The "A-B toll" method of handling manual long distance calls

Douglas A. Kerr

Issue 5
October 10, 2025

FOREWORD

Before the advent of Direct Distance Dialing, and in fact before the advent of operator toll dialing (*ca*. 1945), long-distance (toll) telephone calls were set up using wholly manual switching. Typically, a manual toll switchboard was used at the calling end to set up the connection and manage the resulting call. A second toll switchboard was used at the distant end to arrange for the "completion" of the connection. And, especially for longer connections, there might be intermediate toll switchboards as well. These were specialized switchboards, more complicated than the switchboards used for local calls in manual central offices.

But not always. In many cases, for "station-to-station" calls to cities perhaps not over 100 miles away, another operating method, called "A-B toll", was often used. There, no "toll" switchboards were involved at all. Rather, the connection was established between "local" switchboards at both ends.

This article describes this operating method and gives insights into its evolution as the landscape of local telephone switching itself evolved from a "manual" paradigm to "dial" operation.

1 ABOUT "TOLL" CALLS

What is known technically as a "toll call", and often to the customers known as a "long distance" call, is a call for which an explicit charge (a "toll") is made, typically dependent on the distance of the call and its time duration.

As a consequence, many of the technical and operational ingredients for handling such calls are also identified by the moniker "toll", such as "toll switchboards", "toll trunks", "toll central offices", and of course, "toll operators".

2 TOLL OPERATING METHODS

In the area of toll calls, we speak of various "operating methods". These are different schemes used at various times, and in various situations, of how toll calls are set up and administered.

This article speaks of one of those methods of operation, called the “A-B toll” method (for a reason that will subsequently become apparent), which has a unique property that sets it apart from all the other toll operating methods. For my purposes here I will call all those “other” operating methods collectively the “regular” toll operating method.

3 TWO “OPTIONS” FOR A TOLL CALL

In general, there were two options (my term) available for a toll call, a matter that figures prominently into our story here. I will identify them by the names they had from perhaps 1940 on.

- Station-to-station call. Here the caller asked the long distance operator for a certain number in the distant city. The call is extended to that “number”, and if the call is answered, the call is charged for (the timing starting nominally when the call was answered.

- Person-to-person call. Here the caller asked the long distance operator for a certain number in the distant city and as well for a certain person to whom the caller wished to speak. The call is extended to that “number”, and if the call is answered, the operator asks for the wanted person. If and when that person comes “on the line”, the call is charged for (the timing starting then).

The rate for person-to-person calls was normally higher than for station-to-station calls to the same locality. This reflected the greater labor cost the telephone company incurred in setting up such calls, and the fact that they might receive no revenue for all that work if the wanted person is not available to speak on the call.

To the caller the value of the person-to-person option is that there would be no expense if the person to whom the caller specifically wanted to speak was not available. The higher rate if the call was successful was the cost of “insurance” for that.

4 CALL HANDLING

4.1 Introduction

The story of the “A-B toll” operating method begins when local telephone switching was, in many cases, handled by manual local switchboards. And in fact the name of the method draws upon that model. So in this section I will begin by reviewing, on a concise basis, manual local telephone switching. Then I will proceed to ways of handling toll calls in this environment. Finally I will do the same thing in a “dial” local switching environment.

4.2 In a manual local switching environment

4.2.1 *Interoffice local calls*

Figure 1 illustrates on a greatly simplified basis the handling of a local (thus, “not toll”) call from a subscriber in the Wabash central office in Middletown to a subscriber in the Melrose central office, also in Middletown.

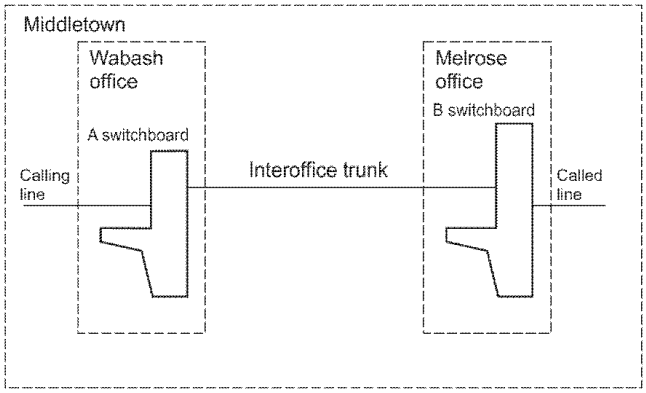

Figure 1. Interoffice local call between manual offices

Here, as in many figures to follow, manual switchboards are re[resented by a “switchboard” symbol, and these are treated as “blocks”. In particular, the lines between them do not attempt to show the roles of cords and jacks at the individual switchboards.

At each of the two central offices, Wabash and Melrose, both in the town of Middletown, there are two switchboards (each typically with many positions), called the “A” switchboard and the “B” switchboard (we see here only one position of each of those at each office). The “A” switchboard answers a “service request” from a subscriber and handles the subscriber’s call. The B switchboard is responsible for completing the connection to the called line for a call from another office (or in many cases, also for a call from a subscriber in this same office, via the “A” switchboard there).

Suppose the Wabash subscriber wants to call a friend served by the Melrose office (a “not-toll”, or local, call). When he takes his telephone off-hook, an operator at the Wabash “A” switchboard answers and says, “Number, please”. He gives that operator the wanted “Melrose” number. She extends the call over an interoffice trunk to the Melrose “B” switchboard, and passes to that operator the wanted number (the line number part only–the Melrose part is obvious). The “B” operator there extends the connection to the desired line, and that line is rung.

4.2.2 *Toll call to a distant city*

Now suppose our Middletown Wabash subscriber had wanted to call, for example, a friend in Riverdale, a quite distant city (and here we assume a “regular” toll operating method, not the “A-B toll” method). he would have asked the answering “A” operator for “Long Distance”. We see the players in this scenario in Figure 2.

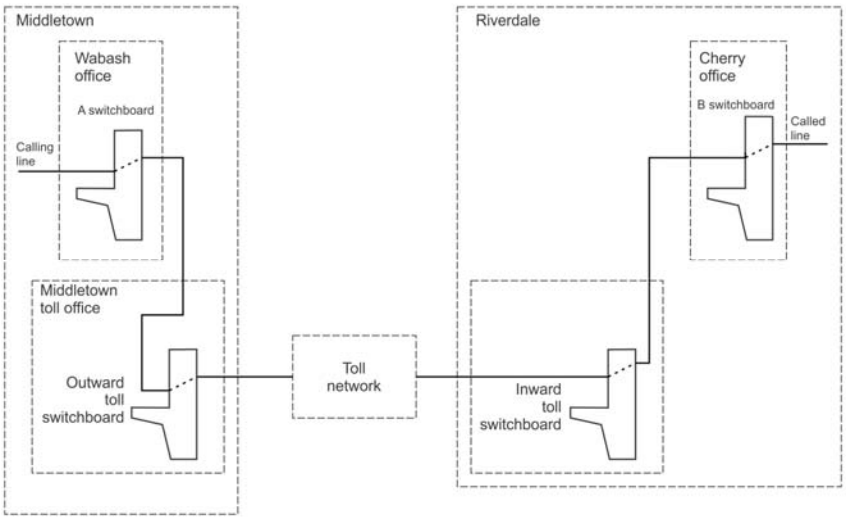

Figure 2. Manual “regular” toll call between manual offices

The A operator would extend the connection to the appropriate *outward toll switchboard* (“Long Distance”), who would answer, “Long Distance”. The caller would give that operator the city and number he wished to call (Riverdale, a Cherry number)..

The toll operator would launch the call into the toll network, the connection eventually reaching the *inward toll switchboard* serving Riverdale. The wanted “Cherry” number would be passed to that operator by the Middletown outward toll operator.

The inward toll operator would extend the connection to the B switchboard at the desired office in Riverdale (Cherry). The B operator would complete the call essentially just as would be done for an interoffice local call.

The resulting call would be administered by the outward toll operator, who also makes a *toll ticket*, with the details of the call, which will be used to bill the caller for the call.

4.2.3 *A-B toll calls*

However, in the case of “station-to-station” toll calls (only) to cities not very far way (although far enough away that calls to them are “toll” calls), the calls were often handled by a different operating

method, called the “AB toll” method. We see it, in simplified form, in Figure 3.

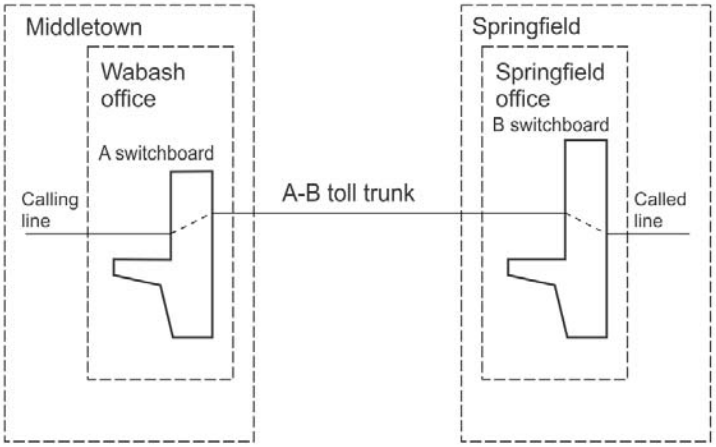

Figure 3. Simple A-B toll call between manual offices

Here a caller served by the Wabash office in Middletown caller wants to call (on a “station-to-station” basis) someone in Springfield.

Based on the calling instructions in the telephone directory for making station-to-station toll calls to Springfield, the caller does not ask for “Long Distance”. Rather, he asks the answering “A” operator for the wanted number in Springfield (giving both the city and the number).

The A operator extends the call over an A-B toll trunk to the Springfield (local) B switchboard (we assume for now there is only one office in Springfield, often the case for the destination cities to which this operating method is typically used). She passes to the B operator the wanted number. The B operator completes the call to the wanted line.

The Deerfield local operator makes a *toll ticket*, with the details of the call, which will be used to bill the caller for the call.

Note that this looks almost like a manual local interoffice call. The technical moniker “A-B toll” was given to this mode because this involves an (ordinary) A switchboard and an (ordinary) B switchboard/, no “toll” switchboards nor operators being involved.

Differences from a local interoffice call include:

- The A operator makes a toll ticket, with the details of the call, that will be used to bill the caller for it.

- Because the A-B toll trunk was typically quite a bit longer than a local interoffice trunk, it might not have been implemented just as a plain physical pair, as would be used for a local trunk. And as a

consequence, the signaling over that trunk might well have been different that that used on a local interoffice trunk.

The B switchboard position involved might be a position in a section of that B switchboard dedicated mainly to completing toll calls.

4.2.4 *Tandem operation for A-B toll calls*

In some cases, most efficient use of the A-B troll trunks to a “cluster” of nearby smaller cities is attained with the use of an intermediate switchboard located in the cluster (almost always in the central office of one of the cities in the cluster). We see this “tandem switching” form of A-B toll operation in Figure 4.

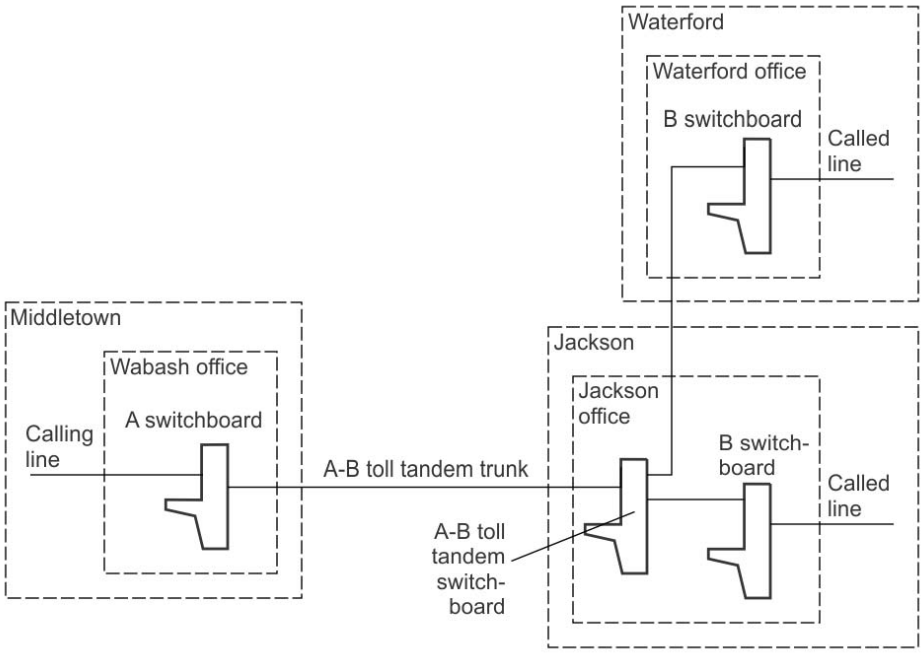

Figure 4. A-B toll tandem switching

Here A-B toll calls from Middletown to either Jackson or Waterford are sent over a trunk in a common group to a manual A-B toll tandem switchboard in Jackson. The operator there can extend the call to the B switchboard in either Jackson or Waterford.

4.3 In a “dial” local switching environment

4.3.1 *Interoffice local calls*

Again, for reference, Figure 5 shows the setup for a typical interoffice local call between step-by-step (SXS) offices. It assumes a 6-digit number, a two digit *central office code* and a four digit *station number*.

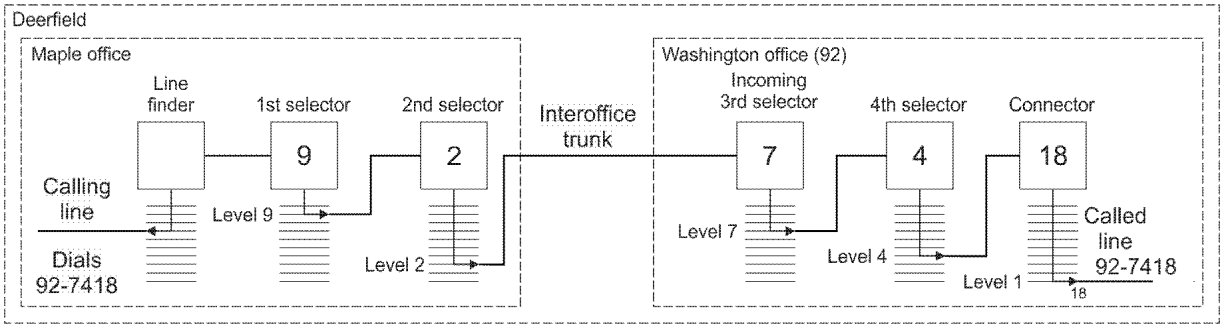

Figure 5. Interoffice local call between SXS offices

4.3.2 *Toll call by the "regular" toll operating method*

In Figure 6 we see, in a simplified way, the overall situation for a toll call between two step-by-step (SXS) dial offices, using the "regular" toll operating method.

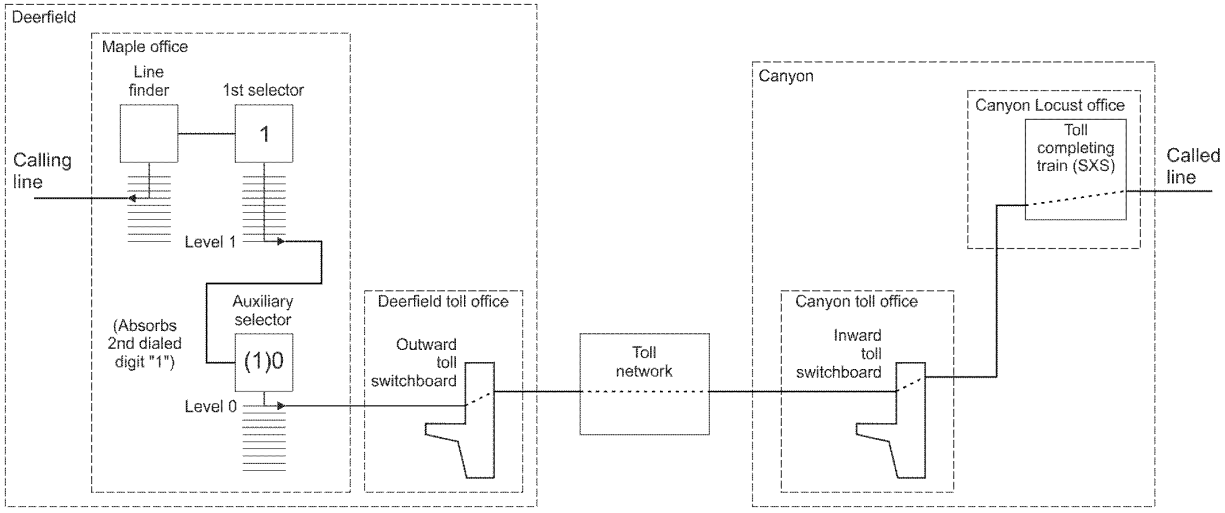

Figure 6. "Regular" toll call between SXS offices

The caller (in the Deerfield Maple office) dials "110" to reach the "Long Distance" operator. (The second dialed "1" is just "absorbed" by the auxiliary selector to save switch stages.[1])

The outward toll operator (to use the formal name) extends the call through the toll network to the cognizant *inward toll switchboard*. (There might well be intermediate toll switchboards involved in that.)

---

[1] Here, the only valid numbers that start with "1" are service codes, and all start with "11". So if the first digit dialed is "1", then a second digit of "1" is "no news", and it can just be ignored.

The inward toll operator extends the call, via switches in the step-by-step *toll completing train* (often called just the "toll train") at the destination office (Canyon Locust), to the called line.

I show that train as just a "block" It typically actually comprises two or three consecutive step-by-step switch stages. Here we need not be concerned with its details.

The Deerfield outward toll operator makes a *toll ticket*, with the details of the call, which will be used to bill the caller for the call.

4.3.3 *A-B toll call to a nearby city*

In Figure 3 we see, simplified, the situation of this scenario in a typical form.

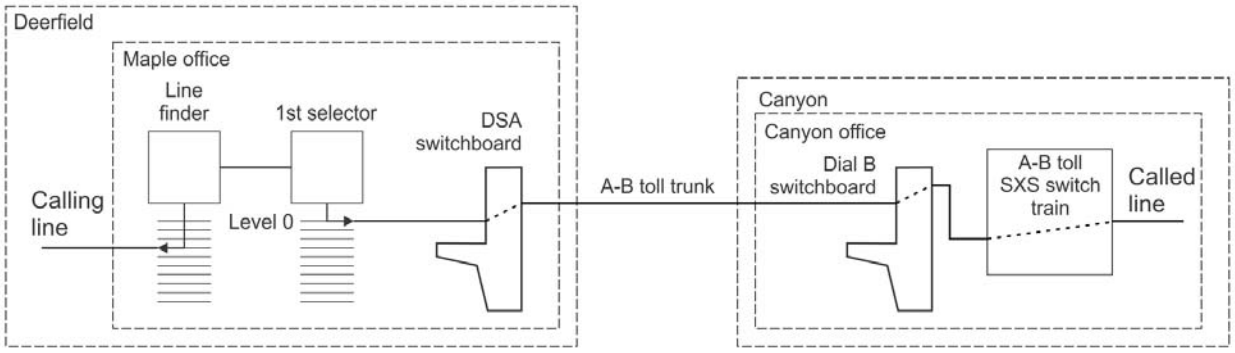

Figure 7. A-B toll call between SXS offices

Here our subscriber in Deerfield (with dial service) wants to call someone in another nearby city, Canyon (what has only one central office), also with dial service (a toll call). He dials "0" to reach the Deerfield "local operator" (formally, the DSA switchboard [2] operator). He tells the DSA operator that city and number. She extends the call over an A-B toll trunk to a dial B switchboard serving Canyon.[3]

---

[2] The original formal name of this switchboard was the "dial system A" switchboard, from which that abbreviation came. It was so-called because it was the closest thing to a "A" switchboard that a dial office had, and its operator provided many of the supporting services which were done, in a manual office, by the A operator. Later, when that historical connection to a real "A" switchboard had faded, the formal name was changed to the "dial service assistance" switchboard (still, conveniently enough, abbreviated "DSA".

[3] Sometimes called a "DSB" (dial system B) switchboard. Its original "main" job might have been to complete, through the local completing switch trains in the various Mayfield dial offices, local calls from manual offices still in operation in that same city.

The Deerfield DSA operator passes the desired number to the Canyon B operator. By dialing into the *A-B toll completing switch train* of the Canyon office (a special form for handling A-B toll calls), she completes the connection to the wanted line.

The Deerfield “DSA” operator makes a *toll ticket*, with the details of the call, which will be used to bill the caller for the call.

We see here why the moniker “A-B toll” again seems apt: the call passes from an “A” switchboard to a “B” switchboard (no “toll switchboards or “toll operators” being involved at all).

The B switchboard position will very likely be a position in a section of that B switchboard dedicated mainly to completing toll calls.

4.4 Overall

4.4.1 *Why is this mode attractive*

To the telephone company, this mode of handling certain toll calls is attractive because, compared to the “regular” toll method of operation, it involves less labor cost for handling the call (if only because the local operators may have been paid at a lower rate than toll operators, because of the more complex duties of the latter) and utilizes capacity in lower-cost switchboard equipment.

To the customers, by virtue of the lower cost of handling applicable toll calls by the A-B toll method, the rates were often lower then for the same calls if handled by the “regular” toll operating method. (See section 10 for a discussion of how this was sometimes handled by the telephone company.)

4.4.2 *Why only for “station-to-station calls*

The local switchboards, connecting trunks, and SXS completing switch trains (if dial switching is in the picture) used in the A-B toll operating method were not set up to perform various “gymnastics” often needed for the handling of person-to-person toll calls.

For example, often the outward toll operator must call back the calling station to establish a path that has the desirable transmission characteristic for a toll connection. But in doing so, she may wish not to yet ring that station until, for example, the wanted person at the far end has “come on the line”.

Or, for various reasons, she may wish to “re-ring” the called station (on the same connection) after they have hung up. All these require various special switchboard arrangements, special signaling arrangements, and (if dial switching is in the picture) special capabilities in the switches involved.

In addition, while the onset of A-B toll operation certainly required additional training for the local “A” and “B” operators, it was nowhere as extensive as required for “toll” operators, who might have to participate in a wide range often quite complicated scenarios.

5 “STEERING” OF TOLL CALLS

In many cases, for station-to-station calls to “nearby” toll points, the telephone company would only want to handle them via the “A-B toll” operating method, and so would want to “force” only that scenario for such calls.

Assume for the moment a local office operating on a manual basis. How did a caller, wishing to place a toll call, know to either:

- ask the answering A operator for “Long Distance” (if the “regular” toll operating method was the method of choice for that call), or

- ask the answering A operator for the city and number (if the A-B toll method was the method of choice for that call).

Generally, this was (ideally) done by way of the table in the directory that told how to place calls to various other cities. There might be separate columns for “station-to-station” calls and “person-to-person” calls, and a row for each distant city.

For each combination, the table cell might say either “Ask for Long Distance” or “Ask your local operator for the city and number wanted”, or a symbol for some such.

Suppose the caller doesn’t do that. Suppose he wants to place a call that should be handled by the “regular” toll operating method, but has given the city and number to the answering A operator. She would perhaps have said:

> I’m sorry, that call must be placed through Long Distance. I will connect you”

Now suppose the caller want to place a call that should be handled by the “A-B toll” operating method, but he has asked for Long Distance . He gives the Long Distance operator the city and number. She would perhaps have said:

> I’m sorry, that call must be placed through your local operator. Please hang up and call again. Give the city and number wanted to the local operator.”

6 PERSON-TO-PERSON TOLL CALLS TO NEARBY CITIES

Suppose that "station-to-station" calls to a certain fairly-nearby city are handled on an A-B toll basis. But what about person-to-person calls.

As discussed above, such calls would often require "gymnastics" not supported by the A-B toll operating scheme. Accordingly, these would probably be handled only by the "regular toll" operating method. The caller would be "steered" to that modality as described in Section 5.

7 QUOTING CHARGES

7.1 On collect calls

Collect calls are calls that, with the assent of the called subscriber, will be billed to the called subscriber rather than the calling subscriber.

In one case, the "gymnastics" of this might be a bit complicated. The called subscriber might ask that he (after the call is finished) be advised of the charge for the call (a service called "quoting charges"). In that case, the operator may, after the end of the call proper, re-ring the called station (on the same connection) to advise the subscriber there of the actual charge for which he will be billed. There are special "ringing control" arrangements in toll switchboards and switching equipment used for toll connections to provide for this.

But under the A-B toll method of operation, the simpler setup would not provide for the operator to re-ring the called station over the same connection.

She would have to establish a new connection to the called station to deliver the charge information, rather a pain, involving more operator time than under "regular" toll operation.

As a result, most telephone companies required all collect calls to be handled via the "regular" long distance operating method.

7.2 On "not collect" calls

In much the same vein, generally for "not-collect" toll calls[4] the caller could ask the operator to, when the call was finished, advise him what the charges would be (another form of "quoting charges"). Under the "regular" toll operating method, the toll operator could just "ring back" the caller on the same connection for this task.

---

[4] In telephone industry jargon these are called "paid" calls.

But she could not do this over an A-B toll connection. To perform that service, she would have to make an entirely new call to the caller's line, again rather a pain, involving more operator time than under "regular" toll operation. Which is why many telephone companies would not provide "quoting of charges" on calls made via the A-B toll operating method.

8 USAGE

According to a 1936 article in the Bell System Technical Journal, in 1915, 47% of toll calls were handled on an A-B toll basis. In 1934 (the last year shown), 64% of toll calls were handled on an A-B toll basis.

Even though for various reasons this mode was mostly used for toll station-to-station calls to "fairly-nearby" cities (and was the preferred mode there, perhaps the only mode used), such toll traffic was a large fraction of all toll traffic (subscribers were more likely to make a toll call to a nearby city than to a more distant city, owing to the cost difference involved). Thus the predominance of the A-B toll method is not surprising.

9 LONGER DISTANCES?

The reference information I have suggests that, generally speaking, the use of the "A-B toll" operating method was limited to calls to relatively nearby cities. (One reference cites "100 miles" as the general limit for the A-B toll method.) Why this limitation?

I have no real idea. I conjecture that, with regard to longer routes, it was not efficient to have two sets of "long distance" trunks, one for only A-B toll calls (and thus, only station-to-station calls) and one for "all other" (mostly person-to-person) calls.

10 A DISTINCT SERVICE?

In some cities, during certain eras (Denver in 1912, for example), the telephone company advertised a service, described as a attractive alternative to their "Long Distance" service, for what are today called "station-to-station" (only) toll calls to fairly-nearby cities.[5] One advantage given was that the rates for such calls were less than even the "station-to-station" rates for the "Long Distance" service. It was also described as "quicker".

This service was presumably conducted via the A-B toll method (whose costs were less than for handling the same call via the regular

---

[5] Thanks to John Haralson for initially bringing this to my attention.

long distance method, thus leading to the lower rates), and which in fact typically had shorter setup times than for the “regular” long distance method of operation.

In many such cases, at the time, what we later came to call “station-to-station” calls were described as “two-number” calls. And when the distinct service mentioned just above was offered, it was often spoken of as the “Two Number Toll Service” (as distinguished from “Long Distance” service).

Of course in that case, “two-number” not only meant “station-to-station” but also the handling of the calls by a distinct method, the one we know technically as “A-B toll”.

In some cases (for example, Hartford, Conn., in 1922-1924) where this type of call was considered a distinct service, the company met the naming issue head on and identified it as the “A-B Toll Service”. While we might find that technically apt, it was doubtless wholly mystifying to the subscribers.

But elsewhere, there was no such distinct “service”. Rather, the A-B toll operating method was the preferred method for the telephone company to handle person-to-person calls to certain fairly-nearby cities (and such calls were “steered” to the A-B toll mode as described earlier in Section 5).

11 IN MODERN TIMES

The advent, and eventual wide use, of direct distance dialing (DDD), from the early 1950s, in which subscribers dialed their toll calls, no operators being involved, led to the eventual disappearance of arrangements for the “A-B toll” method of operation.

-#-