

RELEASE CONDITIONS IN AUTOMATIC EXCHANGES

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Several types of release are available for automatic exchange equipment, and a brief review of the different types may be of assistance to Administrations about to embark upon a programme of automatisisation, or who are undecided with regard to the merits of the systems they are already using.

Types of Release Systems

(a) Calling-party release.

With this type of release system, a connexion is held until the calling party replaces his handset. In support of this type of release it has been stated that the originator of a call is the proper person to determine when the call is concluded, particularly in message-rate systems where the call is debited to the calling party

The whole of the equipment used for a call remains held until the calling party restores his handset, but failure to do this within a reasonable period will cause visual and audible alarms to operate.

An objection raised against this type of release is that the calling party is usually the first to replace his handset with the result that, where homing type uniselectors are employed, the called party's uniselector will rotate to seize a 1st group selector. When the called party eventually restores his handset, the uniselector will rotate to its normal position and the 1st group selector, if of the 2000 type, will perform a complete rectangular movement

Some advantage can be claimed for the unnecessary seizing of a 1st group selector because the called party hears dialling tone and is consequently aware that the calling party has terminated the call.

(b) Calling-party release with last-party release of the final selector

This is a variation of the full calling-party release method referred to under (a). Release of a connexion is under the control of the calling party, but when he replaces his handset first he does not release the final selector. This remains held until the *called party* replaces his handset.

An advantage claimed for this type of release is that the unnecessary wear on uniselectors and 1st group selectors, which occurs with full calling-party release, is avoided.

However, the holding of a final selector may have a serious effect on the traffic carrying efficiency owing to the final selectors comprising a comparatively small group of switches.

A *called-subscriber held* alarm is provided as in the case of the full calling-party release system and a further alarm to indicate prolonged holding of the final selector by the called party is sometimes provided.

The final selector circuit is a little more complicated than for *full* calling-party release.

(c) Last-party release.

With last-party release systems no equipment is released until both calling and called subscribers have replaced their handsets, consequently it is not necessary to make special provision for *operator hold* on either outgoing or incoming calls.

An alarm circuit is required to provide an indication when the connexion is held by only the calling or called subscriber.

This system is not very popular with the majority of Administrations.

(d) Either-party release.

With this method, the entire connexion is released when either the calling or called subscriber replaces his handset.

When the calling party remains on the line, his line circuit uniselector rotates and finds another 1st group selector which, unfortunately, will not be in the predetermined order of selection in the grading.

When the called party remains on the line, his uniselector also will rotate and seize a 1st group selector.

Provision must be made for the final selector to disconnect the *either-party release* feature and substitute an *operator hold* condition on calls incoming from a manual board.

This system also is not very popular.

(e) Either-party release but last-party release of the final selector

This system is sometimes preferred because there is no unnecessary seizure of a 1st group selector when the calling party replaces his handset first.

When the calling party replaces his handset first, all switches except the final selector release. The holding of the final selector by the called party is liable to reduce seriously the traffic carrying efficiency of what is a comparatively small group of switches.

When the called party replaces his handset first, all switches remain held by the calling party but the called party is free to originate a call.

The final selector circuit is more complicated than for the full calling-party release system and requires two separate alarm circuits to indicate whether the final selector is being held by the calling or called party.

The feature which enables a called party to release his line from a connexion must be withdrawn on incoming calls from a manual board if *operator hold* is required.

Summary

Systems of types (d) and (e) in which a called party can disconnect his line from a connexion are liable to produce premature release during the transfer of a call from one party to another, should the called party be an extension on a P.A.B.X. Also, some circuit complication is involved in arranging the final selector to guard against premature release when the called party *fumbles* the handset upon answering and in arranging the

final selector to disconnect the called party release feature on calls originated from a manual board when *operator hold* is required.

With last-party release of the type referred to in (c), a calling subscriber is unable to abandon a call which is answered by an intermediate party who proceeds to find the person to whom the calling party wishes to speak. This condition frequently causes annoyance to the calling party because he is left in ignorance of what is happening and he is unable to make another call. Valuable trunk circuits are often unnecessarily held for long periods with a loss of revenue and in some cases the howler must be connected to the called party's line to make him aware that the call has been forgotten.

The remaining systems, types (a) and (b), are in most general use and it would appear reasonable to assume that release should be under the control of the calling party as the originator of a call for which he is paying. Also, the calling party's attention is continuously focussed on the call, whereas the nature of the calling party's enquiry often raises

doubt at the called end as to who should deal with the call.

Calling-party control of a connexion has the further advantage that it corresponds with manual-board practice so that the separate parts of a system function in similar fashion.

The choice between the release systems (a) and (b) depends upon the condition which arises when the calling party replaces his handset first. In the type (a) system the called party's line is connected to a 1st group selector and in the type (b) system the called party holds a final selector

In the former case there is some unnecessary movement but, as the resultant wear on the called party's line uniselector is well within the capacity of the switch during the life of the exchange, it is probable that this type of release is preferable to type (b) where the called party holds one of a small group of final selectors with a risk of seriously reducing the traffic carrying capacity



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The G.E.C.'s automatic telephone system of four exchanges was opened recently in Lagos. Seen (left) at the inspection are Mr. Rumsey, Nigerian Post and Telegraph Department, Chief Arthur Prest (Minister of Communications) and the Oba of Lagos. (Below) is the Trunk Records Switchboard.