

G.E.C. Telephones in London Foreign Exchange Market

Special Systems used by Dealers and Brokers

FEW businesses so utterly depend upon the telephone as that of Foreign Exchange. The scene in a busy office is almost beyond description when perhaps eight dealers are constantly engaged in buying and selling currency of all denominations by means of telephone calls. To the uninitiated in financial matters, the "verbal shorthand" used is without meaning but little observation is necessary before the complete reliance on the telephone becomes evident.

The telephone equipment in a typical office consists of special switching panels inset in desks and associated with private lines, together with a number of telephones connected to the public system.

The purpose of the equipment can best be appreciated by an understanding of its need, as conveyed by the following outline of the Foreign Exchange Market.

Money first began to replace the primitive system of barter as a means of fostering the growth of local transactions. In consequence, different denominations of money came into being. Whilst intercourse between communities remained small, this variation in the denominators of wealth was of little moment, but with the growth of international trade there

arose the need for some means of effecting payment between people of different countries, each using different currencies. The branch of economics that met this need is termed Foreign Exchange.

In the years before the war, business in Foreign Exchange consisted largely of the buying and selling of foreign bills, the transactions in London being negotiated by dealers who met on two afternoons per week in the Royal Exchange. The price paid in sterling for a foreign bill depended upon the rate of exchange but with most currencies tied to gold and practically all reasonably stable, variations in rates were small and few.

After the war there began a period of unstable currencies and now rates of exchange are constantly varying. A rate of exchange is the price of one currency in terms of another and it varies continuously with the relation between world supply of and demand for the currency. This relation is governed by the debts that fall due for payment throughout each working day. Debts arise from various causes which can be summarised as (a) normal visible and invisible trade, (b) international finance—chiefly the movement of floating balances from one financial centre to others in order that risks of depreciation may be avoided,

and(c) international issues of industrial capital, and the selling in one centre of stock owned in another

International debts are cleared through dealers, who buy in one currency from those who wish to sell and sell in the same or another currency to those who wish to buy. These dealers are on the staff of banks and financial houses who negotiate foreign business for their clients.

The expense which a bank incurs in providing this service to its clients has to be met by the profits to be made on the actual buying and selling. Speculation by buying a currency in anticipation of a rise in the rate of exchange, or by selling short in anticipation of a fall, is almost completely prohibited as being foreign to the policy of British banks. The dealer must therefore take every advantage of the instantaneous differences in rates of exchange ruling in different centres for a given currency, in order that he may buy and sell at a profit. The margins are normally very small and must be seized at the moment the rate of exchange is favourable.

London is the largest money market in the world and huge dealings in foreign currency are constantly in progress between banks in the City. Experience showed that there was a need for an intermediary, whose purpose it would be to put a dealer wishing to buy into immediate



Fig. 1.—*Phonexpress* equipment in broker's office.

contact with a dealer wishing to sell. This intermediary is the Foreign Exchange broker

The broker endeavours to find amongst the dealers buyers and sellers of currencies at prices satisfactory to both. There are thirty brokers in the City of London and they take their remuneration from the brokerage paid them by both parties to any transaction arranged.

The London Foreign Exchange Market consists, then, of the dealers, who are in constant touch by telephone with the financial centres of the world and their home clients and branches, together with the brokers.

A dealer requires instant communication with a broker in order that he may make his requirements known quickly whilst a rate of exchange at which he hopes to make a profit still holds, and the broker requires instant communication with other dealers in order that he may meet his client's

requirements whilst the latter's request or instructions hold good. A dealer generally requires that his opposite number shall be found by a broker within a period that very seldom reaches 30 seconds. Private telephone lines linking dealers and brokers obviously become essential and equally obviously the method of operating them must be of maximum efficiency.

Many of the banks and brokers in the City have installed the Reliance Phonexpress system. This is a special system devised by the Reliance Telephone Company (a subsidiary of The General Electric Company Ltd., formed to specialise in private telephone systems in Great Britain) and employs largely standard apparatus manufactured at the Coventry works.

The complete Reliance Phonexpress equipment in a typical broker's office is seen in Fig. 1. In the foreground is the



Fig. 2.—Phonexpress equipment in dealer's office.

desk already mentioned, equipped in this instance with four panels, in the right-hand corner of the office is the associated automatic apparatus, consisting of uni-selectors and relays, and in the opposite corner is the operating battery and its associated charging equipment.

Similar apparatus is installed in the Foreign Exchange Departments of banks (Fig. 2), and a network of private lines links banks and brokers. The near view of a panel given in Fig. 3 shows it to be equipped with keys and lamps. Two lamps, one green and one red, are associated with each key. The designation strips beneath the keys carry brokers' names in a dealer's office and dealers' names in a broker's office. At the bottom of the panel are two keys, one for signalling and one for releasing.

The method of operation is very simple. A broker calling a dealer depresses the key designated by the dealer's name. The associated green lamp glows, and the broker then depresses the signalling key at the bottom of the panel. On the dealer's panel at the other end of the line the broker is represented by a key and two lamps, of which the red one glows to indicate the incoming call. The dealer depresses the associated key and almost instantly the red lamp is extinguished, the green lamp glows, and a through connexion is established for conversation. Since the key is designated, the dealer knows the originator of the call and the exchange of informative opening remarks usual on a normal telephone call is unnecessary. The requirement of speed is thus again served and the parties to the conversation break at once into the abbreviated

forms of speech by which their business is conducted. At the end of conversation the release keys are depressed on both panels, whereupon conditions are restored to normal in readiness for another call.

A dealer calls a broker, and the broker responds, in exactly the same manner

The four panels shown in Fig. 1 are identical, and a call can be made over any line from any panel. Similarly, an incoming call can be answered at any panel, the red lamps of a calling line glowing on all four. With a call in progress, the green lamp of the line glows not only on the originating or answering panel but on the others also at both ends of the line to denote that the line is engaged.

The ability to answer from any panel is one of the principal factors in eliminating delay because it means that a call may be answered by the first broker to become free to deal with it. The same condition obtains in a dealer's office, where the desk, as seen in Fig. 2, also includes a number of panels.

One of the biggest installations of the system is to be found in the Foreign Exchange Department of one of the Big Five Joint Stock Banks. It comprises eight panels with associated automatic apparatus and is in constant use. Over 2 000 calls is the daily average, and at one position the total reaches 500 calls, made or answered. The Department is never quiet and as many as five languages may be heard simultaneously. A dealer engaged on a trunk call to, say, Paris, will change from French to English to speak to a broker over the Phonexpress system, may call a reply across the Department to



Fig. 3.—Calling and answering panel.

a colleague who requires information, and then resume conversation with Paris. The end of the call will bring no respite, because another will be awaiting attention, probably from another foreign centre.

When it is remembered that this activity is reflected at the other ends of the lines it is realised that dealer and broker alike have no time for deliberation and require a steady head and a brain that is as quick and as sure as the telephone system on which they rely.

Automatic Equipment.

The lines approach fifty in total and are divided into two groups for terminating on the banks of 25-point uniselectors, serving as linefinders. Corresponding points on other arcs of the banks are wired to the keys on the panels. Depression of a key causes a uniselector to step to the marked contact and thus to establish connexion with the line to the dealer whose name forms the designation of the key

The lines are multiplied over similar uniselectors associated with the other panels. Whilst two uniselectors for each panel terminate the present total number of lines, there is a spare bank wired in each group in readiness for the addition of the necessary mechanism should the number of lines be increased. With fifty lines to be terminated the use of 50-point uniselectors is obviously suggested but is prohibited by the fact that the hunting time would have occupied too great a proportion of the total time available for establishing a connexion.

The lines are connected to break jacks in order that connexions to a magneto telephone may be plugged to any one of them should a fault of any kind render the line inaccessible from the panels.

Circuit.

From Fig. 5 it will be seen that depression of a line key operates relay ST. Contact ST1 operates relay S, which locks at contact S4 in series with contact ST1 to positive via the release key. Contact S3 closes a circuit for the driving magnet, which steps the linefinder by self-interruption. Stepping continues until wiper P reaches the contact marked by positive from the depressed key, whereupon relay K operates over the circuit prepared by operated contact S2. Relay K locks at contact K1 in series with operated contact S1 and the release key. Contact K2 opens the driving circuit and operates relay KA. Contact KA3 lights the engaged lamps of the called line on all positions. On receipt of this signal the broker releases the



Fig. 4.—Automatic apparatus cabinet.

key, whereupon relays ST and S restore, leaving relay K in series with normal contact ST1 under the control of the release key. The broker then depresses the signalling key, which operates relay RG. Contact RG3 starts a vibrator, whilst contacts RG1 and RG2 feed the signalling current to the line. Release of the signalling key releases relay RG, and the handset and talking circuit are then connected to the line via normal contacts RG1 and RG2 and operated contacts KA1 and KA2.

At the end of conversation the release key is depressed to release relay K, which

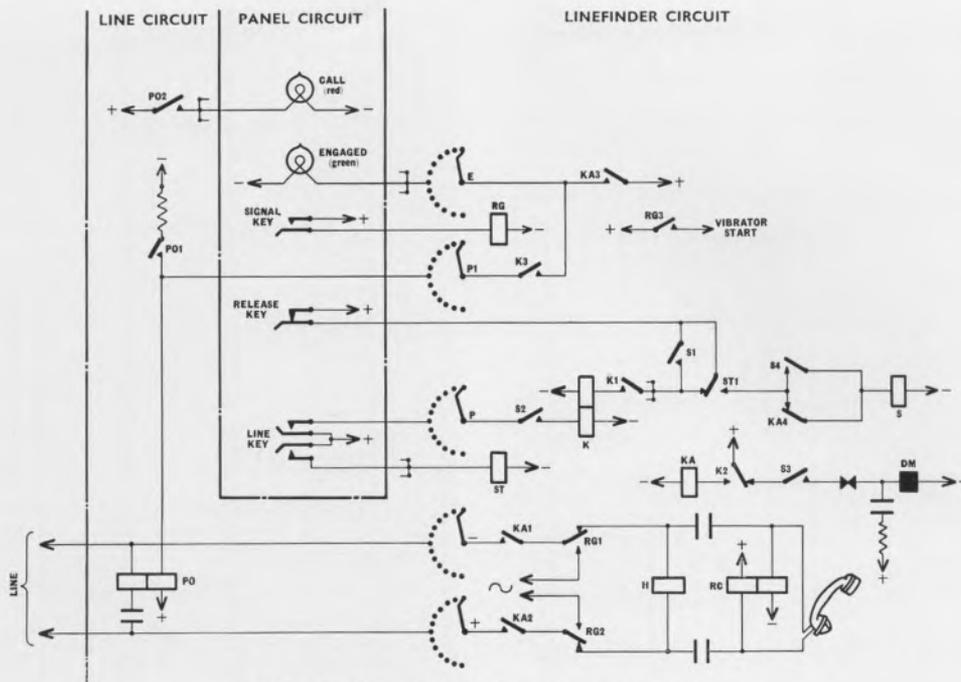


Fig. 5.—Circuit of *Phonexpress* System.

in turn releases relay KA and thus restores circuit conditions to normal. The linefinder remains on the contacts to which it was stepped, and starts from that point when a second call is made.

On an incoming call, signalling current received over the line operates relay PO, which locks at contact PO1. Contact

PO2 lights the calling lamp. The call is answered by depression of the corresponding key on any position, and a linefinder steps to the line. Thereafter, operation is exactly as for an outgoing call, except that contact KA3 has the additional function of releasing relay PO to extinguish the calling lamp.