

# Methods of Handling Toll Calls

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**T**WO steps are required in handling a toll call: first, the necessary information for identifying the calling and called subscribers is recorded on a ticket; and second, the necessary switching operations are performed to complete the connection. The search for the most effective and satisfactory manner of performing these two functions has resulted in several methods of handling toll calls.

From the standpoint of simplicity, the ideal method would be one that enabled the "A" or subscribers' operator to plug directly into the toll line. This method, known as "A-B", is employed for calls between subscribers' lines served by offices which in general are not more than about fifty miles apart. Toll calls, covering greater distances or characterized by

intermediate switching or for which a particular person is to be reached, require methods not compatible with the regular work of the "A" operators, and are handled, therefore, by specially trained toll operators.

The "A-B" method, shown on Figure 1, is so called because calls are completed by the local "A" operator who answers the calling subscriber's line, and an operator in the office in which the called subscriber's line appears. This method is thus the same as that used for completing local connections between subscribers' lines that appear in different offices of the same exchange area except that the "A" operator makes out a "ticket." Handling this class of calls reduces somewhat the number of local calls that the "A" operator can handle, but it is the most desirable method to use for

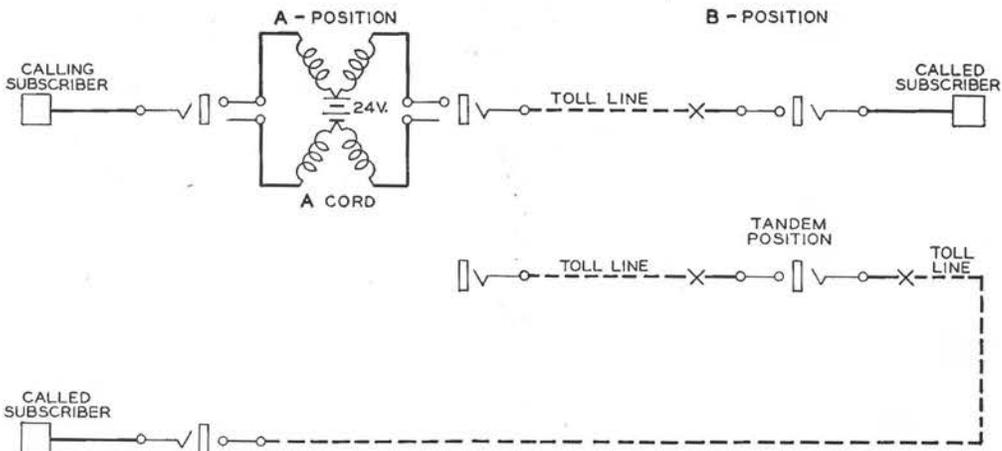


Fig. 1—Toll calls between subscribers within moderate distance of each other are sometimes completed directly by the original "A" operator

short-haul toll business from the standpoint of economy and satisfaction to the subscriber.

The long-distance method, used until recently for completing calls when the toll switchboard is not a

mation by routing the ticket to a directory operator, who is provided with directories listing the subscribers in the more important towns and cities. The ticket is then sent through a distributing system or by messenger

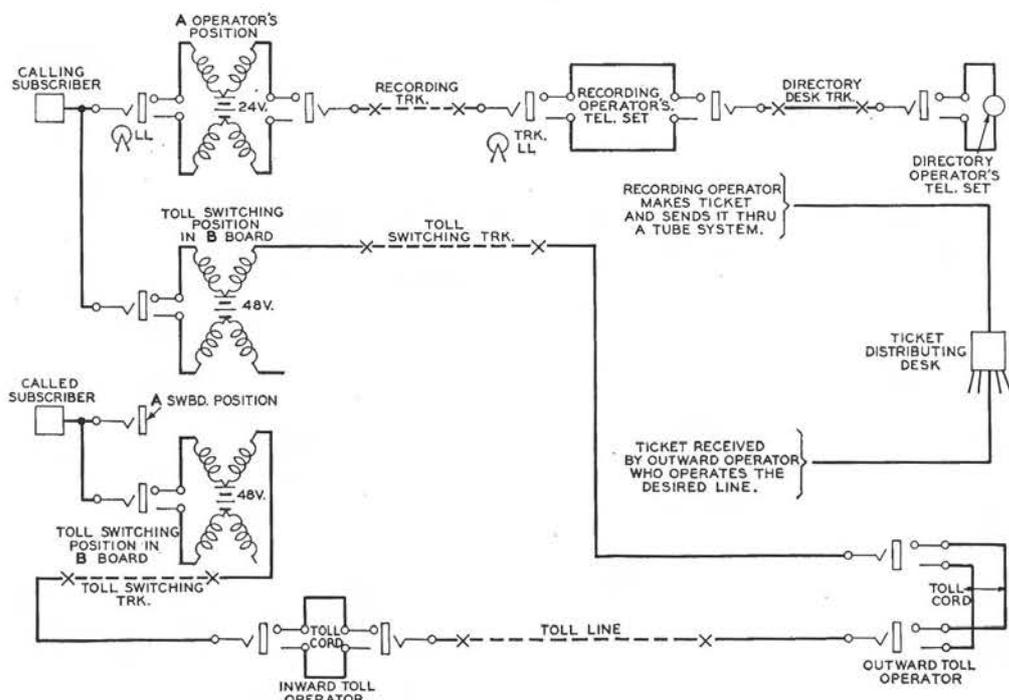


Fig. 2—Until recently all long distance calls went first to a recording operator and later were completed by a line operator.

part of the local board, is indicated by Figure 2. Here the subscriber calls his local "A" operator in the regular way, and asks for "Long Distance." The "A" operator connects the subscriber's line, through an "A" cord-circuit, to a recording trunk which appears at the distant end in a recording switchboard. The operator at this position records the information required on a ticket and then tells the subscriber that he will be called.

Since the subscriber does not always know the telephone number of the person he is calling, it is often necessary to obtain additional infor-

mation by routing the ticket to a directory operator, who is provided with directories listing the subscribers in the more important towns and cities. The ticket is then sent through a distributing system or by messenger to the line operator handling the toll line that will be used for completing the call. This "line" or "outward" operator proceeds to get the called number in the distant office, and as soon as this has been done the calling subscriber, who is being held on a toll switching trunk, is rung.

This "single-ticket" method of recording and completing a toll call is not entirely satisfactory for it would be desirable to complete the calls so promptly that the subscriber could remain at his telephone. This improved type of service has been made possible on a large percentage of the toll calls

by introducing the CLR method of operation, which combines the functions of the recording and line operators of the older method—CLR being merely the initials of “combined line and recording.”

The CLR method of operation for manual systems is indicated by Figure 3. The subscriber calls his local “A” operator who completes the connection to the outward, instead of the recording, switchboard. The outward operator answers the call, records the information on a ticket, and proceeds immediately to get the called subscriber in the distant office while the calling subscriber remains on the line. While waiting for the called station to answer, the outward operator, without telling the subscriber to hang up, obtains another connection to his line. This is over a trunk arranged to provide switchhook supervision to the toll operator and forty-eight volts for

the operation of the subscriber’s transmitter. As soon as the toll switching or “B” operator completes the connection to the subscriber’s line, the toll operator takes down the connection to the CLR trunk, and this gives an indication to the “A” operator that the connection may be taken down at her position also. If for some reason the call can not be completed immediately, the subscriber is told that he will be called as soon as the called party is available and the ticket is then sent to a delayed-outward operator’s position where the call is handled as it would have been by the old method. Reports are given the subscriber periodically of the progress of his call.

If a calling subscriber has a dial telephone, he dials a code that ordinarily connects his line over a CLR completing trunk to the outward toll operator. This method of operation is shown on Figure 4. The CLR com-

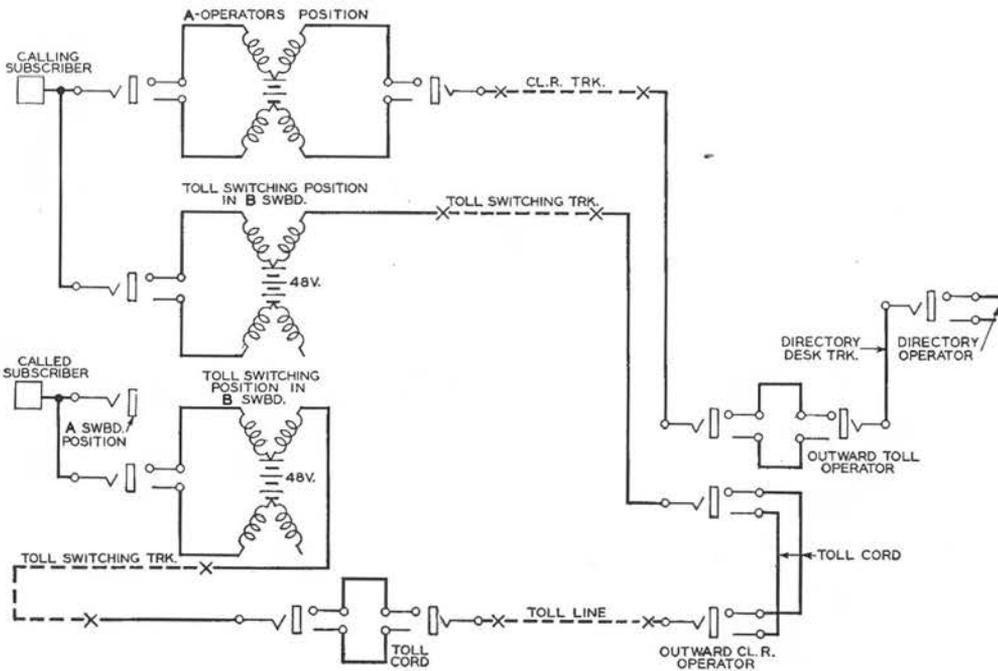


Fig. 3—CLR operation combines the “recording” and the “line” operators and so cuts out one step in the completion of a toll call

pleting trunk is arranged to provide forty-eight volts for supplying talking battery to the subscriber's telephone so that it is not necessary for the outward operator to obtain connection to the calling subscriber's line over another trunk, as it was in the manual system. The line operator then proceeds to complete the connection in the same way as for manual systems.

With the CLR method of operation, the service to the subscriber is improved if the called number is furnished by the calling subscriber at the time the call is filed. On calls to the larger cities, where the number is not furnished by the calling subscriber, the CLR operator attempts to obtain the number over trunks to the directory operator in her own office before

working out on the toll line. Information is posted at the CLR position giving the routing instructions to frequently called points, and this list is supplemented by complete information at a routing desk where the additional routing information may be had over trunks provided for this purpose.

The combined line and recording method of completing toll calls is used at the present time in practically every Bell System office. Its use has greatly improved the service from a subscriber's point of view; the average System circuit build-up time, which was 7 minutes in 1925, had been reduced to 2.4 minutes in 1928. This improved service has been made possible without incurring additional costs for facilities or operating time.

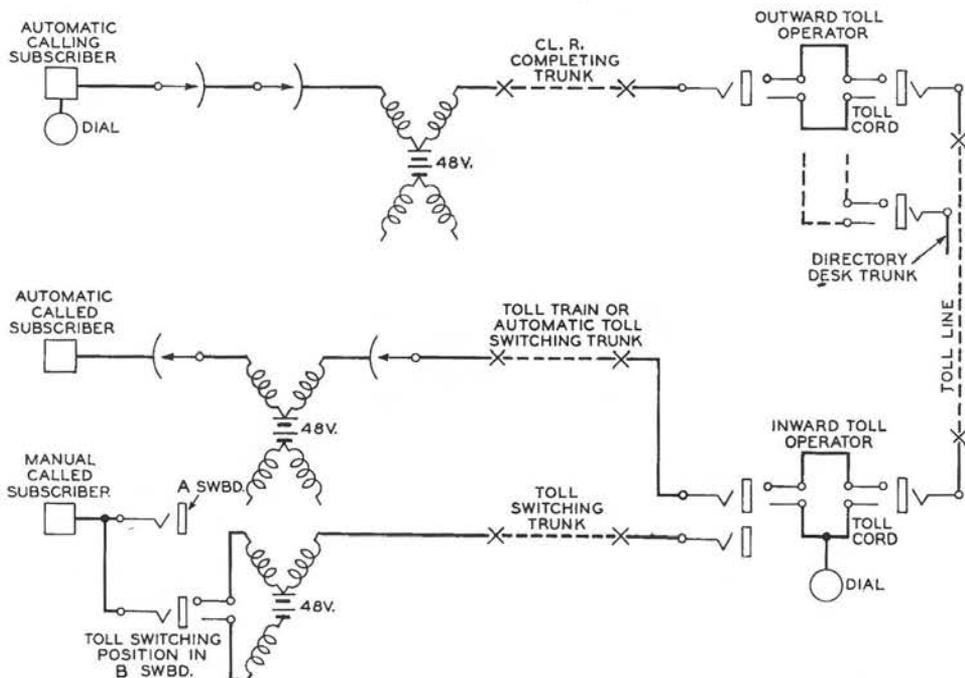


Fig. 4—When applied to dial areas the CLR method makes a further simplification possible as it is not necessary to obtain a new connection with the calling subscriber to secure toll facilities