment of scouts is apparent from the fact that about 100 such groups worked uninterruptedly for longer than two months and passed their reports by radio to their employers. Moreover, more than 200 other groups of radio agents were committed which were not directly identified by the German monitors (the first mentioned 100 groups were recognized positively!). This means that the final Russian grand offensive, which began on 12 January 1945 and crushed the German eastern front, had been prepared for by some 3,000 agents with approximately 500 radio operators!

Working with the security police and other agencies, the German radio defense was able to break up approximately 100 scout groups in a period of about 4 months; this, however, was not even a third of the number committed by the Russians. Nevertheless, what was learned in combatting Russian radio agents was quite adequate to give the German military command clear indications of the operational intentions of the Russians and the proposed line of advance of their army groups.

If the German top command had evaluated the reports as they deserved and had shaped its own measures accordingly, the German eastern front would not have been split up into single groups. Rigid adherence to their own operational notions, contempt for Russian leadership, disregard of everything which gave strategic and operational intelligence regarding the enemy, and slavish execution of the strategic ideas of the "greatest general of all times" resulted in the smashing of the German eastern front within a few months.

No doubt the mass employment of radio agents greatly facilitated the military success of the Russians. They were able to gather the ripe fruits of this activity so quickly only because the Germans utterly rejected any active evaluation of the warning signs obtained by monitoring Russian agent traffic. Consciously or unconsciously one no longer tried to take effective countermeasures and to launch new operations on the basis of the intelligence gained. The upper echelons simply allowed themselves to be guided by the will and whimsy of Hitler. One either was resigned or one placed hope in the use of those fabulous wonder weapons of which there had been so much talk for two years.

In no enemy offensive could the details be foreseen so promptly and so completely as in the case of the Russian offensive of 12 January 1945 and in no other case were the results of our own intelligence so utterly disregarded.

FROL AND COMPANY

Generally speaking, the agents and their radio operators were very cautious and clever. But there were some who, despite their ability, were incautious and so prepared for themselves a speedy end. A case in point was the agent Frol, employed in Berlin by the English. Ivan Frol was a Croatian by birth who had had an unstable life as technician in Italy, Germany and South America. In 1943 he was located by a Yugoslav embassy in South America and sent to England as one subject to military service. Because of his good knowledge of German, he was immediately trained as an agent. After several unsuccessful attempts he was dropped by parachute near Heilbronn on 2 October 1944 with his radio man Betzinger. From there they made their way to Berlin by train and found lodgings in Berlin-Charlottenburg, Sachsenplatz 5, an address given them in England. Here they set up their radio set.

The two began work. Their radio connection was good. Frol fathered information which Betzinger forwarded to England. That their work was not unimportant is obvious from a message sent on 21 October 1944:

"It is urgently necessary to bomb the General Staff Building in the Bendlerstrasse. Position is 100 meters NW of bridge over Landwehrkanal. Destruction will interrupt intelligence communication with all fronts. Reinforced concrete roof 4 meters, walls 2-1/2 meters thick. More exact report follows by courier. Source B."

The first rash act on the part of the two was to transmit diligently without changing the location of their set so that the German intercept service soon noticed this new traffic and learned the approximate location by close range D/F-ing. Still it might have been weeks before a raid would have been possible, if Ivan Frol had not been guilty of the same kind of stupidity that proved fateful for so many. He talked.

He liked especially to talk and drop hints during air raid alarms and when he met a man with a Polish sounding name in the air raid shelter near the Zoo and discovered that the man lived in Reichstrasse (in the same area as he), his shyness disappeared and he proceeded to tell how he had come from England and dropped by parachute and that he had important things to do. The man with the Polish name arranged to meet Ivan shortly thereafter at the corner of Leipzigerstrasse and Friedrichstrasse. He also reported the matter promptly to the police and Frol was arrested at their rendezvous on 28 October.

He immediately confessed everything, identified his lodgings on Sachsenplatz and his operator.

The following day the police raided the station. Betzinger defended himself with a gun and was shot down after a long exchange of bullets.

With that the activity of this group was at an end.

THE GERMAN CHRISTMAS OFFENSIVE 1944

Who has forgotten the howl of triumph in the National Socialist press when on 16 December 1944 the celebrated German Christmas Offensive, between St. Vith and Monschau broke loose against the American First Army. It was the last offensive which the armies of Adolf Hitler were to undertake. The press brought out article after article on the unconquered and unconquerable strength inherent in the National Socialist State and its armed forces. And when the first successes were recorded, people were fairly turning somersaults. Now the Americans would be shown a thing or two! Now they were to be driven back to France and annihilated in great battles of encirclement. Broadcasts were made in the Flemish language, appealing to the population of Belgium to prepare for the new coming of German troops, not to leave their cities but to wait patiently for a new liberation. Within a short time all Belgium would be occupied.

But it did not turn out that way. After ten days, during which certain successes were obtained, the German offensive began to bog down; on 29 December it was completely stopped. A bitter struggle began. Then on 10 January the German retreat started slowly. The dream was over. The offensive had shown not how strong Germany still was but how little offensive power was left in the German army.

How was it possible for the relatively weak German forces to score such remarkable initial successes? How was it possible for the offensive

to take the Allied High Command so completely by surprise as to bring the American First Army into a critical position?

The swift change in the military situation in the west in August 1944 did not for the moment greatly change the radio agent situation. These agent operators did not move back with the retreating German forces but remained in their own areas.

After the front had approached the German boundaries, the activity of radio agents in France and Belgium fell off gradually. Most of them ceased sending during the second half of October.

In September 1944 a new situation arose in the west. Till then the Allied agents had had an easy time working and building up resistance organizations among the predominately anti-German populations of France and Belgium. Now it was necessary to use German speaking agents in German territory. Such agents were not available in great numbers and their work was not as easy as that of the French and Belgians in the occupied territories had been.

At the northern end of the front in Holland and at the southern end in the French Departments Doubs, Haute Saone, and Vosges conditions were more favorable for the agent. Here he was given stout support by the Dutch and French population. Hence Allied spies worked from the two ends of the line over into the German area of operations. It was possible to introduce into this area relatively quickly a large number of agents, although many of them were promptly apprehended by the Germans - not less than 450 in the single month of September 1944!

Sometimes the Germans were able to carry on very profitable "radio games", e.g., on the southern sector in November 1944. On 1 November they apprehended a French agent Le Touche as he crossed the lines near LaForge with a radio set and various instructions. He was "turned" and used for a deception which was maintained almost two months.

Gradually, however, a kind of vacuum arose on German soil for the Allied radio agent service so that by the end of October 1944 this means of intelligence virtually had to be written off and no information was obtained regarding the situation behind the German front. That is why the Germans were able to assemble troops for the "Christmas offensive" quite unnoticed by the enemy.

On 26.12.44 General Payton March, Chief of Staff, stated that the lack of dependable information on the military situation of Germany had been responsible for developments on the western front.

On the same day one U.S.A. intelligence agency reported that the success of the German offensive in the west was attributed in official circles to the failure of Allied intelligence. A clean-up was to be expected which would extend into circles close to General Eisenhower.

Early in 1945 British and especially American intelligence began building up a new network of radio agents behind the German front and in occupied Holland in order to get reliable information on which to base future operations. This heavily financed activity was successful. In a few weeks a system of smoothly functioning agent stations came into being. The last phase of the struggle in the dark began and the scales soon tipped swiftly in favor of the Allies.

A WONDER-WEAPON AND ITS HISTORY

The result might be quite interesting if someone cared to take the trouble to record the number of times Hitler, Goering, Goebbels, Milch, Fritzsche and many other leaders of the Third Reich stated positively that air superiority was decisive for the course and outcome of a modern war.

The validity of this statement is not open to criticism, World War II has supplied unmistakable proof. It is all the more surprising then that the German air force, which had manifested decisive superiority in the first two years of the war, began to decline in the first phase of the Russian campaign, one may even say had begun to decline (at first scarcely perceptibly, but then more and more obviously) in the autumn of 1940. After the campaign in the west, after experiences in the "air battle over England" in August - September 1940, after experiences over Crete, etc., one would have expected that every effort would be made to develop the German air force, especially since the German intercept service and other means of intelligence showed clearly that in England and in the USA the value of the air force in modern war had been recognized quickly and the output of the aviation industry was being increased to the limit. The figures reported from America were so high as to challenge attention before the middle of 1940. Nevertheless, in the fall of 1941 it was clear that the German air force was being eclipsed and in 1942, when the British began air attacks on German territory, people in Germany asked anxiously what had become of the German air force that was to prevent such attacks. The summer and autumn of 1942 showed that the German air force no longer dominated the air over Germany. How had this been possible?

To answer the question, it is necessary to recall the origins of the German air force. It had been developed by a small group of officers with a high degree of technical and tactical training. These included Wever, Udet, Loeb, Kesselring and Jeschonnek. Wever was a real strategist and tactician, and ideal German general staff officer. Udet was the leader in practical work and commitment tactics. Loeb was the man of vision who planned and promoted the German aviation industry. Kesselring was a good organizer and administrator - perhaps a bit too grandiose in his ideas but a man of ability and energy. Jeschonnek was the genius of tactical planning. The others who came into the picture were - apart from a few capable specialists - healthy and ambitious men looking for a career. Wever was killed in an accident before the war. Udet lost his life in the Russian campaign under peculiar circumstances.

Loeb had a fatal accident in the summer of 1940. Kesselring - yes, his was a peculiar story; he became a General Field Marshal and held high commands in Italy to the end of the war, but strangely enough in the army rather than in the air force. He was a victim of the most debated person in the German air force: General Field Marshal Milch. Many people have called Milch the evil genius of the German air force; he was a career maker of the purest sort.

Germany found no replacement for these men, or perhaps did not know how to put the proper men in their places. The decline of the German air force began back in the summer of 1940 and this decline eventually proved fatal for the Third Reich and fateful for Germany.

There were plenty of reasons for the gigantic catastrophies of 1944 - 1945. Without question, one of the most important reasons for the German collapse was German air inferiority from 1942 on.

Mention has been made of the fact that the German intercept service recognized during the first half of 1940 that the development of the aircraft industry in the U.S.A. was assuming alarming proportions. It was no great trick to figure out when the results would begin to be manifest in the European theater.

People in the German Ministry for Air and in OKL underestimated the capacity of American industry and did not believe these reports. Hitler himself called the figures "astronomic and of no significance because they were Utopian." Nevertheless it was certain that the struggle with the fast expanding American superiority in production could only be carried on successfully by superior and clear sighted leadership.

Even before the war, work on a new type of propellerless turbine - air stream propulsion (jet aircraft) had led to promising results. In the spring of 1938 the possible use of such propulsion devices was discussed. Computations and preliminary studies at the Messerschmitt plants from the fall of 1938 to the spring of 1939 showed that a plane with the new device would have far more speed than the old planes with gasoline motors. Work began at once on plans for a "Strahljäger."

In June 1939 a project of the BMW* for a pursuit plane with two jets was laid before the Ministry for Air. This was given the model designation "Me 262," which later became famous. This model corresponded, except for some minor details, to the final Me 262. On the basis of this draft, the Ministry for Air ordered the construction of three experimental planes; construction was to begin in 1939. Early in 1940 the experimental workshops were busy producing devices and single parts and about the middle of 1940 the first plane reached the assembly stage.

This machine represented the first stage in a development calculated to bring about a basic change in air warfare. There were two reasons: speed and fuel economy. Speed is of decisive importance in

* BMW = Bavarian Motor Works.

a pursuit plane and the first year of the war had shown that the superior performance of German planes could hardly be maintained in the long run because high performance gasoline motors were not available in Germany.

It now appeared that the production of the jet power plant could not keep pace with the development of the aircraft. On the one hand, great difficulties of a purely technical character were encountered in developing and testing a new type of propulsion; on the other hand, surprisingly enough, an incomprehensible lack of interest in this revolutionary novelty was displayed in official circles. What happened was the exact opposite of what might rationally have been expected. In the firm conviction that the war would end with a quick victory, people thought that active furtherance of this work was not urgent. They thought the jet plane would come out much too late to play an important part in the war. This attitude prevented suitable continuation and expansion of the intensive work already done. It is true that a few people in the RLM did have vision, but their effort came to naught "in official channels" leading through their superiors.

Not to let time pass unused, the Messerschmitt Company installed a normal gasoline motor in the abbreviated nose of the first experimental apparatus. On 18 April 1941 the Me 262 (without jet propulsion) made its first flight. Some valuable information was gathered but the primary purpose - development of the jet planes - was not furthered. Thus a full year passed, a costly year that could never be made up for, because the delivery of the first jet engine was delayed a full year due to inadequate support of the company. Finally, on 25 March 1942, the Me 262 started for the first time with two BMW jets. These experimental flights showed, however, that the engine was not yet up to expectations.

Meanwhile the Junkers Company, which was working on a similar engine, achieved a fairly good experimental form and there was hope of getting ahead faster with this model. A second Me 262 was equipped with this engine. The first flights were made about the middle of July 1942. The Junkers engines still showed various defects, especially in regard to regulation, but they were reliable enough to justify experimental operation.

The pilot who flew the plane was enthusiastic about its performance. It had now been proven that a wonder-plane had actually been created.

In 1940 Schulze-Boysen (see Rote Kapelle case) learned of the work on this new type of aircraft. He took a great interest in the matter but agreed with various high officials of the RLM that no usable machine of this type could be produced in the foreseeable future. It may be, of course, that Schulze-Boysen was the man who intentionally belittled the project in the Ministry for Air in order to sabotage development. There is evidence that he put out propaganda against the Me 262. Through Schulze-Boysen the agents of the "Rote Drei" learned of the development and through them word reached England in 1942. Here the reports were initially considered day dreams and not until 1943 apparently was any serious effort made to spy out the truth. Early in 1944 England was fairly well informed regarding the state of development.

Any sensible person would assume that after the brilliant results of the first trial flight with the jet engine, people in Germany would have done everything possible to get this device into assembly line production. Quite apart from some valuable tactical advantages, the Me 262 with a maximum speed of 870 km per hour afforded an advantage of more than 200 km an hour over the fastest planes in the world. And that at a time when all countries were on a so nearly equal footing that they were straining every nerve to gain an advantage of even one kilometer.

Nothing of the kind happened. The Ministry for Air late in 1942 issued an order for a total of 5 experimental planes (I repeat: five!) and 20 others which were to be delivered by the end of 1943! At the time a program was worked out providing for a production of 20 machines of the Me 262 type a month (I repeat: twenty a month!).

Whenever before and during the war people compared notes on the three armed services, it was generally agreed that the German air force was relatively the most advanced, that it acted most swiftly and took account of changing situations faster than the others. In the present case I should consider the term "sleepy heads" a piece of flattery. There is absolutely no word for such an attitude. Obviously the people were not capable of estimating even approximately the importance of this new invention. Perhaps there were people in the Ministry for Air who didn't wish to. But it was not only the RLM which revealed the lack of interest, even OKL clearly manifested the same indifference. The Office of Development of the RLM addressed several letters to the command of the air force describing possibilities of using the device and offering to reveal the specifications they wished to make for this aircraft. The letters remained unanswered! Only after repeated admonitions by RLM did a message come from the command staff of the air force early in 1943 to the effect that the number of jet planes specified for delivery in the program was considered adequate and that after gathering sufficient experience at the front this number might be increased at the expense of other types. Anyway the air force staff was not concerned with laying down any specifications for such an aircraft! That was the upshot of efforts of the German air force through "channels."

This didn't help the German aviation industry - in this case the Messerschmitt Company. What the company needed was a sympathetic, intensive furtherance of the project from above, since the capacity of its plants was by no means equal to the current demands, to say nothing of providing for large scale production of the new machine. Before the Me 262 could go on the assembly line everything would have to be rearranged and brought up to the minute, since the project was already three years old! At the time development, construction, and servicing of a number of other types had to be carried on with a very small number of workmen and draftsmen. The necessary technicians could only be drawn from the aviation industry itself and for this the aid of the RLM was essential. The total capacity of German aviation industry was fairly great and if work had been concentrated on a relatively small number of critical tasks, it would have been possible to make ample deliveries of the tactically necessary types.

It was the duty of the RLM to exercise control in this matter. But this was precisely where the leadership failed completely. Late in 1942 no less than 53 types of planes (disregarding various sub-types and series) were in use or under construction. General Field Marshal Milch could not comprehend the need for changing this situation and did not stand up against the special wishes of the generals in the various services and it was due to these special wishes that the multiplicity of types had been developed. This explains why the output of the aviation industry was so much less than capacity. It also explains difficulties of supply and with the ground organization.

The agents of the "Rote Drei" were very well informed regarding these conditions and numerous reports on the subject went from Switzerland to Moscow.

Repeated suggestions by men in the industry that production be limited to 6 or 8 basic types in order to get higher production were not listened to by Milch. In the face of such an attitude all efforts at increasing production were virtually doomed to failure.

In April 1943 the Messerschmitt Company finally succeeded in interesting the troops in the Me 262. Captain S., chief of an air force testing command, flew the Me 262 and was enthusiastic about it. He declared that even in the experimental model it could be used to great advantage at the front. One month later Major General Galland took off from Lechfeld on a fairly long experimental flight. He returned greatly impressed. He was convinced that with tactics adapted to the performance and peculiarities of this plane air warfare would be completely revolutionized. He called for delivery of 100 planes before the end of 1943 and for the building as soon as possible of large numbers - in addition to the previous program for fighters with gasoline motors. He promised to convince Hitler through Goering that the Messerschmitt Company should be given the necessary support. Shortly after Galland's visit Milch called for detailed plans for assembly line production of the Me 262 and promised to take special measures to assure supplies. At the same time he stopped production of several other machines.

Galland's request for delivery of 100 machines by the end of 1943 could not be complied with, - too much time had been lost. This number could not be turned out until May 1944 at the earliest. Quick production in series could only be guaranteed if the RLM met the conditions which had been discussed repeatedly. These were:

1. Giving the Me 262 top priority.
2. Absolute protection of the workers against claims of the armed forces (hero catcher program.)
3. Prompt fulfillment of detailed, specific requirements in the way of material, machines, men and space.

A few weeks after the Messerschmitt Company stated its requirements, it was clear that these could not be met by the RLM. Obviously no progress could be made without the aid of Speer, Minister of Armaments.

The chairman of the Messerschmitt board, Seiler, then had a conference early in July 1943 with Sauer in the Ministry of Armaments and laid before him various facts: that in the view of General Galland and other experienced officers the Me 262 afforded the air force an unparalleled opportunity, that the RLM was not in a position to supply the men and machines necessary for this program, that General Field Marshal Milch had shown no sympathy with the suggestion that the number of types in production be cut below 53 to get capacity for the Me 262, and that in consequence the support of the Ministry for Armaments was urgently needed. Using reports from agents in France, President Seiler endeavored to prove that the air superiority of the Western Allies was increasing from week to week although the command of the German air force was not drawing the proper inferences from this fact.

Sauer pointed out that he had been told a few days before by Hitler to take charge of the construction of submarines in order to increase greatly the production of these vital weapons. For this reason alone he would not be in a position to intervene actively. Moreover, he thought that Seiler was too pessimistic in his view of the air situation. The enemy was suffering in its attacks losses which it could not stand in the long run. At the present there was going on a test of morale which had to be won. In spite of all the air attacks since the spring of 1943 only eight percent of German industry had been put out of operation by the beginning of July. The only decisive weapon was the submarine; he was confident that submarine warfare would be resumed on a large scale in November 1943.

It is hard to say which of Sauer's lines of thought was the more surprising. World War I had clearly shown that submarine warfare does not decide a war. Now, when the Allies were combatting submarines effectively with their radar, one could no longer count on a success with this weapon, even if thousands were employed. Regarding the increasing superiority of the enemy as a temporary test of morale when America was just starting to produce bombers is simply incomprehensible. One can only comprehend it if one assumes that Sauer was getting his information on other countries solely from the broadcasts of Hans Fritsche.

After an interview lasting nearly two hours, Seiler left Mr. Sauer with the impression that the latter simply did not comprehend the simple fact that a modern war cannot be waged with any prospect of success without clear superiority in the air. Speer was soon to get a sharp lesson. The British attack on Hamburg showed what the score was. In the wake of this catastrophe Sauer delivered a lecture at Hitler's Headquarters and mentioned Seiler's suggestion. He said he would be ready now to take over the guidance of the aviation industry but on condition that he be given full responsibility. The German leaders, however, were not at that time ready for any such incisive measures. Again months were allowed to pass and this was in the summer of 1943 after the disaster in North Africa, after Sicily, after Stalingrad, when Allied air raids were increasing in number and violence.

In September 1943 Seiler approached General Field Marshal Milch once more, supported this time by Director General Frydag of Goering's council. The two gave Milch their opinion that a number of models of the Messerschmitt, Dornier, Junkers and Focke-Wolf lines must be dropped to get capacity for the Me 262. But if the gentlemen had assumed that under the influence of the Hamburg disaster Milch would grasp the need for new revolutionary decisions, then they had deceived themselves mightily. Milch accused Frydag of accepting bribes from the Messerschmitt concern because he was representing its interests. The interview was fruitless; not a single type was dropped. The motto everywhere (not merely in the air force and RLM) was "wash my hide but don't get me wet!" The fact that this was jousting with windmills and evading the issue, that the aviation industry had only limited resources and was heavily overburdened, either was not comprehended or else people purposely closed their eyes and played strong man. "Oh, well, we have to do it, nevertheless!" strong words, but feeble brain work.

Air Force Program number 223, drawn up late in August 1943, provided for serial production of the Me 262 in January 1944 and for an increase to 60 planes per month by May 1944. Beginning in October 1944 after a complete change over to large scale production, the output was to jump to a maximum of 1000 planes a month in September 1945 - I repeat: 1945, i.e., two full years away. If this program was nonsensical at a time when the air superiority of Britain and U.S.A. was becoming more manifest every day and when only quick action could be of any avail, it was obvious that the program was a mere pipe dream in view of the inability of the RLM to meet the requirements of the Messerschmitt Company. All these programs were drawn up with an eye to their propaganda value, so that the proponent might play the strong man in lecturing on the subject at Hitler's Headquarters and perhaps get a decoration.

British and American air activity over Germany showed that assembly line production of aircraft in Allied factories had really started. The restoration of German air superiority had become a vital matter. The problem could only be solved by a complete break with previous methods.

Meanwhile the British agent service had not been asleep and as a result people in England were fully aware of the danger threatened by the Me 262. They decided to act. On 17 August there was a heavy bombing attack on the Regensburg plant which was badly damaged. It was due solely to the initiative of a few of the leading men that production could be resumed in a relatively short time. The system of moving, camouflaging and protecting the workshops had justified itself completely. Nevertheless valuable time had been lost once more.

In October 1943 the manager in Regensburg induced Goering to agree to inspect the reconstructed plant. At the same time he wished to hear all complaints about inadequate support of the Me 262 program in the past. On 2 November Goering appeared with Milch, Galland, General Vorwald, Colonel Diesing and several engineers of the RLM. President Seiler had agreed with all his men to take full advantage of this one favorable opportunity to tell Goering all their desires and all their

complaints, even though the gentlemen from the RLM and Milch might not be exactly delighted.

Reichsmarshal Goering opened the meeting by requesting the gentlemen of the Messerschmitt Company to speak quite openly and set forth all their desires and complaints. In the conference, which lasted several hours, the history of the Me 262 was given in detail and with absolute frankness, likewise all efforts to secure machines and personnel, which thus far had brought no satisfactory results. Using tables and diagrams they demonstrated that, because of lack of hundreds of technical men, production was so far behind that the delivery dates suggested in the program would have to be delayed by months, entirely due to inadequate support on the part of the authorities. The statements by the men at the Messerschmitt Company were confirmed by a staff engineer from the staff of Colonel Diesing, although Field Marshal Milch kept popping up with objections like a jack-in-the-box.

After four hours the meeting came to an end. Goering promised to see to it that construction should be furthered so as to make possible the production of considerable numbers of machines. The truth of the matter is, that Goering's visit did not help the Messerschmitt Company at all, although all the leading men reminded the offices concerned of the promises made by Goering.

It is an elementary observation that the employment of a new weapon can only be successful if:

1. It comes as a surprise and
2. It is used in great quantities.

If this is not done but the weapon is used in homeopathic doses, the enemy has a chance either to imitate it or to invent a means of defense, or to change his tactics and adapt them to the new situation, or to interfere with production of the new weapon. Obviously there could be no thought of surprise. It soon appeared that the British and Americans were starting to change their tactics for the safety of the bombing squadrons. The critical factor, however, was that the general air superiority of the Allies had already increased to a point where they could begin systematic destruction of the German air force and of the aviation industry thus reducing the stock of airplanes and also preventing mass production of jet planes. One plant after the other was attacked and production sank rapidly. Moreover the German air force was used up in the efforts to combat the invading planes. The Allies had already dealt the German air force a frightful blow by the attack on the Experimental Institute of the Air Force near Peenemünde and the mass employment of flying bombs had been postponed indefinitely. Both the "Rote Drei" and the British radio agents had meanwhile picked up so much information that people in England and the Soviet Union were pretty well informed on the subject of the jet plane.

Prodded by the Allied air attacks, the Supreme Command finally decided to do something for the air force. In March 1944 when the

sparrows were already chirping about the coming Allied invasion, the "Jägerstab" was formed under Sauer, a staff of men from the Armament Industry of Speer. This office controlled labor, machine construction and the procurement of material, as well as transportation. Actually this transfer of responsibility for producing pursuit planes brought extraordinary results. Aircraft production reached a figure several times as high as in the days when the plants were still intact. There was large scale shifting and bunkering of production facilities. The "Jägerstab" signified for the aviation industry a great boost by rendering available all those things which the Air Ministry never had at its disposal. But this was no longer the point. It was now necessary to create something absolutely new and that could not happen. There was no change in the basic attitude of the top command. The countless types continued to be built; the chief emphasis was shifted to production of fighters but the production of bombers of all sorts still tied up a large portion of existing capacity. It was no longer a question of equaling the production of the English and American industry but of catching up and surpassing it; of course this was not possible. Therefore the only way of regaining air superiority was by building the greatest possible number far superior fighters. It was necessary to shoot down so many hostile bombers that the enemy would fall behind in the race.

The Me 262 was not immediately affected by the "Jägerstab." Its principle duty was to overcome as quickly as possible the results of air attacks and to increase production. Nevertheless the general support also aided the Me 262 in modest measure so that the first serial numbers could be delivered to the troops beginning in March 1944. To put it mildly, that was late enough.

The use of the machine by test units of the air force in Bavaria against hostile reconnaissance planes and long-range fighters definitely established the superiority of the Me 262 over any other aircraft. The number of planes shot down and the moral effect of this new type aircraft had the result that for weeks no enemy reconnaissance planes ventured into this area. These results justified the assumption that the jet pursuit plane Me 262, if properly employed, would restore air superiority in a short time. The results of the intercept service revealed that the English were not only giving much thought to the Me 262 but were seriously worried lest the Germans succeed in producing the machine in large quantities. From this it could be inferred that neither the English nor the Americans had a model capable of opposing this aircraft. Even if they succeeded in copying the machine, it would be a long time before it could be employed by the Allies in quantity. The last chance had come for making extensive use of this weapon. All the more astounding was the news that Hitler at this time had ordered that the Me 262 be used as a high-speed bomber. Why this order was given never became clear. There are indications that Milch advised it. It is also quite possible that Hitler, in his impulsive headstrong fashion, hit upon the idea and put it through. In any case it was done for purely propaganda purposes. The German people and the enemy were to be shown that the German air force was still able to drop

bombs on the target unscathed. So the German propaganda machine raced away madly and Fritsche got a new lease on life.

Of course the Me 262, like any fighter plane, could carry bomb loads for certain purposes but in the first model as a straight fighter plane without sights for bombing the success was bound to be slight and not worth while. As came out ultimately, the effect of such missions was unimportant. All efforts to get the order rescinded failed. General Galland, who saw himself robbed of the only chance to lead his fighters to success, retired in vexation after vain attempts to alter the situation. Hitler forbade any discussion of the question. England breathed a sigh of relief.

This story shows how far the German Supreme Command failed to assess correctly the tactical possibilities of the air force and in particular the value of the jet fighter. Only at the beginning of the war was the employment of the air force correctly planned and executed, and this was due solely to the foresight and hard work of a few men who were no longer in charge and for whom no adequate successors had been found. Later on everything was improvisation and was based on propaganda considerations. This explains the commitment of the air force, the many types, the constantly changing construction programs, and the changes demanded all the while by the troops, which together with the incompetence of the leading figures of the RLM, hampered the German aviation industry. When the Allied landing took place early in June 1944 and the German Air Force was hardly able to impede, much less to stop enemy operations, the lack of a strong air force was felt keenly. Only then did people in the highest places see in the Me 262 a means of regaining air superiority. Sauer meanwhile had expanded his "Jägerstab" to an armament staff which was to look after the entire armament industry. In this connection he had taken aircraft production over into the field of competence of the Ministry of Armaments. In his proposed program dated 22 June 1944 Sauer called for sharply increased production of the Me 262 with a monthly production of 500 planes by December 1944.

The program could not be fulfilled. Too little preparatory work had been done and production of parts was far behind, due to want of technicians. The request of the Messerschmitt Company for equipment experts and tool makers were forever being questioned; several commissions were appointed to check on the demands, although these always turned out to be justified. Allocations remained absolutely inadequate and at this time could not be satisfactory. It was too late. As a result, the need for common laborers to keep production going increased all the while. There was also a demand for experts and administrators for the numerous depot workshops and to look out for a large number of foreigners who had been employed. Even the Armament Staff was no longer in a position to meet the requirements of the Messerschmitt Company in full.

In the spring of 1944 the Allies began their attacks on plants making synthetic gasoline. One plant after the other was badly damaged. During the summer a point was reached where the resulting shortage of

aviation gasoline forced the air command to limit radically the number of types. A number of types which had been ready for replacement before 1943 were now discontinued. The Messerschmitt Company thought this would release overseers, experts and machines for the Me 262, and permit a rapid increase in production. Instead, Hitler in August ordered the construction of a 1-IL-Fighter of Type 162. This is the story: the Heinkel Company had meanwhile been working on the development of a jet fighter and developed a cheap model with only one jet. Construction was completed in the summer of 1944. It was the above mentioned Type 162. It was to be put on the assembly line and be used early in 1945 in large numbers. The period from initial production to serial production was not to exceed nine months; in the light of Messerschmitt's experience this was an impossibility, since there would be the same difficulty in regard to personnel, machines, etc. Even assuming that Type 162 was cheaper than Type 262, even if we grant that it was simpler and hence could be built more rapidly, yes, even if we grant that it would perhaps be better than Type 262, we must nevertheless conclude that in this case the better was not merely the foe of the good but became the foe of the entire cause. The time when this decision was made was not a suitable time for trying time-consuming experiments. There was time in 1940, not in 1944. The Me 262 was already thoroughly tested, was on the production line and called for 2,000 hours, in other words was cheap. It was only necessary to develop the necessary capacity for mass production. Instead of getting large scale production of this model going, recourse was had once more to the scheme of splitting up material and personnel and instead of reducing the number of types, one more type was put into production. According to all previous experience the result could only be that neither the one nor the other model would be ready in quantity in the spring of 1945. Furthermore Type 162 was inferior to Type 262 in one respect and it also was based on a jet motor of the BMW which was not yet in large scale production and was not yet technically right. The whole thing boiled down to rivalry between the two firms, which meant a wastage of energy.

Early in October 1944 there were large new drafts for the armed forces and the Messerschmitt Company was not spared. If the quota demanded by the armed forces had been released, the production of the Me 262 would have been out of the question. President Seiler went to see Goebbels as plenipotentiary for utilization of man-power since he was responsible for the new draft calls. The interview took place on 10 October in Berlin. Dr. Goebbels expressed astonishment that the long promised "wonder weapon" was not yet coming out in quantity. Seiler gave him the whole story of the Me 262. Thereupon Dr. Goebbels sent his Chief of the Personnel Division, Dr. Schultz von Dratzik, to check up on the spot. He found that what Seiler had reported corresponded with the facts. Goebbels now intervened and the Messerschmitt Company were excused from supplying men to the armed forces and were assigned a number of first class specialists and other urgently needed helpers. But the basic question of changing the entire aircraft program could not be solved even by Goebbels.

The occupation of the Ruhr, the loss of Upper Silesia and the unrestricted air superiority of the enemy ushered in the final phase of the war. The German armament industry had to contend with extraordinary difficulties. Hitherto the unparalleled discipline of the German people as a whole had made it possible to keep the work going in spite of constant attacks on the cities. Now a new phase of the air war began: the systematic destruction of means of communication. The dispersion of manufacturing plants, which had been accomplished in the preceding years, now presented almost insoluble problems when normal transportation ceased. The German air force was frittering itself away and using up a large portion of its strength in the counterattacks of January 1945. It was no longer able to keep the enemy from achieving his aim. The German people waited in vain for an effective employment of the new "wonder weapon." Only rarely did one hear of the use of individual machines which indicated the unusual superiority of the Me 262. But the totally inadequate tactics prevented any decisive success. Everywhere in Germany you could see the Me 262 just as you could the bazooka (Panzerfaust) which was on display in offices, armories, omnibuses, guard houses, etc., everywhere except where it could be used in great numbers. It was disheartening to see the Me 262 standing by the dozens on airfields ready to start and offering a perfect target for hostile bombers and fighters. The order to start did not come. Why? - I do not know. It was no longer possible to protect the aviation industry itself from low-flying hostile aircraft.

In the last three months of the war events crowded one another and in administration and command circles there were powerful words and resounding phrases which merely served to disguise the chaos. Finally they had become aware of the fact that the Me 262 should be the focal point of production. Production of all other models, including the Me 162, which had bogged down because of poor test results and the unsatisfactory condition of the BMW engine, was stopped. If that had been done a year earlier it would have made sense, now this hasty measure only resulted in snarling up production as a whole. Sauckel, Gauleiter of Thuringia, promised Hitler in resounding tones an additional large scale production of the Me 262 in his plants, giving incredibly near term delivery dates to which it was obviously impossible to adhere. In February 1945 Degenkolb, who had become prominent by his successes in the program for building locomotives, was put in charge of the production of the Me 262 and given plenipotentiary powers. Four weeks later Speer had to turn over the Me 262 program to the SS, which had long since betrayed its intention of getting control of industry. SS-Obergruppenführer and General der Waffen-SS Kammler was appointed by Hitler Commissar for the Me 262; he had all authority and placed his officers in all plants engaged in work on the machine. But it was too late to think of any well coordinated production. The swift advance of the Allies made it necessary to move the shops into those parts of southern Germany which were still unoccupied. Transportation was such a problem that a large part of the material was often on the railway or highway for long periods. Anyone with a grain of sense was already convinced that all efforts were now useless. Kammler, however, continued issuing his unintelligible directives and threatened to have his SS-men shoot anyone who did not follow out his instructions at once.

The advance of the Allies became more and more rapid. Soon the entire area of Germany was occupied. The history of the Me 262 came to an end.

I have not described the struggle of the Messerschmitt Company in behalf of the Me 262 in this volume to give prominence to the concern; there were other companies in the aviation industry of no less importance whose performance merits equal recognition. The story has been told because it involves a matter of decisive importance for the course of the war and because the history of the Me 262 is typical of conditions in Germany. On the one hand, manifestations of real genius on the part of the individual scientists and technicians, on the other hand, the failure to recognize the big opportunity because of the obstinacy and indifference of men in high positions. Active, untiring effort on the part of individual industrialists and long drawn out handling of affairs by high officials; mighty plans intended to make a good impression, which could not possibly be carried out; conscious closing of the eyes to the catastrophic seriousness of the situation; working at cross purposes by the individual agencies, and the watering down of any really great plan "in official channels." This is symbolic not merely for the Me 262, but actually for everything that happened in Germany. Consequently in the history of the Me 262 we really have a bit of the history of the German people.

BROADCASTING IN WORLD WAR II

A fat volume might be written on the propaganda broadcasts of the various belligerents of World War II. No doubt some competent person will do this. In this volume we shall only mention broadcast propaganda in a general way, in particular with regard to the manner in which it was reflected in the intercept service.

The word "propaganda" has gotten a bad connotation during the last decade and a half since, unfortunately, we have had to accustom ourselves to its use, not to gain recruits for a good cause but to force upon others against their will ideas which are neither good of themselves nor useful to those upon whom they are imposed. Things have gone so far that there is a general aversion to everything connected with propaganda and an immediate resistance where propaganda is even suspected.

The different countries made use of broadcasting in different ways, and certain developments resulted in all countries on the basis of observations made. If I mention so-called broadcast propaganda, I do so with reference to the role which broadcasting played as a means of psychological warfare.

The use of broadcasting as a means of propaganda by government originated in the Soviet Union. In this federation the enormous possibilities were recognized which centrally controlled broadcasting has for propagating specific ideas. With revolutionary resolution they set to work and created a mighty organization for the use of the government and the Communist Party.

In human affairs one must always be very cautious about making comparisons. This is especially true when comparing forms of government, countries, peoples, and the like. Of course this may be done objectively in order to recognize differences, but one must guard carefully against attaching any estimate of value. These are sure to be one sided and to yield a distorted picture.

Thus if we observe the type of Russian broadcast propaganda within the limits of the Soviet Union, we find much that is very primitive. However we must not forget that Russian internal propaganda is intended for the Russian worker and peasant, who stands on a low mental level, and that it is calculated precisely for his concepts and his attitudes. Consequently it has its effect in these circles. The extent to which it achieves its aim of affecting the entire population was shown clearly during World War II.

When the Russians broadcast in the same manner in German to Germans, then they showed that they knew little of the soul of the German people. Only during the course of the war did they learn to take actual conditions into account, both regarding what they must say to the German people and to how they must say it.

But in spite of everything, Russian broadcast propaganda played only a subordinate role during the war. It began to have a certain effectiveness only when captured German generals, officers and enlisted men appeared on Russian broadcasts and addressed their messages to the German people and the German soldiers.

Psychological warfare had begun in Europe long before the outbreak of open hostilities. Soon after the assumption of power by National Socialism, an ardent effort was made to proclaim loudly to the world the National Socialist doctrine as a panacea for all countries and all peoples. In conjunction with other "cultural accomplishments" of National Socialism (struggle against the churches, struggle against labor unions, persecution of Jews, subjugation of the press, concentration camps, etc.,) this activity aroused opposition in all foreign countries and this opposition found expression in foreign broadcasts. In reality these were not counter-propaganda transmissions but merely efforts to discuss the validity of National Socialism and its practical methods, coupled at times with corrections of National Socialist claims, insofar as they were applied to other countries. But even that was enough to make the National Socialists denounce these broadcasts as pure propaganda and atrocious lies.

The British were very reserved in this matter. The French, on the other hand, were somewhat more active, and in time (beginning about 1936) the Strasbourg transmitter became the mouthpiece of liberal democratic ideas.

Indicative of the skepticism with which National Socialist propaganda was secretly viewed in Germany is the fact that the Strasbourg broadcasts were listened to by everyone who had a suitable receiver.

Even at that time people in the Ministry of War and Ministry of Propaganda in Berlin were aware that in any future war a large part of the population would regularly listen to the broadcasts of other countries. But since National Socialist propaganda worked chiefly with invented or distorted arguments, there was serious danger involved in listening to foreign broadcasts, because untruths are only effective when there is no one on the spot to disarm them by a convincing presentation of the truth.

An attempt was made to render the German people immune to foreign broadcasts. This was to be done primarily by shifting the whole German broadcasting program over to wire radio. The instruments were to be so devised that it would be absolutely impossible to hear foreign broadcasts.

This was a gigantic program and considerable time must elapse before it could be realized in full. The preliminary stage was represented by the so-called "people's receiver" which was planned to receive only German transmissions. When World War II broke out, wire radio was still in its early stages. It was necessary to find some other way of keeping foreign broadcasts from the German people. It was decided - with characteristic National Socialist thoroughness - to use the universal cure of strict prohibition. The death penalty was fixed for listening to foreign broadcasts. They even went so far as to include listening to broadcasts of allied countries under the same ban.

It has been claimed that the National Socialists were good psychologists. In general that is true. At least by personal experience they recognized all the negative aspects of German character and took the point of view that their own attitude, their own inner inferiority must be assumed to be present in all other people. They knew perfectly well that the broadcasts of other countries would be listened to in spite of all prohibitions. But in order to reduce to a minimum the resulting dangers, they established that maximum penalty for listening and passing on what had been heard. They had no choice. Their system of having everyone spied on by everyone else would see to it that listening to foreign broadcasts did not get out of hand.

Immediately after the outbreak of the war the French started a violent agitation, using transmitters in Strasbourg and Paris. It was directed against the National Socialist government of Germany and its responsibility for bringing on World War II. The management of this propaganda was poor. One attempted to use a clumsy instrument on a clumsy object and in so doing caused more damage than would be suspected.

When the military events turned against France in 1940, the broadcasts of the above mentioned stations became a wild scolding and with that lost all effectiveness. These transmissions were listened to only with loathing and shrugging of shoulders.

Somewhat more clever were the transmissions of the British broadcast stations but they revealed such a lack of knowledge of actual conditions in Germany that the listener often had to shake his head. Had the English been asleep these past six years? Didn't they know

what had happened in Germany since 1933? What had become of their celebrated "Secret Service"? If it hadn't learned more than appeared in the sometimes downright simple propaganda, then the British were indeed badly off.

Many of the statements could be checked at once and shown to be incorrect. No, propaganda, if it were to be crowned by success, was not that simple! One got the impression that a number of newspaper reporters were working here confusedly without centralized control, without any comprehension of the actual situation in Germany. Only the reports on events in England and America were of interest, including reports on the sessions of Parliament, on the industrial situation, on ideas regarding the future course of the war. From these it was sometimes possible to draw all sorts of deductions, frequently more than - from a military point of view - was good for the British. But since people in Germany were accustomed to regard broadcasts as pure propaganda, they gave no credence to those reports to which it would have been wise to pay some attention.

There was a basic change when Brandon Bracken took over the Ministry of Propaganda. The way in which the entire style of broadcasts to foreign countries changed in about four weeks was really striking. From an unsure and tortuous path, one shifted resolutely to the only correct path under the circumstances - to the path of truthful, factual reporting. People in Germany had plenty of intrusive propaganda and because people knew that the press and the radio were not describing things as they were, but in the way National Socialism meant them to be regarded by the German people, there developed a real hunger for some objective reporting on burning questions of immediate and vital importance, a reporting which should be free from scolding, accusation, self-glorification, and distortion. The British didn't need to do anything more than tell the German people the truth. That was enough. That alone was so hard and annihilating for National Socialism that any added propaganda terms, any injected propaganda purpose, could only weaken the effect. It was necessary to depict things in such detail and in such fashion that anyone could at any time check their accuracy.

And at the very time when the British broadcasts were making truthful reporting the foundation of their propaganda, Dr. Goebbels was proclaiming openly in Berlin: "propaganda is never limited to the truth but is only determined by the purpose."

The enemy of the lie and of distortion is the truth. Only when unadulterated truth is used as a weapon can it be effective in the long run. National Socialist propaganda relied on the principle of the "lie of the moment"; that is to say one boldly asserted anything and thus achieved for the moment the desired effect. If time ultimately revealed the untruth of the statement, one had accumulated meanwhile a number of new "facts" which could be trotted out with much to-do and which would so fully claim public interest that no thought would be left for the former "stupidity."

English propaganda - if we insist on using the term - began with the coming of Brandon Bracken to work on a long term basis and this assumed that there should be no contradictions in the stories told or in the arguments. On the other hand, people over there could now afford to collect and toss back in wholesale fashion the contradictions in the speeches of German statesmen and propagandists, in German publications, in the press and in broadcasts. That alone was very effective. For this purpose they recorded in England every speech of Hitler, Goering, Goebbels, and others, every lecture of a military or political nature, every article read over the German broadcast stations, and so were able to produce, as it were, a multitude of living witnesses. That was damnable for German propaganda, especially as there was nothing to offer in return. So the English indulged in entire programs in which nothing was heard but skillfully selected extracts from speeches by prominent National Socialist leaders. Only one course remained for reducing the effectiveness of these broadcasts - that was jamming.

So now the Germans used every available means to make reception of the German language broadcasts from London impossible. However they were rarely successful because the English sent out their broadcast simultaneously on 3, 4, 5, sometimes even 8 to 10, different frequencies. Reception was always possible on at least one or two of them. Naturally this varied from place to place. The jammers did not really interfere everywhere and anyone who seriously intended to hear the offerings of the British Broadcasting Company generally succeeded - of course there were exceptional cases.

I am not asserting that the English like lily white angels limited themselves to 100 percent fact with no propaganda. By no means! They sent out what were admittedly propaganda broadcasts, only they always separated them from straight reports. As I said, these were admitted propaganda and everyone knew that things were invented. However, these broadcasts were spiced with so much spirit and humor that people liked to hear them. They had not been hewn with a broad ax like the products of the Ministry of Propaganda in Berlin. As a rule they betrayed a cleverer hand and were pretty well worked out.

As an example we may quote the reports of "Pfc Adolf Hirschal" who was at first on the eastern front and later in various other sectors or stations from which he wrote letters to his wife which began "Dear Amelia, beloved wife! This is to inform you that today has been the best day of my life and am going to tell you why....." Listening to them, it was hard to keep from laughing so hard you fell off your chair, they were so full of spicy wit and irony. There were people who waited impatiently for days for the next "letter of Pfc Adolf Hirschal."

Once a week there was a "report" on the meeting of two friends, Kurt and Willy, namely senior teacher Kurt Kruger and Willy Schimanski, counsellor for the Ministry of Propaganda, in their regular cafe on the Potsdamer Platz, later - after the bombing of Berlin began - in a Berlin suburb. The way in which the methods of Goebbels' Propaganda Ministry was shown up was very amusing.

Now and then "Mrs. Wernicke" put in an appearance and talked on life in Berlin but these broadcasts were among the least clever, they were only suitable for people "who were very modest in their demands."

One of the best broadcasts came daily at 1800 hours; it was the "broadcast for the German armed forces." It gave a good accurate survey of the situation on the fronts and of general military problems connected with the war. Of course, events at the front which were unfavorable to the Allies were not stressed too greatly; sometimes one forgot to mention them. Those were exceptional cases. Otherwise the description of the situation tallied with the facts and it was possible from these descriptions to get a dependable picture of military events. Not only of military events, but also of the situation in Germany. For, if British intelligence had been almost completely uninformed on this subject during the first year of the war, this had changed as the war continued.

Perhaps some day someone in the British intelligence service will reveal how and by what means the great apparatus was built up which permitted the British to learn very quickly about all events in Germany. I am sure British intelligence got a major portion of its information from radio agents, since through these it had available the services of confidential agents (men or women) in the very highest offices in Germany.

How well informed the British were regarding the intentions of Hitler's headquarters was revealed, for instance, when in April 1944 the London radio announced that Hitler planned, after the collapse of the eastern and western fronts (at that time on the Dnieper and the Atlantic), to employ the "strategy of the scorched earth" in Germany and meant to realize in terribly tragic and gruesome fashion a "heroic epic of the death of the German people." And this was a year before he began to convert his intention into deeds.

Long before they were used, the British reported openly on the new German jet fighters and described their good and bad qualities. Sometimes somebody was incautious and by premature reporting endangered the sources of information. On the whole, however, I must say the English knew how to build up a first class intelligence service under most difficult conditions and also to derive benefit from its results. Results both for military operations at the various fronts and for psychological warfare, especially by means of radio.

There is one other series of broadcasts I would like to mention here - these were the broadcasts to German women sent out twice a day. These also were adapted to the outlook and the spirit of the German woman but in general failed to be effective because - from the standpoint of time - they were badly placed and because German women were not sufficiently accustomed to thinking for themselves to be able to face these matters with adequate understanding and the necessary critical spirit.

The so-called "workers program" was not especially fortunate; it more or less missed the problems and offered the German worker little of positive value.

While in Germany the penalty for listening to foreign broadcasts was death, the British Government did not attempt to limit listening to German broadcasts. The Germans had organized a grandiose program in the English language as information service for listeners in England, but if anybody ever missed the mark, if any laborious effort ever achieved a 100 percent failure, it was here. It even reached the point where the British recommended listening to the German stations. What was offered either provoked a shaking of heads or a compassionate smile. I once remarked that the National Socialists were good psychologists. This was true only in respect to their own people. When dealing with other countries they displayed without exception a total inability to enter into the thinking of other people. For that reason German National Socialist propaganda was usually merely a flash in the pan, unless it was supported by very practical economic interests. The United States of America set up a German language broadcast, the "Voice of America, the Voice of One of the United Nations" immediately after the beginning of the war. The broadcasts, however, were difficult to hear and found little following.

Of all the American broadcasts in the German language the most interesting were the addresses of the well known author, Thomas Mann. They were permeated by much spirit and knowledge, were excellent in style, and inspired by a glowing hatred of National Socialism. Mann was always well informed regarding developments and conditions in Germany. The trend of thought always climaxed in the theme: "German people, how much more must you fear victory than defeat."

National Socialist leaders called Thomas Mann the "Peck's bad boy of the Apocalypse"* and it is safe to say that rarely has so much truth been expressed in so few words. It outlines clearly the enormity of the actions of the National Socialist leaders of Germany and also suggests how petty this whole group of men really was.

Thus far I have mentioned only broadcast stations which worked openly and without disguise, i.e., could be recognized by the announcer's statement as being in Moscow, London, New York, etc. But there were other transmitters which worked with the most varied disguises. If one watched carefully, however, one could always determine after a while the country in which this or that transmitter was located. For instance there was the "Transmitter of the SA-Fronde." It worked in the Soviet Union and tried to give the impression that it was located in Germany and represented an opposition group inside the SA. The "German People's Transmitter" was likewise in Soviet Territory. It was usually easy to recognize transmitters working from the Soviet Union because of the number of times "Kameraden!" occurred. Almost every second or third sentence began thus.

The so-called "Atlantic Transmitter" was listened to by many Germans. Its offerings were not always well chosen, its information not always dependable. It worked from Algiers and was the U.S.A. propaganda station

* Apokalyptischer Lausbuben.

for the German armed forces. The so-called "German Freedom Station" was in the same area and under the same direction. For a time "Gustav Siegfried Eins" made quite a stir. It was located in England and used as theme song the melody " - bis an dein kühles Grab", i.e., the continuation of the theme song of the "Deutschlandsender." It soon became known popularly as "der Scheissensender" for the following reasons:

Several times each evening at seven minutes before the hour this transmitter brought a talk by the "Chef." This chef's language was enough to make a hard-boiled soldier at the front turn pale. He never used a noun without prefixing "Scheiss -" and there was a generous interlarding with "Arschlächern", "Scheisskerlen", "Misthunden" etc. He gave descriptions of the private lives of the National Socialist big-wigs. Generally these were pure fiction or at least greatly exaggerated. One of the maddest pranks was the report on "Schwarze Jutta," the supposed lady friend of a German admiral and the principal heroine of the wildest orgies.

This wild scolding wearied and repelled the hearer. These broadcasts did not have the least effect. People asked themselves: "if the 'Chief' uses such language, how will the 'underlings' talk?"

There was a huge number of other transmitters but their importance was slight.

The importance attributed to foreign broadcasts in official circles and the danger one saw in them during the war is apparent from a decree of the Chief Signal Officer, General Gimmmler, dated 11 October 1944, regarding listening to foreign transmissions. Among other things he said: "It is a sign of the most pitiful baseness and of the most dangerous weakness when one listens to foreign broadcasts."

And in view of the character of the National Socialist propaganda it was downright grotesque when he then repeated Goebbels' words that propaganda is never confined to the truth but is only limited by its purpose. Finally the order ends up: "I order ruthless intervention without regard for person or rank whenever this greatest of all crimes is discovered".

Along with the type of broadcasts already described, there was one other - shall we say "active" use of radio, especially by the British; I mean the so-called special messages which were intended for agents employed in Germany. They were short and might read somewhat as follows:

"Stettin is in Germany",
"Mary's brother bought two chairs and a table",
"The first window is lighted, the second is dark",
"My mother is at home",
"Vienna is in Austria",
"Keep your children at home, it is still too cold",
"England's women are happy", etc.

These were messages agreed upon in advance which had reference to parachute drops, agent meetings, changes of frequency, and the like.

Occasionally pieces of music were played to convey prearranged messages, primarily in the Polish broadcasts of the British Broadcasting Company which were intended for the Polish resistance movement. They referred chiefly to parachute drops; these were regularly announced by melodies, e.g., the soldier song "Es reiten die Ulanen" or "Oh du mein Bosmarin, entfalte dich", or "Die tausend Tapferen" and so on.

Summing up the role of broadcasting as a means of psychological warfare, we can describe it as far reaching and significant. But if anyone should get the idea that the German people lost the war because it surrendered to the poison of hostile broadcast propaganda, he would be missing the point entirely. If things had worked this way, England would have had to lose the war because German broadcasts for five years aimed at breaking down the will of the English people to resist. Or else the German people should have given in late in 1940 when British propaganda was trying to divide and infiltrate. But it merely met with resistance, just as the broadcast propaganda of Dr. Goebbels was rejected in England.

The importance of the English, Russian and other broadcasts seems to me to lie in another quarter; they helped the German people in its search for the truth, in its effort to learn the real relations of things, in its conscious and unconscious urge for spiritual recovery, in its search for a way out of the labyrinth of aberrations. If, after the outward collapse of the National Socialist reign of terror - a collapse which was inevitable - the German people showed that a vast majority had long since broken with that negative system and created conditions favorable to a positive course, then a good part of this cure may be ascribed to the critical searching of the broadcast frequencies. Broadcasting showed that it can only be effective as a weapon if it uses the truth. And that is a lesson for the future.

WAS THE GERMAN INTERCEPT SERVICE IN WORLD WAR II WELL ORGANIZED?

Perhaps from what I have said the impression may have been gained at times that the German intercept service during World War II was very poorly organized and failed on that account. I do not wish to say anything of the kind. In its several parts the intercept service was very well set up and achieved useful results in numerous cases. However, it did suffer from some defects to which I shall come back later. That which was definitely defective was the use of the results of this service.

National Socialism was a system which sabotaged itself in every way and in the long run achieved the very opposite of what it sought. We can find plenty of confirmation of this this. I will pick out the following typical example in connection with the intercept service:

In the Cipher Section of OKW a group had been set up at considerable expense and with good technical equipment for monitoring all transmissions intended for any considerable circle, including broadcasts, radio telephone, press and economic radiograms. Hundreds of messages were copied daily, evaluated, and put together in so called "Chi-Nachrichten." When worked over intensively, they were a regular mine of information on the armament situation in enemy countries. But this called in the first place for a genuine search for the truth, i.e. for the actual situation - no matter whether the findings agreed with one's wishes or not; in the second place it was necessary that the circle dealing with these "Chi-Nachrichten" should not be too small, lest it fail to extract from them laboriously all that might be extracted.

Neither the one or the other condition was satisfied. In the Third Reich the search for truth was synonymous with hostility to the state. The universal watchword was an Arab proverb: "Tie up the ass where your master wishes it to be tied." Such a system as the guiding principle of a state, is well suited to give the uninitiated an impression of "powerful national unity". In reality it contains the germ which will bring on its own destruction.

Fear lest the truth become known dominated the leaders of the state. Instead of evaluating the extensive and significant cipher messages and thus learning about developments in hostile and neutral countries, there was an order by the Führer that these summaries should be given a very limited distribution to only a few office chiefs. It was forbidden to pass them on. Now an office chief is a man who in view of his duties as administrator cannot, even with the best of intentions, read through 10 - 20 pages of decodes daily, digest them and derive from them a clear picture. He has barely time enough to glance at them. Actually the upshot was that the recipient of these decodes initialled the upper right corner and put them in the safe. Every two or three months came a "destruction procedure" and the stack of paper which had accumulated meanwhile was burned. All the laborious effort of many people, all the outlay of material, equipment and time had been useless. That is the way the Führer would have it. And so in countless ways a system degenerated in which the truth always got a negative label while mistrust always received a positive score.

I said before that the German intercept service suffered from some defects. We shall take up two of them here. One was also characteristic of the armed services of the Third Reich as a whole; rearmament had proceeded too fast on an inadequate foundation. The result was a critical lack of good experienced specialists. You can not train scientific traffic evaluators on the drill ground. People had spread out but had not achieved depth. There were many intercept companies but only a few useful evaluators. Much importance was attached to externals. In the Red Army form meant nothing, content meant everything; in the Third Reich outward form occupied the foreground at all times. Many things were organized to death.

The other defect was the splitting up of the German intercept service. Even though one may grant that each of the three services was justified in having a separate intercept service corresponding to its peculiar needs, nevertheless all other facilities for monitoring the radio traffic of foreign countries should unquestionably be combined in one central organization. Only thus could there be any guarantee that all available messages were evaluated and made the basis of reliable estimates of the situation in hostile and neutral countries. This, however, was not the case. Instead of one central strategic radio intelligence there were almost a dozen organizations working in this field. There was either absolutely no collaboration among them or the collaboration was very loose and suffered from mutual mistrust.

Quite prevalent, on the other hand, was a sort of competitive struggle. Each of these organization was ambitious to beat the others. Each wanted to appear to work faster and better than the rest and always tried to represent itself in a favorable light and its rivals in an unfavorable light. The concept of unselfish and complete cooperation for the benefit of the country was foreign to all these organizations.

This splitting up of the work used up an undue number of valuable workers; each individual worker diligently and with interest but on the whole a considerable portion of these workers and of their efforts was wasted. The same was true of the machines and other instrumentalities. With centralized control several times as much work could have been turned out and the damage caused by overlapping and antagonistic efforts could have been avoided.

This resulted in a peculiar situation where the individual organizations functioned well but the intercept service as a whole, due to over-organization, did not achieve the results it might have achieved. A patient cannot be treated successfully by a dozen physicians, of whom one feels his pulse, another listens to his lungs, and a third examines his throat, etc., and each one subsequently makes his own independent diagnosis. That is the way things were in the German intercept service after the middle of 1939.

One other circumstance might be mentioned which was calculated to let the results of the labors of the intercept and evaluation services go up in smoke uselessly; the important personages before whom these results were laid for utilization had a preference for so-called "hot ones," i.e., for individual messages with an especially interesting content. That is all right once in a while but such messages merely bring details into the limelight. That which is of real value in the intelligence work of a modern war is the totality of the many little single hints, evaluated and combined in instructive surveys. And there was a general dislike for this detailed work.

It is hardly possible to reproach any individual for this situation. Every official person in the Third Reich - including the armed forces - was at all times so overburdened with superfluous nonsense that he simply

had no time left for calm, scientific, critical work. Thus the most important part of strategic intelligence was lost in the mad scramble of unproductive, intentionally or unintentionally purposeless business.

The development of the German intercept service during World War II was a remarkable one. Not in the matter of organization - here there was little change - although individual technical and organizational measures were always being put through. The development of which we shall speak had to do with the assignments.

The artless reader will probably start out with the assumption that the German intercept service during the war had as its primary assignment the monitoring of the traffic of hostile countries and as a secondary assignment the monitoring of neutral countries whose attitude was open to doubt. He will hardly hit upon the idea that the monitoring of the traffic of countries allied with Germany would find a place, since that would not merely indicate mistrust of one's allies but from the very start place the alliance on a very unstable foundation. An alliance which is not based upon complete mutual confidence, an alliance with mental reservations, especially in wartime, resembles a contract which either of the two parties is ready to abrogate at a moment's notice. Whoever enters upon a life and death struggle relying on such alliances admits that his cause is a poor one and knows that his partner intends to escape from his contractual obligations in case of a crisis. This means a war with two fronts: a visible outward front against the enemy and an invisible inward front against one's friend, a front which may burst into flame at any moment, probably when one's strength is most urgently needed on the outward front.

When the Third Reich entered this war it had a political ideological and military alliance with Italy and with Japan. There were half a dozen similar agreements with other countries. The alliances with Italy and Japan had been celebrated for years in every key, painted in every color, and discussed in countless articles. "Never yet" had there been anything with so firm a foundation. "Never yet" had an alliance been so stoutly supported by a common philosophy; "never yet" had there been such indissolubly close, such cordial alliances as these. Moreover there was such a strong personal friendship uniting the leading statesmen! This was the quintessence of all alliances the world had ever seen, the Himalaya of mutual confidence.

That is the way the public saw it. Yet in the schedule of the German intercept service were listed Italy and Japan and all the other countries with which there were treaties and agreements. But that was not all. The portion of the time of the German intercept service devoted to these two countries amounted at the beginning of the war to almost one-eighth of the total working time. In April 1943 the number of Italian messages intercepted was four times as great as in November 1939.

The proportion of intercepts of "friendly" countries in comparison to those of hostile countries increased from month to month as the war went on. Far behind the scenes, way out in the darkness back stage, an

invisible struggle was taking place - without swords and noise to be sure - the effects of which were bringing death, wounds or captivity to thousands and tens of thousands at the front.

This was the struggle between cryptography and cryptanalysis. While British and Russian cryptographic security was constantly increasing and the interception of the messages in these systems retreated more and more into the background because decryption proved impossible, the German cryptanalyst kept in touch with the system of the allied states. This was a poor testimonial for their systems. It was a poor omen for this struggle in the dark which was merely a precursor of the struggle at the fronts. So the proportion of messages of friendly powers continued to mount unchecked. In the spring of 1943 these amounted to more than a quarter of the total intercepts.

Instead of warning the lesser allies and calling their attention to the vulnerability of their systems, there was rejoicing over the cryptanalytic successes and the interest manifested in the traffic of these countries was as great as the interest in that of the enemy countries, sometimes even greater.

There was a further reason for the increase in the proportion of allied and friendly messages intercepted and decrypted and it was just as serious as the first. The attitude of these countries toward Germany was becoming more uncertain and more unreliable from year to year and from month to month. So it was necessary to pay mighty close attention to these "friends", if one wished to be safe from surprises. In the case of Italy, Hungary; and Finland this "checking" proved very valuable.

I cannot conclude these remarks without saying a few words about the German cryptanalytic service. From 1922 to the end of the war it was under the direction of Ministerialrat Fenner, who was well known abroad. As an individual he was one of the most debated personalities in the German intercept service. Regarded professionally, he was an organizational genius who developed the art and science of German cryptanalysis to a high state of perfection. He was born and grew up in Russia (in St. Petersburg, the later Leningrad).

His right hand man was a Russian emigrant by the name of Novopaschenny who in Czarist days had been a professor at the astronomical observatory in Pulkovo near Leningrad and had rendered good service during World War I in the Imperial Russian Navy. He served on a Russian destroyer in the Baltic until it hit a mine and sank. His cool bath apparently did him no permanent harm. The Bolsheviks during the great Russian revolution made it hot as hell for him and sentenced him to death. Novopaschenny thought their treatment unfriendly and fled to England where he worked for a time in Scotland Yard. In 1921 or 1922 he turned up mysteriously one day in Germany, became acquainted with Fenner, gained his friendship and was magically installed by him in his section in the then Ministry of Defense. Although Novopaschenny (who was called in the outfit "The Old Man of the Mountain" and sometimes the "Sheik") remained a man without a country, they kept him in the German cryptanalytic service

where he developed true analytic decryption. The originally very small group of cryptanalysts was expanded gradually and at times during World War II numbered more than 150 persons.

Strange to relate, Fenner proved to be a fanatical, egocentric chap who refused all collaboration with the oft mentioned "evaluation service" and obstinately stood up for his own section without regard for the functioning of the intercept service as a whole. To this lack of cooperation may be ascribed the fact that, despite excellent performance by the crypt-analytic section and excellent performance by the evaluation service, the final result of the intercept service as a whole was not what it should have been.

Fenner typified the wide spread German characteristics of eccentricity, pride in his official unit, and rejection of all that did not fall within his own narrow province. He was an opponent of National Socialism, not from philosophical conviction, but due to his basically negative attitude. He had been just as violent an opponent of the Weimar Republic and had mocked and scorned every administration from Scheidemann to Papen and Schleicher. He was the spirit which always denied - as Goethe said.* But he represented German cryptanalysis and was its soul and inspiration.

It seems appropriate in this connection to mention another matter connected with the central office of the German strategic intercept service in Berlin, the so-called "Chiffrierabteilung".

World War II began in September 1939, hence in November 1943 more than four years had already elapsed. Aerial warfare had increased in intensity, the bombing of cities had become more extensive. But still the "Chiffrierabteilung" worked undismayed in its own quarters on the Tirpitzufer in Berlin. During the early part of the war an alternate location had been selected outside Berlin but this was given up later. Most of the records were kept in single copies in the workrooms in wooden or at best in steel cabinets. They acted just as though the airwar were of absolutely no concern to the Cipher Section, as if it were impossible for this center of the strategic and military-political intercept service to be destroyed by an air attack.

Shortly after the beginning of the war this important agency got a new Chief, a Lieutenant Colonel Kempf. He was a typical drillground officer without any spiritual or humane qualities, a stickler for regulations in the worst sense. It would hardly have been possible to find in the entire army a more unsuitable head for this center of technical signal intelligence. In his mind the important things were correct uniform, correct saluting, correct bearing, and a military haircut. He had not the faintest conception of this special service and still less of how to get along with people in such a sensitive organization. On the other hand he succeeded in ruining any pleasure his associates

* In Goethe's Faust Mephistoteles says "I am the spirit that always denies."

might have found in the work. In place of any joy of accomplishment the motto became "duty."

A few weeks after his departure (hailed with joy by all concerned) came the terrific British attack on Berlin in the night of 22 November 1943. With astounding precision bombs hit all the buildings along the Tierpitzufer which contained sections of the "Chiffrierabteilung." In a single hour all the keys and reports, card files and orientation folders, tables, and sketches, that had been created during decades of painful effort, were destroyed. It was not long before the effects of this blow began to be felt. It was as if the main nerve center of a human being had been dealt a heavy blow with a blackjack. A sense of being crippled fell upon all the work of this center and this was aggravated by later air attacks. Work went on of course. Files were started, new counts and new card files were produced. But the actual creative work recovered only slowly and imperfectly. Far too much had been destroyed that night.

On 1 October 1943 Kempf was replaced by Colonel Kettler, a man who already had considerable practical experience in the intercept service and who had been chief of the intercept control station of the army for several years. By dealing with his personnel in an outstanding fashion he was able to inspire and maintain an interest in the work. But he reached this position too late. Had this man with his clear insight and understanding guided the agency from the beginning of the war, probably many a fateful piece of stupidity would never have been perpetrated.

BIG FRY AND LITTLE FRY

Pumping the servants has always been a favorite method of finding out what the master and mistress of the house were up to. In the secret services of the various states this course has been followed frequently, often with good success. It may seem somewhat strange to say the same method can be used in radio intelligence and yet during World War II something of the sort did happen, although perhaps instead of the class distinctions "master" and "servant" we should speak of the big and wealthy on the one hand and the little poor-fellows on the other. Or perhaps we should distinguish between those who are at the moment "the haves" and their "dependents." What I mean is this: Hitler's attacks on the small states of Europe from 1938 to 1941 had forced the governments of these countries to take refuge abroad in order to continue efforts for the recovery of national independence. Most of these governments in exile had gone to London. Here they maintained little ministries and kept in touch with their representatives in foreign countries, i.e. with their embassies, consulates, missions, delegations, and the like. They made extensive use of radio telegraphy and thus supplied raw material for the German intercept service. And this "raw material" was - first class! At least in most cases. And for two reasons: in the first place, the cryptographic systems used were not ordinarily first class - the Germans usually solved them very quickly. The second reason was that these decrypted messages were exceedingly informative. Since these governments in exile really had

very little to do, they had ample time to pick up information in all quarters. And as soon as the Minister for Foreign Affairs or the Minister of War found out something, he was just itching to pass the information on to the embassies, etc.

Everything that the "big fry" (i.e. the governments of Great Britain, U.S.A., Soviet Union, etc.) strove to keep secret, these "little fry" diligently tattled. It was fun to read their messages. Poland and some of the Balkan governments were the worst. An especially fruitful source was opened for the Germans in June 1943 by the solution of the system used for Polish military attache traffic between London and Bern. The "results" were outstanding!

The Turks likewise gave the Germans valuable information throughout the course of the war. The Germans had to give up monitoring Russian diplomatic radiograms because every attempt at decryption failed, but beginning about the middle of June 1941 they were able to read Turkish diplomatic messages between Moscow and Ankara and so obtained very valuable clues. Persia was also quite fruitful. Beginning in September 1941 the focal point of the entire intercept work was concerned with the links

Ankara-Moscow	and	Moscow-Ankara
Ankara-London	"	London-Ankara
Teheran-Moscow	"	Moscow-Teheran
Teheran-London	"	London-Teheran

If Mr. Churchill and the British Foreign Minister and the Commissar for Foreign Affairs, Mr. Molotov, had known how their little "boarders" were tossing their secret measures to the Germans like hot biscuits, such hair as they had left would have stood on end.

Of the "big fry" the USA provided its enemies most amply with information. Among other things a special radio network had been set up in 1942 which covered the entire globe. This was the "WVNA-net" (named from the call-sign of the station in Karachi, India, which was the first one heard.) Most of the exchange of messages could be read currently; it afforded information on American military measures in the Far, Middle, and Near East and in Africa. The following survey shows the extend of the network in November 1942:

WVNA-net

Call sign, location, cover name and interpretation

war	Washington	agwar	= Adjutant General, War Department
		mild	= Attache
		crypto	= Secret communications service
		victor	= Proper name, (head of "crypto")
			"Signatures: Arnold, Cambala, Groninger, Kroner, Loughry, Marshall, Ohnstaed, Osborn, Reybold, Sommervell, Strong, Ulio.

w v n a	Karachi (India)	speck	= proper name Signatures: Jordan (Vice- Consul) Wheeler (General and head of the USA military mission)
w v m t	Basra (Iraq)	amsir	= American military section Iraq Signature: Connolly (Vice- Consul)
w v n v	Cairo (Egypt)	amsme	= American military section Middle East
w v n t	Asmara (Formerly Italian-East Africa)	amseg	= American military section Egypt. Signature: Hodges
w v m y	Teheran (Iran)	amrus	= American military section Russia Signature: Ondrick (Mil. Att.)
s 9 x	Delhi (India)	aquila	= Cover name for American air forces.
		ammdel	= American military mission Delhi
		amobsin	= American military observer India Signatures: Tiger, Speck (only there for a short time)
n e k c i	Chungking (China)	ammisca	= American military section Karachi office in Chungking.
		amilat	= American military attache Signature: Stilwell (General and Commander of U.S. Forces in China) Barrett (Military Attache) Gauss (Ambassador)
j 7 z	Kunming (China)	ammkun	= American military mission Kunming.
b u d	Gura (formerly Italian East Africa)	amgad	= ? Signature: Bishop, Signals.

"Pst!"

It was in the summer of 1944 when little slips were pasted up all over Germany which bore nothing but three letters: "Pst!". They appeared on the windows and doors of railway cars, on letter boxes, on match boxes, on the mirrors in barber shops and even in toilets. These were intended to keep people from gossiping. But apparently that was only meant for the

laymen because in "initiated circles" they were diligently chattering out of school.

In other connections cases have been mentioned where the German broadcasts or the German press compromised the work of the German intercept service by revealing details which came from the intercept service. North Africa (Fellers) and Sicily are examples. Those were in the year 1942. However, the lessons were not sufficient to prevent repetitions in the year 1944.

After a long time and infinite pains the Germans had succeeded in breaking one of the cryptographic systems used by the Polish resistance movement so that they could read the intercepted messages currently. One day late in October 1944 they decrypted a message telling that the Russians had set up in the area they occupied a concentration camp for members of the Polish resistance movement where the prisoners were confined under disgraceful conditions. Numerous details were given.

Three weeks later there was a German broadcast on conditions in the part of Poland occupied by the Russians, in which that decrypted message was repeated verbatim. On the previous day the "Ostdeutscher Beobachter", published in Posen, had also printed this message verbatim. Of course it was not stated that this was a decrypted message of the Polish resistance movement but the content was enough to catch the attention of the Poles.

It is a well known fact that in this life extremes often meet. Alongside the tendency to gossip there was something else which led to serious compromises.

The excessive secrecy within the German armed forces, which had nothing to do with any sensible or necessary secrecy, led each of the services to maintain an anxious silence with respect to the others. If there was any real orientation, it was usually limited to commanders who then kept their wisdom to themselves. Thus the right hand frequently did not know what the left was doing. This explains the countless compromises which resulted from ignorance of real conditions and their consequences. It also explains many compromises in broadcasts, in the press, etc.

Unclassified memoranda, which were distributed down to the companies and doubtless fell into the hands of the enemy, often referred to the possibilities and assignments of radio intelligence. The cover designation "S.Qu." (sure source) for decrypted messages was explained. The consequence was an increasing reticence on the part of all our enemies in the use of technical means of communication; this was felt especially beginning in July 1944 when during the retreat of German troops on all fronts all kinds of material fell into the hands of the enemy. A further consequence was an intensification of all camouflage measures. That resulted in a new decline in intercept results. And this led in November 1944 to an order by General Fraun (successor to General Fellgiebel) regarding new cover words. "S.Qu.-Nachrichten"

was replaced now by "Heinrich-Meldungen", "Otto-Meldungen" and others. But the result was the same.

VERMEHREN Nr. 2

Ben Akiba said that all things are repeated in life and that everything that happens consists only of copies.

We have already reported the Vermehren case which happened in Ankara. Half a year later something similar happened in Stockholm. Here again the rats deserted the sinking ship. Beginning 10 October 1944 non-German broadcasts brought sensational reports in rapid succession. One member of the German embassy after the other renounced National Socialism, deserted the German Embassy, placed himself under Swedish protection and requested that a passport be issued him as a man without a country. On 13 October 8 people had already taken this decisive step, including the press attache, two secretaries and a niece of Dr. Hjalmar Schacht, who had been arrested a short time before by the Gestapo.

The German press said nothing about this but foreign countries were all the more interested and it is easy to imagine the impression produced there. What did the boastful words of Party bigwigs signify when members of the German missions preferred to break away from the National Socialist regime and placed themselves under the protection of a foreign power in spite of all the dangers threatening them from the Gestapo? How hopeless the situation in Germany must be for the second air attache at the German Embassy in Stockholm to quit on 7 November 1944, to renounce National Socialism openly and to place himself under Swedish protection! What a lift this gave other countries!

Nor did these matters remain hidden from the German people. For a long time everyone who had a good broadcast receiver had been listening to foreign broadcasts. The prohibition against listening to such broadcasts carried with it the threat of imprisonment and was intended to protect the German people against improper influences; actually it became a challenge to disobey. It is worth noting that the workers were the ones who first began openly listening to foreign broadcasts. German broadcasts lost interest more and more. Goebbels had lost ground. And so had the entire National Socialist system.

SMALL TOWN PRANKS

Whoever has followed attentively the description of radio agent activity and the way it was combatted can hardly have reached any other conclusion than that the German "radio defense" was by no means adequate to keep pace with the development of the mighty network of foreign agents, let alone to overcome it entirely. The few units assigned for monitoring and D/F-ing had their hands full if they tried to cover the most important links and fix the transmitters.

But which were the most important, i.e., the most dangerous transmitters? Frequently this was not learned until it was too late. The main evaluation unit had plenty to do. There could be no thought of complete interception and current coverage of agent traffic as a whole.

Despite the fact that this service had nothing whatsoever to do with that of the so-called Staffs of the Zones of Communications, it was always affected by cuts and reductions which applied to all rear area services. Instead of strengthening "radio defense", it was always being weakened.

To have some protection against this, the following expedient was devised: the two battalions of "radio defense" which comprised the existing companies were combined to form a regiment. And most of the people serving on the staff of radio defense were "transferred" to this regiment. (Actually only on paper.) Thus they disappeared from the lists of OKW; one had made an "extensive reduction in force" and could now commandeer these people back to "radio defense" from the "Regiment." The fact that this "regimental staff" was located in the same place as the staff of "radio defense" is an observation we may keep to ourselves.

With this the old situation was virtually reestablished! But the execution of this measure had called for a terrific number of negotiations, conferences, letters, and lectures - a gigantic expenditure of energy and pains that should have been needless.

It was necessary time after time to use such childish methods to protect oneself against lack of understanding in one's own camp. And the resulting loss of time and waste of energy hurt the work itself.

In addition to these matters, a struggle was going on due to jealousy between the radio defense of OKW and that of the police. From the beginning of the war to its very end the struggle was going on behind the scenes. One agency was jealous of the other, begrudged it its successes and was delighted at every failure of the other "party" which it could use as proof that its own work was better. From the very beginning OKW tried to gain control of all anti-agent activity and to have the police agencies subordinated to itself. The police resisted and tried to do the very opposite, relying on Himmler who was almost all-powerful.

Even when the Allies were in Köln and Koblenz and the Russians were in Stettin, Kdstrin, and Görlitz, this internal fight continued and even became more bitter from day to day. Is it any wonder that the work suffered seriously? Since the summer of 1944 the whole structure of the German armed forces and hence of the anti-agent activity had been so rotten that the struggle was more concerned with questions of competence between police and armed forces than with actual combatting of the agents.

Soon military events took a turn which inevitably brought about the end of the "Thousand Year Reich" of Adolf Hitler.

People in the German radio defense were proud of the fact that in 1943 they seized twice as many agent transmitters as in 1942 and that this was repeated when they seized twice as many in 1944 as in 1943. They boasted of it and led themselves and other to believe that anti-agent activity was going along very successfully.

Actually this was merely jousting with windmills for the number of radio agents was increasing so fast that it would have been necessary to pick up ten times as many as in the previous year, just to keep pace with them. The existing resources of radio defense and of the police were by no means adequate for this purpose and the struggle between the two did its part to slow things up. The much touted German unity remained a dream, even in this field.

On 21 December 1944 the Russian offensive broke loose against the German bridgehead in western Latvia where some 25 divisions were putting up a hopeless struggle, quite cut off from their native country. These were the first flashes before the final storm in the east. And while the Russians were preparing for their great push, officers and officials of the German armed forces were being detached to National Socialist training centers for "spiritual and ideological training". Even the cipher section and radio defense with all their subordinate units had to detach from their scanty personnel people for ideological training. The officers indoctrinated at these training centers then traveled around as "National Socialist Leadership Officers" (NSFO) visiting garrisons and agencies and delivering fiery propoganda speeches. In Zinna near Jüterbog, where the central office of radio defense was located and the mass of work coming in every day had everybody swamped, an NSFO colonel turned up once a week and delivered speeches lasting for hours which everyone was obliged to attend. He declared that the situation was serious but by no means hopeless. There was constant reference to Frederick the Great, the Seven Years War, the Napoleonic Wars and other historic events. Otherwise the main thing was proper saluting and a good military bearing. These were the basis of the fighting power of the people and the will to resist. Among other undesirable phenomena of modern civilization the lipstick was the greatest evil!

At the High Command of the Army they created the position "General of Signal Intelligence attached to the Chief of Staff of the Army Signal Service in the General Staff of the Army." It had taken five and a half years of war to bring this about! Now the army alone had 28 intercept companies, while the armed forces had no more than 50 all told. That was a sizeable organization. But its work fizzled because all these companies were not under centralized control but all sorts of staffs were sandwiched in between and this caused delay and dissipation of energy.

THE END

Every end has a beginning but it is hard to fix the beginning of the end of World War II precisely. In my opinion, this end began

promptly in connection with the bogging down of the German December offensive in the West in 1944. Up to that time the structure of the entire German military apparatus and of the state had stood up pretty well in spite of heavy burdens and the whole machine was functioning, although serious disturbances had long since been evident. With the early days of January symptoms of collapse became so obvious that no one could mistake them. And now something happened which is not without a touch of tragi-comedy.

Six months earlier a group of officers, who recognized the senselessness of continuing the war, tried to avert the worst by an act of violence. The attempt failed. The newly appointed Chief of the Replacement Army, Himmler, now introduced a discipline of terror. It resulted in giving the structure of the armed forces in all its branches an appearance of great solidity. Everywhere people "did their duty" diligently. Everyone avoided speaking about the war and its prospects or else they spoke with feigned conviction of the certainty of final victory and made mysterious mention of the impending use of new and decisive weapons. This was especially true in officer circles. At dinner in the casinos ceremony reached ridiculous proportions. What had been a free and easy meal became a demonstration of discipline and of National Socialist thinking. The "German greeting" and a snappy clicking of heels became trump-cards. A meal without raising one's arm five or six times was no longer conceivable. And at the same time there was an epidemic of reorganizations which were fatal to all regular work. Combing the lists and giving up personnel (and combining units) slowly but surely upset the former exact system of work and administration at the upper levels.

The speeches and addresses of the commanders at so-called officer gatherings kept getting sharper and "smarter". The check on railway trains and stations reached a point where enough people were employed to form whole divisions. And they increased from day to day. But this very thing led a careful observer to think that, in spite of outward discipline, the inner structure of the armed forces was in a state of dissolution. The "flying" and "motorized" courts martial didn't change matters. Executions by the firing squad and publication of them in railroad stations and in cities brought no change. Desertions became more numerous, even among officers. Listening to foreign broadcasts became general in spite of all prohibitions, because these broadcasts revealed with terrifying clarity the hopeless measures in Germany. On 12 January 1945 the Russian offensive broke loose from the bridgehead near Baranow (near Sandomir). On 15 January the Russians were at Kielce. Soon the entire east front was in motion. On the 17th Warsaw and Tschenstochau fell and the Russians were before Krakow. On the 19th they took Strassburg, and advanced to Graudenz. Lucenec fell.

Up to that time there had been an out-station of the German intercept service in Tschenstochau which monitored radio traffic of the Polish resistance movement and of Russian Agents. The existence of this station was known to both the Poles and the Russians.

When the front began to draw near to the city, the station reported the fact to the headquarters in Zinna and asked where it was to go. At the control station they played big brave boy. The head of the service belonged to that group of National Socialist officers who always shut their eyes to every critical situation and concealed the true picture from themselves and their subordinates by braddadocio.

The answers sent to the out-station were hardly what might have been expected: they should not regard the situation as more serious than it was; for the present there was no danger whatsoever, they would kindly refrain from spreading panic; withdrawal would be ordered when the time came, and so on.

The result was what one might expect. When the Russian tanks were rolling into the city, the head of the out-station hastily ordered his people to pack up what they could lay hands on quickly, with the result that everybody thought of his private possessions which he loaded on the few available trucks, and the unit raced out of town with the Polish rebels firing at them from the windows of the houses. Not until they were several hours away did they recover from their fright sufficiently to realize that documents of the utmost importance for the counterintelligence service had been left behind, including a report which had arrived just 24 hours earlier with all details that had been learned regarding the Russian radio agents.

Although people in Zinna near Berlin were encouraging the out-stations at Tschenschow to be of good courage, they themselves had begun preparing to evacuate in case of a Russian advance. However, the way in which these measures were carried out showed how completely the command there had lost its head. First they began packing the old files in boxes. Then they discovered they didn't have anywhere near enough boxes. New ones were not to be had. So they unpacked again and burned all the files down to the end of 1944. This had to be done as swiftly as possible and it was inevitable that in their haste they also burned up the things they needed for their current work.

Meanwhile groping attempts were made to find out where the control station of radio defense should go if the situation became critical. In conferences of officers, on the other hand, it was stated firmly that they had no intention of changing location and would stay here till the very last minute. They set up ridiculous tank blocks. Bazookas were stored in the offices and gas masks were tested out. The Russian prisoners of war saw this and grinned.

All the while things were moving at the fronts. In the west the Allies occupied Bastogne and Hoesfalize. The last three weeks had cost the German army 100,000 dead and wounded.

On 28 January the Russians were 6 km from Königsberg. Posen and Thorn were encircled, Memel was in Russian hands. Lithuania had been cleared of German troops. In East Prussia 200,000 German troops were

encircled. Kattowitz and Beuthen, Wohlau, Dyhernfurt, and Obernigk had been taken by the Russians. Bombs rained down on Berlin and other cities night after night crippling all work and destroying the most essential installations.

In the offices of OKW and near the Potsdam bridge there was no longer any real work. People ran shivering through the rooms, were telephoning, and setting up new files, or were packing. And some of this packing was done under a great nerve strain. They sent out people to look for alternate quarters but there wasn't much to be found for bombing had already destroyed too much and the remaining buildings were already overcrowded.

The most comical situation of all was found in those agencies which were subordinate to the Chief Signal Officer of the Armed Forces, General Gimmler. Gimmler was one of those officers who never got beyond the horizon of a hard boiled top sergeant. All his dispositions, orders and instructions betrayed that fact. He clung tenaciously to Berlin and insisted just as obstinately that the only possible alternate location for offices of the Signal Service of the Armed Forces would be the Army Signal School in Halle.

This Signal School was a group of buildings that stood out so prominently in the terrain that it was only a question of time when these barracks would be a victim of enemy bombs. Consequently all the units under General Gimmler were definitely averse to moving to Halle. They tried desperately to talk the chief out of this idea, but the more arguments they brought up against the plan, the more obstinately the old man insisted upon it.

Some of the sub-chiefs did, nevertheless, try to discover alternate locations, but this was done more to salve their consciences than with any honest purpose. The fewer positive preparations they made for possible evacuation from the Berlin area, the greater became the mountain of paper covered with directives and instructions, orders and arrangements for transferring the units.

Piles of instructions on how to conduct oneself in case of transfer of the units were prepared and stored and everybody knew perfectly well that if matters became serious, nobody could possibly follow out what was set forth in these instructions which had grown to book length. Nobody had time to read them through and even the specialists, who had to be employed for the purpose, were all at sea, because the contradictory ideas laid down here, the constantly changing situation, the continual changes in personnel made every plan obsolete as soon as it was drawn up.

In addition, the bombing of rail lines had made any orderly move impossible.

Finally they began to realize this and drew up lists showing the composition of the marching columns. They had reached the point where

the members of the highest units of the armed forces were to set out on foot with their bundles of documents and head for the Army Signal School in Halle. Some of the files and other documents had already been shipped to Halle. Half of them were lost on the way, the other half fell victim to Allied bombs in Halle.

On 31 January the Russians reached the boundary of Lower Silesia. In Breslau the Mayor, Dr. Spielhagen, was executed publicly in the marked place for cowardice. Three weeks later the Russians were at the gates of Cörlitz and of Guben; Graudenz was already encircled. In the west nothing could halt the Allied armies.

At the time the German capital reflected faithfully the process of decay; it was frightful to see the mad speed with which things went down hill. Berlin became the rallying point for deserters. There were so called passes for entry into Berlin in order to make some control possible. Only such members of the armed forces (including officers) as had such a pass were permitted to enter the capital from outside. Anyone else ran the risk of being treated as a deserter. These passes had to be shown at the barriers along with all other papers. But these passes didn't help because anyone who wanted to desert found a way.

Checks on the railroads and sentries at the barriers and along the rail lines were powerless because the destruction of stations made it possible to enter or leave railroad property without having to go through the gates.

In the final days of March it reached a point where individual officers in confidential conversations spoke openly of their intention to desert. This showed how rotten the armed forces had become behind its outer facade. Single officers began moving out to the south and southwest in what approached panic and frequently ran into the arms of the advancing enemy.

The higher officers of radio defense in Zinna held two Storch planes ready to save their own hides. But there were already some of the men standing by with machine guns, just waiting for these planes to start, to give them a final salute. The rest of the personnel was to make its way on foot.

The situation was similar at the central office of the army intercept service in Zossen near Berlin. They attended strictly to business and talked about things which no longer interested them in the least. Any direction of the processing of results of the intercept service had long since dropped out. In most cases wire connections were interrupted and radio traffic was quite inadequate. Now the control stations of all branches of the intercept service began transferring small units and within a short time they were all fluttering around like pennants in the breeze.

The final hour of the German intercept service coincided with the end of the German armed services.

THE GREAT "WHY?"

This book covers the entire field of the intercept service during the last 30 years. A lot of space has been devoted to the work of Russian, English, and other radio agents during World War II. These agents worked in behalf of their native land and thus rank with the soldiers at the front.

This was known to the German command. Since early in 1942 it had not been ignorant of the strength of this uncanny opponent in the ether. It knew that these radio agents represented the consolidated defensive power of all Europe in the face of the war let loose by the National Socialist leaders. Whoever was permitted to observe the effect of this force could come to no other conclusion than that this war could never be won. There was no way of counteracting this invisible power successfully, unless it were by exterminating all the non-German peoples of Europe. So the question arises: why did the National Socialist leaders in Germany fail to give due consideration to this fact? Why did they continue the war although it was hopeless? The results of the intercept service revealed how strong the enemy was in all fields. Why did they not stop the war when they knew it could not be won? Why did they go on adding victim to victim, destruction to destruction, suffering to suffering, until all Europe was brought to the brink of the abyss? There could be no hope of victory and yet they continue the war.

Clausewitz once said: "...often everything depends on the silken thread of imagination" but even this sentence is not justified here. Therefore I ask in the name of all the peoples of Europe and not least in the name of the German people: WHY?