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Communication Intelligence

ANONYMOUS

Unclassified

This is a translation by Dr. Ray W. Pettengill of an article entitled "Fernmeldeaufklärung" by an unnamed "German expert" published in the Allgemeine Schweizerische Militär Zeitschrift *for October, 1952 (pp. 747–757). At the beginning of the article there was a gist which read: "The following observations concern a field of military intelligence which is very important but is little known in most circles. The very nature of the subject forbids any detailed discussion of the content.—Editor." This article, which is bound to be of interest to readers of the Journal, is reproduced here without comment.*

No nation can forego information regarding the political, economic and military activity of other countries. If such information cannot be obtained by open, permissible means, then an attempt will be made to procure it by forbidden means and through channels which must be kept secret (by confidential agents), or by unauthorized interception if messages are transmitted by telecommunications channels.

Obtaining information by intercepting and evaluating foreign transmissions by telegraph, telephone or facsimile over wires or by radio is known as communication intelligence. It is superior to agent intelligence because the opponent cannot choke it off when employed against radio communications; in this case it entails little risk and supplies objective original reports. It can never be replaced but only supplemented by agent intelligence. This supplementation logically calls for a unified control of both types of intelligence.

Along with pure procurement of information, communication intelligence lays the foundation for crippling, or suppressing entirely, undesirable telecommunications by monitoring harmful foreign transmissions, as well as those of foreign radio agents working within the country (including unreliable native amateurs), since without previous communication intelligence one cannot conceivably jam enemy propaganda broadcasts or eliminate radio agents and radio amateurs. As soon as the police take measures to render such agents innocuous, communication intelligence becomes communication defense.

Communication intelligence and communication defense are therefore for any government indispensable means of obtaining political and economic information regarding other countries and of defending itself.

It is only in the pursuit of this latter aim that communication intelligence becomes a source of intelligence for the military command.

From a military point of view the procurement of enemy messages belongs to the field of general intelligence which becomes active in wartime as operational and tactical ground, air and sea reconnaissance. But even before war breaks out, use is made of both agent and communication intelligence. In communication intelligence the focal point is radio intelligence which includes, in addition to the interception of radio messages, picking up of radar and other radio emissions, including all signals for remote control or guidance of planes or guided missiles and for remote detonation of explosives. Military communication intelligence has nothing to do with telecommunications; the two are to be carefully distinguished and communication intelligence is to be associated closely with agent intelligence in normal times and with ground, air and sea reconnaissance in wartime.

The government must provide the technical prerequisites for all communication intelligence by setting up a supreme central agency.

This agency takes the steps necessary for monitoring telephone conversations and telegraphic traffic over wire lines, using competent linguists as agents when necessary.

In the field of radio it will undertake scientific studies of wave propagation in connection with time of day and weather and, on the basis of this knowledge, will check the entire range from kilometer to millimeter waves. In so doing it will be concerned primarily with determining the characteristics and relationships of the links observed in the several ranges, without concerning itself with evaluation of the content. Depending upon the relationships, it will assign the various links (diplomacy; press and broadcast; commerce and industry; railways, inland and marine shipping, airlines; army, navy and air force; customs; police) to the intercept control stations of the ministries of state for close observation by their communication intelligence stations. Only in this way is it possible to avoid waste by tedious search and fruitless double monitoring.

The control stations for communication intelligence operate in collaboration with agent intelligence. For the actual monitoring, they employ communication intelligence stations, either for monitoring both wire and radio traffic at the same time, or separate stations for wire and for radio, and establish base lines for long-range D/F-ing at several intercept stations. The control stations exchange results. Commitment will vary with the need and is determined by each control station. Frequently stations will be subordinated to lower echelons. This will be the rule in the armed forces; here the military districts are in charge of communication intelligence.

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A communication intelligence station usually works in a fixed location. For intercepting wire traffic it will have out-stations. For intercepting certain types of radio traffic, e. g., space rays of short waves and ultra-short waves with only quasi-optical range, it will be provided with mobile receiving stations in automobiles, aircraft and marine craft. With its long-range D/F equipment for long, medium and short wave, it, together with adjacent stations, supplies the necessary D/F base. Stations which work in radio defense must have instruments for close-range D/F-ing.

In addition to fixed stations, the armed forces have completely mobile units for operational or tactical commitment. In the army, these are combined to form intercept regiments, which, according to experience in the recent war, are subordinated to the highest command at the front (i. e., to army groups) and provide armies, corps, and divisions with the results of communication intelligence. Special units will provide for attempts to deceive the enemy or for jamming enemy traffic (tank traffic, air control traffic, radar, guided missiles, remote detonation).

In peacetime, the armed forces will depend primarily on fixed stations with centralized control. The evaluators of the fixed stations must have available the results of all types of reconnaissance regarding the leadership, organization and equipment (particularly radio equipment) of the enemy. Based on this information, a systematic observation of enemy methods must supply a basis for the use of mobile intercept units. These must have a chance to work under field conditions against enemy traffic, and as a rule such an opportunity is afforded only in connection with enemy maneuvers and exercises. Employment in monitoring one's own traffic is no satisfactory substitute and, if carried on for too long a time, may even prove harmful. On the other hand, training in jamming does not require foreign traffic. In wartime the centralized control will be relaxed in favor of decentralized commitment. The focal point of the intelligence effort then lies with the communication intelligence officers at the top military headquarters.

Only long-term personnel can be used in communication intelligence, since the quality both of the intercepts and of the evaluation results depends far more on long experience than on intensive study of the foe. Only by employing competent experienced personnel can an inflation of the communication intelligence organization be avoided. To a great extent human beings have to be replaced by modern technical devices. For instance, search receivers will probably be replaced by wave indicators, aural receivers by band receivers, acoustic D/F-ing by visual D/F-ing, while the work of the evaluators can be facilitated by the use of Hollerith [IBM] machines to a greater extent than was done during the last war.

We shall not go into details regarding methods here, but only give a general hint. In communication intelligence the solution of enciphered messages (telegrams and radiograms) by trained cryptanalysts is just as essential as the interception and simultaneous translation of the content of telephone messages (wire or radio) by first class interpreters, who must be masters of military terminology. The interception and simultaneous evaluation of telephone traffic generally involves no great difficulty, if no scramblers are used, because the partners are rarely consistent in using cover words to disguise their speech; generally interpretation is possible. Telegrams, on the other hand, may be converted into secret form by cipher systems, including machines, which are so tough that decryption either is not possible or is successful only after the information is out of date. However, it would be a mistake to assume that military communication intelligence is doomed to futility if it cannot read currently all the cipher messages intercepted. Merely by following the traffic relations of the enemy it is possible to interpret his operational and tactical organization; simultaneous D/F-ing results in locating the headquarters, which permits deductions as to the distribution of forces. During the war, German radio intelligence succeeded more than once in working out the hostile radio situation and making a proper tactical evaluation without having been able to read a single message.

To a great extent communication intelligence has to rely on secure telecommunications of its own, not only to control commitment—particularly of the D/F service—but to send back to the evaluation unit the intercepts of outlying receiving stations, and to transmit final results to the commands.

In all countries communication intelligence probably corresponds essentially to the organization we have sketched in broad outline. It may be of interest for the West to speculate on the possibilities of military communication intelligence activity by the Soviet Union and its satellites against Western Europe.

The [communication intelligence] potential of a country is reflected in the manner in which it handles its own radio communications. The more disciplined this is, the more it is disguised and camouflaged, the fewer points of attack it affords an unauthorized intercept and evaluation service, the more it is being guided by lessons learned from its own radio intelligence. The Soviet armed forces during the last war displayed exemplary restraint in radio traffic before the beginning of the campaign in the East. This was abandoned when the Germans attacked in 1941. It was some months before traffic again became normal—temporarily. During the battle near Uman in July/August 1941 the German radio intelligence again had difficulty in interpreting the

Russian radio situation tactically. Nevertheless, by following the relations between links and with the aid of dependable D/F-fixes it was possible to get a general picture of the distribution of forces. Shortly before its encirclement, the signal officer of a Russian army radioed in the clear over his signature his final dispositions before ordering his instruments destroyed. He was captured unharmed. His message made it possible to pick him out quickly among the captured Russian officers. He was interrogated by the German communication intelligence officer and what he said not only confirmed previous results but was important for the further development of the work. The statements of this intelligent Soviet officer, who was an expert both in radio communication and radio intelligence, were made with a willingness which could only be explained by the fact that he was still stunned by the defeat of his army. They were received with caution but were confirmed more and more during the course of the campaign. At about the turn of the year the Soviets made considerable progress in disguising operational radio traffic; their tactical traffic did not keep pace, however. It was necessary to regard Soviet radio intelligence as having improved correspondingly. Its capacity and purposefulness was revealed in the autumn of 1942. Without doubt it contributed materially to the recognition of the weakness of the Italian and Romanian armies in the Bend of the Don and of the sensitivity of the junction of the two armies; the Soviet attack which led to the encirclement of the German 6th Army at Stalingrad was the result.

One must assume that the effectiveness of the Soviet communication intelligence has been increased constantly. No doubt what was learned about German communication intelligence from captured documents has contributed materially; the interest taken by Soviet authorities in German prisoners who had served in communication intelligence is significant. Furthermore, the ability of the Soviet command to employ technical means for tactical purposes must be rated very high.

For the assumed commitment of military communication intelligence we start with the present distribution of forces. According to the scanty information available, the Soviets appear to be employing four army group commands (called "Fronts" during the war) against the West:

North (also known as "Atlantic"), probably the command of the former military district "Leningrad", with headquarters in Insterburg (East Prussia): 72 divisions, of these 32 in the Soviet Zone of Germany, 4 in Poland, 26 in Soviet territory;

West, probably the command of the former military district "West" in Minsk (White Russia), with headquarters in Warsaw: some 15 Polish divisions in Poland;

Center, possibly the command of the former military district "Ukraine" in Kiev, with headquarters in Prague: 5 divisions in Austria and Hungary, ten Czech divisions and 16 Czech brigades in Czechoslovakia and 9 Hungarian divisions in Hungary;

South, probably the command of the former military district "Odessa", with headquarters in Sofia: 3 divisions in Romania and Bulgaria, plus 15 Romanian divisions in Romania, 15 Bulgarian divisions and 3 Bulgarian brigades in Bulgaria, as well as 4 Albanian divisions in Albania.

The communication intelligence activity of each army group command is probably in the hands of a communication intelligence commander whose tasks are assigned by the control station located in the Ministry of Defense in Moscow. Subordinate to all communication intelligence commanders are fixed communication intelligence stations with appropriate long-range D/F units, while the commanders with Army Groups North and South apparently have mobile units in addition.

In the case of *North*, the main effort is probably directed against British and American forces stationed in West Germany with a secondary effort against the French and Belgian troops. It may be assumed that for this purpose, the intelligence units near the border are used, i. e., along the general line Wismar-Harz-Meiningen-Plauen-Oberpfälzerwald. This commitment promises success, even against low-power transmissions, during exercises and maneuvers near the boundary. Fixed stations, likewise near the boundary in view of the predominant use of medium waves (located perhaps near Wismar, in the Harz, and along the crest of the Böhmerwald), are probably charged with observing radio traffic of the armed forces in Britain (including the North Sea) in the Netherlands, in Belgium, in France and in Switzerland. One must also count on monitoring of Spain and Portugal, although this is probably only by samples. Direction finding will not be especially effective against these countries. Denmark can be watched from the base line Rügen-Wismar. For monitoring the Scandinavian Peninsula and the Baltic, there are two probable base lines: Petsamo-Viborg-Dagö, chiefly against Finland and the Gulf of Bothnia, and Dagö-(Konigsberg)-Rügen against Sweden, Norway and the Baltic.

In the case of *West*, we should expect the main emphasis to be on training Polish communication intelligence units for use against the West and to assist in monitoring the Baltic area.

Center may well be charged with observation of the Danube area, primarily of Allied occupation troops in Austria, working from the Austrian territory occupied by the Soviets and from Czechoslovakia.

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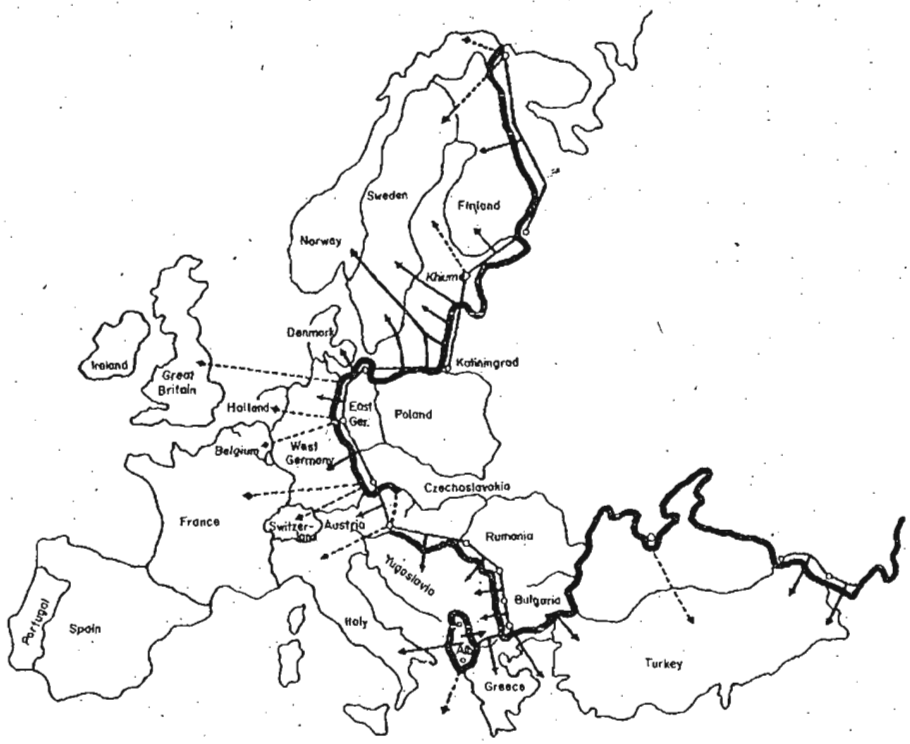
Monitoring of Northern Italy is probably handled from the Soviet Zone of Occupation in Austria.

South no doubt covers the Balkans, and, in conjunction with *Center*, is responsible for covering Yugoslavia, with the participation of Hungarian, Romanian and Bulgarian units, following a base line with the following sectors: Graz (Austria)—Szeged (Hungary)—Iron Gateway (Romania)—Sofia (Bulgaria)—Nevrokop (Bulgaria). Possibly a base line Skutari-Delvina in Albania helps here, although primarily employed against Italy and the Adriatic. Greece and the Aegean may be covered from the base line Delbina (Albania)—Nevrokop (Bulgaria)—Burgas (Bulgaria). The eastern part of this line may work against Turkey whereas the main observation of Asia Minor is presumably assigned to the military district "Caucasus" (headquarters in Tiflis).



The sketch-map [reproduced here] attempts to represent this possible Soviet setup. From it we see that most of Western Europe can be covered under normally favorable conditions. This is particularly true of such border areas as Finland, Western Germany, Austria, Yugoslavia and Greece.

It must be assumed that, in accord with its political concepts, Soviet Russia exercises rigid control without limiting the independence

of its satellite states. Even before the war, Poland had a capable communication intelligence organization; its installations in Gdingen and Stargard were quite up-to-date. Hungary furnished a useful communication intelligence unit during the Russian campaign. The Romanian units, however, were just being built up. No judgment is possible respecting Czechoslovakia and Bulgaria. One need not count on any mixture of different national units of the Eastern block on a supernational basis. On the other hand, the collaborators will all the more certainly employ uniform methods. This was the course adopted by German communication intelligence in the east. Army Group *South* had in 1942 one Italian and one Hungarian army and two Romanian armies in addition to its German armies. The communication intelligence units of the allies remained intact, were subordinate to their own armies, worked independently, and merely received recommendations and instructions from the communication intelligence commander of the German Army Group through liaison officers who handled the exchange of results. This assured uniform collaboration. In contrast to the solid front of the Eastern block, conditions among the Western European forces still appear problematic.

The West European Union has at its disposal the communication intelligence services of Britain, France and the Benelux countries. When NATO becomes effective there will be added those of the United States, Denmark, Iceland, Canada, Norway and Portugal, and within the framework of the European Community for Defense, those of Germany and Italy. Not participating at present are Finland, Greece, Ireland, Austria, Sweden, Switzerland, Spain, Turkey and Yugoslavia. Beyond doubt, the lack of Finnish and Swedish territory in the north, and of Greek territory in the south, would seriously handicap western communication intelligence. The extent to which collaboration is assured is still an open question.

In any event, the status of military communication intelligence probably varies in the major states of the Western European Union, of NATO and of the proposed European Community for Defense.

Britain presumably has an admirable organization, at least in the Royal Navy and Royal Air Force. Whether the army unit—including that of the Canadian army—is equally good is not certain. The questions regarding methods of evaluation put to German prisoners by British interrogators permit some inferences.

Germany down to 1945 had an extensive organization but it was badly split up. When it was disbanded after the capitulation of 1945 contact with developments was lost. Consequently it would take years to build up a new one.

France after its defeat in 1940 was not able to start building up its

service before 1945/1946 and because of the 5-year interruption is probably distinctly behind the times.

Italy, which supplied a communication intelligence unit for the war against Russia, may well have utilized the experiences of those days in organizing its forces on the basis of the Peace Treaty of 1947.

The United States, because of its overwhelming armament potential and technical superiority, should be in a position to create an outstanding military communication intelligence service. It seems, however, as if the realization of its superiority in material, combined with a love for improvisation, were tending to crowd into the background complicated intelligence methods which, like communication intelligence, cannot be improvised. If it is true that the outbreak of the Korean War in June 1950 took the American command in the Far East completely by surprise, this would not argue for the preparedness of a dependable communication intelligence service. The assembling of strong North Korean forces north of the 38th Parallel without the active use of radio would be inconceivable. Radio intelligence, for the employment of which there were favorable opportunities, should have recognized the concentration early.

Employment of the forces of the West European Union and of NATO will result in a coalition army, the national components of which will remain undisturbed, even though they come under a unified command. On the other hand, the agreement for the European Community of Defense provides for "integration". The largest national unit is the division; corps and armies and therefore the general headquarters troops are already supra-national. Operational communication intelligence units belong among the general headquarters troops; from this it results that they will be supra-national. It remains to be seen how the difficulties will be solved which will arise from grouping Belgian, German, French, Italian, Luxembourg, and Dutch communication intelligence units (fixed stations and mobile units). In any event they are not insuperable, and it may be regarded as certain that a European force can dispense neither with the supra-national operational nor with the national tactical communication intelligence (in the form of close-range intelligence groups attached to the divisions), because we must remember that toward the end of the war the latter provided the Germans with some 70% of their total intelligence results.

There is less likelihood that this will change as more and more large, swift, mobile units (armored and armored-escort divisions) are employed, which, like the Air Force and the Navy, have to rely entirely on radio connections during combat. Against these, radio intelligence will still be effective.