Estonian Interwar Radio-Intelligence

By Ivo Juurvee

1. Estonian radio-intelligence in historiography

The Estonian pre-war military intelligence service - the Second Department of the General Staff - and especially its radio-intelligence branch, Section D, have not been researched much, although it is rather frequently mentioned in historiography. Due to different reasons its significance has probably been overestimated. The first to promote the myth of its influential role were officers of the General Staff who were arrested and interrogated by the NKVD (the Soviet secret service, a predecessor of the KGB). They were asked about intelligence, and something had to be answered. To speak about the importance of Section D was secure, since its leadership managed to flee the country in time, and its personnel was known to the Soviet authorities.

Therefore, information on radio-intelligence could not cause more arrests, which would have been possible while uncovering other collaborators of the Second Department. For example, the former Chief of the General Staff, General Nikolai Reek, said that he knew very little about intelligence, since the Head of the Second Department had to report directly to the Commander-in-Chief, General Johan Laidoner (which was not true). Soon Reek started to recall, probably due to torture, and one of the first things he confessed was that “radio-intelligence gave a lot.”

Another reason to believe in the power of Section D is less pragmatic but political. Since radio-intelligence against the Soviet Union was most probably organized in co-operation with Germany, it was used to discredit the leadership of the Republic of Estonia and its Armed Forces as pro-Nazi in Soviet Estonian historiography and as an indirect justification for the events of the summer 1940. Investigations of several authors of the partnership between the Second Department and the German military intelligence service Abwehr show that special radio

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intelligence equipment and optics were donated to Estonians by their German counterparts. The same has been confirmed in recent publications. It has become 'common knowledge', as the original source proving that fact is complicated to detect because of cross-quoting and missing quotes. After some research it was possible to find the original source, which is a book by East-German historian Julius Mader. He writes:

“In June [1936] the Head of the Second Department of the Estonian General Staff, Colonel Maasing, visits Canaris in Berlin. Abwehr gets the permission of the Estonian government to use Estonian territory for anti-Soviet espionage. To fulfill the task, the Estonian secret service is equipped with long-distance photo-cameras and radio-intelligence tools to be stationed along the Estonian-Soviet border. Cameras were installed in the lighthouses on the Gulf of Finland in order to photograph Soviet navy ships passing by”.

This short excerpt without any citation has been for a long time the basis for all studies on Estonian radio-intelligence. The existence of cameras in the lighthouses could be possible, although so far no documented evidence has been found to support the claim.

2. Radio-intelligence before Section D

Estonians were already eavesdropping on Soviet radio-communication before the formation of Section D in the Second Department. The extent of systematic work is complicated to detect. In the 1920s and 1930s there was no essential difference between conventional radio equipment and equipment used for tasks of radio-intelligence. Almost all military receivers could be used to monitor the enemy’s communication. With some simple reconstruction civilian broadcast receivers could also be used for such purposes. The same applies to devices used by radio-amateurs, which in some cases was more sophisticated than the equipment in the Armed Forces.

The Wireless Station of the General Staff in Tallinn intercepted the first radio messages of the Red Army during the War of Independence (1918-1920). However, radio-intelligence has not been mentioned among its primary functions. It was probably just a coincidence, which had to happen while working in a receiving mode for long periods.

There are known some examples of naval radio-intelligence. After the War of Independence a long-wave station was located at the post of Naval Communications of Stenskäri. Among other functions it had to take care of radio-intelligence. By the end of the 1920s the station had lost its importance because the Red Baltic Fleet seldom used long-wave transmissions while at sea.

In July 1928, Lieutenant Colonel Karl Laurits, Head of the Second Department at that time, informed the Chief of Staff of the Navy:

“With the consent of the Commander of the Navy ... the radio-station of Island Naissaare, the personnel of which will be reinforced with one civilian hired by the Second Department, is going to be used for radio-intelligence purposes. Actual radio-intelligence work is going to be
organized by the Commander of Radio Station of the General Staff, Lieutenant Lõhmussaar from Communications Battalion, under my supervision."

In the same document it was foreseen that until the arrival of the fourth radio-operator the station had to work in a receiving mode for 18 hours per day, and 24 hours a day once the fourth operator had arrived. From here it is possible to conclude that a shift lasted for six hours.

The document “Signals and Working Hours of Army and Navy Radio Stations”, which went into effect on October 1, 1928, stated that the navy radio-stations of Kuressaare, Pärnu and Coastal Fortifications had to monitor the communication of the Soviet naval ships on the Baltic Sea for five minutes every hour, in addition to their routine. No Army station was given duties of the same kind.

In 1925 three long-wave direction-finding stations were purchased for the Army, i.e. equipment for intelligence purposes. By April 1933 this rather primitive equipment was out of active service and stayed in the storage of the 3rd Communications Company. Although in 1931 the Head of the Second Department Laurits described the theoretical views and importance of direction-finding in the booklet “Intelligence Service in Staffs”, the Estonian Army did not have the modern equipment described at that time.

When the staff of the 1st Division moved from Narva (next to the Russian border) to Rakvere (100 km west of Narva) in 1932, the radio-station was left in its previous location to accomplish “special tasks”. It stayed there at least until the end of 1933, when the Inspector of Engineer Troops was asked to leave it there or replace it with a station of the same kind.

It is not known if “special tasks” meant radio-intelligence. Nevertheless, during the period from April 1932 until April 1933 the transmitter of the station had worked for 217 hours and the receiver for 7998 hours (which makes 22 hours per day on average), i.e. the receiver worked approx. 37 times longer than the transmitter. The average for all stations of the Communications Battalion was 24.5 times. This allows to argue that the Narva station was used for intelligence purposes. The four direction-finding stations worked in the period mentioned above altogether for 1350 hours, which makes 3 h 42 min per day on average. (This number is purely theoretical, since for finding a transmitter, at least two stations had to work at the same time. However, it reveals a relatively low intensity of direction-finding.)

The most actively used (2 h 20 min per day) Marconi direction-finding station was located in Petseri (a town on the Russian border in South-East Estonia), in the same place where the intelligence station was located, monitoring Soviet communication for 9 h 10 min per day.

Although the data above proves that Estonians had made some efforts in the field of radio-intelligence, the letter of the Chief of the General Staff General Nikolai Reek addressed to the Chief of Communications of the Army gives the impression that the work was not systematic. Reek writes:

“... Already during peacetime we have to start preparations to carry out radio-intelligence. It means skills in finding [enemy] stations and decipher-
ing intercepted messages. An appropriate plan has to be drawn and several young officers from the Higher Military School included in this task.”

3. Radio communication in the second half of the 1930s

In the second half of the 1930s three wavebands were mainly used for radio communication: long waves (band width ca 1-10 km, frequency 300-30 kHz), medium waves (ca 100-1000 m, 3000-300 kHz) and short waves (ca 10-100 m, 30000-3000 kHz). Ultra long waves (more than 10 km, less than 30 kHz) were rarely used, but research on ultra short waves was still at a stage that did not allow wide-spread use.

Medium and long waves were more reliable, but due to some peculiarities short waves were more promising for military communication. Since the short waves reflect from ionosphere, transmitters with low power could create communication to distances of thousands of kilometres. Vast shortcomings were low reliability and the ‘area of silence’ (i.e. that

the direct wave cannot be received anymore, and the reflected wave has not reached the surface of earth yet).

During this period the two receiver brands of “Audion” and “Super” were used. “Super” was more sophisticated and made “Audion” redundant. The number of valves (vacuum tubes) in it could usually indicate the level of sophistication of the station. Radio amateurism was popular among Estonians. It was the time of “radio romantics”. Some equipment built by amateurs was even better than the gear used in the Armed Forces. At the same time they
were a reserve of radio specialists for the military who could be deployed in the case of need, especially by the Defence League.\(^{21}\)

### 4. Equipment\(^{22}\)

Data on the equipment of the Estonian radio-intelligence is from the summer 1940, when it had to be handed over to the Red Army. In separate parts Section D handed over all together 25 radio stations, transmitters, receivers, direction-finding stations and several hundred pieces of other equipment (antennas, cables, batteries, valves, etc.). The possibility, that some equipment was missing - hidden, handed over to some other Estonian military unit before or stolen - cannot be completely excluded, although it is implausible. By the summer 1940, there was the following equipment in use:

**Radio stations** (including both, receiver and transmitter):
- Telefunken Torn. Fu f/24 b211 (1 item)
- Telefunken Torn. Fu B 1 (1 item)

**Receivers:**
- Telefunken Torn. EB (4 items)
- Telefunken Spez. 445 b Bs ”Tornister” (3 items)
- Telefunken D 770 (4 items)
- Telefunken E 381 H ”Allwellen” (2 items)
- Telefunken L.Mw H.E/24b 316 (1 item)
- Telefunken 876 WR (1 item)
- Kerting-Ultramar 37 SV 8360 (1 item)

**Transmitters:**
- Quarts Crystal (out of date, 2 items)
- ‘1-valve’ (out of date, 1 item)\(^{23}\)

**Direction-finding stations:**
- Telefunken TP/L.M./ 6/315 (3 items)
Out of these 25, 22 had receiver function and only five transmitter function (three of them were out of date). It shows a clear focus on monitoring. Nevertheless, all three radio-intelligence units had their own transmitter and one in the Second Department. The Second Department was located on Pagari Street, in the Old Town of Tallinn in the building of the General Staff. Its radio-station in the same house was probably also available for intelligence officers in case of need, e.g. for contacting the radio-intelligence units.

"Tornister-Empfänger Spez. 445 b Bs" was a portable 4-valve Audion-receiver that could be carried in a backpack by one man. In the German Wehrmacht it was used from 1930 up to 1937. During the period of 1937-1939 it was replaced with more sophisticated “Telefunken Torn. EB” which was used until the end of World War II. These two were also the main receivers used in German tanks and other armoured vehicles. Section D possessed three Spez. 445s and four Torn EBs by the summer of 1940. The serial numbers show that all three Spez. 445’s used in Estonia were made in 1936. This may indicate that 1) they had already been used by Germans and handed over to Section D as second-hand receivers during the replacement process of 1937-1939 or 2) the same process had been going on in Estonia, the original number of Spez. 445s was larger, and some of them had already been replaced with Torn EBs or 3) the process had already been completed, and four Torn EBs had replaced three Spez. 445s which were in reserve by then.

The Spez. 445 was a receiver developed especially for field conditions. Therefore, operational reliability was a priority. All four vacuum tubes were of the same type (RE 074). Although four different valves would have provided better receiving quality, German engineers preferred easy replacement – it was obviously much easier to carry only one valve for replacement in the field than four different ones. It was also easier for the Estonians to order only one type of reserve valve from Germany. The primitive design of the receiver is demonstrated by the fact that the bandwidth could not be changed by a switch, but an operator had to carry three different coils (for short, medium and long waves) with him. Spez. 445 could receive bands of 40-3000 metres and, regardless of several imperfections, could be used for radio-intelligence purposes. Torn EB was an update of Spez. 445. One of the differences was that bandwidth was changed by switching, and there was no need to change coils. This receiver was produced in huge amounts and was the mainstay of German infantry and armour troops radio communication throughout World War II.

“Telefunken D 770” and “Telefunken 876 WR” were 7- and 6-valve super-receivers. Although their construction was much more sophisticated than Spez. 445, D 770 and 876 WR were only civilian broadcast receivers. After the outbreak of war in September 1939, the Second Department received additional funds to obtain five receivers to monitor foreign public broadcasts (mainly news). This explains the purpose of these receivers and gives the approximate date of purchase.

With a simple and cheap reconstruction and a better antenna, D 770 and 876 WR
could be used for much wider purposes than just listening to radio news. The crucial difference between military and civilian equipment was that the latter could not receive text in Morse code. To rebuild these radios to receive Morse code was not complicated, especially compared with various experiments carried out by the Communications Battalion. After that they would have been even more useful for the intelligence than Spez. 445 and Torn EB, although it is not known if they were rebuilt. Because of their nature, D 770 and 876 WR did not bear much transportation and especially working conditions in the field.

“Telefunken Torn. Fu f/24 b211” and “Telefunken Torn. Fu B 1” were portable radio-stations (i.e. they included transmitter and receiver) widely used in the German Army from 1937 until the end of World War II.

“Telefunken TP/L.M./ 6/315” was a portative long and medium wave radio finding station. In addition to an ordinary moving loop-antenna, which appears to be the basic element of every direction-finding station, they were equipped with an additional stick-antenna, which allowed determining the direction of enemy transmitters more precisely. The set included several other extras up to leather transportation bags.

Bearing in mind the small number of personnel in Section D, the amount of equipment is remarkable. Obviously not all of it was used at the same time but according to need. Some of it could be in reserve, some temporarily out of service. When air was quiet, one operator could monitor several different frequencies using several receivers at the same time.

Twenty items out of twenty-five were made by the German company Telefunken. The documents state that four items made elsewhere were out of date. It is clear that the great majority of technology used by the summer of 1940 was made by Telefunken. The equipment was modern, mostly only a few years old and on the same level as in the German ground forces. On the other hand, it consisted of devices used for communication rather than special radio-intelligence tools, except maybe direction-finding stations.

5. The question of obtaining the equipment

In the second half of the 1930s the Estonian Armed Forces mainly used radio technology of Telefunken. The largest purchases during the period were six division and six brigade radio-stations, ordered from Telefunken in the second half of 1938. A competitive tender was announced, and extensive documentation has remained intact. There is no reason to doubt in the quality of the technology, since at least in the field of short-waves Telefunken was one of the (if not the) best in the world. As early as 1912 the company had succeeded, after constant research, in creating short-wave radio connection at a distance of 20,000 km.

No documentation of the purchasing process of the equipment exists. This gives space for historical discussion. One possibility could be that the files were destroyed or lost during World War II. The other possibility is that such documenta-
tion has never existed, which in turn leads to two options.

Firstly, the tender was never announced publicly in order to cover the intentions of the Estonian radio-intelligence. The decision was made by a narrow circle of military radio specialists.34

Secondly, the equipment may have been aid from the German Abwehr, as has been argued by East-German historian Julius Mader. This possibility is more realistic, although it cannot be confirmed yet.

6. Personnel of Section D

In contrast to other parts of the Second Department, the personnel of Section D as of summer 1940 is precisely known: it was 26 people – two officers, 23 NCOs and one private. Nobody had been hired before 1936. This confirms the supposition that Section D was formed in 1936-1937.35 The second officer, Olev Õun, was taken to service only in March 1938; so far Andres Kalmus had managed to supervise the section alone.36

Radio-intelligence had gone through two major enlargements. The first of them was at the beginning of 1937, when Section D had just started its work. The second occurred in summer of 1939, when, according to President Konstantin Päts’ secret decree from July 10, “due to complex situation [in Europe] naval radio-intelligence has been reinforced”. With the order of the Commander-in-Chief General Johan Laidoner from July 22, the radio crew of the Second Department was enlarged “substantially”.37

After the entry of the Red Army into Estonia at the end of September of 1939, there is only one known new NCO in Section D.

According to a Commander-in-Chief’s top-secret decree No. 223, from 1936 the peacetime personnel of Section D was 33 people.38 It leaves two possibilities: Section D was not staffed to its full strength or some civilian radio-operators were also employed.

7. Training of personnel

Most of the Information NCOs (informatsiooniallahvitserid – official name for NCOs of radio-intelligence) on whom data can be found were graduates from the Radio Class of the Communications Battalion. The two exceptions were the Administrative Sergeant, who was working in the office and did not need training in the radio field, and one NCO, who was trained as a radio-operator in the Navy.

Information NCOs were professionals, some of them had more than ten years of practice as military or civil radio-operators, many had commendations from their superiors for excellent service.

The two officers were well-educated. In addition to military school, they had graduated from full-time gymnasium, which was not as common in the 1930s as it is now. Both had been instructors at the Joint Military Education Establishment, and were fluent in German and Russian. Captain Kalmus had followed military radio courses abroad.39 Major Reino Hallamaa, the head of Finnish radio-intelligence during World War II, under whose supervision Captain Kalmus and Captain Õun were working after fleec-
ing Estonia in 1940, has said that both men were very talented. Olev Õun was especially talented, who was, in Hallamaa’s opinion, a “phenomenal decipherer” and had managed to break the latest code of the Red Army during the Polish campaign in September 1939.\textsuperscript{40} Unfortunately, no materials are available to support or argue the words of that high-ranking Finnish intelligence officer.

Taking into consideration the aforesaid, the personnel of Section D could be evaluated as highly professional and experienced. They were the best that Estonia’s tiny Army could provide.

8. Positions of radio-intelligence units

In 1939-1940 Section D units were stationed in Merivälja (7 km to the East from the city centre of Tallinn, probably next to the lighthouse of Viimsi, where the post of Naval Communications was situated, or somewhere in the area of nowadays Ranniku Road or Mõisa Road), Narva (probably at Olgino Mason 5 km to the North-East from city centre)\textsuperscript{41} and Tartu (probably in some of the units of the 2\textsuperscript{nd} Division).

By July 1, 1940, fourteen Information NCOs were stationed in Merivälja, five in Tartu and four in Narva.\textsuperscript{42} They had been regrouped recently, and their previous positions are impossible to trace nowadays. Note that for keeping one receiver working 24 hours per day, four radio-operators were needed.

Distribution of equipment between units is not clearly known. There was one direction-finding station in each unit. Other equipment was slowly gathered in Merivälja, as in the summer of 1940 Section D was prepared for closing down. There is no evidence about Section D’s unit in Petseri, although it has been mentioned in the literature.\textsuperscript{43} Possibly it had been closed down earlier, and crew and equipment had been transferred to Merivälja; it would also explain higher concentration of people and equipment there.

The transfer of crew and devices from Narva to Merivälja started in October 1939.\textsuperscript{44} This was presumably caused by changed priorities of radio-intelligence after establishing the Red Army bases in Estonia according to a bilateral treaty from September 28, 1939 (a precursor to occupation and annexation of Estonia by the Soviet Union). Bases were found in Paldiski (a town 60 km west of Tallinn) and on the Island of Saaremaa (in the Baltic Sea, off western Estonian coast), and concerned the Second Department much more than the Red Army units in the Leningrad Military District. It explains the movement of focus of radio-intelligence work from the Estonian eastern border to Tallinn.

Between January and September 1938 the Head of Section D, Captain Kalmus, had five times “accomplished special tasks” in Võru, once in Tapa and in Narva. These trips lasted for 4-5 days each.\textsuperscript{45} In October Captain Õun was fulfilling the same duties for three days in Tartu.\textsuperscript{46} It can provide ground for speculations (e.g. that there was a radio-intelligence unit in Võru, which permanently had problems and was transferred to Tartu in September-Octo-
ber 1938), but unfortunately not for feasible conclusions.

In 1938 the General Staff had the idea to create a mobile radio-intelligence unit the following year. The action plan of the Staff under the heading “Intelligence” stated: “To develop and expand radio-intelligence. To acquire mobile a radio-intelligence base for radio-intelligence and for eavesdropping telephone communication in the territories near to the border.” There is no evidence on the realisation of this idea, although its implementation should not have been complicated. All military radios of Telefunken were portable and developed with the intention that one or two men on the battlefield could carry all needed equipment, including batteries or a generator. Therefore, some receivers and batteries on a truck could already be named a mobile radio-intelligence unit, as it could easily carry the crew and devices needed. The other side of the coin is whether this was a necessity. Estonia is a small country and there were already at least three permanent radio intelligence units with relatively

Positions of Section D radiosfinding stations and their approximate range in 1939–1940.
small distances to each other. (At the same
time the Signals Intelligence Service of the
United States had only seven permanent
units, although most probably staffed and
equipped much better.) One more transportable unit could not give a new qualitative level. Probably the idea was just an attempt to implement the general trend of making communications troops mobile  

9. Telephone eavesdropping

The idea of a mobile unit included eavesdropping of telephones. The Second Department was familiar with this task. In the 1930s the Estonian Armed Forces purchased more than twenty field devices for eavesdropping telephone lines, and by 1940 Section D had at least one of them (type “LE 36”). These were primitive and light and were usable only if the enemy had low quality or single-wire (in that case ground was used as the second wire) communication. In both cases the eavesdropping equipment had to be near the line of the enemy. The system was for tapping field-telephone communications of the forefront troops of the other side in battle conditions. During peacetime these devices could not be used, since, due to security concerns, single-wire telephones were mostly abandoned after World War I, and field-phones were not used in peace-time. Furthermore, there was no direct access to the Soviet telephone lines anyway. Tapping the communication lines of the Soviet Embassy in Tallinn was technically possible, but the question whether it was actually conducted requires some further investigations.

10. Direction-finding

There was one direction-finding station in every unit of Section D, which is also the most pragmatic solution. The range of stations was at that time 250-300 km. Therefore, it was theoretically possible to find all transmitters working on long and medium waves in whatever spot in Estonia and also on the Gulf of Finland, in western part of the Leningrad Military District (including the city itself), in Southern Finland and Northern Latvia.

In addition to the finding stations of Section D, some were also located on Navy ships. However, it is not known whether they were used for intelligence or navigation purposes. The location and functions of “Marconi” direction-finding station exploited by the Army in the second half of the 1930s are also not known.

The effectiveness of radio finding remains unknown. When between 1936-1937 several transmitters of ‘radio-hooligans’ (radio-amateurs who used their sophisticated equipment “to have fun”) emerged in the Tallinn area, it took more than half a year before the best known of them, “Kapa-Kohila,” which used frequencies reserved for civil air-traffic navigation, was hunted down. This does not prove the pitiful state of radio-intelligence. (Former officers of Communications Battalion have told afterwards that they knew perfectly the location of “Kapa-Kohila”). Fighting radio-hooligans was not a function of Section D. There is a possibility that the Postal Service did not even ask the Armed Forces for help. Nevertheless, only a need to conceal Estonian radio-
intelligence real capabilities from the possible enemies could excuse this almost criminal ignorance.

### 11. Deciphering

The success of Captain Õun in deciphering soon after the outbreak of World War II was already mentioned. War was a key factor allowing a breakthrough in dismantling enemy military codes. In peacetime ground troops preferred wire connections due to their higher reliability. In contrast to radio messages, telegrams and telephone conversations did not have to be coded, which made them faster and more user-friendly. In wartime, when large troops had to move and could not stay in their permanent bases, there was no alternative to radio communication. Therefore, the number of broadcast messages increased substantially, providing more data for cryptographic analysis, which is the foundation to break codes.

In 1936 a former Head of the Second Department Lieutenant Colonel Artur Normak told to a Swedish intelligence officer, Captain Hallenborg, that there had been a breakthrough in deciphering Soviet codes. The clue to the mystery was obtained after one station of the Red Army repeated its enciphered message in plain text after it had not been understood by the recipient. Both messages were intercepted by the Estonian radio intelligence.

After imprisonment in 1941 a former Chief of the General Staff General Nikolai Reek told NKVD interrogators that the Head of the Second Department Colonel Maasing had reported to him about breaking some of the codes of the Red Army. Probably as a consequence of torture Reek told the NKVD what it wanted to hear, yet it is also possible that it is true.

### 12. The targets of radio-intelligence

Although the transmitters of the Soviet ground forces were certainly monitored, priority for Section D was supposedly the Red Baltic Fleet, which since 1918 had been pushed to a narrow strip on the eastern coast of the Gulf of Finland, with the main base in Kronstadt.

In the 1930s the ground troops were initially reluctant to use radios, mainly due to their complexity and security concerns. The Red Army was still under-equipped with radio-stations at the time. Therefore, radio communication between the units in the Leningrad Military District could not be very active, while the fleet had no choice and had to use wireless connection.

Secondly, the German Abwehr supposedly supported Estonian radio-intelligence, and the main concern to Germany in the
area was the Red Baltic Fleet. Until the battleship *Bismarck* became operational in 1940, there were no ships in the German Navy that would have had as strong armament as the Soviet battleships *Marat* and *Oktyabrskaya Revolutsiya*. These ships were modernized between 1928-1934 and could arrive at the East-Prussian coast only within 24 hours after departure from their base in Kronstadt.

Thirdly, Section D had stationed its two best-equipped units near the sea, while the third one (Tartu) was at some distance from the Soviet border and still had the Gulf of Finland in the range of its direction-finding station (see map).

Fourthly, in the period before and during World War II radio-intelligence had more importance for the navies than for the ground troops. In the long run the Germans may have been interested in Estonian radio-intelligence to provide their specialists with more raw data for cryptographic analysis. Nonetheless, some material of operational value might have been obtained. Soviet aid had a great impact on the Spanish Civil War (1936-1939). Most of it was delivered from the ports of Sevastopol and Odessa on the Black Sea, while some ships departed from Leningrad (now St. Petersburg), passed through the Danish Straits and the English Channel and delivered their cargo to the ports of Santander and Bilbao on the southern coast of the Gulf of Biscay. These vessels, equipped with short-wave radio-stations, had to pass by Section D units at a close distance. During the journey they tried to keep radio silence as much as possible. Nevertheless, it is worth mentioning that already as early as 1936/1937 there was a possibility that the Estonian radio-intelligence was eavesdropping Soviet communications within the zone of war. One of the main stations exchanging signals with the Soviet instructors was situated in Leningrad, so most of its transmissions and receiving should have been within the range of the Section D unit in Narva.

By the personnel strength, its training and the equipment used it can be concluded that Estonian radio-intelligence had enough capacity for intercepting Soviet radio communication in order to lay ground for a successful deciphering process. How Section D actually accomplished the task of transforming the intercepts into useful informations remains a topic for further research.

1 Radio-intelligence is a process of monitoring (enemy) radio communication, collecting, analyzing, and deciphering the intercepts, and the agency, which deals with this process. Important is a systematic and conscious work, since incidental hearing of other’s messages cannot be called intelligence. The field grew rapidly with the development and wider use of radio-communications in the interwar period. Now the term SIGINT (signals intelligence) is also widely used.
2 EE ERA, 495-12-121, pp. 21-22; 495-12-277, pp. 16-18.
3 Reports of the military attaches were forwarded from the intelligence service to Reek.
4 ERAF, 130-1-9861/3, pp. 52-55.


8 Tiit Noormets, _Eesti sıjaväeluure tegevusest, meetoditest ja vahenditest aastail 1920-1940_, pp. 59-60.

9 J. Vingisaar, _Raadioside Vabadussıjas._ [Radio Communication in the War of Independence] _Sıdur_, No. 46-47, 1938, p. 1154. The possibility that it was a secret task cannot be excluded.

10 EE ERA, 527-1-1575, p. 100.

11 EE ERA, 642-1-230, pp. 5-6.

12 Ibid., p. 18.


14 EE ERA, 512-1-268, p. 151. In 1940 Section D used also three radio-finding stations, but these were modern and obtained later.


16 EE ERA, 512-1-268, p. 28.

17 Ibid., pp. 151-151 verso.

18 Tiit Noormets, p. 59.


21 “Kaitseliit raadioajandust arendamas” [Defence League is Developing Radio Communication] _Kaitse Kodu_, No. 7, 1936, p. 209. Defence League (Kaitseliit) was a voluntary military organization, the Estonian equivalent to the National Guard in the United States. With its 40,000 members it was a considerable military force.

22 All technical data below, if not cited, is from materials obtained from EADS-RACOMS by the author.

23 EE ERA, 495-12-277, pp. 2-3; 9-10 verso; 40. Indicated number of valves means that equipment was made by the Estonian Armed Forces, probably in Communications Battalion’s workshops.

24 EE ERA, 495-12-277, p. 10 verso.

25 Tornister-Empfänger - ‘rucksack-receiver.’


28 EE ERA, 498-9-272, p. 258.


30 “Sende- und Empfangsgeräte des Heeres.”

31 EE ERA, 495-12-277, p. 9.

32 In the Estonian Army the power (i.e. range) of radio stations was defined by unit for which they were meant. The five categories were: Commander-in-Chief’s Station, Division’s Station, Brigade’s Station, Regiment’s/Battalion’s Station, and Company’s Station. See: Toe Nımm, p. 45.

33 EE ERA, 498-14-486; 498-14-572.

34 Recent study by Craig C. McKay and Bengt Beckman, _Swedish Signal Intelligence_ (London: Frank Cass, 2003), supports this possibility. See Craig C. McKay and Bengt Beckman, p. 84.

35 Tiit Noormets, p. 59.

36 EE ERA, 495-12-277 and the personal files of the servicemen.

37 EE ERA, 498-9-272, p. 57.

38 EE ERA, 495-3-16, p. 205.

39 EE ERA, 495-7-1553, p. 13 verso; 28-30; EE ERA, 495-7-6875.

40 Jari Leskinen, pp. 303-305. German military attaché in Tallinn, Colonel Horst Rössing, evaluated the Estonian radio-intelligence against the Soviet Union as more successful than the Finnish one (Ibid., p. 50).

41 Tiit Noormets, p. 60.

42 ERA, 495-12-277, p. 9; 18.

43 E.g Tiit Noormets, p. 59.

44 EE ERA, 495-12-277, pp. 32-32 verso.

45 EE ERA, 495-7-6875, pages without numbering.

46 EE ERA, 495-7-1553, p. 29.

47 EE ERA, 495-12-478, pp. 253-254.

48 These units were spread over a large area, incomparable with Estonia. They were: Corozal...


Toe Nõmm, p. 46.


EE ERA, 495-12-277, pp. 49-50. It is not clear what these three machines were for. In the Red Army’s documents they are called chasy dlya shifrovi (ciphering clocks). Most probably they were tools based on several wheels and meant for encoding and decoding messages. For description of such machines see: Nikolai Liventhal, pp. 29-30.


EE ERAF, 130-1-9861/3, p. 55. Note that Maasing was the Head of the Second Department only till January 1939.


M. Boltunov, pp. 30-35.