

A Letter From Mexico

An American telephone engineer, Joel J. Ewen, telephone equipment engineer of Western Electric Co. in New York City, reports on a recent vacation visit he made to Mexico during which he toured two of Mexico City's 20 telephone exchanges.

"ESTIMADOS AMIGOS,

"Recently we arrived in Mexico City after a pleasant 10-hour flight from New York City. Having been associated with the Bell System for a good many years, naturally one of the first things I was interested in seeing, was the operations of the Mexican telephone company. So I took myself down to 59 Victoria St. and the main offices of Teléfonos de México.

"Introducing myself as a representative of the Western Electric Co. and explaining my desire to visit a telephone exchange, I was ushered into the office of Señor G. O. Rosen, engineer and plant superintendent, the man in charge of the operation and maintenance of central office equipment. Mr. Rosen offered to have all 20 exchanges in the city shown to me. I explained to him that one typical exchange would be sufficient; otherwise I'd be spending my whole two weeks vacation in the telephone company, and that's what I do the other 50 weeks of the year back in the states.

"While the arrangements for my visit to an exchange were being made, Mr. Rosen and I discussed the telephone business as it pertains to México. Did you know that, up until 1950, there were two competing telephone companies in México, and that it was necessary to subscribe to telephone service from both companies in order to be able to reach any telephone in the country?

First Company Formed in 1888

"The first telephone company in México was organized way back in 1888 by the Boston Telephone Co. Known as the Mexican Telephone & Telegraph Co., it was seized by the government during the 1915-1925 revolution. Afterwards it was taken over by the International Telephone & Telegraph Co. during its world-wide expansion period.

"The competing company was organized

in 1904 by the Swedish organization, L. M. Ericsson Corp., which is also a world-wide manufacturing and operating system. Its Mexican operation was called Empresa de Teléfonos Ericsson, S.A.

"The reason that two competing companies were able to obtain franchises for the same territory was that the Mexican Constitution frowned on monopolies, even if they were 'natural' monopolies. However, it was soon realized that duplication of plant and equipment was uneconomical, and many attempts at merger were made without success until 1950.

"As Mr. Rosen explained it, the policy of the Mexican government is to encourage its citizens to own a larger part of the industries and resources of the country. So, in 1947, Teléfonos de México was formed as a Mexican enterprise, in the hope that the new company would be able to facilitate financing and receive more favorable treatment from the government in the rate matters.

"Teléfonos succeeded the Ericsson in-



JOEL J. EWEN

terests in 1948 and acquired the IT&T's company in 1950. After the merger, Ericsson and IT&T each held 37½ per cent of the capital stock of the new company, with the remaining 25 per cent owned by private citizens in Sweden and Mexico. In August, 1958, Ericsson and IT&T sold their interest in Teléfonos to a group of Mexican capitalists, bringing the company under Mexican control.

"Our conversation was interrupted by the arrival of the messenger who was to escort me to the exchange I was to tour—the Madrid exchange. This exchange, an unimposing two-story affair, was located on the corner of a busy intersection.

System Installed in 1923

"I was greeted by Señor Alberto González Soltero, Madrid's genial wire chief. Señor González escorted me to the second floor where much of the automatic switching equipment was located. Here, I came across a system which I had heard of but had never seen before. It is a product of L. M. Ericsson of Sweden, the same company that owned part of Teléfonos de México. It is interesting to note that this system has been in use since 1923, and at least one of these exchanges may be found in 44 countries, or every country you could name, except the United States, Canada and Great Britain. The system is called "Automatic Telephone Exchange with 500-Selectors" or "AGF" for short, and over three million lines are in service throughout the world.

"Mr. González guided me through the various bays of AGF equipment, explaining to me in great detail the workings of the system. All the switches are driven by an electric motor in each aisle, similar to our panel type system. The heart of the equipment is the 500-selector, which is the mechanical device that can connect the calling telephone to any one of 500 lines. Also these switches are so compact, that 60 of them can be stacked into one relay rack bay. Another feature is that, instead of having wipers, the switches come in contact with terminals to which the line wires have been soldered, the wipers on this switch contact the bare line wires themselves, which are strung from the floor to the ceiling in banks of 2,000 wires for each bay.

"My guide stopped at a selector bay, and while I watched a particular switch, he plugged in a test telephone and dialed a number. The operation of an electromagnet on the selector switch coupled the switch to a constantly rotating shaft from the motor, running the length of each bay. The switch began to operate, and the wiper-arm ro-



Señor Albert González Soltero, Madrid exchange's wire chief demonstrates the operation of the power supply equipment.

tated 12 out of the possible 25 steps. Then, automatically, electromagnets operated to stop the rotary motion and change gears. The wiper-arm then began to step longitudinally off the switch and into the bank of wires until the eighth of 20 possible steps was made. The switch stopped in this position with the wipers in contact with line No. 228 of a possible 500 lines. When the wire chief disconnected his telephone, reverse gears were brought into play, and the switch retraced its steps until the starting position was reached.

Came Away An Expert

"We then examined the register bays. There are six registers mounted on the front and six on the rear of each bay. Each register consists of a number of relays and a crossbar switch. The purpose of the register is to receive and store the pulses received from the dial of the calling telephone, and to control and stop the selectors on the called line. The rectifier bays, ringing machines and distributing frames also received considerable scrutiny. The voltages and frequencies for power and ringing are the same as those employed in American systems, 48 volts for power and 20 cycles for ringing.

"After Señor González's detailed explanation of the workings of AGF, I came away an expert. This equipment, consisting of 10,000 subscriber lines, was first installed in 1956. While I was there, the installers were busy adding an additional 10,000 lines.

"I was then turned over to another wire chief, who took me to the first floor and showed me the automatic rotary system. The rotary system

equipment I saw was of an old vintage and scheduled for removal. We also visited the operating room on the second floor where international calls are handled. Domestic long distance calls are cared for by 175 switchboard positions at Victoria Street. Outside of information and long distance operators, there are no other classes of operators in Mexico such as the dial service operator in the United States, who assists us in reaching our party and gives credit for wrong numbers dialed. Incidentally, all operators in the capital speak English.

"Although the telephone company is managed principally by foreign personnel, mainly from Sweden, all the maintenance men are Mexican, and all are expert craftsmen. The two wire chiefs were expert in the intricacies of automatic switching. Each knew all of the circuits in detail and was able to explain the function of each relay and switch. I left the Madrid exchange with the feeling that I had really broadened my knowledge of telephony.

Few Independent Companies

"I returned to the main office of Teléfonos de México where I met with the chief engineer, Eric Wallsten, and several of the telephone engineers. Mr. Wallsten completed my picture of the Mexican telephone operations by discussing with me the size and scope of the company and its future plans.

"Except for a few small independent companies near the United States border, Teléfonos operates all the telephones within the country. All telegraph and teletypewriter service is government-owned and operated. Teléfonos, or Telmex as it is popularly called, serving a country with a population close to 33 million people, boasts only 421,439 stations. This is about one telephone for every 75 persons. Since the merger in 1950, the number of telephones has increased 50 per cent. At the end of 1958, the company had some 235,000 miles of long distance circuits, 526 central offices, and close to three million miles of wire in local networks, representing a value of 105 million dollars. Gross receipts in 1958 ran about 29 million dollars and the net was 4 million dollars. Up until 1956, the company paid a 10 per cent dividend, but this was reduced in that year to 8½ per cent.

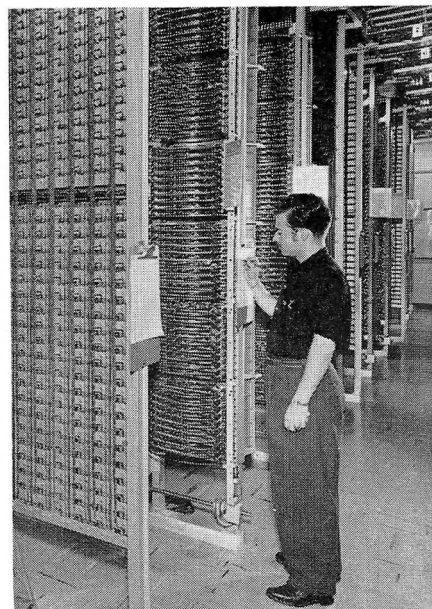
"Mr. Wallsten explained that Telmex has a large expansion and improvement program under way, which calls for the conversion of most exchanges from manual to automatic operation, enlarging and extending the long distance network to areas previously without outside connections, and reducing the number of held service requests. To

implement these ambitious plans, many new central offices have been built and AGF type equipment added, such as I saw at the Madrid exchange. To obtain additional toll circuits, the company is using telephone carrier equipment and microwave, and I was told that nationwide toll dialing is planned for the future.

No Outdoor Booths

"In addition to my visit to the telephone company, I indulged in the usual amount of sightseeing around Mexico City. From my excursions, I became familiar with some of the Mexican telephone practices. For one thing, I never saw an outdoor telephone booth, such as are found in every town and city in the United States. In fact we only saw one coinbox telephone, and that was in one of the more expensive restaurants. It had no number and calls could not be received on it. I don't mean to say that you won't be able to find a telephone if you should need one, for the average Mexican depends on public telephones for his communication needs. Just about every store and shop has a regular wall or desk telephone which has been designated by the telephone company as a public telephone. To place a call, you simply pay the proprietor the designated amount. Neighboring residents and shopkeepers who are without telephone service use this telephone to receive calls. For this service the proprietor collects a slightly larger amount.

(Please turn to page 48)



Engineer noting a trouble on the trouble chart in a Mexico City central office. At the left is a line of 500-selector switches stacked 60 to a bay. To the left of each switch, under the can covers, are the relays associated with that switch.

LETTER FROM MEXICO

Concluded from page 24

“All in all, we enjoyed México quite a bit. There were many interesting things to see, and the people are charming and friendly. But I was most impressed by the friendliness and courtesy exhibited by the people I met at the telephone company. I guess that's the way it is with telephone people everywhere.”

Sinceramente,
JOEL J. EWEN