

# THE COMMUNICATIONS OF THE ROMANIAN ARMY IN THE WAR FOR UNIFYING THE NATION. CONCLUSIONS AND LESSONS LEARNED FOR ROMANIAN ART OF WAR

*Colonel (ret.) Professor Gheorghe BOARU, PhD\**

**Abstract:** *This paper explores the stages of organization and equipping that occurred in the communications of the Romanian army and the creation of the first specialized sub-units, preparation and participation in the War of Independence (1877-1878) with further developments until the First World War.*

*The study and analysis of the most significant stages of development of the signals troops in the Romanian Armed Forces, both in terms of organizing, equipping and principles of assuring the appropriate communications for various military actions conducted prior, during and after World War I, allowed drawing conclusions and important lessons learned in terms of military art.*

**Key words:** *wireless telegraphy, telephony, telephone switches, carrier pigeons, optical telegraphy, communications*

***MOTO:***

***"A nation that does not know its history is like a child who does not know their parents" - Nicolae Iorga***

## ***Introduction***

In the vicinity of the palace Cotroceni in Bucharest there is a very impressive historic monument, well known to Romanian and foreign tourists – often called „The Lion”. It is actually a collection of statues, which dominates the crossroads of Geniului Boulevard and Iuliu Maniu

---

\* Academy of National Security Sciences, Academy of Romanian Scientists, E-mail: boarugheorghe@yahoo.com

Bulevard and the area is officially called „The Lion Square”, which is a monument to the heroes of the Military Engineers’ Army accomplished between 1926 - 1928 and inaugurated on 06.29.1929 (created by architect Spiridon Georgescu).

This monument symbolizes the strength, fortitude and bravery shown by the Romanian army who fought the First World War, in the campaigns between 1916-1918, especially during the dramatic clashes at Marăști, Mărășești and Oituz. In the four corners of statuary ensemble there are four soldiers of the engineer troupes, properly equipped to accomplish combat missions: a scout, a soldier of the railway, a pontoon soldier and a telephone orderly.

On the four sides of the statue base four metopes are mounted representing, in relief, aspects of actions specific to each military speciality from engineer troops at the time, arranged on each side of the main base at the bottom of the statuettes. One side displays the specific signal troupes activities: installing and maintaining the stations / the telephone and telegraph centers.

*On front of the "The Lion" statue there is the following inscription: "TELL FUTURE GENERATIONS THAT WE MADE THE SUPREME SACRIFICE ON THE BATTLEFIELDS FOR UNIFYING THE NATION".*

In this heroic spirit, mentioned in the inscription on the front of "The Lion" statue, signal troupes of the Romanian Army acted with dedication, professionalism, heroism and sacrifice for assuring connections among all military echelons who fought in those crucial times for Romania.

The spectacular developments that were accomplished by signals troops of our army were consistent with the technological developments of the time, military organizing and equipping the Romanian Army, with the requirements and principles of warfare corresponding to that historical period.

### ***The creation of the first sub-units of signal troops of the Romanian Army***

The years 1830-1870 were a historical stage which produced a huge leap in the technical resources and in insurance of communications between the correspondents who were at great distance, as follows:

*THE COMMUNICATIONS OF THE ROMANIAN ARMY  
IN THE WAR FOR UNIFYING THE NATION.  
CONCLUSIONS AND LESSONS LEARNED FOR ROMANIAN ART OF WAR*

---

- the discovery of the electric telegraph; the invention of the telephone, the construction of the radio; the introduction of electric telegraphy in the armies of US, Germany, Austria, Russia, France and Belgium, and lessons learned from the Crimean War (1853-1856) and the Franco-Prussian War (1870-1871);

- in November 1854 a team of French experts conducted a line linking Vienna - Predeal and Bucharest - Iași. In March of next year, the connecting line was extended to Giurgiu.

In this technological and especially politico-military context, Romania took some progressive measures suitable for the those moments: some officers were sent abroad to study the way telegraph service was organized in other armies; some publications appeared in Romanian press with special issues to inform our military personnel about the experience of other armies in these areas; in 1873 the War Minister presented a report to King Carol I on the creation of military telegraphy within the engineer troops.

All these were important arguments for also setting up the first telegraph sub-units in the Romanian army.

A historic day for signal troops of Romanian Army was represented by 14 July 1873 when by Decree 1303/1873 the first telegraphy sub-unit was set up within the Romanian Army I - the telegraphy section into the mining company of the engineering battalion. This date marks the birthday of signals troops and is celebrated each year as the “Day of Military Signal Troops”.

The first telegraph officer of the army was Captain Grigore Giosanu, the company commander of mining – he is the founder of the first school of telegraphy within the 1st Battalion of Military Engineers.

In 1874, the telegraph section was endowed with the first special carriages equipped with Morse telegraph equipment, wire and cable for realization of the telegraph cable circuits during a campaign.

On May 28, 1874 other 4 sections of telegraphy were created, one for each engineering company composed identically. Those four telegraphy sections were intended for Divisions 1, 2, 3 and 4 concentrated in autumn of the year 1876 in preparation for a possible war in the Balkans.

***Participation of the Romanian Army in the War Of Independence (1877-1878) and evolution of the signal troops up to First World War***

On April 6th, 1877 military mobilization was officially declared. The military forces and materials for telegraphy sections were completed.

By the High Decree no. 1957/1877 of 19th October, by merging the four sections of telegraphy in the engineering battalion, the first telegraphy company from Romanian Army was created (The 6<sup>th</sup> Telegraphy Company) with a number of 211 military personnel.

In terms of manpower and organizational resources, troops were grouped into three services: the liner service, the service of station and the service of train – which was a novelty for that time.

***Conclusions and lessons learned from the War of Independence***

*The War of Independence was a hard test both for the sub-units of military telegraphy, and for the Department of Posts and Telegraphs, leading to the following conclusions:*

- there was an obvious lack of experience manifest in telegraphy sub-units created just four years before;
- there was a lack of adequate planning for the organization, endowment and satisfying the needs of the links by means of telegraphy or postal service;
- the four military telegraph stations were insufficient for assuring all the necessary connections for General Headquarters with the immediately subordinate echelons and territorial postal telegraphy network was not sufficiently developed to fully cover the needs of the front;
- there was an insufficient number of telegraphic movable means for campaign and means for the transport of correspondence across the Danube to Bulgaria;
- there was a lack of regulations on how to ensure links to the military commands, as well as between military and civil authorities;
- there was a necessity to constitute, from peacetime, reserves of materials and reserves of military personnel.

***Developments after the War of Independence***

On April 1st, 1884 Regiment 1 Engineers was created (by High Decree no. 1070 of 27.03.1884) which had four organic engineer battalions, each with a telegraphy and railways company.

In 1884 the phone was introduced in the endowment of the army and every telegraph company and railways company were equipped with 10 telephones by Siemens.

In 1885 two engineer battalions were created, each with a telegraph and railways company; their total number was 6 telegraph companies and railways. On February 16th, 1886, the telegraph company was separated from railways after the reorganization of the 1<sup>st</sup> Engineer Regiment.

In 1887:

- the 2nd Engineer Regiment was created - on January 8th. Each Engineer Regiment comprised two organic battalions, mixed of telegraphers and mine diggers, one for each Army Corps;

•The “School of telegraph and cavalry digger” was created under the 1<sup>st</sup> Engineer Regiment, under the command of Captain C.N. Hîrjeu.

- Telegraphy sub-units were used to install telegraph and telephone lines in city fortifications of Bucharest, on the beachhead at Cernavodă and on defense lines Focșani - Nămolosa - Galați.

In 1888 they introduced carrier pigeons and optical telegraphy in the military with Mongin equipment (of French production, that used concave mirrors and a light bulb as a projector and Morse code signals for transmission).

Between 1887 - 1899 *the first textbooks and specialized courses* were printed.

By Ministerial Decision No. 134/1903, “*The Network of Correspondence by carrier pigeons*” was created.

In 1903 the first radio means were brought to Romania (TFF - cordless phone) by Romanian Maritime Service; they were installed on land and on ships;

During 1906 - 1908 the state bought from the company “Mixed & Genest” the following: 71 phones, 71 bobbins of 500 meter long campaign cable, 71 interceptors, 142 batteries backup, 17 telephone switches with 12 lines (1906) and, subsequently (1908), other 125 phones on 4 directions, 365 simple phones, 769 km wire and 462 interceptors.

There was also telephone equipment purchased from „**Siemens and Halske**” and „**Ericsson**” companies (1905-1908).

In 1908, they introduced into the army the first three stations T.F.F. (radio), “Telefunken” type.

During 1911 – 1913, the state bought initially 2 and then other 20 T.F.F. Marconi (radio) stations from the English company “*Marconi’s Wireless Telegraph Company*”. In the same period, one part of the necessary telephone materials was completed (telephone commutators and telephone sets), purchased from Austria, Germany, France and Italy (so many that they came in train carriages) which equipped the fortifications of Bucharest, Focșani, Galați, Cernavodă and infantry divisions.

*In 1913 the Battalion of Special Services was created* (April 26th) with a special company, an aerostation company, a school and park of aviation and the warehouse company.

*In August 1914, the Franco-German War began* after the assassination of Archduke Franz Ferdinand in Sarajevo. Austro-Hungary being in an alliance with the Germany, the telegraph wires were discontinued. Constanța-Constantinople cable was also discontinued, Turkey being in the alliance with Germany, too.

In this context, *in 1914, a crucial event happened in the evolution of radio-communications at the national level* – the commissioning of the first “*national station of wireless telegraphy*” in Carol I park, in the summer of 1914 (later moved to a new location, Herăstrău) by engineer Emil GIURGEA, “doctor in physical sciences, director of radio-communications and member of the Romanian Royal Society of Geography”.

### ***Communications of the Romanian Army during World War I (1916-1919)***

The participation of the Romanian army in the war for unifying the nation, with all its implications, was a difficult exam and a tough endeavor for all communications specialists, forcing them to make a lot of efforts and find highly complex solutions, under certain conditions with high risks and unforeseen situations.

Inventive and intelligent, they found solutions and processes for making some communication systems viable for assuring generally uninterrupted and good-quality connections for various commands, although

*THE COMMUNICATIONS OF THE ROMANIAN ARMY  
IN THE WAR FOR UNIFYING THE NATION.  
CONCLUSIONS AND LESSONS LEARNED FOR ROMANIAN ART OF WAR*

---

the endowment was more than modest, and the number of troops involved in the 1916 campaign was very low.

*On August 14, 1916 Romanian Army mobilization was declared by High Decree no. 2784 of August 14 when they created: General Headquarters, four army commands, seven army corps commands, two cavalry divisions and 23 infantry divisions.*

*The situation of signal units and sub-units at the beginning of World War I was not appropriate. Because of the reduced number of telegraphy sub-units, some of these commands were not backed with transmission means. For the other commanders, at least one section of radio (T.F.F.) or telegraphy was provided.*

All these newly created echelons needed, from the beginning, to be provided with horizontal and vertical links, which had to be covered by means of the five telegraphy companies (organized by sections). M.C.G. was subordinated to the Battalion of Special Services. The endowment with transmission means was modest in comparison with other belligerent countries.

Because of the low number of telegraphy sub-units, the commands listed above were provided, in principle, with a section T.F.F. or telegraphy. The Cavalry Divisions did not have telegraphy sections.

The three posts of Radiotelegraphy, made in the country during 1914 - 1915, passed to the Ministry of War, being used for contact with allies, under the name of the fixed Posts.

“Service TFF” was set up in the Battalion of Special Services. During the campaign of 1916, the means of optical telegraphy and the connecting agents proved to be extremely useful.

The radio-goniometry service was organized in the Romanian army (the first three stations being installed in Bucharest, Ghimpați and Slobozia).

*In the period 1916-1917, troops received extra communications means and equipment* brought from France as follows: 400 Morse telegraph apparatuses; 200 telephone switches with 4 numbers; 1200 telephone switches with 10 numbers and 50 telephone switches with 25 numbers ; 1500 phones, 2000 km light cable with 12 wires and others.

The old carriages were replaced with new ones, on two wheels, taken from the Army Arsenal and telegraphy and telephony sections were reorganized.

***On October 30<sup>th</sup>, 1919, the Regiment of Special Services was set up*** (by converting the Battalion of Special Services) organized in three battalions - T.F.F. Battalion with 3 T.F.F. companies, a warehouse company and a training center - Battalion of Design with 3 companies of design, one warehouse company and training center - technical battalion with pigeons company and photo, hydrology company, the workshop company and warehouse company.

By creation of the design battalion optical telegraphy was extended. Projectors of various types were purchased: manually, mobile installed on hypo-drawn carriages or on cars, all of French, English and Russian manufacturing.

#### ***Developments in the forthcoming period***

In 1921 a *telegraphy company* was set up with “*Hughes*” *telegraphic apparatuses* (new equipment);

In 1922, by transfer of the 21 battalions of pioneers of the divisions, the seven regiments of pioneers of the army corps were created, each with a communications battalion, organized in three telephone-telegraph companies, each with 3 sections.

Since 1925, the terminology of *transmission company* and *transmission platoon* was adopted.

#### ***Lessons learned and measures for the next stage after the war***

*The lessons learned from the Great War, the experience of other armies, especially the diversity of transmission technique they were endowed with, which was more sophisticated and more modern, showed that serious action needed to be taken in order to maintain it constantly functional.*

Therefore in 1921, *the Arsenal of Technical Troops* was created, including the 25 repair workshops, the electrical workshop, and the electric cells workshop.

*With the reorganization of the army, in the period between 1918 - 1922, the infantry divisions had, each of them, a telegraphy company and the cavalry divisions had only T.F.F. sub-units. The 1<sup>st</sup> and 2<sup>nd</sup> Mountain Divisions, after being constituted, had each one a mixed transmission company (telephony, T.F.F. and projectors).*



*THE COMMUNICATIONS OF THE ROMANIAN ARMY  
IN THE WAR FOR UNIFYING THE NATION.  
CONCLUSIONS AND LESSONS LEARNED FOR ROMANIAN ART OF WAR*

---

During this period, some measures were taken which led to a clear improvement of training facilities for the telegraphy and telephone operators, being gathered in a larger, homogeneous unit; then, within them “*transmission centers*” were created that constituted true training schools for all specialists from transmission sub-units of other services.

- Subsequently, in the peacetime organization of all regiments of infantry, artillery, cavalry, mountain troops and border guards, it was established to include one basic transmission sub-unit, intended for the centralized preparation of specialists for all the related needs, called “**company (battery, squadron) of special services**” that comprised, in addition to other subunits, one transmission platoon (divided into three sections: telephony, signal and riding or cycling agents).

To avoid damaging the transmission technique supplied (which was already insufficient), through a Ministerial Decision (no. 277 / 02.03.1920) it was established *that materials sent for training and drills should be different from those used during wartime* and, therefore, should be selected from those old and worn ones which were in the endowment of each Army Corps.

***Conclusions and lessons learned for Romanian Art of War***

Analyzing the military campaigns of 1916 – 1917, we reached some conclusions and lessons learned of great and immediate importance for the use of modern means of transmission, as follows:

1. At the beginning of the campaign in 1916, some of the commands showed a lack of trust in using technical means of transmission, compared to agencies and optical transmission, both due to insufficient knowledge of how to exploit technology and to the frequent cases of interception of telephone circuits and T.F.F. transmission. However, everybody agreed that out of these all, *the telegraph is the basic means* of organizing transmissions (also because a written document remained testimony for each communication act).

2. The dramatic evolution of the battles’ situation at the end of 1916 and of the maneuver character of warfare campaign in 1917 caused radical changes in the concept about the role of the transmissions means: - the phones became the basic technical means of transmission at tactical and

operational echelons; - the process to ensure the connections based on *the „bottom-up” principle was changed.*

3. *The “top-down” principle was adopted* for the organization of the telephone lines of the 6<sup>th</sup> Infantry Division during the Battle of Mărăști (24.07 - 08.21.1917) but only at the end of the war.

4. *The wireless telegraphy (T.F.F.)* was used on a smaller scale, being considered primarily a means for enemy interception and press releases of the agencies and, secondly, a means for organizing links.

5. *The connecting agents, the postal and signaling means* were widely used in all forms of combat.

6. Regarding *the endowment with telephone and telegraphy means*, this was inappropriate in the campaign of 1916 and quite good in the campaign of 1917 after the reorganization of the army and the measures taken as a result of the support received from allies (especially from the French).

7. Regarding *the telegraphic means* (which was most advanced), the situation was quite bad compared to other belligerents; throughout the war, our army had only 14 T.F.F. posts of campaign, while French and German armies possessed several hundred “Waves maintained” radio stations (as a result of the use of the electronic tubes). The T.F.F. stations of the Romanian army were installed on cumbersome and bulky hypo carriages, while those of the German and French troops were most of them installed on auto.

**Some important lessons learned:**

- completing telephone connections was achieved with the units and sub-units on the first line with signaling agents and optical means;
- creating a campaign telephone network developed on the base before starting the attack;
- double telephone line between artillery and infantry;
- assuring the telephone stable link between the batteries, battalions and the artillery with the observation posts thereof;
- covering the need to bury the telephone lines realized by campaign cable, installed in the first two positions occupied by troops, not to be broken off by bombing enemy;

- encoding the telephone conversations and especially encrypting all radiograms transmitted by the wireless telegraphy apparatuses.

### **Final conclusions**

*.. it can be said that if at the beginning of the war, transmissions on the battlefield were not appreciated at their true value, the experience of two years of war and the difficulties of commanders of all ranks in command of troops led to a change of these outdated concepts regarding the organization and realization of transmissions.*

*One of the most important issues for transmission structures from various levels in the interwar period was a **clearer definition of their place and role in the management system** and processes used for training and training to meet the demands of a branch of service which is engaged in a dynamic, fast changing process, technically speaking.*



## **BIBLIOGRAPHY**

- CERĂCEANU I., “*Transmisiunile Armatei României 1873 - 2012*”, Editura Militară, București, 2012;
- CERĂCEANU I., DINCĂ G., “*Din istoria telecomunicațiilor - repere cronologice principale*”, Editura Militară, București, 2013.
- DIMITRIE L., “*Câteva date referitoare la Stația de telegrafie fără fir din Parcul Carol I*”, București, 1915;
- ENCIU G., “*Telecomunicațiile, factor activ în dezvoltarea societății*”, Editura Științifică și Enciclopedică, București, 1987;
- ENCIU G., BIJI I., CONSTANTINESCU E., PANAIT L., “*Contribuții la istoria trupelor de transmisiuni din armata română*”, Editura Militară, București, 1973;
- GIURGEA E., “*Progresele recente în telegrafia și telefonie fără fir – organizarea rețelei române de telecomunicații*”, București, 1921;

