

CENTREX SERVICE

SATELLITE OPERATION WITH CENTREX SYSTEMS

Many of our P.B.X. customers who are potential candidates for Centrex service have their employees at more than one location. They either have satellite P.B.X. installations or have provided separate P.B.X.'s with attendants at these locations. When one of these customers is interested in Centrex service, he will, in most cases, require this service for all his stations and the provision of the attendant facilities at one location only. Each customer with these requirements must be given individual consideration. We do not intend to present in these Notes a solution to every possible combination which can exist. We do, however, intend to offer some broad ground rules which can be applied in these cases.

No. 5 Crossbar Centrex Installations

The No. 5 crossbar Centrex development, as it is today, **can not** include the satellite stations in the overall numbering plan for a Centrex customer **if the 711 type dial equipment is retained at the satellite location**. All incoming calls to these stations must be routed through the customer's attendants for completion. This completion will be over tie lines between the two systems. Intercommunication on a two-way basis between the Centrex and the satellite stations can also be completed over these tie lines. Future development will make it possible to include these satellite stations in the Centrex customer's overall numbering plan.

It is possible to **include** these satellite stations in the No. 5 crossbar Centrex **if these stations are terminated directly in the Centrex installation**. In this case, they would be equivalent to regular Centrex stations and lose their identity as satellite stations. The same attendant team would serve all stations and no tie lines would be required for intercommunication between stations. The distance of these stations from the No. 5 Centrex will require consideration in this case.

This satellite location can also be served from another No. 5 Centrex different from that serving other stations of the same customer. In this case, this location must be treated as a separate Centrex

customer with its own attendant facilities to provide all the features available with Centrex service. Intercommunication between the customer's stations in each Centrex can be over tie lines if desirable, or can be over the regular telephone network combined with regular subscriber traffic.

Step-by-Step Centrex Installations

All the customer's stations can generally be provided Centrex service when step-by-step facilities are used. The dial facilities can be retained at the various locations and one attendant location can be provided. This requires the introduction of a universal numbering plan for all stations. This could require some rearrangements at some locations, and in some cases, complicate the intercommunicating trunk pattern. Any of the equipment arrangements described in Section 3 of these Notes can apply.

Those described in Section 3-b (cord switchboards, with normal cord operation as the attendant facilities) are very similar to normal P.B.X. operation. The controlling factor in routing incoming DID traffic to each location is the transfer feature. If separate trunk groups to each location are provided, each group of indialing trunks can be concentrated and only a relatively small number of transfer trunks returned to the switchboard. Since the transfer connection is retained on the position for the duration of the call, the transmission of the established connection can be affected if too much back haul results from this arrangement.

The equipment arrangements described in Sections 3-c and 3-d (608A switchboards with single and normal cord operation or 621A consoles as the attendant facilities) will generally require tandem routing through the dial equipment nearest the attendant location for all DID traffic to the satellite stations. This is necessary because of the method of operation employed for transfer and listed number calls (release loop operation). It is possible to route from the serving office directly to each location if this is required. In this case, the transfer traffic must be handled at a console position at that satellite. Again back haul problems resulting in

transmission difficulties must be considered. Another possibility, when the 608A switchboard is used, is to provide separate indial trunk groups to each location, as required, with the equipment for the satellite location arranged as described in Section 3-b. Transfer trunks would be terminated at the cord switchboard and normal cord operation used to handle this traffic. Again, the same problems of back haul exist.

Outgoing traffic from each location presents a problem also. Local and service code traffic can be routed to the serving central office nearest each location. Toll operator traffic should be routed to the same serving office for all locations since they

all now have the same central office code. This can be over separate trunk groups or through the main location. DDD traffic from each location can be over individual trunk groups but these trunks should be terminated in the same recorder group at the CAMA office. This traffic can also be routed through the main location.

If Centrex-CO operation is provided for the stations of the main location, ANI can be available for these stations only. The identification for the satellite stations (when the dial equiupment is retained at that location) must be on a CAMA operator basis until ANI equipment is developed for use with 701 P.B.X. facilities.