POINT-TO-POINT DATA—PREROUTE PEG COUNT REGISTERS
NETWORK SWITCHING ENGINEERING—TRUNK DATA
NETWORK SERVICES METHODS

CONTENTS PAGE

1. GENERAL

1.01 This section describes the application of point-to-point data provided by preroute peg count registers in No. 1 Crossbar (1 XB), No. 5 Crossbar (5 XB), Panel, and Electronic Switching System (ESS) end offices. This application relates to the method of converting point-to-point data provided by the preroute peg count registers to load volumes for use in trunk forecasting and servicing. A summary description of preroute peg count registers for the different switching systems is provided in Part 2 of this section.

1.02 This section is issued as part of a comprehensive restructure of the 780-401-ZZZ series. Whenever this section is reissued, the reason(s) for reissue will be listed in this paragraph.

1.03 The definition of point-to-point data and the requirements for these data in trunk forecasting and servicing are covered in Section 780-401-300. Preroute peg count registers are a source of point-to-point data for local traffic in metropolitan and nonmetropolitan networks. They provide point-to-point data in terms of total attempts for individually selected traffic items. Study periods and time intervals are optional and must be negotiated by the trunk engineer with the appropriate switching system administrative personnel.

1.04 There are no standard summaries for provision of these point-to-point data. Total attempts accumulated on each register for the designated study period and time interval(s) are normally submitted along with register assignment records to the trunk engineer. It is the trunk engineer's responsibility to manually summarize these data into a workable format. These data must then be converted to loads that are offered to the network.

1.05 References in this section to methods, planning, data requirements, service levels, and equipment quantities are based on American Telephone and Telegraph Company recommendations.

2. SUMMARY DESCRIPTION OF PREROUTE PEG COUNT REGISTERS

2.01 Preroute peg count register arrangements are available in No. 1XB, No. 5XB, Panel, No. 1, No. 2, and No. 3 ESS switching systems. In all cases, counts of call attempts for predesignated

traffic items are provided for prearranged study periods and time intervals. Traffic items are in terms of the originating marker group (No. 1XB and No. 5XB), decoder (Panel), or control group (No. 1, No. 2, and No. 3 ESS) to the designated NXX or grouping of NXXs.

A. No. 1XB

2.02 In No. 1XB switching systems, auxiliary general purpose wire spring relays, one per NXX or grouping of NXXs are mounted as an equipment unit on a miscellaneous relay bay located in the vicinity of the markers. A maximum of 80 NXXs or grouping of NXXs may be counted in this semipermanent arrangement. The units are provided on a per marker basis. Thus, one or more markers may be equipped with relays as desired. Standard No. 14 type registers are used to score the count of attempts. Section 216-060-210 provides a complete description of these relays and the required wiring arrangements.

B. No. 5XB

2.03 In No. 5XB flat spring relay type switching systems, a maximum of 20 preroute peg count relays may be provided to count the attempts to the designated NXX or grouping of NXXs. In wire spring relay type switching systems, a maximum of 40 such relays may be provided; however, these relays are sometimes used for other purposes and all 40 may not be available for point-to-point data purposes. In both types of No. 5XB switching systems, the preroute peg count relays are associated with standard No. 14 type registers. These relays may be provided for all markers of an office or they may be installed on a per marker basis. Section 218-040-022 describes these relays and the required wiring arrangements.

C. Panel

2.04 As in No. 1XB, an arrangement which permits semipermanent cross-connection for a maximum of 80 NXXs or grouping of NXXs is available in panel decoder dial switching systems. A general purpose wire spring relay is required for each and standard No. 14 type registers are required for scoring the count of attempts. The relays are mounted as an equipment unit on a per decoder basis. One or more decoders may be provided with this arrangement. Section 215-060-210 provides a complete description of these relays and the required wiring arrangements.

D. No. 1, No. 2 and No. 3 ESS

2.05 Electronic switching systems do not require special relays and associated electromechanical registers to collect preroute peg count data. These systems utilize the call processing and call store memory capabilities to perform the collection task. The data are periodically output according to predetermined schedules.

2.06 In No. 1 ESS, there are between 50 and 150 General Purpose (GP) registers (depending on the generic program) which may be assigned for various special studies. The number of registers available to gather preroute peg count data is dependent upon the number of registers assigned to the other possible functions. The preroute peg count studies in No. 1 ESS are referred to as Office or Foreign Area Preroute (OFAP) studies. In No. 2 ESS, there are 32 dedicated registers for gathering preroute peg count data. No. 3 ESS has four such registers.

2.07 Assignment of preroute peg count registers is described in Sections 231-061-605 (No. 1 ESS), 232-060-605 (No. 2 ESS), and 233-060-605 (No. 3 ESS).

3. APPLICATION OF PREROUTE PEG COUNT REGISTER DATA

A. Data Gathering

3.01 Preroute peg count registers provide a type of point-to-point data that are not available from other point-to-point data systems. Since all switching systems capable of gathering preroute peg count data are restricted to the number of traffic items for which data can be provided, this source of point-to-point data does not provide all of the point-to-point data that are required for the trunk forecasting and servicing operations for a given area.

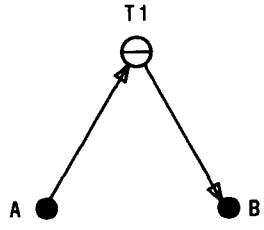
3.02 Since preroute peg count registers are not part of a mechanized system, the procedures for gathering this type of point-to-point data must be established by each Bell Operating Company (BOC). Normally, the trunk engineer must request, for each study period, the offices in which the register data are required, the destination codes

for which the associated relays must be wired or for which registers must be assigned, the length of the study period, and the desired study hour(s). The resulting counts of attempts are normally returned to the trunk engineer for the study hour(s) for each day of the study period by register number. The trunk engineer must then associate the register number to a traffic item and reassemble the data to reflect the average number of attempts on a traffic item basis for each study hour.

B. Conversion Process

3.03 A full complement of trunk group data (peg count, overflow, and usage data) must be collected on all involved trunk groups for the same study period and study hour(s). The preroute peg count data may then be converted to load volumes for each of the traffic items. The preroute peg count data for each traffic item are expressed as a percentage of the peg count for the trunk group over which the item is routed. This percentage is then applied to the trunk group usage data to determine the load for each traffic item.

3.04 For the simple network arrangement shown, assume that preroute peg count register data are collected at office A for the traffic item A → B during 20 consecutive business days from 10 am-11 am. On trunk group A → T1, a full



complement of trunk group data are also collected for the same 20 days from 10 am-11 am. To convert A → B attempts to a load value, the ratio of the A → B attempts (preroute peg count data) to the A → T1 attempts (trunk group peg count data) is multiplied by the offered load (from the peg count, overflow, and usage data) of the A → T1 trunk group. Since the traffic item attempts and the trunk group attempts represent attempts "offered" to the traffic item and the trunk group, the offered load of the trunk group is used instead of its carried load.

4. QUALITY CONSIDERATIONS

A. General

4.01 The requirements for and the use of point-to-point loads in trunk forecasting and servicing necessitate that consideration be given to errors associated with the source of the point-to-point data and the process for converting these data to loads. The quality of point-to-point loads developed from preroute peg count register data is dependent on scheduling, the proper assignment and/or wiring of registers and relays, and the timely recording of the data from the proper registers.

B. Scheduling

4.02 Since this is not part of a mechanized process, the study period and study hours may be scheduled to meet the needs of trunk engineering through proper coordination with the other organizations involved. These data will normally be used with trunk group data and point-to-point data from other sources. Therefore, the study periods and study hours for preroute peg count collection should be identical to those scheduled for these other sources of data.

4.03 It is recommended that 20 consecutive business days be used coincident with the busy seasons for the offices and traffic items involved. Normally, only one study hour or consecutive study hours for register data collection is possible. The study hour(s) should consist of as many hourly or half-hourly segments which contain the same traffic levels and characteristics as the busy hour of the offices and traffic items involved.

C. Data Collection Coordination

4.04 Personnel in organizations outside of the trunk engineer's organization are responsible for assigning the appropriate registers, for performing any rewiring tasks, and for obtaining the readings from the registers. It is therefore the responsibility of the trunk engineer who has requested, needs, and ultimately uses the preroute peg count register data to provide as close coordination as is necessary to assure accurate data collection.