



# Ericsson News

OCTOBER 1927

English edition.

Managing Editor:

Woldemar Brummer

No. 7

**Notes from Telefonaktiebolaget L. M. Ericsson, Stockholm.** Mr. Gösta Klemming has been appointed by the Board of Directors to act in the capacity of Works Manager in Stockholm under the direction of the Managing Director or his representative. Mr. Klemming will take up his duties at the termination of the present year.

**Notes from Italy.** L. M. Ericsson's subsidiary in Genoa, Società Ericsson Italiana, has received an order for the laying of the toll telephone and telegraph cable between Bolzano and Brennero. The cable was delivered by the Pirelli cable works and will form a part of the international telephone net of Europe.

The construction work mentioned in No. 5 of the Ericsson News for the current year (page 4) has been increased with the telephone nets for the cities of Modena, Fano, Senegaglia and Aquila.

**Notes from Switzerland.** The Hasler company of Bern, which manufactures and delivers P. A. X. telephone exchanges of the Ericsson system for small communities, with junction lines of their own construction to the central exchanges, has received a written testimonial from 'Obertelegraphendirektion' in Bern, dated Aug. 24, 1927 (No. 223, 1092) and covering the company's products and deliveries of this line of material. The original wording of the testimonial is as follows:

"Wir bestätigen Ihnen, dass uns die durch Ihre Firma erstellten und gelieferten *automatischen Landzentralen* System Ericsson in jeder Beziehung befriedigen. Es sind heute 20 solcher Anlagen in Betrieb, für minimum 10 und maximum 125 Teilnehmeranschlüsse, sowie für 1 bis 10 Verbindungsleitungen. Einige Anlagen sind mit der automatischen Zeit-Zonenzählung ausgerüstet, die ohne Störungen arbeitet. Die Stromlieferungsanlage, mit Glühkatoden-Gleichrichter in Pufferschaltung, ist sehr einfach gehalten und trägt viel zur grossen Zuverlässigkeit dieser Anlagen bei, die Fernladung der Batterien von der Vermittlerzentrale aus hat sich bis jetzt gut bewährt. Ebenso befriedigt uns der Betrieb der 2-er Gemeinschaftsanschlüsse.

Vor allem können wir Ihnen für die grosse Sicherheit, mit der Ihre automatischen Landzentralen unter den verschiedensten Verhältnissen arbeiten, ein gutes Zeugnis ausstellen. Einige dieser Zentralen mussten während Monaten, sogar bis zu einem halben Jahr überhaupt nicht besucht werden und dann zum Teil auch bloss wegen Gewitterstörungen. Der Betrieb der von Ihnen gelieferten Anlagen gestaltet sich bis jetzt sehr günstig."

**Notes from Paris.** An agreement has been signed with the French Postal, Telegraph and Telephone Administration according to which the Ericsson works in France are to take part in the automatization of the Paris net. As a result, the board of directors of Société des Téléphones Ericsson have passed a resolution calling for a considerable extension of the factory in question.



R 796 View of Cairo, Capital of the Kingdom of Egypt.

**Notes from Warsaw.** It has been decided to replace the present telephone plant in Lodz, the industrial centre of Poland — which belongs to the district for which a concession has been granted to 'Polska Akcyjna Spółka Telefoniczna' —, by an automatic telephone plant according to the Ericsson system. As a result the Ericsson works in Stockholm have received an order for an automatic telephone exchange with an initial capacity of 10,000 lines and an ultimate capacity of 50,000 lines.

Information has been received from New York to the effect that a number of the telephone subscribers of that city

have submitted a complaint to the telephone company in which they claim that the New York telephone net is equipped with telephone instruments of an antiquated type and demand that these be replaced by telephone instruments with handmicrotelephones (handsets). The New York Telephone Company has declared its willingness to supply this new instrument at a cost of doll. 3.50 for installing it and a monthly rental thereafter of 50 cents. On account of the large number of subscribers — New York has about 1,600,000 — the telephone company has figured that this change will cost from eight to ten million dollars; this may require several years to carry out.

It is a well known fact that there is nothing new about the principle of the handmicrotelephone (see The L. M. Ericsson Review, Nos. 7 & 8, Vol. II, page 86), this instrument having been tested out by L. M. Ericsson already in 1885. The design which was finally accepted was patented by him in 1895 and has since then been improved upon in different ways. Ever since that time the handmicrotelephone has constituted an integral part of 'Ericsson telephones', and not only became the standard type of combined transmitter and receiver in all telephone nets for which the material was furnished by L. M. Ericsson — including all concessions owned by the company —, but also gained a world-wide application in its quality of the most suitable and convenient type of instrument devised for the combined purpose of speaking and listening. For this reason, it did not occasion surprise when, on the expiration of the patent, nearly every telephone manufacturing concern included them as a part of their standard production. Also, the handmicrotelephone is not unknown to the American telephone industry, for American telephone instruments provided with handmicrotelephones have been manufactured for markets outside of the United States although they have as yet, almost completely been excluded from the telephone nets of that country. A remarkable fact is that the handmicrotelephone still forty-two years after its birth is well nigh regarded as an innovation by the American public. Judging by the newspapers it seems that action on the part of telephone subscribers in favour of the handmicrotelephone is not restricted to the city of New York alone.

**Literature.** The July 1927 number of "Europäischer Fernsprechdienst" (page 33) contains an article entitled "Das Problem des Europäischen Fernsprechverkehrs in Schwedischer Beleuchtung" in which A. Lignell's, Superintendent of Telephones, Stockholm, article "The Toll Traffic Problem in Europe with Special Reference to the Organization of the Service" has been given a detailed review. This latter article ran through three consecutive issues (Nos. 5 & 6, 7 & 8 and 9 to 12) of The L. M. E. Review for 1926 (Vol. III, pages 55, 78 and 111 respectively).

"The Ericsson Automatic Telephone System", a profusely illustrated forty-page descriptive booklet covering in detail the construction and functioning of this system, has now been published in English, French, Spanish and German, in addition to the Swedish edition which appeared at the beginning of this year.

Concerning the above booklet, Ericsson Telephones, Ltd., of London, have written us as follows:

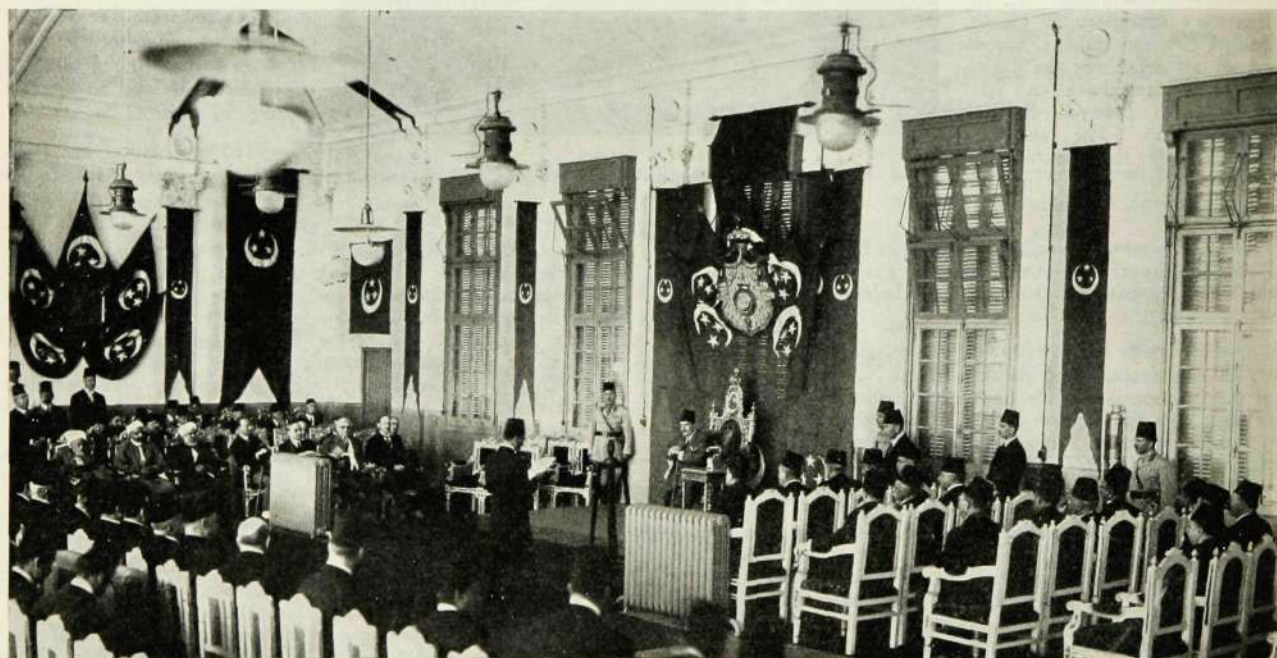
"Various of our customers wish us to compliment you upon the way in which this Book has been brought out, and have stated that the information given is extremely interesting and of great value."

The Swedish edition of Nos. 7 to 9 (3rd quarter) of **The L. M. Ericsson Review** has appeared and contains the following articles: *The Ericsson Automatic Telephone System*,



R 756 The new Medina Exchange, Cairo.

Ericsson News No. 6 of this year. — *Projecting City Telephone Nets* is a short yet comprehensive article covering the fundamental principles for planning and preparing projects for city telephone nets. — The English, French, Spanish and German editions of the above number will appear during the month of November.

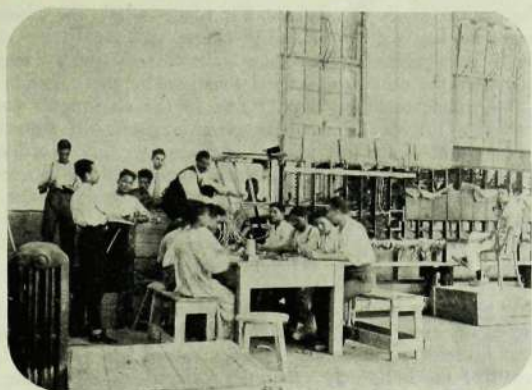


R 747

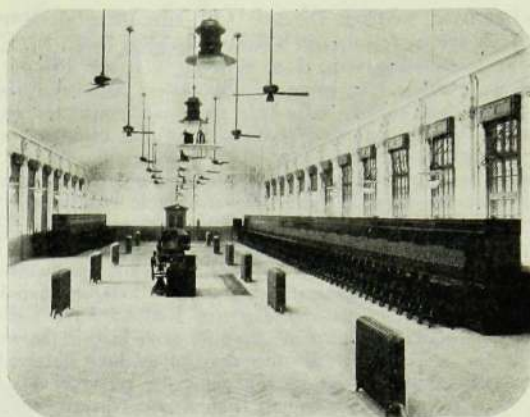
View taken during Inaugural Exercises, Medina Telephone Exchange.

*Experiences from the Stockholm Telephone Net Concerning the Efficiency and Maintenance of the System*, by A. Lignell, Superintendent of Telephones in Stockholm. This is a very comprehensive abstract of interesting traffic statistics covering a period of three years, compared with corresponding data for manual service, and gives conclusive evidence that the system has given satisfaction beyond expectation as regards efficiency as well as maintenance. This article has also been issued in the form of a separate booklet in Swedish, English, French, Spanish and German. — *The Skövde and Herrljunga Interlocking Plants*, by Captain T. H:son Almqvist, signal engineer for district II of the Swedish Gov't Railways. — *Time Control and Efficiency*, by A. Engblom, chief engineer, Borås Weaving Mills, Sweden. — *Field Telephone Switchboard for Buzzer and Magneto Signals*. — *Local Telephone Installations with Push Button Intercommunication Telephone Instruments*, describes — from a point of view of design and functioning — the intercommunication telephone instrument of the Ericsson Vienna type announced on page 4 of

**Rationalisierung in der Telephonie**, "ein Beitrag zur Lösung einer Frage, die sämtliche Telephonverwaltungen interessiert", published by *Firma Hasler A.-G., Bern*, is an extremely interesting paper dealing with the practical and economical methods of telephone plant construction in sparsely populated districts. The author gives evidence of a thorough knowledge and a rational view of the conditions vital to the subject and gives a series of noteworthy solutions for this problem. The problems arising in connection with the automatization of the rural exchanges with junction traffic to the respective central exchanges have been solved by means of the Ericsson P. A. X. system. As far as we know, this subject has not previously been treated with such versatility and at the same time so concisely and with so much perspicuity as in the article in question, for which reason we are of the opinion that it will be regarded as a most welcome contribution to modern telephone-technical literature. We suggest the study of this paper by all those whose work brings them in contact with this problem.



R 761 Group of Native Installers at Work.



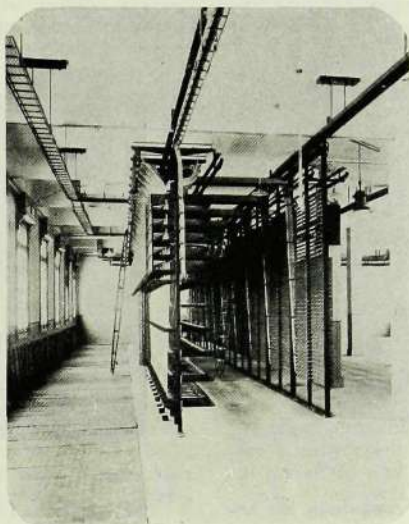
R 757 Interior View, Medina Telephone Exchange.

**The Medina Telephone Exchange in Cairo.** At the end of 1925, the telephone plant in the capital of Egypt — a city of about 1 million inhabitants — comprised about 11000 subscribers' lines and 14000 telephone instruments, distributed among seven exchanges, five of which were built on the L. B. system, one C. B., and one automatic. In order to provide means for handling all the new applications and to bring about a more practical grouping of the subscribers, it was decided to erect a new C. B. telephone exchange in Medina — a district lying on the border between the old and the new sections of the city —, a new building having been erected for this purpose. The order for the delivery and erection of this new exchange was secured for L. M. Ericsson from the Egyptian government through the good offices of Bergstrand and Ahlberg, their representatives in Cairo. The exchange was inaugurated and opened for traffic on the 25th of May of this year.

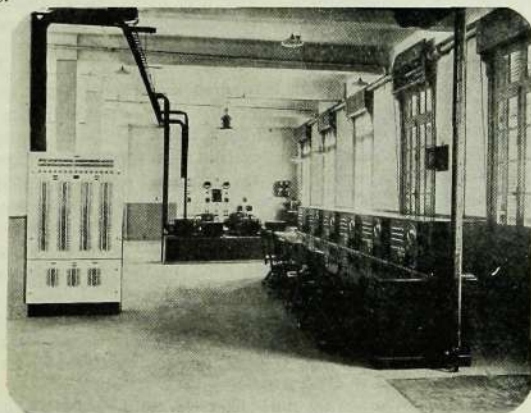
The exchange is built according to Ericsson's C. B. 3-wire system, with a capacity of 6000 subscribers' lines and 450 junction lines to the other seven exchanges. It has sixty-three local positions (twenty-one 3-position switchboards) and twenty-seven junction positions (nine 3-position junction boards). The total capacity of the entire telephone plant is thus increased to about 18000 subscribers' lines, one third of which is handled by the Medina exchange. The stipulated final capacity is 9000 lines, but the multiple fields are able to accommodate a maximum capacity of 11000 lines. The construction is subtropical, owing to the existing climatic conditions.

The inaugural exercises were held in the presence of H. M. King Fuad and his cabinet, a number of other important state dignitaries and the foreign diplomatic corps. They were preceded by a demonstration of the exchange proper — which is housed in the third and fourth stories of the building — during which the King evinced a keen interest in the plant and its functioning. The formal opening ceremony took place in a room specially prepared for this purpose. Seated on a throne, the King touched a telephone instrument placed beside him and proclaimed the exchange opened for traffic. This was followed by a speech of some length on the part of the Secretary of Communications, who dealt with the various advantages which accompanied the completion of this exchange and announced his complete satisfaction with the same.

The illustration in the centre of page 2 shows a view taken during the inaugural ceremony, while above is shown the imposing exchange building. The top, right hand illustration on this page gives a view of the operating room with the local positions to the right, the junction positions to the left and the supervisors' desks in the centre. Below and to the left the power plant and testing facilities are shown. A group of native installers at work may be seen in the top, left hand corner, while the lower right hand illustration shows a group of the staff with assistant engineer Cumming, the exchange engineer Mr. G. Gray, and the superintendent, Mr. Saad Effendi, seated third, fourth and fifth respectively, counting from the left.



R 753 Main Distributing Frame.



R 759 Power Plant and Test Desks



R 760 Staff of the Medina Exchange.

**Automatic Voting Device for the Finnish Parliament.** A system for electric balloting designed by L. M. Ericsson was described in Nos. 3 & 4, Vol. II (page 26) of The L. M. E. Review. In principle, this system had been devised and worked out already some time since and constituted one of the results of the continued endeavours of this company in the field of applied electricity. In 1925, however, the subject had reached a point of actual interest on account of certain plans entertained by the Finnish Parliament already in November 1924 for the installation of an automatic voting device. These plans have now been realized and the Finnish Parliament consequently have the distinction of being the first parliamentary institution to adopt automatic balloting. Telefonaktiebolaget L. M. Ericsson and its subsidiary in Finland have had the privilege of delivering this plant, the first of its kind in the world.

Mention was made in the description here referred to of the adaptability of this system, making it possible to satisfy the various requirements resulting from a wide diversity of parliamentary customs. Thus, the system can be adapted for both open and secret voting, for the automatic recording of the ballot and for the withdrawal of a casting vote. The plant furnished to the Finnish Parliament has been constructed to fill the special requirements of this body and a detailed description of the same will appear in an early number of The L. M. Ericsson Review.

In the following we will delineate the principle features of the Ericsson automatic voting device.

This is composed of the following main parts:

1. Two push buttons and one signal lamp at the desk of each member.



R 752

Fig. 1.

2. One control device for the chairman, comprising the necessary keys and four vote meters.

3. One indicator, on which the voting results are announced by means of illuminated numerals.

4. A number of relays mounted on a common rack.

5. One storage battery with charging machinery.

A ballot takes place in the following manner:

Each voter has before him the above mentioned (see point 1) two push buttons marked "Aye" and "No" respectively, and one signal lamp. The chairman depresses key No. 1 in his control device (fig. 1) and announces that the voting may begin. This is further indicated by means of a signal lamp, placed so as to be visible to all the voters. These latter depress either the Aye or No button, causing the signal lamp of the voter to glow. The meters have now registered the given vote as either Aye or No. If the voter — while his lamp is still burning — depresses the remaining button also, his previous vote is cancelled and a neutral vote is registered in its stead, after which a further changing of the vote is not possible. A repeated pressing of the buttons does not in any way influence the meter; consequently, only one vote — Aye, No or neutral — can be given from each voter's desk.

When the members have finished voting, the chairman depresses key no. 2 in his control device (see fig. 1), thereby extinguishing all the voters' signal lamps. Positions where, for some reason or other, the buttons have not been depressed, are now registered as unoccupied. It is now too late to register a vote given from one of these positions, either as Aye, No or neutral. The lamps in the indicator (fig. 2) are simultaneously lighted, so as to show that the counting mechanism stands at 0.

The counting of the votes takes place when the chairman depresses his key no. 3, the lamps in the indicator being simultaneously extinguished. The votes cast are electrically registered one after the other and added together by the counting meters in the indicator (see fig. 2) and in the chairman's control device (fig. 1). Each counting meter registers all four categories of votes — aye, no, neutral and absent. The wording on the indicators delivered to the Finnish Parliament (illustrated in figs. 1 and 2) has the following meanings: 'jaa' = aye, 'ei' = no, 'tyhjä' = neutral and 'poissa' = absent. The sum of the numbers indicated by the four meters is equal to the number of voters' positions. The efficient control so necessary in balloting is obtained in this manner.

After all the votes have been counted, the lamps in the indicator are again automatically lighted and the result of the vote is given in illuminated numerals. After a record has been made of the result of the ballot, the chairman manipulates a restoring key (fig. 1) causing all the meters to be restored to 0 and the entire system stops functioning. A new vote can be taken immediately.

The total length of time required for the taking of a vote — including the registering and summing up of the votes — by means of the device for 200 members ordered by the Finnish Government amounts to about 70 seconds, while for plants for not more than 100 voters the time required is only half as long.

A secret ballot according to the old method takes about fifteen minutes for 200 voters which, with say 300 ballots per year, gives a total of seventy five hours or ten working days against six hours or not quite one working day if the automatic voting system is used.



R 753

Fig. 2.

The apparatus for this plant left the Ericsson works in Stockholm in the latter part of August, to be installed in the Finnish House of Parliament and be ready for use at the opening of the fall session. On August 5th the completed apparatus was mounted in the company's works and its functioning was demonstrated in the presence of press representatives and other interested persons.

On August 31st the plant was approved after having been thoroughly tested by the acceptance committee of the Finnish Parliament, the members of this committee being M. Heikinheimo and V. Ylöstalo, professors at the Institute of Technology in Helsingfors, and A. Lindberg, engineer. The final inspection was attended also by the Secretary of Parliament E. J. Ahla, L. L. B., and Mr. G. Bergh, managing director of the Ericsson subsidiary in Finland. On September 1st the installation was demonstrated to representatives of the Finnish press and a number of members of parliament, was officially accepted on September 7th by the secretarial commission of parliament and was tested out by the members of parliament on the evening of the same day. At a session of parliament on September 9th a decision was passed to abandon all methods of voting hitherto used in favour of automatic voting. The plant has been in use since September 20th.

During a visit in Stockholm on October 14th, Mr. V. Tanner, the Finnish Secretary of State, stated during a press interview that the Ericsson automatic voting device functions with the utmost precision and is giving general satisfaction.

In addition, we wish to state that the wide adaptability of this system makes it suitable not only for parliamentary institutions but also for all other bodies or societies in which voting occurs.