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DF-249 37/51/TOPSEC/AFSA-14

IDEAS FOR THE ESTABLISHMENT OF AN ATLANTIC INTERCEPT SERVICE

1. Attached is an Armed Forces Security Agency translation of a paper by Dr. Wilhelm FLICKE entitled "Gedanken über die Errichtung eines atlantischen Horchdienstes". In and out of uniform the author spent some 30 years in the former German intercept service and after he had been appointed official historian of OKW/Chi by General FELLGIEBEL had an exceptional opportunity to become familiar with virtually all aspects of the work. The story of how ASA finally contacted Flicke is interesting; insofar as the translator has been able to piece it together it is as follows:

2. After the war Flicke composed two books which were intended primarily to open the eyes of the German people to things not commonly known. He had already arranged for publication of the one, entitled "Die Rote Kapelle" - a fictionalized account of one of the major Soviet spy rings, and had completed the manuscript of the second, "Kriegsgeheimnisse im Aether" (War Secrets in the Ether), when he met an American officer who became interested in the letter and wished to bring the manuscript home to arrange for publication here. Just before the officer was to return, he was killed in an accident. The "Historical Section" went over his papers and discovered the Flicke manuscript. It was sent to this country ad was eventually purchased by this government. It has not yet been published.

3. Dr. Flicke was contacted through CIA and entered into a contract for the sale of "War Secrets in the Ether" and for homework over a period of two years. The papers submitted on topics suggested by ASA and AFSA have been translated and issued in the DF Series. Ultimately the period was extended and it was during this extension that the present paper was prepared. It appears to merit careful study.

Translated: R.W.P. 35 Copies
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I. THE PRESENT AND FUTURE IMPORTANCE OF THE INTERCEPT SERVICE

STRONG AND WEAK POINTS OF THE INTERCEPT SERVICE IN THE PAST AND LESSONS TO BE DRAWN THEREFROM.

"The past provides the lessons for the present and the future." This is especially true of the intercept service. It is impossible to organize an effective service of this kind today without taking into account the experiences of the past two decades. Nor can one recreate simply by taking over into the present the organization of the past. During and since the last war things have happened which suggest important changes in organization and call for shifts of emphasis.

The basis of these reflections is the assumption that the countries of northern, southern, and western Europe, along with those of the Americas and various areas of Africa and the Near East, constitute a community of interests and of action, and opposed to it in the aether stands the entire complex of countries and areas under the leadership of Moscow; in this connection it does not matter whether individual countries of the western group are at this moment members of the Atlantic Pact or are still outside it. Precisely those countries which have not yet joined the Atlantic Pact will have to play an important role in the intercept service of the future.

Both in the First and Second World War the intercept service had an importance which must not be underestimated. The fact that since 1945 many new inventions have been made in the field of communication techniques should not mislead anyone into believing that now and in the future there will not be a wide field open to the intercept service and that its value will be less than in the past.

The intercept service is of value not merely in time of war, it is always of value, even in times of profound peace. It is of special value then because it lays the foundation for its work in case of war and supplies information which will be of the utmost value if war comes. Between the two world wars the German intercept service succeeded in getting surprisingly good insight into the military structure of almost all the countries of

Europe. If it had been continued against the East in 1945, the Western World would not face as many riddles as it does today. The gap will be hard to close, to be sure, but it can be closed if one does not delay too long in building up the organization.

Wherein lay in the past the strength of the intercept service and wherein lay its weakness?

For the answer to this question, I am taking the practical example of those European countries which had the oldest and best intercept service: Germany, France, England and Italy. The strength of the intercept service of these countries rested on long experience and tradition, and also on the fact that these countries maintained a smoothly functioning intercept service in the period between the World Wars.

The weakness lay in the fact that frequently one clung too tenaciously to tradition and was hesitant and very slow in accepting innovations. Consequently the intercept service was always limping along behind the play in the aether. Today this danger is greater than ever before.

A second weakness of the intercept service of the old school was due to the fact that the amount of traffic passing through the aether was considerably greater than the best intercept service of any country could monitor. Hence a strictly systematic, complete control of the aether was no longer possible. It was necessary to limit oneself to certain focal points and this left the way free for the enemy in many areas.

The probability that this will be repeated is very great today. For this reason it is necessary to make a radical break with an old tradition, namely with the tradition of the "National Intercept Service".

Let us take the present situation in Western Europe: it makes it necessary (or would make it necessary) for each individual country to maintain an organization of its own for all provinces of the intercept service (army, navy, air force, international traffic, radio agents, radio broadcasts, etc.). That would mean that even in peacetime each country would have to occupy thousands of persons in the intercept service without being certain that all traffic was really covered. No country

can do this (merely for financial reasons).

The intercept service, however, is only of value if it is carried on on a large scale so that no radio traffic can escape it in the long run, so far as this is humanly possible. If this condition cannot be fulfilled, it is better to dispense with it entirely.

Dispensing with it, however, means that the most valuable intelligence material is ignored.

There is only one way out of this dilemma: the West European (or Atlantic) Intercept Service must be organized on the basis of a super-state. The closest conceivable collaboration of all the Western countries must be so thoroughly organized that the integrated effort will be just as much a matter of course as if it were the intergrated effort of a single country.

Such a combination of the intercept services of a number of countries would result in two noteworthy advantages:

1. An enormous saving of trained personnel, equipment and money;
2. An increased utilization of the various experiences of the individual countries in special branches of the intercept service.

For in the course of time almost every country has been able to gather especially valuable experience in certain fields of the intercept service; Germany in regard to the radio traffic of foreign armies and in regard to radio defense, England in the field of the naval intercept service, the United States in the construction of cryptanalytic machines, etc.

If in the future each country concentrates its effort, within the framework of a collective program, on specific areas of the intercept service, then far more can be accomplished than with the present system.

In this matter the greatest resistance is to be expected on the part of the English. For this reason the English must be granted a certain independence within the framework of the Atlantic Intercept Organization without upsetting the principle of universal collaboration. In this matter it would be well to take into account the specific advantages of the country, e.g. by moving to England the control of the entire Atlantic naval intercept service and the West European central cryptanalytic office.*

* For Naval systems.

In these two fields the English have shown remarkable achievements. By sending a number of outstanding German, French and Italian specialists in naval intercept service and cryptanalysis to England, a first class central office for these two branches of the work could be created in England and this should be in the closest possible contact with the main center (somewhere in France, probably in the Paris area).

The organization of a unified intercept service of the nations of the western bloc would be much simpler under present day conditions and much clearer than was the organization of the "national" intercept services before and during World War II. The former German intercept service, for instance, had to work on practically all the countries of Europe. The French intercept service was directed not merely against Germany, but likewise against Italy, Spain, England and Belgium. This complication drops out today; there is only <u>one</u> target at which all efforts are aimed. This condition results in a great simplification and saving and makes it possible to devote oneself with greater emphasis to the monitoring of all important radio traffic. The difficulty resulting from the different languages and special interests of the several countries is not so great as to be insuperable.

These reflections show that the problem of creating a truly effective intercept service for the countries of the western bloc is by no means incapable of solution despite the multiplicity of tasks and the terrific increase in radio traffic; it is not even difficult. It merely calls for clear decisions suited to the situation. In this respect the adherence to old national traditions must be set aside radically.

The seriousness of the present situation, which can hardly be expected to improve in the forseeable future, permits of no half measures, not even in the field of the intercept service. An intercept service which is defective and inadequate in its organization could do more harm than good. Either the readiness of the Western Hemisphere to defend itself is to be seriously assumed, in which case the intercept service must be developed as quickly and comprehensively as possible because it requires no little

warming up time before it can work at full capacity, or else the entire rearmament of the West will continue to be merely on paper, in which case it will be well to dispense with an intercept service altogether.

There is already abundant work for the intercept service; the air is teeming with traffic which can be intercepted. However, an intercept service cannot be organized overnight; many months are required before it can function properly. In this respect one must not indulge in illusions. In case of need an infantryman can be trained in six weeks, but a good intercept operator cannot, to say nothing of evaluators or cryptanalysts. In this respect the Russians have a great head start. It is a question of overtaking them as quickly as possible.

When the German Reichswehr was set up after the end of the First World War, General von Seeckt declared: "It is more important to reestablish the intercept service than to fight to be allowed another infantry regiment." This statement is still valid today.

II. THE DANGER OF SPLITTING UP THE INTERCEPT SERVICE AND THE NECESSITY FOR CENTRALIZED CONTROL

There is one other point in past experience which ought never to reappear in the future; that is the splitting up of the several branches of the intercept service with all its sorry consequences. It, too, resulted from the maintenance of old traditional developments. For instance, in Germany, international diplomatic traffic was monitored, copied, decrypted and evaluated by three perfectly parallel intercept organizations:

OKW,

the Foreign Office,

the Forschungsamt (Goering's Research Bureau).

Theoretically, therefore, every diplomatic radiogram was worked on by three organizations. That entailed a wastage of intercept operators, cryptanalysts, apparatus, administration, paper, etc., which might have been reduced by one-half with doubled efficiency.

Within the armed forces the Air Force maintained an intercept service of its own, doing work which the Army intercept service could have done without difficulty. Hundreds of operators and instruments could have been spared. It was just the same story for radio agents, broadcasts and in other fields.

All this not merely resulted in a splitting up and wasting of energies but also in marked disturbances in the supply of information to the top command. An unwholesome rivalry between the individual organizations led not to an increase in the total output but to intrigues and sometimes to mutual sabotage. Each outfit rejoiced only in the defeats of the others, never in the successes. In other countries the story was the same. It is still the case in England today.

The lessons to be drawn from this are that in the future the entire field of the intercept service must be directed and coordinated by a single central control office. Moreover this results in worthwhile potential savings and in a rational utilization of qualified personnel and material.

Despite the multiplicity of tasks, the organization as a whole must be kept as simple and clear cut as possible, only then can maximum performance be achieved.

If it was said above that a concentration of the entire intercept service in a common central office is absolutely necessary, this must not be taken to mean that this central office must become overorganized with too many ramifications. For instance, it would be nonsense to direct an intercepted message of purely tactical content through channels to the central office and from there through channels to the troop unit concerned. The central office need not be very large; its principle task is not the performance of a multitude of detailed jobs but the coordination of the work of all the subordinate formations or stations of the intercept service. Of course the central office must be able to issue binding orders.

This last mentioned factor needs to be emphasized especially. Shortly before the outbreak of World War II an experiment with a central office of the intercept service in Germany was tried; the cryptologic agency of OKW (OKW/Chi) was to have been this main center. When the organization was set up, however, it turned out that OKW/Chi had no power to issue orders but merely had the right to express wishes and recommendations. Naturally nobody whatsoever paid any attention to these "wishes and recommendations". In the final analysis there was now one more organization but no acutal central office. The original intention had been totally missed.

III. ON THE DANGER OF CUMBERSOMENESS OF THE INTERCEPT SERVICE AND THE NECESSITY FOR A FAST WORKING ORGANIZATION

Another thing which was likewise learned from experience of the last war was that almost all the former organizations of the intercept service were cumbersome and therefore worked too slowly. It must be admitted that every form of the intercept service concealed a certain cumbersomeness; that lies in the nature of the case. The copying of radiograms, their treatment by the cryptanalysts and evaluators, the forwarding of the information obtained to one's own control station and from there to the troop command called for time. But these time losses inherent in the nature of the work can be much reduced by technical and organizational measures. A good teleprinter net, which connects all stations of the intercept service with one another, is absolutely necessary, likewise a radio net of its own for the transmission of short cipher signals to the intercept units committed.

Within the intercept organization the work time must be so regulated that every avoidable loss of time is actually avoided. Thus there were within the framework of the German intercept service some stations where every intercepted message was entered with its number in long lists which were then transferred to receipt books and only forwarded against receipt. There were times at the intercept control station of OKH (Army) when the purely formal procedure took so much time when large masses of traffic came in that the radiograms often did not reach the cryptanalytic experts for many hours, sometimes not for days.

The principle of speed must be developed until it becomes the self-evident motto of the entire intercept service and this must be done without harrassing the individual worker. By periodically repeated conversations, orientation lectures and courses, the principle of speedy reporting (by rational organization) must be so instilled into each individual that it becomes an all pervading concept.

IV. FOCAL POINTS OF THE INTERCEPT COMMITMENT IN THE FUTURE

The intercept service must consider the following facts: a war in the future will differ very materially from the wars of the past. There are no longer any national wars where the enemy only stood on the other side of the front line and on this side of the front there was a unified community. The Second World War has already given us a foretaste of the future. The fronts no longer run solely along the frontiers or battle lines but this way and that through the populations of all the countries of the earth, through their souls and through their ideologies.

The war of the present and the future shifts its focal point to the inner front. The intercept service must also take account of this fact.

The work of the "fifth columns" and "Roten Kapellen"* will assume gigantic forms in the future. The best Army organization and troop leadership shrinks in value when the "Roten Kapellen" carry on their treacherous activity in the rear day after day.

A realization of this fact forces one to the decision to transfer the focal point of the intercept service in part from the actual front to the rear area in order to combat the activity of the radio agents as quickly and effectively as possible. This can be done the more easily since the intercept service at the front has lost some of its value anyway in view of the great mobility of modern warfare.

While in the First World War, and to some degree in the Second World War also, the focal point of the intercept service lay in obtaining <u>tactical</u> and <u>operational</u> information, in the future it must shift on the one hand to <u>strategic</u> information and on the other to combatting <u>radio agents and partisan radio</u>.

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* "Die Rote Kapelle" (Red orchestra or band) is the name given by the Germans to the Soviet spy ring with groups in Berlin, (ca. 1936 to 1942), Brussels, Paris (ca. 1940 to 1942) and several other cities. The other major spy ring, which operated in Switzerland, was called the "Rote Drei" (Red Three) because of its three radio stations. Fairly complete information on the activities of the two rings is found in TICOM publications DF 116 AH, 232, 236 and two books by Flicke: "War Secrets in the Aether" (unpublished) and "Die Rote Kapelle" (a "novel" published in 1949).

V. ON THE STRATEGIC, OPERATIONAL AND TACTICAL INTERCEPT SERVICE

Just as warfare as a whole is subdivided into strategic, operational and tactical, so, too, is the intercept service.

The intercept service came into being during World War I which was fought in the main as a war of position. The fighting was limited to single skirmishes, battles in a limited area and a few offensives. The military radio traffic reflected this and of necessity forced the intercept service to follow the same directions.

Since one was anxiously endeavoring to maintain one's own positions, the observation of the opposing enemy became the principal goal of the intercept service. Consequently the results of this observation lay predominantly in a purely tactical field, rarely in that of operational warfare. A strategic intercept service was not maintained in Germany at all and of the other countries only England had any such.

This reputation of the intercept service as a means of getting tactical, or at most operational, intelligence clung to it for a long time and did not even disappear during World War II. In Germany they were happy if they solved a few Russian divisional ciphers used to encipher tactical radio traffic. On the other hand the illumination of the enemy's rear by the aid of the intercept service went backward.

Today in the West we do not need an intercept service which makes it possible to conduct skirmishes and small operations successfully, but an intercept service which will contribute to winning the war. And that is primarily a <u>strategic</u> intercept service.

A modern war will not be decided solely by operational successes of an army but rather by all the mobilized forces of a country or of a group of countries. The intercept service must take this fact into consideration.

At the beginning of World War II an attempt in this direction was made in Germany. But this attempt proved abortive. There were two reasons:

1. The two intercept stations of OKW/Chi had the assignment of copying primarily diplomatic messages. A secondary group was occupied with the interception of foreign press reports. But diplomatic and press radiograms form only a portion of that vast complex of radio transmissions which must be covered to gain strategic intelligence.

2. The second reason was even more important. It was due to an organizational error. The decrypted messages were translated faithfully in full and forwarded to a few (very few! only three or four) offices. Often there were more than 100 a day. Now even the most competent and industrious officer of the general staff does not have time, along with his other work, to read a hundred radiograms (some of them filling several typewritten pages) every day and to digest them, no matter how willing he may be. Moreover the results of all the other branches of the intercept service and the reports from other sources of intelligence were also coming in.

Moreover every recipient of these VN's ("Verlässliche Nachrichten" = reliable information, as these deciphered radiograms were called) was in constant dread and terror because the security regulations were not handled rationally but in a purely literal manner.

The only proper course would have been to have all decrypted radiograms pass through an "evaluation group" where they could be digested and put out two or three times a day in short, snappy, clear form as summaries. Instead, important messages were given in full while the very great number of "unimportant" messages were simply dropped under the table.

These "unimportant" messages were those whose content, taken individually, offered no extensive information. But that does not mean that in connection with other messages they might not have yielded very valuable information. Only a systematic evaluation

would have been in a position to close the gap. This step was not taken and so approximately two-thirds of all the decrypted messages went into the waste basket unused.

In a modern war all movements are executed with far greater speed than formerly. The intercept service must adjust itself to this fact. To some extent this can be done by stepping up the speed of the work. However a limit is soon reached; the work must never become a mad race; nothing is more dangerous than when those engaged in the intercept service begin to get nervous; they must work with perfect composure.

But how is one to overcome this discrepancy? Well, it is quite simple. By extending the ear of the intercept service farther into the enemy's rear area and picking up radio traffic of all kinds which is passed back there.

Nowadays no one would think of spotting the approach of enemy planes by acoustic aids; that was all right back in 1918. Today 20 times the distance is bridged by radar devices and this wins time for countermeasures. It is necessary to work in similar fashion in the field of the intercept service. No intercept results of a tactical nature, no matter how interesting, are of any avail to me if, due to the swift progress of the action, I am unable to carry out countermeasures. It is not the task of the intercept service to play the role of an historical reporter, rather it is to inform its own command <u>in time</u> regarding the enemy situation so that countermeasures can be taken. And it must gain sufficiently deep insight into the <u>general situation</u> on the enemy side in order that the strategic plans of its own side may be formulated correspondingly.

Obviously in a worldwide conflict, situations can arise which bring the tactical intercept service into the foreground in this or that theater. However, this will not be the rule, but more or less the exception.

I would sum up by saying that in my opinion the principal target of intercept monitoring should be all strategically important traffic of the enemy, which does not mean that the copying of operational traffic need be neglected.

VI. SAFEGUARDING THE INTERCEPT SERVICE FROM ESPIONAGE, SABOTAGE and "FIFTH COLUMNS"

It would be like sticking one's head in the sand, if one were to assert with conviction that one's own organization was proof against all attacks of the foreign intelligence service and against penetration by agents of the "Fifth Column" after a one-time check of the personnel has been made. It should be clear to everyone that in the future Moscow's agents will not spare a single West European or Atlantic agency or organization of any importance. And it is absolutely certain that a western intercept service will present a particularly attractive target for eastern agents merely because of the large number of people engaged in important positions therein.

From the period of the Second World War we have a long series of cases where the foreign intelligence service succeeded in penetrating the system of the German intercept service and working there. That will be the case much more frequently and significantly in the future. The principal aim of the foreign intelligence service will be to ascertain which of its traffic links we are monitoring successfully and which cryptographic systems are being read.

We must regard this danger as real and take steps to meet it in advance. The National Socialist regime in Germany clearly recognized this danger in all its manifestations (resistance movement, agent and espionage service, fifth columns, etc.) and endeavored to take counter-measures. This was done in accordance with the principle of the well known "Führerbefehl Nr. 1" (Hitler's Order Nr. 1) which provided that each person should be informed only insofar as is necessary for his specific task. That is to say, the question was decided according to the principle of the Russian espionage service where the left hand must never know what the right hand is doing.

One might be inclined to regard this system as good and purposeful, especially since one must proceed on the assumption that there are and will be in one's own ranks many people who are ideologically on the side of the enemy.

But Hitler's "Führerbefehl Nr. 1" had two defects which converted its usefulness into the contrary. In the application of the principle of this order to the intercept service these two defects appeared as follows:

1. A painfully exact adherence to the order led to an anxious closing off of each office of each field of endeavor from every other. The result was an (often unconscious) duplication of effort and even an antagonistic effort which left open a wide front for the efforts of foreign spies. That could have been avoided had there been at that time a central agency for the conduct of the entire intercept service such as has been mentioned several times. It would have then been possible to carry out the "principle of minimal orientation" without harmful consequences. Since this coordinating agency was lacking, those serious conditions arose. This defect can therefore be eliminated by the creating of a coordinating central agency.

2. The second defect was more serious. With the mere order that no person should know more than is necessary for his or her specific task the matter is not settled; one must avoid the possibility that a person come into a position where he knows much and consequently betrays much. And precisely in this point the greatest mistakes were made. One example will illustrate this:

   OKW issued "priority lists" from time to time to its intercept stations. These were lists which were handed to every operator and were not even regarded as particularly secret. In them were listed in alphabetic sequence those messages (arranged according to the addresses) which were to be copied with priority I, II or III.

   E.g.: agwar wash I
   gaimudaijin tokio II
   amtorg III
   American messages with the indicators
   "topyk" and "nimyj" <u>not</u> to be copied! etc.

All messages in systems which were currently read stood under Priority I. Priority II comprised systems which were being worked on and where success seemed likely. Priority III indicated systems on which work had not been begun or where no success was in sight. Of course it did not take an intercept operator long to find this out. Consequently, without a single one of them ever coming into contact with the cryptanalytic group or being told anything about the matter, hundreds of operators knew which systems had been solved.

This is only one example; dozens could be given showing how the basic idea of security was violated by thoughtless regulations.

This must be prevented in the future. And it can be done in the following way: at the central office of the united intercept service there must be a small working group whose duty it is to protect the entire intercept organization against foreign infiltration, to maintain surveillance and control and to seal off the entire operation of the intercept service with an "iron curtain".

A further example: OKW passed on the decrypted diplomatic messages with the exact wording and with a statement of the sender and receiver. OKH and OKM usually did the same thing. That is wrong! For it betrays at once which cryptographic systems have been solved. It would be much more correct to work over all the information obtained from a number of messages into a short summary where the text would give no clue to the cryptologic sources.

Today we face the terrifying fact that the "Rote Kapelle" spans Western Europe and in particular Western Germany with a denser network than during World War II. At that time only a few locally limited groups were involved. Today we find old acquaintances of the war days in the editorial rooms, press agencies, administrative positions, in the universities, in the broadcasting studios and everywhere where it is possible to obtain information and exert influence. Their connections with one another are excellent. The network covers all Western Europe.

Where once there were hundreds there are thousands today. How tremendous their influence is is shown by countless West German newspapers which do not try to reflect the opinion of the people but to shape opinion and to do so from the point of view of the East.

Of course there is no radio traffic with Moscow today. But the ideological attitude of former days remains and it is not difficult to imagine what these people are really up to and how things will be in the event of war.

In every labor service company the Communist Party has a confidential agent. Let us look at an example of how this is done:

In a Nuremberg Labor Service Company a young man from Lauf is admitted. His father is a Doctor of Engineering and a member of the Board of Works, i.e. the boy comes from a very good family. A few weeks later he has a "friend", a simple wood worker from Lauf, who "happens" to be a Communist functionary. Every week when the young man comes home the two "friends" sit together until late at night chatting. About what? -

It is very important that in setting up intercept stations, D/F stations and the like in the future the security factor be considered. The stations must always be in the vicinity of army or police quarters so that they may be protected against sabotage.

VII. DRAWING THOSE COUNTRIES WHICH DO NOT AT PRESENT BELONG TO THE ATLANTIC PACT INTO THE FRAMEWORK OF THE UNITED WESTERN INTERCEPT SERVICE

There are a number of countries which for various reasons have not joined the Atlantic Pact as yet and perhaps will not do so. From the standpoint of the organization of an effective intercept service, however, these countries must not be left out of account.

The German intercept service had drawn into its organizational net a number of European countries long before the outbreak of World War II. According to the situation this was done in a more ore less official way. There was very close collaboration with Austria, Hungary, and Finland, and at times also with Lithuania. Later this was extended to include Italy and in 1940 to include Roumania and Bulgaria. In Spain an intercept organization had been set up which was tolerated by the Franco Government and there was also collaboration with Japan.

Today the situation is changed. But there are several countries which for geographic reasons (and hence for reasons of intercept technique) must not be ignored. Among them Sweden is of prime importance. From Sweden the entire Baltic area can be covered by intercept facilities better than from any other territory.

I do not know to what extent intercept work is carried on there. Shortly after World War II a representative of the Swedish General Staff approached me and manifested great interest in questions of the organization and technique of the intercept service. From that I conclude that people in Sweden were at least playing with the idea of setting up or perfecting this service. I think I can assume that this country will not be averse to the idea of joining the West European intercept network.*

In the case of Switzerland things are somewhat different. A purely military intercept service would be of little value here. There would also be no special advantages in the D/F field. On the other hand this country is of outstanding importance for the surveillance of agents (radio defense).

* Since the appointment of Major General Nils Swedlund as Commander and Chief of the Swedish forces the prospects for including Sweden in the unified system of the Atlantic intercept service have increased materially. Swedlund takes a very positive attitude with regard to collaboration with the West.

Switzerland will be in the future, as in the past, a major scene of agent activity. During World War II steps were taken toward the organization of a Swiss radio defense but these steps came very late and were inadequate. Meanwhile the importance of this service has been clearly recognized there and the Swiss have begun organizing a central radio defense. Its incorporation in the complex of the Atlantic radio defense appears urgently indicated. At least collaboration on communication techniques would be of great value. The Swiss D/F net should be supplemented by that of the French, Germans, Austrians and Italians.

Austria, on the other hand, with its old intercept station in Graz would have to be attached organizationally to the West European intercept net and hence also to the D/F net. The incorporation of Austria appears important because there are in Austria a number of excellent cryptanalysts whose aid should not be dispensed with.

The incorporation of Yugoslavia appears important, to be sure, but will not be practicable until some later time. That Yugoslavia attaches great importance to the intercept service is clear from the fact that this country is endeavoring to recruit experienced cryptanalysts.

The inclusion of Greece and Turkey should result in the first phase of the organization of the Atlantic intercept service. Turkey in particular could very well serve to expand the intercept and D/F base.

Spain and Portugal would play no role from the standpoint of the purely military intercept service but could, like Switzerland, be of great importance for radio defense.

Winning over all these countries to the idea of collaboration in the intercept service will call for much skill and tact and must be in accordance with a comprehensive plan. Here one could very well make use of old ties. The interest of these countries might be secured if one not only asked contributions from them but supplied them with material from the mass of information reaching the central office of the Western intercept service and worked on the basis of honest cooperation.

VIII. THE ACHIEVEMENT PRINCIPLE, COMPETITION AND RIVALRY IN THE INTERCEPT SERVICE

A correctly operated intercept service can provide its own command with information regarding the opponent which will be of inestimable value; the service is especially well organized and conducted when the entire personnel performs its duties with joy and interest, because in this service one is especially dependent on the honest good-will of the operators in particular.

One can compare the intercept service to the work of a spider; it builds its web and must then wait patiently and attentively to see what will become entangled in it. Naturally there is no possibility of influencing the enemy to induce him to transmit many and valuable messages.

However by paying strict attention, by expanding and taking good care of the web it has built the spider can contribute toward assuring that as much as possible is caught therein.

It is like that in the intercept service. The interest and zeal of the intercept operators must be aroused and kept alive. However here we encounter a reef on which the entire structure of the intercept service may easily come to grief. With an excessive spurring on of the intercept operators, with the introduction of the Stakhanov principle,* conditions may arise which will undermine all confidence in the reliability of the intercept service.

This observation is not offered here as something purely theoretical and academic, instead it is based on bitter experiences within the German intercept service, particularly during the course of the last war. I should like to illustrate by a few examples.

First of all we have the "Lauf Case".** Here the man who functioned as military head was a reserve officer who in private life was a paper

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* [Translator's note: An efficiency idea similar to the Taylor system.]

** See DF-116
This is by all means the most interesting case of sabotage in an intercept organization of which we have any record. In addition to the "doctoring" of messages mentioned here there was also tampering with associated equipment.

manufacturer. At the intercept station which had to intercept diplomatic traffic he introduced gradually an achievement principle, which was very similar to the Stakhanov system of the Russians. He forced the operators to increase their performance constantly and demanded that each of them should intercept a definite minimum number of messages during the month. This number was very high and was constantly increased. If it was not attained by the operators, they were threatened with transfer to the front; if it was exceeded, then leave and other favors were granted.

This system worked very well for a time, namely until the maximum achievement had really been reached. But it could be foreseen that some day there would be a serious breakdown, and it happened. In order to "improve" their performance record, a number of operators began falsifying intercepts. They would copy any messages whatsoever which had some outward similarity to those which they were supposed to intercept but actually belonged to that group of messages which were not capable of solution and hence were not to be copied, e.g. Russian diplomatic messages. Then they would paste the "heading" of a "genuine" American or English message on the tape and would thus have improved the "performance" by one message; or one and the same message would be copied by three or four receivers and provided with different address headings, etc.

These swindles assumed such an extent that every month hundreds of such false telegrams were forwarded to Berlin where they caused horrible confusion in the cryptanalytic section.

There was a similar case on the Western front, this was the "Schuster Case" concerning which a special report will follow. It extended over a full year. To put it briefly, the case was as follows: at one of the intercept stations in the west the ambition of the personnel had been unduly stimulated. This led an operator named Schuster to hit on the idea of distinguishing himself. He concocted the "radio net of the English command-intelligence unit" (called the FAV-net)* which extended from London via Dublin, Belfast, Leicester, Rejkjavik to Murmansk, and at intervals turned in fake telegrams. Although during the entire year

* Führungs - Aufklärungs - Verbandes - Netz"

he was the only man who "heard and copied" traffic on this net, this did not attract anyone's attention. On the contrary, Schuster was regarded as an outstanding intercept operator and received one commendation after another. When he was unmasked, it was a terrible scandal and consequently the case was killed by absolute silence.

Similar episodes appeared on the Eastern Front. Such swindles can also be continued for a time because an immediate check is difficult. They are always the result of speed-up methods. For instance there was for years a bitter rivalry between the two intercept stations of OKW (Lauf and Treuenbreitzen). Each of these stations was eager to be the better, i.e. to intercept more messages than the other. The result was that more and more links were intercepted which did not need to be intercepted either because the system could not be broken or the content was unimportant. Thus the output of one of these stations mounted to 30,000 messages a month, of which 85% were sent to the incinerator by the cryptanalytic section and the evaluation section in Berlin. This enormous amount of paper greatly hindered normal operations in the central office.

Such evils resulting from sheer human vanity must be radically suppressed in the future. One must incline rather to the principle used by the English Secret Service when committing its agents: "Only report when you have something to report; if you have nothing to report for two years, report nothing!"

The German intercept service both before and during World War II was always under pressure inasmuch as more was demanded of it than could be performed.

Instead of seeking the cause in their own work in cases where the results fell behind expectations and recognizing that something was wrong in the organization and that the man in question or the unit in question might be better employed in some other fashion, those responsible took the much easier course of forcing "better performance" by censure or other drastic measures. This always resulted in deception of minor or major extent.

The following example will show how stupidly people sometimes acted in this matter:

After the German intercept service had won respect by the successful monitoring of foreign traffic, people in Germany set out to apply what had been learned to our own radio operations. They tried to shape these so that all the mistakes made by foreign armies in their traffic would be avoided and that our own radio system should be so maintained that the intercept companies employed at maneuvers and exercises would hardly get any useful results.

That was a very sensible and correct measure. But the reverse side of the medal appeared at once: since the intercept companies achieved only slight results when monitoring our own maneuvers, people declared that the entire intercept service was virtually superfluous since it was not able to fulfill its assignments; or else they declared that the intercept companies engaged were incompetent.

Naturally no company commander and no intercept operator or evaluator wanted to let such a rating stick. Consequently there began at once a chain of swindles which involved obtaining details regarding the true situation on the other side by means of friendly connections and thus "improving" the results of the monitoring.

Such deception and self deception naturally results in a very dangerous demoralization and can shake the entire intercept service to its very foundations and bring it into discredit. One of the most serious tasks of the future will be to eliminate these dangers and to emphasize the clarification of such problems during training. In the intercept service there is so great an opportunity to strive for good performance that there should be no room left for such manipulation.

IX. THE INTERCEPT SERVICE AND MILITARISM

People often talk a lot about German militarism and condemn it without having a clear idea in their own minds as to its essence; by no means did this consist in unconditional obedience and the precise fulfillment of duty. Really it was expressed in an entirely different way, and precisely within the framework of the German intercept service this "militaristic" spirit had an especially baneful effect.

There is probably hardly any other branch in a defense organization which is as delicate and sensitive as the intercept service. Here it is impossible to operate with snappy commands and their strict execution, one is absolutely dependent upon the intelligence and good will of all concerned.

Those "concerned" do not belong to this service for a brief time but for a rather long (sometimes for a very long) period and therefore develop into specialists. In most cases they remain constantly at their special place of work which, according to German concepts, generally rules out any regular promotion. As a result the German intercept service employed persons in the following categories:

Military: Active officers,
Supplementary officers, (so-called E-Offiziere)
Non-commissioned officers and men,

Civilians: Officials of the higher grades,
Senior officials,
Plain officials of the medium grades,
Employees of all grades.

To a certain degree each of these groups represented a caste. But while there was among the officials and employees a certain sense of belonging together, this was usually entirely wanting on the part of officers and supplementary officers in respect to the other categories. Of course there were exceptions.

But since the officers changed every 1 to 3 years and new ones (unacquainted with the work) came in as section heads, there were tensions which assumed an especially serious form when a man who had formerly worked

under an employee or official in a totally subordinate position suddenly appeared as the superior officer by virtue of his military promotion and then acted in a presumptuous and domineering fashion. Thus it happened that many competent specialists (employees and officials) with outstanding experience in their field would spend 10 years, 15 years or longer at their work and have to put up with seeing a changing throng of young, totally inexperienced officers placed over them and having to carry out orders and suggestions which were frequently senseless. And all this because according to German militaristic concepts the head of a section or an agency absolutely had to be an officer.

Such a system, which often led to curious and even catastrophic situations, had a depressing and embittering effect on the real experts. It killed their joy in their work and produced a feeling of resignation and passivity. But since passivity is the worst form of sabotage (because it can rarely be proven), the German intercept service sickened to the core under these conditions which permitted any young lieutenant to become the semi-divine superior of old experienced specialists.

If an intercept service of the future is to be a living instrumentality, healthy in all its members, then this "militarism" must be completely eradicated; that this is possible is proven by the conditions in the American Army where the "civilian" does not represent an inferior being in contrast to the officer but can have the same authority and an equally respected position.

One cannot take this problem of "militarism in the intercept service" too seriously. It is one of the most essential factors which make necessary the creation of a western intercept service on a super-state basis. If it were to be resurrected in Germany in its old form, it is absolutely certain that all those earlier phenomena would reappear. This is clearly recognized by the former specialists. If a new intercept service were to be organized again on a purely national basis within the framework of an independent German military force, the former intercept operators, cipher clerks, and evaluators - who have to contend with economic difficulties

at present - would report in goodly numbers. But of the really good old experts hardly a one would appear!

I would like to support this statement with short quotations from a large number of letters which I have received recently:

"..... I will never work again under the command of our dear former superiors of whom I have very unpleasant memories."

"..... I should prefer to continue in my present calling and shape the remainder of my life according to my own ideas."

"..... I can't possibly take orders from people who are stupid and arrogant, from those chaps who are steeped in their traditions."

"..... Don't ever let those monsters cross my path again! "

"..... I hope I may never have anything to do in the future with such Sh.. : it really should be possible in the future to throw out such !"

"..... In our work in the future only people of real ability can be the leaders."

"..... It must never again happen that the experienced expert first has to train the head of his unit in order to have him over him giving orders."

"..... Rotten, thoroughly rotten was the entire intercept set-up due to the introduction of such ... leaders."

"..... If these 'leaders" are to reappear on the stage, then - without me!"

etc. etc. etc.

These expressions must not be misunderstood; they are not directed against a purely military concept but against its exaggeration. In no other rear area service is the purely military concept of soldierliness so highly esteemed as among the true experts of the intercept service. Only a man

whose whole heart is in the work and who is thoroughly acquainted with military affairs appears suitable for the intercept service.

There is also a serious danger that in case of rearmament the intercept service may become a catch basin for all sorts of characters who have only one aim: to dodge military service at the front, but who have little interest in the intercept service and in the defense of their country. Therefore a careful sifting of the entire personnel appears necessary; and just as necessary is the military training of these people. I have observed that in all cases of treason, sabotage, and defeatism which occurred in the German intercept service, not a single real soldier was involved; the bad actors were without exception types which may be termed collectively "crooked dogs". The man in the intercept service of the future must be just as ready at heart to fight with weapons as with his scientific and technical means; but he must enjoy the certainty that he will not be degraded and treated as an inferior by the military.

X. THE ROLE OF CRYPTANALYSIS AND THE ORGANIZATION OF THIS SERVICE

Cryptanalysis is the heart of any good intercept service. Special attention must be paid to its organization and its work. In Germany the importance of the cryptanalytic service was recognized, to be sure, but the most fateful mistakes were made in its organization.

The first mistake was that it was decentralized and split up in a downright incomprehensible manner. There were cryptologic agencies with:

OKW (High Command of the Armed Forces),
OKH (High Command of the Army),
OKM (High Command of the Navy),
OKL (High Command of the Air Force),
Foreign Office,
Forschungsamt (Research Bureau under Goering),
SD (Security Service),
Radio Defense.

This called for an expenditure of personnel which was simply enormous; there were cases where one and the same cryptographic system was worked on at the same time by 3 or 4 offices.

Good cryptanalysts are rare and valuable; one must employ them as rationally as possible. In that way personnel and time are saved and the work is expedited.

The second mistake made in Germany was to isolate the cryptanalytic work from the evaluation section. The cryptanalytic section led a detached existence and basked in the sunshine of its own glory.

In any good organization there must be the closest possible collaboration between cryptanalysis and evaluation. I will even go so far as to say that cryptanalysis represents a part and an auxiliary organ of evaluation. And that all decrypted messages must be passed to the evaluation section to be worked over there in connection with other results of intercept work.

How then is the cryptanalytic section of the Atlantic Intercept Service to be organized in the future?

For purely geographic reasons the problem is not a simple one to solve. A careful checking of the circumstances makes the following set-up appear to be the most favorable:

1. The entire analytic decryption of a strategic and operational nature (excepting decryption of naval systems) should be concentrated at some point in the USA. The United States has the best technical means and cryptanalytic devices. A number of good European experts on analytic decryption should be employed here.

2. The working group for the decryption of naval systems should be installed in England with experienced German, American, French and Italian experts participating, because the best practical experience in this field is to be found there, good cryptanalytic machines are available and one cannot count on England's willingness to surrender this field of work to any other place in Europe. A parallel group should work in Australia, because this continent will present a separate theater of war and very good and extensive analytic machinery is already available there.

3. At the European headquarters of the Atlantic Union there should be a fairly large working group which would carry out the current decryption of intercepted messages within the framework of the central control station of the unified intercept service, using the ciphers solved by the American analytic group. This decrypting group should work in close contact with the evaluation group.
   For this decrypting group German, English, American and Italian experts should be engaged.

4. To what extent a parallel decryption group for strategic traffic should be set up, must be determined in Washington.

This arrangement does to be sure, involve a certain spatial decentralization, but for geographic reasons this cannot be avoided and would not operationally signify any splitting up and would avoid any duplication of effort.

A rational employment of the cryptanalytic personnel would permit working on all cryptographic systems of the enemy. In World War II, for instance, the personnel of the German naval unit was quite inadequate to work on all traffic intercepted. At first only the major systems were worked on; when these became too difficult, one went over to the minor systems and discovered that good information was to be found in them.

In the future no system should remain unworked, if all the western nations make common front against the East.

The decryption of tactical messages, where no very complicated systems are employed, could be undertaken by the decrypting group of the Central Intercept Control Station.

XI. CONTACT WITH THE ORGANIZATION OF ONE'S OWN RADIO SERVICE AND ONE'S OWN CRYPTOGRAPHIC SERVICE

The observation of foreign radio traffic is important not merely from the standpoint of gaining information regarding the opponent and combatting his agents. No less valuable is the significance of a different aspect of this work.

Obtaining information regarding the enemy by the intercept service is to a great extent possible only because of mistakes made by the enemy, whether these be in radio operation, or in the type of transmissions, or in the use of cryptographic systems. These mistakes are made all the time, they are practically unavoidable and represent a constant with which one must always reckon. This can be calculated quite as exactly as the ever constant ratio between killed and wounded in a war.

This "error-constant" forms not only a continuing source of joy for all those engaged in the intercept service, but it forms an equally great source of concern for those in charge of one's own intercept service. Here there is a point of contact to which great attention must be paid.

One of the most important tasks of the unified control of the intercept service must be to keep clearly before the eyes of those controlling one's own radio service all the mistakes made by the foreign radio service, in order that from them may be drawn lessons for one's own radio service and these lessons be applied in practice.

For this no large organization is required. Two or three experienced specialists on radio and ciphers will suffice if they are constantly in contact with all the experts of the intercept service and with the analytic and evaluation groups and get their information from those sources. They must have enough authority to present their observations to the head of their own radio service in a way which will carry weight. Their contact with the office which exercises control over one's own radio service must be assured.

In this connection everything learned about a foreign intercept service must be utilized. This may be illustrated by an example:

During World War II radio intercept detachments were assigned to German speed boats and at times to submarines. Submarines were equipped with direction finders for waves of medium to high frequency range in order to monitor the radiophone traffic of convoys. It was even planned to use special D/F boats for locating convoys. In this way the submarine packs, which had been driven under water by radar and had lost contact with the convoy, could be informed of the convoy's change of route (which was clearly recognized) by such D/F boats.

The use of this means of monitoring on a large scale was rejected by the Navy chiefs for reasons concerned with the internal organization. However, one can scarcely doubt that thet the Russians will make extensive use of this system. Such facts - once they have been established - must be brought to the attention of the head of the radio service of one's own navy.

Another example:

When German aviators flew to England during World War II the Allied convoys were warned; for instance, Dover sent out an air alarm over the naval radio and said two minutes later: "Fighters are starting". That meant that there was a convoy in the Dover region. Then the same report was sent with definite call signs to naval units by another radio station which was not far away; in this way the Germans could determine where the fighter units involved were stationed.

Such observations by the intercept service must also reach the head of one's own radio service so that the proper deductions may be made in respect to one's own radio operations.

XII. TRAINING, REGULATIONS, AIDS

That intercept service is best where the personnel is most thoroughly trained. That sounds very reasonable and obvious but, as experience - not merely in Germany but in all countries - teaches us, not enough heed has been given to this maxim.

After the First World War it was fully 16 years before I was able to arrange for uniform and systematic training of the people employed in the German intercept service. And even then (especially during the war) the results were inadequate, due to lack of teachers. In part this had serious consequences.

An intercept service of the future will only make sense and have value if it starts with a thorough training of the personnel. Consequently one of the first things which should be done on setting up a new or a unified Atlantic intercept service would be to establish a school for the intercept service which should give the most thorough and comprehensive training possible for intercept operators, D/F operators, evaluators, cryptanalysts and decoders.

At the head of this school there should not be a career seeker but a man thoroughly familiar with everything in the field of the intercept service, one who knows everything by experience. At his side there should be a teaching staff recruited from practical workers of wide experience.

Since the Atlantic intercept service will have in its ranks members speaking different languages, training will be somewhat more difficult; this can be overcome by setting up separate training courses in the several languages. On the other hand it is recommended that all persons engaged in the intercept service be given linguistic training, in which case English and French would have to be considered as basic languages. Courses should be set up for:

Intercept operators

D/F operators

Evaluators

Cryptanalysts

Decrypters

The school should be attached to the central control station of the united Atlantic intercept service and work closely with all sections of this agency. Everything which is learned should be brought to the attention of the teaching staff of the school.

It would also be a function of this school to work out regulations for handling the practical intercept work and to create essential aids for all branches of the service, such as: uniform forms, card files, call sign lists and frequency lists, survey tables etc. etc.

Uniformity in all the basic materials used in the intercept service is an essential prerequisite to success.

XIII. THE POSSIBILITY OF MONITORING SHORT WAVES AND THEIR SCIENTIFIC CLARIFICATION

The successful monitoring of short wave stations was a serious problem for all branches of the German intercept service throughout World War II. Since the propagation of short waves is subject to different laws from the propagation of medium and long waves, and consequently the distance between the transmitter and receiver permits no inference as to the possibility of hearing the transmission, endless chains of difficulties resulted, the solution of which was generally sought on the basis of empirical knowledge, i.e. one made a series of attempts at reception until one finally hit upon a point from which it was possible to hear the transmitter. That often took months. The following example will illustrate the problem: monitoring of the Swedish transmitter for international traffic in Karlsborg (in its transmissions to England, America, etc.) proved difficult in Germany. After a number of experiments inside Germany had proven unsuccessful, one began new experiments in northern Denmark and finally groped one's way down the entire coast to Bordeaux. Here for the first time a suitable spot was found. These experiments lasted for three months.

For the intercept service of the present and future this problem should be solved in an entirely different way and thoroughly. The propagation of the different short waves <u>from any chosen spot on the earth's surface</u> should be clarified <u>right away</u> as exactly as possible (by wave length, times of day and seasons) and so comprehensively that possibilities of reception can be taken into account in the assignment of tasks and of waves to the intercept station. This is very important if one does not wish to risk confusion in the intercept service.

Due to the want of appropriate scientific data, conditions arose at times in the German intercept service which were really chaotic. Of course there were the so-called ("Rechliner Erkenntnisse") Rechlin data,

but at none of the German intercept stations were these adapted to the specific requirements of the work, the tables were stored in the safes without finding proper use. Hence out of an assignment plan set up regionally, there developed through countless supplemental orders a completely new working assignment at the different stations according to wave lengths but these assignments were so deficient in plan and so overlapping that no human being could make sense out of them.

This must be avoided in the future. One of the first tasks of the Atlantic intercept service should be the clarification and regulation of this question.

XIV. THE DIPLOMATIC INTERCEPT SERVICE AND ITS ORGANIZATION

The diplomatic intercept service is the heart of the strategic intercept service, and since at present and in the future the latter must hold a dominant position, a careful, thorough-going organization of this branch appears extremely important.

Its geographic position causes the block of the Atlantic states to be split into two parts by the Atlantic Ocean with the potentially stronger portion in America. For the present this cannot be changed essentially.

On the other hand, the focal point of purely military warfare is in Western Europe as the situation stands at this moment.

This dual character of the strategic situation must automatically influence the strategic intercept service and hence the monitoring of diplomatic traffic. Therefore it is inevitable that the practical carrying out of diplomatic intercept work shall also be divided. However, this does not mean that parallel work by two organizations is necessary; there can be a coordination which will satisfy all demands for information and permit a rational utilization of energy.

During World War II, OKW had foreign diplomatic traffic monitored by its two intercept stations. From a practical point of view all the exchange of diplomatic telegrams of all the countries of the earth was covered by these two stations.

The present situation greatly simplifies the problem; the number of transmitters to be monitored is sharply reduced. Since the countries of the Eastern bloc work on an inner line, as it were the diplomatic traffic of these countries will pass through the air only to a limited extent; the great mass of telegrams will go by wire. Only in traffic with diplomatic representatives in countries outside the Eastern bloc will extensive use be made of radio telegraphy.

While the two intercept stations of OKW employed approximately 300 intercept operators and some 240 receivers, in future a maximum of 100 operators with 80 to 90 receivers should prove adequate.

The existence of the widely separated strategical areas of the Western bloc will, of course, make it necessary to set up one such intercept station in the United States and another in Europe. To this extent duplication of effort cannot be entirely avoided.

In respect to the cipher systems to be worked upon a different solution would appear to be in order. The analytic decryption might profitably be concentrated at some point in the USA; here the best cryptanalysts of the world should be engaged. The systems which are solved would then pass to two decryption groups of which one should be in the USA and the other at the central intercept control station in Europe. In this way the content of radiograms which can be decrypted would become known at the same time in the USA and at the headquarters in Western Europe.

In respect to personnel the size of the European decryption center could be kept very small. It may be assumed that 20 to 35 decrypters would be able to handle the traffic coming in day by day.

Whether it will be possible to concentrate the European intercept station for diplomatic traffic at one point remains to be seen. Experience in Germany during World War II has shown that this was not possible, because many transmitters work with directional antenna and therefore cannot be intercepted at any given point. It might prove necessary to move a number of receivers with the necessary personnel to some more favorable location as a secondary station. The answer to this question can only be drawn from practical experience, just as happened in Germany. However, provision must be made for direct teleprinter connection to make possible current forwarding of intercepted messages to the cryptanalytic group.

On the other hand the treatment of decrypted telegrams in the future must differ from the German practice. It is a mistake to pass on the complete text of the decrypted messages. All telegrams which are decrypted and translated must go to the central evaluation section and be checked there against other results of intercept monitoring and then condensed into reports of moderate length. This need not cause any

appreciable delay. This solution would, however, result in a reduction of the risk of compromise and insure that the appropriate offices would actually read the material which was presented them in an easily comprehended form and utilize it for the conduct of the war.

XV. THE MONITORING OF FOREIGN FACSIMILE TRANSMISSIONS AND OF CAMOUFLAGED RADIO TELEPHONE TRAFFIC

This also belongs to the field of the strategic intercept service. It may be assumed with certainty that the Soviet Union in its internal communications and in communications with its satellites will make extensive use of facsimile (possibly according to the American system "Ultrafax") and of distorted radio telephony, in fact it is doing this already to some extent.

The problem of intercepting these transmissions is a task for the technician. That it can be solved was proven in Germany during World War II. It will be well to tackle this group of problems promptly, because experience has shown that the technical development of serviceable devices for such monitoring calls for a long period of time.

Organizationally this section should be attached to the evaluation section of the strategic intercept service where the material, once it has been translated and evaluated, will be worked up along with the results of the decipherment of diplomatic traffic.

XVI. THE MONITORING OF FOREIGN INTERNAL TRAFFIC

This includes such things as administrative radio traffic, industrial traffic, police traffic, railway traffic, etc. Monitoring these is a part of the complex of the strategic intercept service.

One might be inclined to turn over the monitoring of such traffic to the intercept stations for diplomatic traffic. However, this will prove impracticable because the range of the transmitters will hardly make them audible at the intercept center in Western Europe. For this reason the best solution will probably be to assign the copying of these transmissions to the intercept stations charged with monitoring foreign army traffic. It will be necessary to get as close as possible to the enemy. Which points will be most suitable for monitoring such traffic must be learned by practical experience.

The evaluation of the material should be undertaken at the central evaluation section along with the results of the rest of the strategic intercept service.

XVII. THE MONITORING OF FOREIGN RADIO PRESS AND SIMILAR TRAFFIC

This monitoring field, which likewise belongs to the complex assignment of the strategic intercept service, is so extensive that it calls for special organization. These transmissions should be intercepted by a special intercept station in the vicinity of the evaluation section. The translation and a preliminary evaluation should be made here.

The subsequent treatment of this material should differ greatly from the German procedure during the last war; this consisted in presenting the appropriate offices with a whole mountain of typewritten sheets every day.

But nothing is so dangerous as when the member of the general staff charged with preparing the enemy situation reports is submerged in a flood of paper and drowns therein. The best information from the intercept service is wasted in this manner.

The bits of information obtained by monitoring foreign radio press are in the main quite interesting but are not important as intelligence material for strategic warfare. Their value lies in another direction:

a. As orientation material for the staff for "psychological warfare",

b. As supplemental material for the general evaluation,

c. As source of information for the cryptanalytic groups to facilitate and expedite the task of interpolation. (Archives).*

The results of the preliminary evaluation must be dealt with and disseminated on the basis of this knowledge. The results of monitoring foreign radio press can never be treated as independent intelligence because the content is generally tendentious. They can only be utilized in connection with the other results of the intercept service.

* The term Archives as given here refers to the German collateral files used as cryptanalytic aids. A rather complete description of these files and how they were used is given in DF 204 entitled "The Significance of the Archive as Aid to Cryptanalysis and a Source of Information."

XVIII. THE TASKS OF RADIO DEFENSE IN PEACE AND IN WAR

It has already been stressed that in the future the struggle against agent transmitters and other illicit stations will be one of the most important tasks of the intercept service. This statement must not be regarded lightly; it is of very serious importance.

One may be inclined to deny the necessity for a potent radio defense before the outbreak of hostilities because the transmissions of radio agents begins only with the outbreak of the war. This assumption is erroneous for the following reasons:

a. The beginning of a war nowadays does not follow the rules which were formerly in force. The outbreak of the war today does not represent a sudden transition from a period of absolute peace into one of military action. Between peace and war nowadays there is a series of transitional stages which hardly allow one to tell when peace stopped and war began. Thus one can hardly call the present situation a state of peace.

b. It is not true that the entire net of radio agents of the countries of the Eastern bloc is silent today and will begin operations only after the outbreak of war. This may be true for part of the stations. However, a large part of them is doubtless even now sending traffic from time to time. The experiences of the Russians in World War II have shown them how risky it is to rely on the functioning of a radio connection which has not been thoroughly established before the outbreak of war. No doubt traffic is now being sent only to a limited extent; it probably is limited to making contact and to short enciphered messages intended to train the operators in the use of cryptographic systems. But one can hardly assume that the agent transmitters are absolutely silent.

c. In Germany one discovered during World War II how fateful it is if the radio defense is organized too late and hence goes into action too late. It was a full year (after the beginning of the war) before the radio defense came into being; it was another year before the first agent transmitters were seized; and it was still another year before the radio defense was so well organized and trained that one could speak of any planned combatting of the agent transmitters. By that time, however, Europe was teeming with such stations and the raids could no longer keep pace with the increase in their numbers.

d. The radio defense must be ready to go into action the instant war breaks out. That means two things: it must have been organized long in advance and must have had opportunity to gather a considerable amount of practical experience. There is plenty of opportunity for this; it is provided by the agent transmitters already at work, by the active transmitters of the "fifth columns", by the secret transmitters of the diplomatic and commercial missions of the countries of the Eastern bloc, by illicit propaganda transmitters, by illegal amateur transmitters, etc. Any tracking down of transmitters whose location is unknown within one's own country is an opportunity for training. The practice of raiding "planted" agent transmitters, the perfection of technical aids (D/F sets of every kind) and of encirclement methods, the search for new methods of disguise and surprise - all this yields an extensive field of practice for the radio defense in time of peace.

The reasons enumerated above show clearly that the creation of an organization for radio defense is not a problem which can be put off until the beginning of the war but is one which must be attacked along with the creation of the other branches of the intercept service.

Furthermore one must count on the probability that in the future radio agents will use ultra short wave; in fact there will probably be whole chains of intermediate stations employed (according to the character

of the terrain). Detecting such stations will be a serious problem. Training must be conducted in good season.

It is obvious that the organization of the radio defense before the outbreak of war need not assume the extent which will be indicated as hostilities get under way. It would be adequate to train a cadre which can be expanded later according to need. Nevertheless the area of Western Europe should be covered by a net of at least 12 to 15 fixed radio surveillance stations with long range D/F; in addition there should be two or three motorized radio surveillance companies with the most modern equipment.

In this connection one can make use of the existing organizations. Thus France, for instance, has six fixed stations in its "Police des Communications Radio-Electriques" (P.C.R.). In the West German Federal Republic there are 8 stations of the "Funktechnischen Zentralamts." (Central Radio Technical Bureau). Also in other countries there are other organizations of this character. But precisely these existing organizations show how necessary a unified central control is.

How different the views are regarding the subordination and assignment of duties is revealed by a brief glance at the situation now existing:

In France the "Police des Communications Radio-Electriques" is subordinate to the Ministry for the Interior. The 6 intercept stations watch both radio agents and diplomatic traffic. There is no connection with the Ministry of War.**

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* Subordinate to the "Funktechnischen Zentralamt" in Frankfurt/Main, Gallas installation, is the Radio Surveillance of the FTZ:
8 intercept stations in Western Germany; one of them in Munich, Waisenhausstrasse 4 (in the former office for Research on Wave Propagation).
Duties:
Spotting infractions of the Atlantic City Convention and running down unlicensed transmitters. At present a D/F net is being developed using short wave D/F sets of the Navy (range 10m to 100m).
In the spring of 1951 one such long range D/F is to be set up outside of Munich.
Illicit transmitters which are spotted are reported to the occupying power.

** It is interesting to note that this organization was created by the present Minister for War, Jules MOCH, when he was still Minister for the Interior.

In West Germany radio surveillance is subordinate to the Ministry of Posts.

In Czechoslovakia radio surveillance (diplomatic intercept service and radio defense) is attached to the Ministry for Propaganda.*

Any such variations in handlihg radio surveillance would naturally have an adverse effect on the rational and effective development of the service within the framework of the Atlantic Union. An endeavor should be made to achieve a uniform subordination in all countries.

In the internal organization of the center for radio defense and in its methods there should be numerous departures from German practice during World War II. Here the radio defense led a completely isolated existance as far as organization and work were concerned. There was virtually no collaboration with the other branches of the intercept services of the other armed forces. This explains the senseless duplication of effort on the part of radio defense and the army intercept service in respect to the partisan radio, etc. Occasional collaboration with a cryptanalytic group of OKW or with offices of the Air Force Intercept Service etc. was always on the basis of purely personal relations. For the rest, the Central Office of Radio Defense in particular, which was formed from personnel ceded by all branches of the armed forces, constituted a mob which in its structure was very similar to the twilight organization of the counter-intelligence agency of Admiral CANARIS. There was no inner cohesion whatsoever. Both individuals and work groups shut themselves off from one another.

During the course of three decades I have been in rather close contact with practically all units of the intercept service. The least agreeable impressions were those gathered at the central office of the German radio defense.

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* The Center is located in Prague. There are two main monitoring stations: in Prague and Bratislava; also nine outstations (one of them in Budweis) with long range D/F sets (Marconi Type D.F.G.26). The complete technical equipment was supplied by the British after 1945. In 1927 the radio surveillance service in Czechoslovakia numbered 225 persons; this number has probably been greatly increased since then.

I have never been surprised at the fact that the successes of German Radio Defense were in no wise in proportion to the activity of the radio agents. The designation "Rote Drei," and many others are characteristic of the central office of radio defense. On the other hand the work of the intercept stations (called "Funküberwachungsstellen"), companies, detachments etc. was uniformly good.

The radio defense of the future must not be made up of people detached from all sorts of stations and branches of the service but must be a homogeneous, closely knit organization.

On the other hand the radio defense must not isolate itself. It is necessary for it to work very closely:

a. With the cryptanalytic service,

b. With the army intercept service,

c. With the staff for strategic and operational deceptive action.

Regarding a): The cryptanalytic work of the German Radio Defense never assumed clear form; it consisted of a long series of emergency half-measures. It is necessary that the radio defense of the future have available a good cryptanalytic group, which will work within the framework of the cryptanalytic service of the strategic intercept service, or will work in close collaboration with it and with the cryptanalytic group of the army intercept service. To me a common cryptanalytic organization for the strategic intercept service, army intercept service, and radio defense appears most suitable.

Regarding b): Cooperation with the army intercept service is requisite because there are a great many points of contact. Merely the monitoring of partisan transmitters, Baku transmitters (bands and scout groups) and the like brings up the problem of collaboration. But even beyond that the interchange of information is exceedingly valuable. The last phase of the war in the East (October 1944 to April 1945) showed clearly how intimately the operations of the field army are connected with the work of the radio agents.

Regarding c): The entire matter of radio deception (radio games, agent playbacks) was handled by the Germans during World War II in a manner which revealed no system or organization. Many successful "radio games" were carried on ("North Pole Case",* "Jakushov Case" etc.). But in all these cases the credit for success belonged exclusively to the individuals who carried out the deception. In the future it will be necessary to set up a special working group for radio deception. (For details see the section "Radio Deception"). The radio defense must work in very close collaboration with this group.

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In general it must be admitted that the system of the German radio defense was too cumbersome. At the central office more time and energy was devoted to building up card files and lists and to the composition of annual, monthly, ten day reports, and special reports than to the actual work. This typically German trend toward internal over-organization should not reappear in the future.

The thing which must be guaranteed under all circumstances is the inclusion of the radio defense in the framework of the intercept service as a whole. This is essential not only for reasons of personnel and technical equipment, but also because the work must be strictly coordinated with the work of the other branches of the intercept service.

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* Translator's note: See pp 541-545 of "Kriegsgeheimnisse im Aether", unpublished, filed in AFSA-14.

XIX. THE INTERCEPT SERVICE OF THE STRATEGIC AIR FORCE

In Germany down to the year 1935 all radio traffic of foreign air forces was monitored by the same intercept service that monitored the traffic of foreign armies. The result was unquestionably good. With the creation of the German Air Force the idea promptly arose of organizing a separate intercept service for the Air Force.

I protested strongly against this at the time but without success. The Air Force set up its own fixed intercept station and several intercept companies.

To what extent my view had been right was shown during the course of the war. Almost all the intercept companies and intercept stations of the Air Force were either disbanded or assigned to Radio Defense. The results of the intercept service of the Air Force were meager. It would have been quite possible for the intercept stations of the Army to cover this traffic.

I cannot judge with certainty what the situation is today or whether a separate intercept service of the strategic Air Force is worth while. From my experience in the last war I incline to the view that this is not the case.

Of course that does not mean that the ground and airborne stations of the hostile air force are <u>not</u> to be monitored. However, it is my view, that purely in the field of organization a new set-up should be introduced. This would appear somewhat as follows:

1. All traffic of the <u>ground</u> stations of the foreign air force should be covered by the intercept stations which cover army radio traffic, or by special intercept stations within the framework of the <u>strategic intercept service</u>. A special evaluation group within the general evaluation section should pass the information obtained to the command of one's own Air Force.
2. In areas where the focal point of the conduct of the war lies with the Air Force, (this would involve primarily the Polar region) a special intercept organization should be set up. For details see the section "The Polar Intercept Service".

3. The monitoring of the radio traffic of hostile flight formations (airborne radio) would be assigned to the working group "Radio Warfare" (see this section). The reasons which I advance are as follows: The movement of flight formations of the Air Force is carried out today at such great speed that the working methods of a normal intercept service cannot keep pace on a purely time basis. The approach of air units is spotted much better by radar and similar methods. However, the observation of the radio traffic of flight formations and of directed beams sent out at night for their guidance can be used as the basis for quick jamming operations to disrupt the commands of these formations, to prevent them from getting their orientation, or to direct them on some other course. This requires, however, an organization which would have to be attached to the chief of the intercept service, to be sure, but would have to work rather independently and with different means and different methods. On this point air experts should be consulted.

XX. THE ARMY INTERCEPT SERVICE AND ITS ORGANIZATION

When we study the question of observing Russian Army radio stations through the intercept service and the system of intercept stations to be set up for the purpose, we find ourselves confronting a situation which differs very materially from that existing in Germany before the outbreak of World War II. At that time the German intercept service had established along the borders of German territory a chain of nine intercept stations by which the army radio of the adjacent countries could be watched very well. In the case of Poland, Czechoslovakia, Italy, France, etc. coverage was possible down to the last station, the last message dispatched.

But even then there were considerable difficulties in respect to the Soviet Union, difficulties which were due to the distance. For this reason one sought the collaboration of Finland, Esthonia, Lithuania, and Hungary; the results of such cooperation varied greatly. At most the result made possible a coverage of fixed stations and maneuver stations in the Military Districts of Leningrad, White Russia and the Ukraine and to a slight extent in the Military District of Moscow.

But even here one could not speak of any well planned and <u>complete</u> coverage; one was happy over every station heard and every message copied but was quite aware that the traffic copied was only a fraction of what was sent.

To-day the situation with respect to the Soviet Union is far less favorable. The army traffic of the Soviet Union is protected from observation on the part of a foreign intercept service by an uninterrupted chain of insulating factors. Either there are ocean areas or satellite states, allied or strictly neutral states intervening. If one wishes to cover Russian Army traffic, one can at best get within 300km of the borders of the Soviet Union. In view of the expanse of Russian territory there may be distances running to thousands of kilometers.

One might conclude that the situation is hopeless and that there is no sense in wasting one's strength trying to cover Russian Army radio stations.

Such a deduction would be false and would allow many opportunities to pass unused.

When it was said above that the army radio of the Soviet Union could be covered only inadequately by Germany down to 1939, this "inadequately" signifies a relative concept; it was based on a comparison with Poland, Czechoslovakia, France, etc. A great deal was heard, it was even possible to some extent to pick up Russian army stations at the German intercept stations in Stuttgart and Münster. There was merely no possibility of complete coverage.

Such complete coverage is not possible today and will not be in the future. Therefore one must be content with partial results. In this connection the question arises as to what goal can be set for an Atlantic Intercept Service against the Soviet Union.

Any hope of obtaining a clear insight into the total constitution of the Soviet army by intercept work must be abandoned in advance. It will be necessary to limit the work to a carefully planned searching of the aether in order to cover those garrison stations which can be covered as matters stand.

The real purpose of monitoring Russian Army traffic appears to me to be something quite different. It is a question of gaining an exact insight into the operations and traffic systems of the Russian Army radio as it might appear in the field, i.e. of the traffic at maneuvers and exercises which is equivalent to the radio system in case of war. Here opportunities are present.

In the first place there is a possibility of observing all the radio traffic of the Russian Army units stationed in Eastern Germany. As a result much could be accomplished, though by no means everything.

So far as I know, the Army traffic of the satellite states in Europe will be handled according to the same systems as the Russian. But no matter whether this is always the case or not, the army traffic of all these countries must be monitored with painstaking exactness. This can be done from Western Germany, Western Austria, Italy and Greece.

From the point of view of intercept technique there are two other points of attack against the Soviet Union: from northern Turkey and from Sweden. Consequently one should endeavor by all means to establish a number of intercept stations in these two countries as quickly as possible, or to incorporate the stations existing there now into the complex of the Atlantic intercept service.

The sum total of the intercept results to be achieved in this fashion would be sufficient to give adequate insight into the systems of army radio in the Soviet Union.

The West European intercept service must be put in a position to make "contact in the aether" with the enemy as soon as hostilities break out. It must be so constituted that it can provide its own command with information from the first day of the war on. This task might be solved in the following fashion:

a. A chain of intercept stations extending from northern Sweden and northern Norway through Denmark, West Germany, Italy, Greece, and Turkey to the Persian border will provide by current coverage for the production of the basic material required by the operational intercept service.

b. A number of motorized intercept companies will receive this material currently and use it to train their own personnel.

One must count on the possibility that it will not be possible to hold the Elbe line and that the Russian armies will overrun Western Germany. In order to insure a seasoned intercept service, it would therefore be necessary to motorize even the fixed intercept stations so that they could be withdrawn quickly behind the second defense line.

If there were danger that all Western Europe would be occupied by the Russian armies, the above-mentioned chain of intercept stations would have to be split up, so to speak. The northern half of the stations would then be reestablished on a line from southern England via Norway to southern Sweden, while the southern half would have to occupy positions along the coast of North Africa. The intercept companies would have to be distributed in like manner.

The building up of an intercept service in the Near East appears to me especially important. The fact that the greatest oil fields of the world are located there makes that area a focal point of strategy. Thus must necessarily be reflected in the radio activity. Prompt recognition of Russian military preparations in the area between the Black Sea and the Caspian Sea and to the east of the Caspian Sea might be rendered possible by a well developed intercept service.

For the moment I regard the setting up of a tactical close range intercept service as superfluous; whether in case of war such a service would prove necessary, will depend entirely on the situation which then results.

In any case a central guidance of the entire army intercept service is indispensible. The central evaluation of the material resulting from the coverage is of the greatest importance. On the other hand care must be taken that the nearest military commands receive the incoming information in the speediest way possible.

Russian (and other) army cryptographic systems should be worked on in the cryptanalytic section of the central intercept control station; difficult systems should first be solved in Washington, the simpler ones might be worked on here. Cryptanalysts should be assigned to the intercept stations and intercept companies according to their needs and they should decrypt the traffic in the systems already solved.

In organizing the army intercept service a number of factors must be taken into account which distinguish this branch of the intercept service from all others. In the first place it is the largest in respect to the number of transmitters to be covered. That makes definite demands on the quality of the personnel provided, in particular the evaluators. Furthermore the army intercept service occupies by virtue of its task a more exposed position and constantly faces two dangers:

First there is always the possibility that the enemy will carry out deceptive traffic. It is true that from the period of the Second World War no relatively extensive radio deception on the part of the Russians is known to me; however that does not mean that the Russians will not make use of such means in the future.

Second there is the risk that the troop command will reject results of the intercept service which are in contradiction to its own views and claim that they are deceptive even though they are correct. The head of the army intercept service must always be aware of these two dangers and see to it that the work of evaluation is exact in every case and that objectivity in the presentation of the enemy radio situation is absolutely assured.

During World War II the German intercept companies of the army were combined into battalions and regiments. I was convinced that this was a mistake; in this way the entire apparatus of the army intercept service became too rigid and cumbersome. The army intercept service must be mobile; the simpler its organization, the swifter its work. No lofty pyramid of superior offices is to be erected on the base of the intercept companies; otherwise the practical results of the work are stifled.

XXI. THE NAVY INTERCEPT SERVICE AND ITS ORGANIZATION

The naval intercept service (called "B-Dienst" in Germany) played an important role in both the First and Second World Wars. This will be the case to no less a degree in the future.

The geographical basis has changed and become more simple since the end of World War II. Consequently the old organization can only be retained in part.

England and Germany are the two countries which were able to gather the most experience in the field of the naval intercept service. Since in the future Germany will be out of the picture as far as naval warfare is concerned, England appears to be the proper country to assume leadership in the naval intercept service. However, extensive use should be made of the experience of the German "B-Dienst". It seems all the more natural to set up the control center of the Atlantic naval intercept service in England since even the commander-in-chief of all American fleet units in the Eastern Atlantic and the Mediterranean (6th U.S. Fleet) has his headquarters in London.

The activity of Russian naval forces (primarily submarines) will be incomparably greater in a future war than in the past. It will concentrate primarily on the interruption of convoy traffic between America and Europe and in the Mediterranean. Hence, from the point of view of the intercept service, there are two main areas of observation; the one includes the Baltic, the Kattegat and the Skagerrak, the North Sea and the Atlantic Ocean; the other embraces the Black Sea, the Aegean, the Adriatic and the Mediterranean. The intercept service must be organized accordingly.

For the first area of observation (northwest sector) the old British naval intercept organization should serve as a basis. It should be supplemented by:

2	observation	stations	in	Sweden
2	"	"	"	Denmark
4-5	"	"	"	Norway
2	"	"	"	Germany
1	"	"	"	Holland
1	"	"	"	Belgium
2	"	"	"	France
2	"	"	"	Northern Spain
1	"	"	"	Portugal
1	"	"	"	Island
1	"	"	"	Spitzbergen
2	"	"	"	Greenland

In setting up the intercept net for the second area of observation (south sector) the following points must be considered:

Already we find the greatest concentration of warships of the western countries in the Mediterranean, to which in event of war the greatest strategic importance will probably be attached as far as naval warfare is concerned. The main water artery of Europe runs through the Mediterranean and forms the connection between the Atlantic and the Red Sea. In the Mediterranean and especially in its eastern waters, an enemy, whose principal strength is on land but who has to wage naval warfare, will do everything in his power to strike a decisive blow here. By occupying the Suez Canal he could threaten the oil fields in the Middle East.

Domination of the sea will play a greater role in the next war than ever before. And this is especially true of the Mediterranean. Hence, when we set about organizing a naval intercept service in this area we must not proceed in a miserly petty fashion; the intercept network to be set up here must be suited to the importance of this theater of war.

For the Mediterranean area of observation the following intercept and D/F stations should be set up:

4 in Turkey

2 in Greece

1 on Crete

5 to 6 in Italy (including Sicily and Sardinia)

2 in France

3 in Spain

Eventually several stations should be set up along the north coast of Africa insofar as cable connections with Europe are available.

One must not be alarmed at the large number of intercept stations required; they are distributed over a number of countries and, in proportion to the countries participating, will not call for a heavy outlay of personnel, materiel, and money. It would also be advisable to keep the strength of the stations west of the line Cairo - Kiel - North Cape relatively small before the outbreak of hostilities, and to detail the rest of the personnel for training purposes for tours of duty at the stations to the east of this line, because in peacetime Russian radio naval traffic can be monitored more easily from there.

Corresponding to the divisions of the western naval intercept service into two areas of observation would be the organization of the control station. The main control station should be in England. For the southern area of observation a sub-control station should be set up in Southern Italy or on Malta, which should have direct teleprinter connection with all intercept stations in the Mediterranean area as well as with the main control station in London. The main cryptanalytic unit should be in England with a subordinate cryptanalytic unit at the Mediterranean control station. The London central office should have teleprinter connection with the over-all control station of the Western European intercept service in France and supply the results of this monitoring both to its own admiralty staff and to the over-all control station of the intercept service.

This organization is not as complicated as may appear at first glance. It results from the geographic situation, however, and affords a guarantee that all Russian naval radio traffic that can be picked up will be picked up.

The naval ship-borne intercept service merits a separate chapter. It can play a noteworthy part especially on submarines.

The German naval intercept service early recognized the significance of this branch of the work and at various times equipped submarines with intercept detachments and D/F operators. The results were good.

This branch of the Naval intercept service will always be somewhat one sided, i.e. it will always be carried on by that country which is using its submarines to disrupt the convoy traffic of the enemy. In the present situation, therefore, it will be expected primarily on the side of the Russians. To what extent it can be used by the western countries would have to be determined by naval experts.

XXII. THE BROADCAST INTERCEPT SERVICE AND ITS ORGANIZATION

Monitoring of radio broadcasts of the Soviet Union and its satellites within the framework of the over-all intercept service appears to be of great value for three reasons:

1. For the obtaining of information,
2. As basis for the work of the staff for "psychological warfare,"
3. Because broadcasts are used to pass information to agents.

Regarding 1): In spite of the sharp censorship in countries with a dictatorial government, bits of valuable information slip into the broadcasts again and again. For this reason there should be close contact with the evaluation center of the strategic intercept service. During World War II enemy broadcasts often supplied valuable collateral for the work of the cryptanalysts and decoders.

Regarding 2): "Psychological warfare" is constantly growing in importance; it is only possible if one has exact knowledge of all that the enemy is sending out over his broadcast stations. For this reason a copy of all intercepted broadcasts must be forwarded to the staff for "psychological warfare".

In England and Germany much experience has been gathered in this field. However, it does not appear advisable to locate the central office for monitoring eastern broadcasts in England or in Germany; rather it should be located in the vicinity of the over-all control of the western intercept service. It remains to be seen whether receiving conditions will permit this.

Regarding 3): Even during World War II broadcasts were used by all parties for transmitting instructions to agents or sabotage units and the like; the manner with which this is done varies greatly: by prearranged words or sentences, by enciphered texts, by musical numbers, etc. In the future this will be done to an even greater extent, hence the work of the broadcast monitors must be closely coupled with the radio defense.

The three reasons given above force one to recognize that the interception of foreign broadcasts must not be handled by a separate organization but must be incorporated into the framework of the over-all intercept service.

XXIII. "DECEPTIVE GAMES"
[Radio deception]

Surprise raids on radio agents made it possible frequently during World War II to carry on deceptive games with the opponent. Many of them were successful and could be kept going for a considerable time; most of them bogged down quite soon because the enemy recognized the deception.

The conduct of this radio deception was handled by organs of counter-intelligence or of the security service which were located in the vicinity of the captured transmitter. For this purpose a few competent persons were selected who handled the deceptive traffic, working with the local military officials.

Such a solution of the problem did, however, have serious weaknesses when long-range agents were involved who normally were seeking strategic intelligence. The problem of deceiving the enemy is a complex one which can only be handled successfully and correctly in its entirety. All measures in this field must be weighed one against the other and directed by one office. It will not do for one station in Belgium to manufacture deceptive messages as it deems fit while another in France is doing the same thing, because contradictions will inevitably appear which will attract the attention of the enemy.

Frequently the Germans were running five or six parallel "radio games" whereby each outfit worked without any knowledge of the messages composed and transmitted by the others.

Furthermore, the enemy is not to be misled merely by radio games employing captured agent transmitters but also in as many other ways as possible, let us say by disseminating rumors, by the radio traffic of one's own military transmitters, by "deserters", by broadcasts, etc. etc. If one wishes to achieve success, the sum total of these individual actions must be controlled from a center and the content of the messages sent out during the radio game must be edited by a single authority. This was not done in Germany.

In this respect a new course should be taken in the future. At the central control office of the over-all intercept service in Western Europe a work group should be set up whose task it would be to mislead the enemy by means of radio. This group should work closely with the following offices:

Radio Defense

Staff for Strategic Warfare,

Staff for Psychological Warfare,

General Staff of the Army,

General Staff of the Air Force,

Admiralty Staff of the Navy,

With the Chiefs of the Radio Service
of all Branches of the Armed Forces

With the Strategic Intercept Service,

With the Office of Production,

With the Transportation Services, etc.

The work group "Deceptive Games" should have the assignment of coordinating all measures for misleading the enemy, of working out deceptive radiograms in agreement with the above mentioned offices, and of transmitting them by the aid of a special group of operators.

During World War II the Russians built up their intelligence service mainly on their network of radio agents; they will do so in increased measure in the future. The aim of the "deception group" must be not to send misleading information but in course of time to undermine the entire structure of this net of radio agents. The confidence of the Russian intelligence service in its various nets of radio agents must be so shattered, that the Russians will not even believe the reports of their most reliable agents.

It appears advisable to subordinate this work group to the central control station of the overall intercept service not simply for reasons of personnel and technical apparatus but also out of consideration of the fact that the various branches of the intercept service are in the best position to supply the necessary pattern material.

XXIV. THE ORGANIZATION OF THE CENTRAL CONTROL OFFICE OF THE ENTIRE ATLANTIC INTERCEPT SERVICE

The entire system of obtaining intelligence from the aether will stand or fall depending on the thoroughness of the organization of the central control station of the over-all Atlantic intercept service. The persons who are to guide and control this office must be recruited from the best experts in the field (from all the countries of Western Europe and USA). Filling the post with men who have no previous acquaintance with the subject matter must be avoided in all circumstances.

At the head of the organization there must be a general because only a general will have the authority necessary to insure the carrying out of the tasks.

The central control office must have unconditional power of command with respect to all branches of the intercept service, and with respect to all formations and offices of the intercept service. Its principle task lies on the one hand in the coordination of all branches and units of the intercept service, on the other hand in the centralized monitoring, evaluation and dissemination of the results of all branches of the intercept service. It must exercise supervision so that any splitting up and any overlapping is avoided and that a rational use is made of personnel and material.

This means that the central office must have in addition to its special technical working sections a small coordinating staff to which both the sections and the out-stations and formations are subordinate.

The structure of the central office must theoretically be fixed before actual organization but it would be better if this were accomplished gradually. There is always the risk that the setting up of the central office will occur in the same manner as the setting up of the counter-intelligence agency of Admiral Canaris. Here within a few months perfect swarms of people were hired, who were all supposed to be talented in some way or other, and for whom it then became necessary to find a job after they had been hired, so that countless sections were formed for the sole purpose of giving these people a high sounding title. The rush of

ostensible "specialists" in the intercept service would be great in case of the setting up of a new service but in the main the people involved would be those who recognized but one aim: to get a nice comfortable job. Caution in this respect should be the first rule.

The first task of the overall control of the Atlantic intercept service would be to combine the already existing intercept organizations of the Western Powers and to coordinate and unify their efforts. Only then should one set about building up and organizing new formations and offices. The housekeeping plan of the Atlantic intercept service must therefore be kept flexible and contain no rigid limiting impediments to a gradual expansion.

Organizationally one of the first steps would be to insure direct teleprinter connection with Washington, London, and Rome, and later with all the intercept stations. The forwarding of the intercept results of remote intercept stations would have to be by courier plane.

XXV. EVALUATION

Important as good, complete interception of all enemy transmissions is; important as the decryption of all enemy systems appears - nevertheless the evaluation is the vital spot in the intercept service. This is where the intercept results are worked over and the survey of the enemy situation is shaped, and which is supposed, in connection with all other available intelligence, to give one's own command a picture of the situation on the other side.

Merely this statement of purpose makes it clear that the personnel of the evaluation section must be recruited from among the ablest heads. Unfortunately too little attention was paid to this matter in Germany. That was a very great mistake which ought not to be repeated. The training of evaluators must be handled with the utmost care and thoroughness. It must be as comprehensive as anyone can imagine.

That is a goal which cannot be attained in a few weeks. As initial core, recourse may be had to a number of experienced evaluators from World War II. The further training of good workers will be one of the most important duties of the central control station of the intercept service.

In the organization of the evaluation section two factors must be considered since they will vitally affect the work of the office; these are speed and thoroughness.

On the face of things these two factors stand diametrically opposed, since speed does not permit of thoroughness and vice versa. However a synthesis can be achieved if proper safeguards are taken in setting up the system of work.

Basic in evaluation must be the principle of thoroughness. The basis for exact work on the part of this group, whose principal task is speedy reporting, can be provided by the creation of a well organized archive, well arranged card files, complete collateral aids and survey tables which are constantly corrected and supplemented. Thus it follows that the evaluation section must consist of two working groups, of which the one supplies

the materials required for the dependable functioning of the other, while the latter carries out the swift processing of radio situation reports on the basis of these aids.

This calls for a harmonious collaboration of all concerned down to the least detail. But since any such collaboration, which involves a full appreciation of the other fellow's effort, is in the last analysis a question of character, special attention must be given to this side of the problem. In no circumstances is there any room in the evaluation section for "difficult personalities", obstinate people who go their own way, and for ambitious climbers. Anyone who cannot cheerfully adapt himself completely to the total structure of the closely interwoven separate fields of endeavor must be eliminated very promptly, otherwise he has the same effect as a grain of sand in the works of a watch.

The evaluation section of the central control office of the intercept service should receive the results of the work of <u>all</u> branches of this service, and likewise <u>all decrypted radiograms</u>. Only in this way is it possible for the evaluation section to supply the troop command with really clear, useful summaries. Any splitting up of evaluation work must be carefully avoided, since otherwise, instead of comprehensive reports, there will be only incomplete individual reports which will result not merely in unnecessary additional work for the command in sifting and weighing these against one another, but things may even reach a point where the command is no longer able to cope with the problem.

If an Atlantic intercept service is to be set up, then great importance must be attached to the precise functioning of the Central Evaluation Unit. Its organization and staffing must receive the most careful attention.

XXVI. THE POLAR INTERCEPT SERVICE

In discussing the organization of the Atlantic intercept service thus far, we have taken into account only the front line in Europe extending from the North Cape down to the tip of Italy. However, there is one area which will play a no less important role strategically in the coming developments: the Polar region, and in this case radio telegraphy will be extensively employed.

The measures of the enemy will take the form of air force action on the one hand and of so-called commando enterprises on the other. In both cases the use of radio telegraphy is unavoidable.

It is unlikely that any complicated technical innovation will be employed; even ultra short wave is not likely to appear. Facsimile transmissions, high-speed transmissions, radio telephony and the like probably will hardly come into account. Plain normal short-wave telegraphy will be the rule. In any case it must be monitored.

The peculiar character of this Polar Theater, and the special character of the radio transmissions to be employed there, make it appear advisable to set up a special, independent intercept organization for this area. A chain of 6 or at most 7 relatively small intercept stations should extend from Spitzbergen via North Greenland and Grant Land to Alaska and the Aleutian Islands. It would be well to have an evaluation station working in Alaska which should be provided with directional radio communication with the intercept stations and also have communication with Washington.

It does not appear advisable to attach this Polar Intercept Organization to the European central intercept control station, because the tasks and aims are too different. Moreover any military reaction to the information obtained would originate exclusively in America. However, such a service appears inescapable within the framework of the Atlantic intercept service, and should be established very promptly.

So far as I am aware, there are already two such polar intercept stations in Northern Canada and probably another in Alaska; however, the chain should be extended to Spitzbergen in order to give a satisfactory D/F base. One can assume with a high degree of probability that the Russians already have an intercept station in their reservation on Spitzbergen; there are many indications of this. Therefore the Russian head start must be compensated for.

Organizationally it would appear desirable to attach this polar intercept base with its central office to the headquarters of the American strategic air force.

XXVII. "RADIO WARFARE" AND THE INTERCEPT SERVICE

In any future war there will be one field of military effort which stands in no direct connection with the intercept service, to be sure, but must attach great importance to good collaboration with the service; this is the staff for so-called "radio warfare".

Under the heading "Radio Warfare" come all the possibilities of upsetting the measures of the enemy which are in whole or in part activated, controlled or prepared by radio emanations.

These include:

1. Radio broadcasts; these can be made virtually unintelligible by the use of jammers.
2. Radio navigation beams of the enemy air force; these can be so influenced by jamming that aerial navigation at night is interfered with.
3. Interplane phone traffic of the enemy air force; this can be interfered with by cutting in on the same wave length.
4. Radio control of rockets, flying bombs, etc.; these can be diverted in another direction by radio.

etc. etc. etc.

Collaboration with the intercept service is essential in order to learn the wave lengths and frequencies used by the enemy and to commit one's own jammers accordingly. This collaboration must be a two way proposition, i.e. the staff for radio warfare must maintain contact with the control station of the intercept service of its own accord, and vice versa. An exchange of information is absolutely necessary.

XXVIII. ON THE BUILDING UP OF THE ATLANTIC INTERCEPT SERVICE AND GERMANY'S CONTRIBUTION THERETO

Whenever the building up of an Atlantic intercept service is discussed the question inevitably arises as to the personnel required, the number of intercept stations, and the time within which it will be possible to set up the service.

It would not be a sign of great intelligence, if anybody tried to answer these three questions immediately with precise data. Nothing would be more erroneous than to provide a fixed number of people and intercept stations whose commitment might soon turn out to be incorrect.

This service must grow organically. One must be prepared already to accept the probability that the beginning will be disappointing and that the goal can only be reached by many experiments, reverses and round-about methods. It will be necessary to take some of the experiences of the existing organizations as the basis for further work.

It would also be incorrect to pick out now specific points and set up intercept stations as permanent structures as the Germans did formerly. It will be well to rely on the American system of (knock-down) structures which can be put up within a week. Then if the site does not prove suitable it is easy to move. The factor of uncertainty at this time makes this form necessary and this form also has the advantage that - if the results of the monitoring and the situation warrant - an intercept station can be quickly expanded or can be cut down. The motto, therefore, should be: mobility of the fixed intercept stations.

The question of personnel also calls for the greatest caution. The most experienced personnel is to be found in Germany. But precisely here it will be impossible to accept without further ado every man who was formerly active in the intercept service. In the period since the war there have been great changes in the thinking of the people. Whereas three years ago probably 90% would have been ready to work in a West European intercept service, this proportion has decreased since then and is decreasing steadily. The man in the intercept service has a clearer insight into the actual situation than

the average man outside. The previous military development in the West has undermined his belief in its ability and readiness to resist. Not until he recognizes that the West has a serious intention of defending itself will he change his attitude again.

Care must be taken lest undesirable elements find their way into this service. All this suggests that any over great haste in organization will be risky.

I should also like to warn against setting up "mixed" formations, i.e. formations consisting of people from different countries. <u>The units must be homogeneous</u>.

Only at the central control office is it necessary that there be representatives of all the participating countries.

To sum up, I should like to state that if enough technical equipment and temporary buildings are available, an intercept service can be set up within six months which would constitute a solid foundation for future developments.