Traffic registers for No. 5 crossbar

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In dial as well as manual central offices, registers are provided for measuring traffic. Each register is a small electro-magnetic counting unit with number wheels which turn one position each time a pulse of current is sent through the winding by the operation of other equipment in the office. Registers show the number of calls originated and completed and the loads handled by various groups of equipment units or operators, and give indications of congestion. The general data showing trends in subscribers' usage are useful in shaping business policies, and the more detailed data are needed for central office administration and engineering. The latter include assignments of lines to balance loads and thereby obtain full use of the equipment; scheduling of operators; and ordering of new equipment of proper types and amounts to care for growth or traffic shifts.

Because the Traffic Department is particularly interested in the data provided by traffic registers, they like to have them located in operating rooms at a convenient height from the floor for easy reading, with all registers of a type grouped together. Furthermore, it is desirable to purchase only as many registers as are required for each office at any given time. It is also desirable to have the traffic register cabinet blend in with new operating room appointments and occupy as little space as possible.

To meet these requirements and to obtain manufacturing economies, a new circuit and a new traffic register cabinet, shown in Figure 1, have recently been designed. The new steel traffic register cabinet mounts directly against the wall and will be used in new offices instead of the earlier wooden traffic register cabinets, shown at the left in Figure 2. These were located two and one-half feet away from the wall to permit access to the permanent cables connected to the rear of the registers. With the old arrangement a traffic register distributing frame, shown at the right in Figure 2, was required in the terminal room to connect the various registers to the desired circuits by cross-connecting jumpers. This distributing frame is not required where the new cabinet is provided.

With the new arrangement, one basic register unit is used. It is shown in Figure 3 and only as many of these units as are needed are ordered by the Telephone Companies. On each unit are ten registers, ten register pin jacks, and one supply pin jack. One end of each register winding is surface wired to its individual register jack. The other terminals of the ten registers are strapped together and connected to the supply jack. These register units are mounted on the cabinet framework that also mounts a field of pulse jacks. Switchboard cable leads are permanently connected to the pulse jacks from equipment requiring traffic registrations. As shown at the right in Figure 1, inexpensive Western Electric Company single-conductor cords are used to connect any traffic register via its jack to any equipment via its jack-field pulse jack. Similar cords are used to connect the battery supply jack for each group of ten registers to one of the battery supply jacks of the jack field that provides either direct battery or battery under control of one of the switches mounted immediately above the registers. The traffic registers themselves are of the new 14 type that operate in such a short interval of time that pulse-help relays are not ordinarily required. For some registrations, however, such as sender group busy registrations, it is necessary to have auxiliary relay equipment, which is mounted on

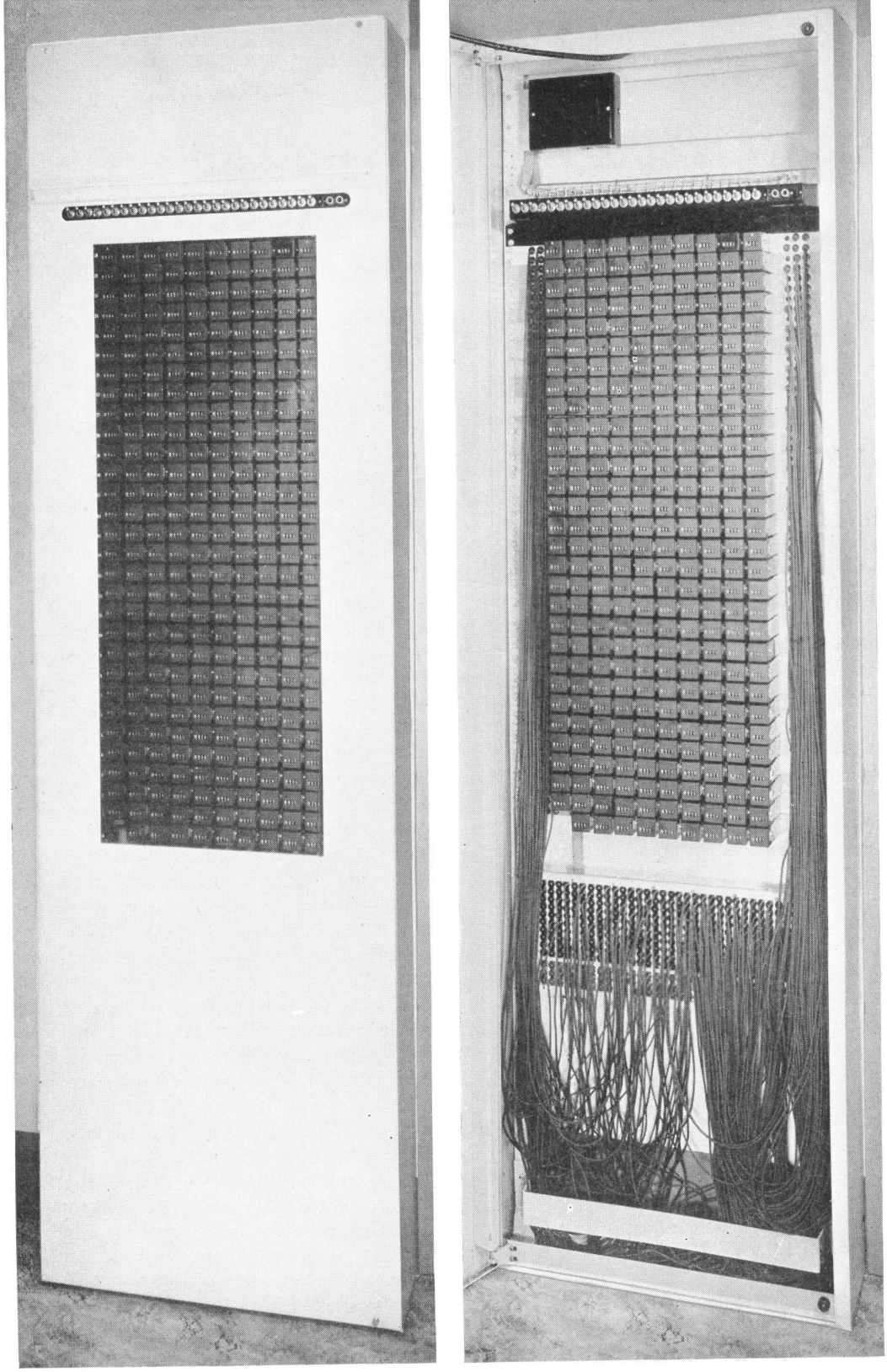
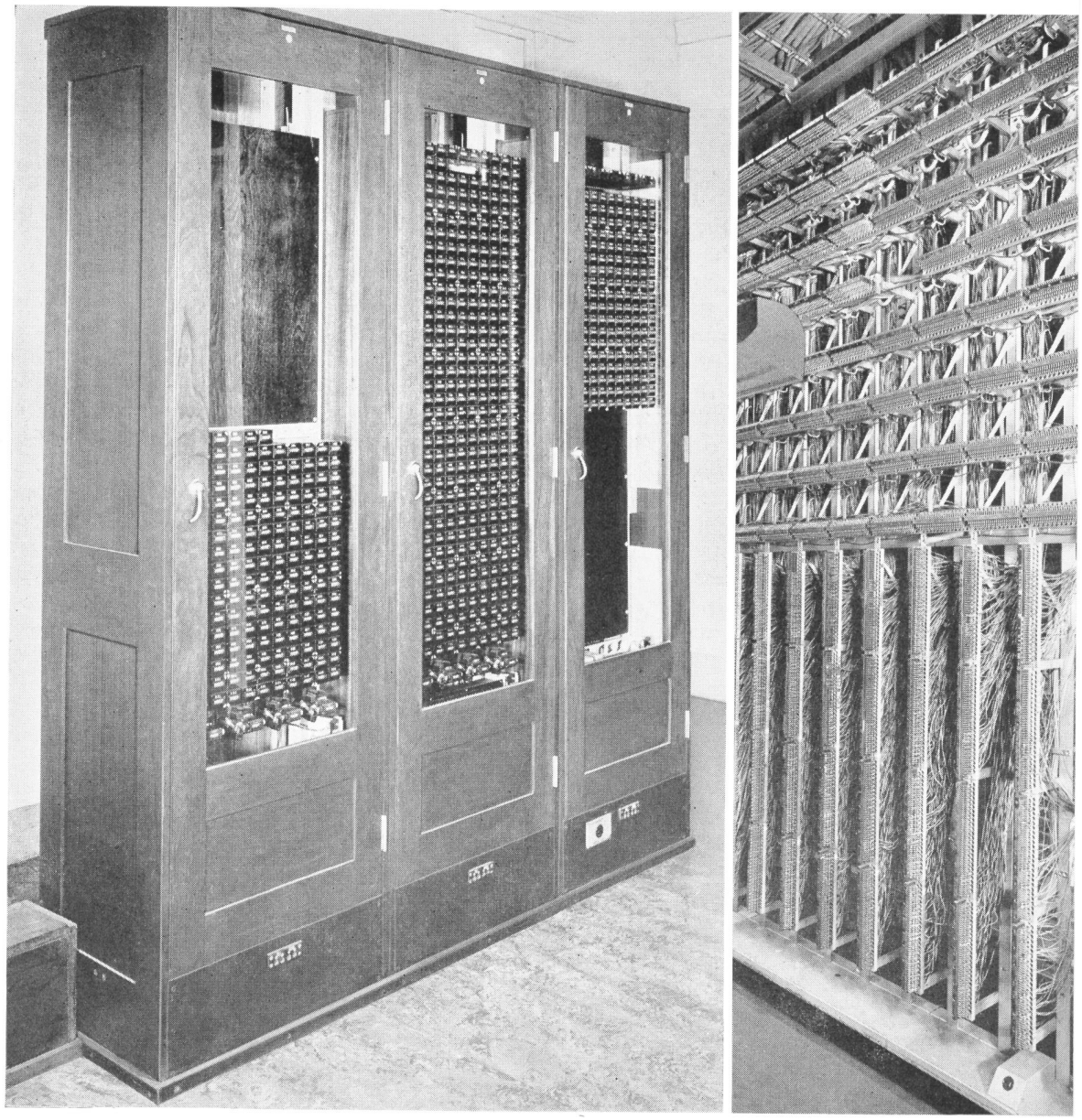


Fig. 1—Left, one of the new traffic register cabinets with doors closed. Right, opening the door of a traffic register cabinet gives access to the cords by which the various registers are connected to the required circuits.

a miscellaneous relay rack frame in the terminal room.

The use of 14-type registers and inexpensive cords makes it possible to meet the Operating Companies' requirements for a traffic register cabinet, one which occupies a small amount of space, contains only the number of registers required for the office at a given time, and can be located in the operating room with all of the registers at a convenient height for easy reading. The traffic register cabinet is only 7¾ inches deep and can be maintained entirely from the front. It is thus mounted against a wall with no provision for access to the rear of the cabinet. It will accommodate any number of registers from ten to three hundred. The Western Electric Company provides only as many register units as are required for each office without penalizing either

Fig. 2—Left, a traffic register cabinet of the earlier type. Right, part of a traffic register distributing frame.



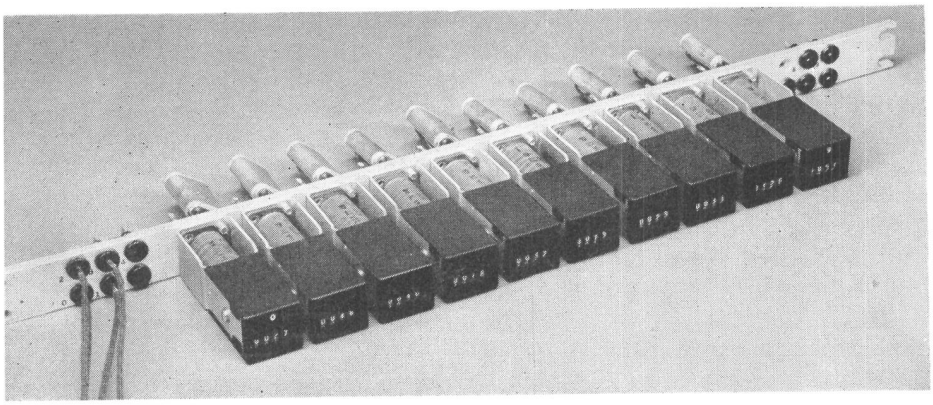


Fig. 3—A traffic register unit includes ten registers and their connecting jacks.

large or small offices. The installer or maintenance man assigns or reassigns incoming cable leads to different registers by changing patch cords as required so that all registers of a type are always grouped together and so that the most often read registers will be located at the most convenient height. A record of the permanent assignment of switchboard cable leads to jacks in the jack field, and of the patch cord connections, is kept on a card hung on the rear of the door of the traffic register cabinet. Because side panels are provided only on end cabinets, any register can be patched to any lead terminated either in the cabinet where the register is located or in an adjacent cabinet.

The new arrangement provides other desirable features. The maintenance man can remove an entire plate of registers for inspection or maintenance without interrupting service and without bending any local cable forms. Registers that are connected to equipments that operate often can be disconnected during periods when readings are not being taken by operating the switches immediately above the registers. This prolongs the life of these registers. The installer can easily provide for either right- or left-hand opening of the cabinet door. Both the door and the side panel may be painted the same color as the wall to which they are secured, thus making them inconspicuous. Jacks connecting to a talking line are located next to the switches so that one traffic employee can pass the register readings to a second employee, the recorder, seated at a desk.

When the central office building does not contain an operating room, the traffic register units, the jack field and the keys are mounted on a standard 23-inch relay rack frame in the switch room. This contributes to the uniformity of the basic arrangement.

Printed in U.S.A.