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**NETWORK SWITCHING PERFORMANCE MEASUREMENT PLAN  
DESCRIPTION  
NETWORK SWITCHED SERVICES  
"DMS\*"--10 EXCHANGE SWITCHING SYSTEM**

CONTENTS	PAGE	CONTENTS	PAGE
1. GENERAL .....	3		
2. OUTLINE .....	3	Trunk Select Failures .....	8
3. APPLICATION .....	4	Equipment Outage--CNTL .....	8
4. OBJECTIVE .....	5	Initializations .....	9
5. INTERPRETATION AND USE OF RESULTS .....	5	System Loads .....	9
6. GENERAL INSTRUCTIONS .....	6	C. Customer Reports .....	9
7. PERFORMANCE INDICATORS .....	7	Customer Trouble Reports Code 8-Found OK .....	9
A. Machine Access .....	7	8. MEASURED COMPONENTS .....	9
DGTR Overflow .....	7	A. Machine Access .....	9
Receiver Overflow .....	7	Dial Tone Speed .....	9
B. Machine Switching .....	8	B. Machine Switching .....	10
Trunk Outage .....	8	Transmitter Time-outs .....	10
		Receiver Time-outs .....	10
		Network Faults .....	10

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CONTENTS	PAGE
Peripheral Faults .....	11
Equipment Blockage .....	11
C. Billing .....	12
Lost Billing .....	12
D. Customer Reports .....	12
Customer Trouble Reports, Code 5 Equipment .....	12
9. PREPARATION OF FORM EO-1714 .....	12
10. PREPARATION OF FORM EO-1715 .....	14
11. THRESHOLDS AND INDEX TABLES .....	14
12. INTEGRITY REVIEW .....	15

**FIGURES**

1. Example of Form EO-1714 .....	17
2. Example of Form EO-1715 .....	18
3. Example of Form EO-6429 .....	19
4. Example of Form EO-1567 .....	20

CONTENTS	PAGE
5. Data Collection Flowchart .....	21
6. Form EO-1714 Verification Flow- chart .....	22
7. Form EO-1715 Verification Flow- chart .....	24

**TABLES**

A. Dial Tone Speed Measured Component Index Table .....	25
B. Transmitter Time-outs Measured Component Index Table .....	26
C. Receiver Time-outs Measured Component Index Table .....	27
D. Network Faults Measured Component Index Table .....	28
E. Peripheral Faults Measured Component Index Table .....	29
F. Equipment Blockage Measured Component Index Table .....	30
G. Lost Billing Measured Component Index Table .....	31
H. Code 5 Equipment Measured Component Index Table .....	32

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## 1. GENERAL

**1.01** The Network Switching Performance Measurement Plan (NSPMP) described in this practice addresses switching performance measurements for the DMS-10 switching system. It is limited to those offices that perform an end office function, including end offices that are used partially as tandem switchers.

**1.02** The title for each figure includes a number(s) in parentheses which identifies the paragraph(s) in which the figure is referenced.

**1.03** The measured components and performance indicators included in this plan are those for which central office maintenance, network administration, and engineering forces are primarily responsible. These components and indicators are sufficiently sensitive to reflect changes in switching performance quality caused by maintenance, administration, and provisioning conditions.

**1.04** Generally, the switching performance of a particular office is related to how well the central office maintenance, network administration, and engineering team is managed and how effectively they work together. Periodic, short-term situations may occur due to conditions beyond the control of the team (e.g., extreme weather conditions, other acts of nature, severe equipment or facility failures external to the particular switching machine) that would adversely affect service. The continuity of performance levels is the responsibility of the team.

**1.05** The weighting of the components was accomplished based on the following considerations:

- (a) Impact of failure on customer
- (b) Impact on revenue
- (c) Severity of equipment failure or outage.

**1.06** Since the level of performance of the control group is the result of equipment maintenance, equipment administration, and provisioning, the results under the plan are to a great extent a

consequence of the management effort. The degree of cooperation, joint effort, and acceptance of joint responsibility will be evident in the results obtained.

## 2. OUTLINE

**2.01** This plan is structured to measure overall end office switching performance as it affects the customer. Therefore, the most pertinent available aspects have been included as measured components. The components are then combined into the following four categories to form the switching index:

- (a) Machine Access
- (b) Machine Switching
- (c) Billing
- (d) Customer Reports.

The components of categories (a), (b), and (c) are technical measurements designed to measure different aspects of service within the broad category. Category (d) is an external view of service by the customer.

**2.02** In addition to the measured components upon which the index is based, this plan also calls for recording certain measurement items entitled performance indicators. These performance indicators are included for one or more of the following reasons:

- (a) Indicators that assist in analyzing the cause of poor service as shown by a measured component
- (b) Indicators that measure aspects of service failures beyond the scope of the measured components
- (c) Indicators which identify potential service failures.

**2.03** The plan includes two results reports: (1) a detailed results report (Form EO-1714) for use as the control group report, and (2) a summary report (Form EO-1715) for upper management. It is not the intent of the plan to designate at which level of management the detailed results report should stop. The severity of service problems and

styles of management would be the deciding factors. The detailed report is designed for single entity (control group) reporting and should be limited to that use. The management summary is used to consolidate two or more single entity reports to any desired management level and for any time period of 1 month or more.

**2.04** The detailed results and summary reports employ a results banding technique in which performance levels are grouped into four bands for each component of the plan and for the overall index. These four bands are as follows:

Band	Index Level	Meaning
H	98.50-100.00	Higher than objective and possible costly
O	95.50-98.49	Objective level
L	89.50-95.49	Lower than objective level
U	Below 89.50	Unsatisfactory level requiring immediate attention

**2.05** The summary report also provides management with two summaries:

- (1) The number and percentage of offices by performance band for each measured component and the total index
- (2) The number of control groups which exceed the threshold level in each performance indicator.

### 3. APPLICATION

**3.01** The plan is fundamental in nature and is intended to provide a general measurement of improving or deteriorating service. Proper application of this plan will assist management in identifying engineering, administration, and maintenance problems. Correction of these problems can only be accomplished through proper management action.

**3.02** Although some machine switching and billing functions are included in the component descriptions, there is no intent to provide complete descriptions of DMS-10 switching system.

**3.03** This plan calls for use of measured components and performance indicators. These items were selected to serve several purposes. Some are useful to local managers in predicting and/or analyzing potential and actual areas of service difficulty. Some are indicative of conditions which may be related to service-affecting problems other than in the measured office. Still others reflect problems affecting revenue. Some of these indicators have direct impact upon the quality of customer service; others are indirectly related. All of the numerous indicators necessary to provide complete and detailed analysis of switching performance quality are not included. Those selected are considered among the most important. They were selected carefully as those which require constant monitoring and management attention.

**3.04** There are many other indicators useful to managers in the detection of adverse service conditions or trends. They should be used in addition to those contained in the plan to identify and analyze potential and actual trouble spots within the office.

**3.05** Other indicators which are less representative of direct service effects yet are relating to the troubles, problems, or conditions affecting service are available and must be used. These other indicators may sometimes prove to be more important than the indicators used in this plan. If these supplemental indicators are neglected, managers may be unaware of impending service deterioration until results worsen. The proper approach is to be sensitive to all indicators.

**3.06** The following is a list of items not directly measured by the plan. These items are indicators of service provided by the control groups and require constant attention. The list is not all-inclusive:

- (a) Major alarms
- (b) Certain network failures

- (c) Cleanliness of the office
- (d) Preventive maintenance backlog
- (e) Percentage of engineered capacity.

**3.07** The administrative data requirements for this plan are restricted to the office busy hour. Therefore, it is strongly recommended that maintenance and network administration personnel exercise judgment in obtaining other hours and, where warranted, total day periods. Many measured components and performance indicators relate average monthly performance for the total office or specific equipment items. Hence, continued analysis of equipment subgroups to identify trouble conditions is recommended.

#### **4. OBJECTIVE**

**4.01** This plan is designed to provide a measurement of the quality of customer service provided by a DMS-10 switching system control group. This plan is also designed to reflect the quality of the administrative, maintenance, and engineering/provisioning effort which relates to the measured service quality.

**4.02** Measured components are included for each of the four major categories (i.e., machine access, machine switching, billing, and customer reports). The measurements provide reflections sufficiently sensitive of the quality of service to the customer. Performance indicators are designed to assist administrative, maintenance, and engineering personnel in predicting and/or in analyzing areas of service concern related to the switching machine performance, and when required, in developing joint programs for corrective action.

**4.03** Generally, the performance of a DMS-10 switching system control group is related to the quality of the administrative, maintenance, and engineering efforts brought jointly to bear on that control group. This plan is designed to measure the service quality resulting from those efforts and indicate the necessity of joint involvement by personnel charged with the different primary functional responsibilities.

#### **5. INTERPRETATION AND USE OF RESULTS**

**5.01** The objective of the measured components is to represent actual failures or delays of the machine to properly complete a call or to provide accurate billing information. The performance indicators represent conditions that may seriously impact the machine's ability to satisfactorily perform its switching and billing functions.

**5.02** The measured components and performance indicators in this plan are of several different types. Some measurements are obtained from machine counts of failures caused by equipment malfunction. This type of measurement represents a lost call and is usually followed by a reinitiated customer attempt. Since regeneration also affects load-sensitive functions of the switching machine, the items of this type are critically indexed. Another type of measurement addresses blockage and delay experienced on equipment items, which are engineered on a probability basis. With this type of measurement, it is expected and economical that a certain level of machine counts will be evaluated. The index levels and evaluation periods are designed to reflect this expected level of event occurrences. The customer trouble report category reflects central office customer line, equipment, and switching facility conditions that caused the customer to report a service failure.

**5.03** Switching performance, as measured by this plan, is strongly dependent on the control of equipment failure rates, the availability of equipment for service, the administration of the available equipment, and the quality of work. There are few inherent reasons why the performance of an individual office, especially over long periods, should be appreciably different from the average performance of large groups of offices.

**5.04** Performance levels obtained through the use of this plan are not comparable to performance levels in other types of switching machines under other measurement plans. Therefore, the service provided by a given DMS-10 switching system office can only be compared to there DMS-10 switching system offices.

**5.05** Management should closely monitor the trend of office result in the various measured

components and performance indicators of the plan. Improvement in the performance of any one item should be related directly to the corrective action taken. This point is significant not only in evaluating the performance of an office but also in evaluating a particular course of action as being worth the required effort and cost in view of the results improvement. Worsening results indicate the need for a stepped-up pace or a different tactic in pursuing corrective action.

**5.06** Objectives are established in such a manner that they are meaningful to and attainable by the managers involved in accomplishing the goals. For this reason, managers responsible for maintenance, administration, and provisioning should be involved in setting the objectives. An understanding of the interrelationship of the various functions is essential to attain overall satisfactory service levels. The plan is designed to foster this understanding.

**5.07** It is the intent of this plan that the interdependency of service on functional group contribution be recognized. The central office maintenance, the network administration, and the engineering/provisioning functional groups are equally responsible for analysis and are held equally accountable for analysis and for concerted corrective action.

**5.08** The use of this measurement plan is not an adequate substitute for proper management. Continuous diagnostic analysis must be employed to ensure problem correction prior to service deterioration.

## **6. GENERAL INSTRUCTIONS**

**6.01** The service month used for this plan is from the twenty-third of the month preceding the report month through the twenty-second of the report month (e.g., February report begins January 23 and ends February 22).

**6.02** Each control group will prepare one report, Form EO-1714 (Figure 1), monthly from the first full report month after cutover and thereafter.

**6.03** Failures on tests made in connection with the installation, modification, or

rearrangement of control office equipment by installation forces are deductible on Form EO-6429. Form EO-6429 is submitted with Form EO-1714. See Figure 3 for an example of Form EO-6429.

**6.04** Most of the data required for this plan are obtained from administrative and maintenance registers or data systems. Actual peg counts or mechanized data printouts are used. Offices utilizing the Engineering and Administrative Data Acquisition System (EADAS) feature for mechanized data collection should refer to Practice 241-120-040, Table A, for register comparisons.

**6.05** Procedures for determining and changing office busy hour periods are in accordance with instructions contained in Practices 241-120-040 and 780-200-031. The determination of the office busy hour is the responsibility of the network administration group.

**6.06** A minimum of 15 days' office busy hour data are required for each report month. This includes valid data from administrative registers for each measured component.

**6.07** The following rules apply when data are lost from maintenance registers which measure components or indicators 24 hours per day:

- (a) All available valid data must be included in the results calculation regardless of the service conditions. Periods affected by events such as storms, civil disturbances, cable cuts, and switching machine emergency actions must be included.
- (b) If a failure count or base count is lost for a certain time period (e.g., transmitter time-outs did not score for 2 days), the base data or failure count used to calculate the component or indicator must be excluded for the same time period.
- (c) One day of data (normally 24 hours) is considered valid if 85 percent of all peg counts between the hours of 0800 and 2400 are obtained.
- (d) Data obtained for measurement purposes must contain valid data for 15 business days of the report month for any component or indicator.

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**6.08** If, due to a malfunction or error, results data for a measured component or a performance indicator are not available for the report period, the notation NAV (not available) is entered in the failures, base, and performance columns of the form. The notation NAV is considered Band U or soft spot performance and is reported as such on the control group report. The notation N or NAV is acceptable.

**6.09** The notation EMPTY is entered in the failures, base, performance (Interexchange [IC] or Total), soft spot, or band columns of the form if the component is not applicable to the measured control group due to design limitations or generic program. The notation EMPTY is not considered Band U. The notation E or EMP is an acceptable substitute entry for EMPTY.

**6.10** Forms used for the compilation of register reading data and for the computation of applicable percentages and component indices are developed and prepared locally. Forms EO-1567, EO-1714, EO-1715, and EO-6429 are available through your local forms management organization.

**6.11** Because of the importance of measured components to the evaluation of the service rendered by the measured office, the district manager must assume responsibility for the validity and integrity of the data reported.

**6.12** Daily printouts of data used for computation of the results reported on Forms EO-1714 and EO-1715 should be kept for the current report month and the previous 3 months. The monthly printouts should be retained for 1 year. It is recommended that a retention system similar to that described in Practice 190-130-010, SPCS/SCC Control Maintenance Plan, be used. The printouts and reports should be filed in the appropriate month's folder and retained until the results for the same month of the following year replace them.

**6.13** Monthly reports should be submitted to the Bell Operating Company's (BOC's) Results organization at the earliest possible date, but no later than the fourth working day of the month following the report month.

**6.14** For companies that use the Operating Telephone Company (OTC) Centralized Results System (CRS), a separate report is entered into OTC-CRS monthly for each switching entity. The OTC-CRS calculates and prepares all Forms EO-1714 and EO-1715 on a monthly, quarterly, and annual basis as required.

## 7. DESCRIPTION OF PERFORMANCE INDICATORS

**7.01** This section describes the performance indicators. Included are brief descriptions of the indicators, the source of the data, and the applicable time period for which data are gathered and summarized.

### A. Machine Access

#### DGTR Overflow

**7.02** This indicator is a count of the number of days in which the DGTR group experienced busy hour overflow in excess of 5 percent.

**7.03** Data required for this indicator are recorded for each average business day dial tone speed busy hour.

**7.04** Each day, obtain DGTR overflow and peg count from the Operational Measurement 005 (OPM005) Service Circuit (SVCE) printout. Calculate the percentage of overflow for each day as follows:

$$DGTR\ OVFL = \left( \frac{OVFI}{PEG + OVFL} \right) \times 100$$

**7.05** At the end of the report period, total the number of days the percentage of overflow was 5 percent or greater for the DGTR group. Enter the number of days in column C of Form EO-1714.

#### Receiver Overflow

**7.06** This component is the percentage of incoming multifrequency (MF) calls that experience overflow due to all MF receivers being busy. Data for this component are obtained during the originating plus incoming (O+I) busy hour from the OPM005 SVCE printout.

7.07 The monthly results are computed as follows:

- (a) In column A, enter the total month's MF receiver overflow (MFR OVFL) for the office busy hour.
- (b) In column B, enter the total month's busy hour MF receiver peg count and overflow (PEG plus OVFL) count.
- (c) Divide column A by column B. Enter the result (expressed as a percentage) in column C ( $[A/B] \times 100 = C$ ).

#### B. Machine Switching

##### Trunk Outage

7.08 Trunk outage is defined as a trunk not available for customer or operator access. This outage is expressed as the normal business day (NBD) outage hours per trunk per month. It includes those trunks for which the office is designated control or assigned office as covered in Section 660-400-010, Trunk Outage Results Plan.

7.09 In column C, enter the trunk service index for the report month as reflected on Form E-3994, Trunk Outage Results Summary.

##### Trunk Select Failures

7.10 During selection of an outgoing trunk, certain situations are encountered that indicate a failure condition. These failure conditions are not extreme enough to cause call abandonment, but rather proceed to select another trunk in the group. Each time one of these failure conditions is encountered, one of the following messages is printed on the maintenance data channel: TRK 011, TRK 016, TRK 017, and TRK 030.

7.11 The monthly results are computed as follows:

- (a) Accumulate the output messages listed in paragraph 7.10 in the No. 2 Switching Control Center System (No. 2 SCCS) file using the message RC:SCHED and FILTER. These messages are described in the Input Manual (IM).

- (b) In column A, enter the total month's failure counts of the SCCS messages listed in paragraph 7.10.
- (c) In column B, enter the total month's office outgoing and tandem call attempts in terms of 10,000 (OPM001 Traffic Distribution [TRAF]- OROG plus INOG PEG).
- (d) Divide column A by column B. Enter the result in column C.

##### Equipment Outage-CNTL

7.12 This indicator is a count of outage hours during the NBD or abbreviated normal business day (ANBD) of control equipment. Removal of equipment from service during busy periods will probably affect service and office reliability margins.

- (a) Regular NBD includes the period from 0900 to 2200 local time on weekdays (excluding Saturdays, Sundays, and holidays).
- (b) The ANBD includes the period from 0900 to 1800 local time on weekdays (excluding Saturdays, Sundays, and holidays) and should only be used as instructed in Practice 201-114-001.

7.13 The outage time is accumulated on the OPM008 Maintenance (MTCE) printout. The outage time is kept under the USE column of the OPM008 printout in 100-second scan intervals (1 hour = 3600 seconds). The results for the month are reported (to the nearest tenth of an hour) for the following control equipment:

- Memory (MEM)
- Central Processing Unit (CPU).

7.14 The monthly results for equipment outage are computed as follows:

- (a) Enter the total month's control equipment outage in column A.\*
- (b) Enter the total count of each equipment item listed in paragraph 7.13 as base data in column B.
- (c) Divide column A by column B. Enter the results in Column C.

\*Outage =  $\frac{USE\ Scan\ Intervals\ x\ 100}{3600\ Seconds}$   
(nearest tenth of an hour)

#### Initializations

**7.15** Initializations (control faults) include the CPU memories, CPU bus extenders, power converters, and clock and change-over packs. Diagnostic programs and other tests are run continuously to detect these faults. An initialization sequence requires an average of 8 to 10 seconds. During this interval, new requests for service are lost. For this measurement plan, all planned initializations are loads required by office growth jobs and generic retrofits or updates, limited to those specified in a Method of Procedure (MOP) document. All other initializations, whether induced manually or automatically by the processor, are considered unplanned.

**7.16** At the end of the measurement period:

- (a) In column A, enter the planned initializations (OPM008 MTCE printout-INI).
- (b) In column C, enter the unplanned initializations.

#### System Loads

**7.17** This indicator measures the ability of the maintenance programs to continually check the ability of the system to process calls. For this measurement plan, all planned system loads are loads required by office growth jobs and generic retrofits or updates, limited to those specified in a Method of Procedure (MOP) document or Bulk Change Supplements (BCS). Planned system loads do not include action of last resort (i.e., system load to return to old generic). All other system loads, whether induced manually or automatically by the processor, are considered to be unplanned.

**7.18** At the end of the measurement period:

- (a) Enter the total month's planned system loads in column A.
- (b) Enter the total month's unplanned system loads in column C.

#### C. Customer Reports

##### Customer Trouble Reports, Code 8 Found OK

**7.19** This component includes all customer trouble reports that result in disposition Code 8. Disposition Code 8 is defined in Practice 660-169-013.

**7.20** Code 8 reports are obtained from the Trouble Report Evaluation and Analysis Tool No. 2 (TREAT 02). Code 8 network customer services subcodes 080X and 089X are subtracted. The 080X and 089X subcodes apply when reports result from inaccurate or incomplete data base information from the data base driven services.

**7.21** The monthly results are computed as follows:

- (a) In column A, enter the total month's Code 8 Found OK.
- (b) In column B, enter the total working lines as of the first day of the report month divided by 100. Working lines are the total working line terminations (cable pairs) outside the central office (e.g., working lines in the computer system for main frame operations [COSMOS] or F1 facility in the Loop Maintenance Operations System [LMOS]). Average working lines must be used if a change of more than 500 working lines occur during the report month.
- (c) Divide column A by column B. Enter the result in column C.

#### 8. DESCRIPTION OF MEASURED COMPONENTS

**8.01** This section describes the measured components. Included are brief descriptions of the components, the source of data, and the applicable time period for which data are gathered and summarized.

##### A. Machine Access

##### Dial Tone Speed

**8.02** Dial tone speed is a measurement of the machine's ability to provide dial tone within 3 seconds during the dial tone speed busy hour. It

is used as the primary measurement for evaluating the capability of providing originating customer service. The DMS-10 switching system measures the speed of dial tone on all originations from either dial pulse (DP) or DIGITONE\* service customers.

**8.03** The procedures for determining the busy hour to be measured and for gathering and summarizing the data are contained in Practices 780-200-031 and 780-350-060, respectively.

- (a) In column F, enter the month's average accumulated percentage of delay (item 21) from Form E-4372. This item is provided for information only and is not used in developing the component index.
- (b) In column H, enter the month's total adjusted index points earned (item 27) from Form E-4372.

## B. Machine Switching

### Transmitter Time-outs

**8.04** A transmitter time-out occurs when a pulse-transmitting circuit fails for any reason to complete its function.

**8.05** A count of time-outs is obtained from output messages TRKXXX. The following messages represent a time-out: TRK018, TRK031, TRK096, TRK097, TRK098, and TRK099. Outgoing and tandem calls are obtained from OPM001 TRAF-OROG and INOG PEG.

**8.06** The monthly results are computed as follows:

- (a) Accumulate the output messages listed in paragraph 7.25 in the No. 2 SCCS file using the messages RC:SCHED and FILTER. These messages are described in the IM.
- (b) In column F, enter the number of time-outs obtained from the messages accumulated.
- (c) In column G, enter the total month's office outgoing and outgoing tandem call attempts in terms of 10,000.
- (d) Divide column F by column G. Enter the result in column H.

- (e) Transmitter time-outs on Direct Inward Dialing (DID) trunk groups terminating on Customer Premises Equipment (CPE) may be deducted. The corresponding base count must be reduced accordingly. These deductions are recorded on Form EO-1567 (see Figure 4 for an example EO-1567 form).

### Receiver Time-outs

**8.07** A receiver time-out occurs whenever a pulse-receiving circuit cannot complete its function for any reason. Trunk diagnostic results from call processing requests for maintenance plus total receiver seizures are used for this component. This failure can be caused by the receiving office, the sending office, or the interconnecting facility.

**8.08** A count of time-outs is obtained from output messages TRKXXX. The MF receiver seizures are obtained from the OPM003 ISVC printout (MFRC line). The following messages represent a time-out: TRK020 and TRK022.

**8.09** The monthly results are computed as follows:

- (a) Accumulate the output messages listed in paragraph 7.28 in the No. 2 SCCS file using the messages RC:SCHED and FILTER. These messages are described in the IM.
- (b) In column F, enter the number of time-outs obtained from the output messages accumulated.
- (c) In column G, enter the MFRC count in terms of 10,000.
- (d) Divide column F by column G. Enter the result in column H.

### Network Faults

**8.10** This component measures the availability of major units of network equipment. If major units of equipment are disabled or removed from service, call completion is jeopardized.

**8.11** The OPM008 MTCE indicates the units of equipment grouped under Network (NTWK). For purposes of this component, the units included are:

- Network Signaling Pack (NSPK)
- Network Loop (NLP)
- Intergroup Switch Packs (IGS).

**8.12** The monthly results are computed as follows:

- Sum all the faults for the equipment units listed in paragraph 7.31 (use OPM008 PEG). Enter the result in column F.
- Sum the O+I peg count for the month. Enter the result in terms of 10,000 in column G. The O+I peg count is obtained from OPM002 OSVC (TOTC) and OPM003 ISVC (TOTC).
- Divide column F by column G. Enter the result in column H.

#### Peripheral Faults

**8.13** This component measures the availability of peripheral units of network equipment.

**8.14** The OPM008 MTCE indicates the units of equipment grouped under Peripheral (PEQP). For purposes of this component, the units included are:

- Peripheral Shelf (PSHF)
- Digital Carrier Module (DCM).

**8.15** The monthly results are computed as follows:

- Sum all the faults for the equipment units listed in paragraph 7.34 (use OPM008 PEG). Enter the result in column F.
- Sum the O+I peg count for the month. Enter the result in terms of 10,000 in column G. The O+I peg count is obtained from OPM002 OSVC (TOTC) and OPM003 ISVC (TOTC).
- Divide column F by column G. Enter the result in column H.

#### Equipment Blockage

**8.16** This component measures the availability of service circuits, network paths, and outgoing trunks. No service circuits indicate that there are either no transmitters available on an outgoing call or no ringing circuits available on an incoming or intraoffice (IAO) call. No path indicates that there are no network paths (i.e., time slots) to complete incoming, outgoing, tandem, or IAO calls. No trunk indicates that there is no trunk available on a tandem or outgoing call.

*Note:* If the control group is equipped with Common Control Switching Arrangement (CCSA) trunk groups or equivalent (i.e., trunk group size is dictated by customer purchase of trunks) or choke network (mass calling/media stimulated) trunk groups, the overflows on these trunk groups are deducted from the total office overflow scorings and total originating peg count before computing the office overflow component.

**8.17** The monthly results are computed as follows:

- In column F, enter the total month's office busy hour equipment blockage excluding deductions authorized by Form EO-6429. The equipment blockage is obtained from OPM001 TRAF (BLK) for ORTM, OROG, INTM, and INOG.
- In column G, enter the total month's office busy hour originating plus incoming call peg counts. Office busy hour O+I is obtained

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from OPM002 OSVC (TOTC) and OPM003 ISVC (TOTC).

- (c) Divide column F by column G. Enter the result, expressed as a percentage, in column H.

**C. Billing**

**Lost Billing**

**8.18** This component measures the ability of the machine to properly record automatic message accounting (AMA) information on AMA magnetic tape. The AMA errors include billing equipment outages, billing equipment failures, and canceled and partial charges. Further definitions of these failures are provided in Practice 201-900-700, Pre-Billing Failure Performance Reporting. Total AMA errors and entries are supplied by the AMA data processing group.

*Note:* This component should be reported as EMPTY until such time that a measured component index table is developed based on data collected in the Billing Service Measurement Plan.

- 8.19** The monthly results are computed as follows:
  - (a) Enter the total month's AMA errors in column F.
  - (b) Enter the total month's AMA entries in terms of 100,000 in column G.
  - (c) Divide the total failures in column F by column G. Enter the performance ratio in column H.

**D. Customer Reports**

**Customer Trouble Reports, Code 5 Equipment**

**8.20** This component includes all customer trouble reports that result in disposition code 5, excluding distributing frame and line translation troubles. Disposition code 5 is defined in Practice 660-169-013.

**8.21** Code 5 reports are obtained from the TREAT 02 report. Code 5 distributing frame troubles, line translation reports (0525 and 0526), and network customer service subcodes 050X and

059X are subtracted. The 050X and 059X subcodes apply when reports result from inaccurate or incomplete data base information for data base driven services.

**8.22** The monthly results are computed as follows:

- (a) In column F, enter the total month's equipment code 5's.
- (b) In column G, enter the total working lines as of the first day of the report month, divided by 100. Working lines are the total working line terminations (cable pairs) outside the central office (e.g., working lines in COSMOS or F1 facility in LMOS). Average working lines must be used if a change of more than 500 working lines occurs during the report month.
- (c) Divide column F by column G. Enter the result in column H.

**9. PREPARATION OF FORM EO-1714**

**9.01** This plan includes results data prepared by both administrative and maintenance personnel. Therefore, it is recommended that:

- (a) Form EO-1714 be prepared jointly
- (b) All developed input data be retained in one location as described in Section 6.

**9.02** All decimal figures recorded in the performance columns of Form EO-1714 are rounded to two places after the decimal point. Round upward if the third digit is five or greater; round down if the third digit is less than five (e.g., 0.005 = 0.01, 0.096 = 0.10, 0.094 = 0.09, 0.003 = 0.00, etc).

**9.03** The following subparagraphs define the column headings for the performance indicators section of Form EO-1714 (Figure 1).

- (a) **Column A - Failures:**

Entries in this column include register scorings of the number of times an event or failure occurred within the defined time frame during the report period, the number of reports, or the amount of outage

experienced during the period. The notation NAV (not available) or EMPTY is entered, when applicable, according to the instructions in Section 6.

(b) **Column B - Base Data:**

The entries in this column include the data that are used as the divisor to determine performance ratios or percentages. Certain entries will be in terms of 100,000 or 10,000 or 100 (rounded to two places after the decimal). The notation NAV or EMPTY is entered, when applicable, according to the instructions in Section 6.

(c) **Column C - Performance:**

Entries in this column are the ratios or percentages developed by dividing data base entries in column B (rounded to two places after the decimal). The notation NAV or EMPTY is entered, when applicable, according to the instructions in Section 6.

(d) **Column D - Threshold:**

Entries in this column are obtained from the list of threshold levels included in Section 10.

(e) **Column E - Soft Spot:**

The numeral one is entered in this column when the indicator performance is worse than the threshold level or the data are NAV for the report period.

**9.04** The following subparagraphs define the column headings for the measured components section of Form EO-1714 (Figure 1).

(a) **Column F - Failures:**

Entries in this section include register scorings of the number of times an event or failure occurred within the defined time frame during the report period, the number of observed failures, or the number of reports. The notation NAV or EMPTY is entered, when applicable, according to the instructions in Section 6.

(b) **Column G - Base Data:**

The entries in this column include the data that are used as the divisor to determine performance ratios or percentages. Certain entries will be in terms of 100,000 or 10,000 or 100 (rounded to two places after the decimal). The notation NAV or EMPTY is entered, when applicable, according to the instructions in Section 6.

(c) **Column H - Performance:**

Entries in this column are the ratios or percentages developed by dividing data base entries in column G (rounded to two places after the decimal). The notation NAV or EMPTY is entered, when applicable, according to the instructions in Section 6.

(d) **Column J - Component Index:**

Entries in this column are obtained from the appropriate index table for the measured item in Section 7.

(e) **Column K - Index Points:**

Entries in this column are obtained from the appropriate index table located at the end of this practice.

(f) **Column L - Band:**

Entries in this column will be the appropriate band (H, O, L, or U) for each component index.

BAND	INDEX LEVEL
H	98.50 - 100.00
O	95.50 - 98.49
L	89.50 - 95.49
U	Below 89.50 or NAV

**9.05** All lines on Form EO-1714 (Figure 1) are defined in the description of components section or are self-explanatory except the following:

- (a) **Line 9:** In column C, enter the total number of performance indicators applicable to the measured control group, including NAVs.

Enter the total number of soft spots in column E.

- (b) **Line 20-Total Points:** Enter the total points in column K.
- (c) **Line 21-Maximum Available Points:** Enter the total maximum points of all components for which results are measured. Exclude EMPTY and NAV components.
- (d) **Line 22-Total Index:** Divide line 20 by line 21. Enter the result, expressed as a percentage ( $L20 \div L21 \times 100 = L22$ ).

**10. PREPARATION OF FORM EO-1715**

**10.01** The DMS-10 switching system Network Switching Performance Measurement Plan Office Summary Report (Form EO-1715) provides all management levels with a specific report to identify the number and percentage of office performing in the satisfactory H and O bands, in the less than satisfactory L band, and in the unsatisfactory U band. It also provides the number and percentage of offices exceeding the threshold for each performance indicator. For companies on OTC-CRS, all EO-1715 reports are prepared by CRS.

**10.02** All data recorded on Form EO-1715 (except percentage calculations) are taken directly from the represented Form EO-1714 reports. Percentage entries are rounded to one decimal.

**10.03** The form serves three purposes. Figure 2 is provided as an example of a multioffice, single month Form EO-1715.

- (a) Multioffice, single month
- (b) Multimonth, single office
- (c) Multioffice, multimonth

**10.04** The following subparagraphs define the column headings of Form EO-1715 (Figure 2) and provide the source data locations on Form EO-1714:

- (a) **Column A:** Enter the number of control groups reporting results in each component.
- (b) **Column B:** Enter the number of office report months.

- (c) **Columns C through F:** Enter the number and percentage of control groups in the appropriate band column for each component.
- (d) **Columns G through N:** Enter the number of office months and soft spots, one for each component from column E on Form EO-1714.

**11. THRESHOLDS AND INDEX TABLES**

**11.01** This section contains a list of threshold levels for the performance indicators. Tables A through H contain the measured component index tables used to complete the monthly Form EO-1714.

**PERFORMANCE INDICATORS**

**MACHINE ACCESS            THRESHOLD**

Number of Days  
 DGTR OFL  
 5 Percent or Greater            1.00

Receiver Overflow            0.10

**MACHINE SWITCHING      THRESHOLD**

Trunk Outage            95.00

Trunk            Select  
 Failures            25.00

Equipment    Outage-  
 CNTL            1.00

Initializations-  
 Unplanned            0.00

System            Loads-  
 Unplanned            0.00

**CUSTOMER REPORTS      THRESHOLD**

Code 8 Found OK            0.10

## 12. INTEGRITY REVIEW

**12.01** The integrity review contained in this section provides general guidelines for assuring the validity of results submitted under the DMS-10 switching system NSPMP.

**12.02** Figures 5 through 7 may be used independently or in any combination based on the type of review planned.

**12.03** In order to provide accurate end results, the data used must be tested from its source through all phases of processing.

**12.04** The DMS-10 switching system integrity review is designed so that it can be used effectively to review all or part of the SCC. It can also be used by local office supervision to identify trouble. However, the use of the review should not be limited to central office review functions.

**12.05** The integrity review should not be regarded as a personnel evaluation plan. Proper application will assist management in identifying engineering, administration, and maintenance problems that distort the accuracy of the DMS-10 switching system.

**12.06** A thorough integrity review should be used if machine performance does not correlate with data reported machine performance on the NSPMP or if the machine performance does not reflect the data produced by software.

**12.07** The DMS-10 switching system operational measurements are the primary source of data used for the NSPMP. If the daily collection is nonmechanized, locate the appropriate forms for logging hourly, daily, and/or monthly information.

**12.08** Other inputs are provided by the data processing group (comptrollers) and the equipment outage log. All source data for the NSPMP must cover the same time frame (from the 23rd of the month to the 22nd of the following month).

**12.09** A method of assuring that data is properly collected is described in paragraphs 11.10 through 11.12 and illustrated in Figure 5.

**12.10** The following manual data collection must be performed:

- (a) Check the data for transcription errors from the teletypewriter output to the logs. The No. 2 SCCS minicomputer should be used whenever possible.
- (b) Compare data from the daily totals with the monthly totals.
- (c) Look for trends in the data or for any sudden changes.
- (d) Randomly select several days data and compare all hourly totals with the daily total. Ensure that the hourly totals are the corresponding hours that make up the daily total. These messages may be filtered and expanded by using the No. 2 SCCS minicomputer. If the SCC tapes are not available, use the history teletypewriter paper at the office. Was there a change in data with a new office data run, generic, or broadcasting warning message?

**12.11** If EADAS is the data collection tool, verify that all data used is correct. Check this with the local network switching administrator. Look for transcription errors from the EADAS printout to Form EO-1714 or any intermediate forms.

**12.12** If the No. 2 SCCS minicomputer is used to collect and/or calculate totals from plant data, verify that the computer is adding the right registers. Perform a manual addition of one month's data for randomly selected items. Compare for accuracy.

**12.13** Figure 6 provides a guideline to determine the accuracy of Form EO-1714. This guideline assumes that all source data is transcribed to Form EO-1714 correctly and that the computations are correct.

**12.14** Obtain copies of Form EO-1714, Office Report, from the staff if the form is prepared manually, or from OTC-CRS for at least the 3 prior months.

**12.15** Verify all EMPTY entries on Form EO-1714 to validate that the office is not equipped for the measurement, due to either an equipment or generic program. Documentation should be maintained to substantiate any EMPTY entries.

**12.16** If any lines are NAV (not available), there should be documentation available to validate the reason measured failures and/or base data is not available. The NAV is considered softspot or Band U performance and should be indicated.

**12.17** The reviewer should access CRS prior to the office visit and request data for the previous 3 months for all performance indicators and measured components. Various programs are available in the CRS3 library file on how to use instructions.

**12.18** If errors are found while checking records from OTC-CRS, correct the data base.

**12.19** Check Form EO-1715 is not required if using OTC-CRS. All data is taken from Form EO-1714.

**12.20** Figure 7 provides guidelines for checking results reporting and record retention for Form EO-1715.

**12.21** The DMS-10 switching system NSPMP Summary Report (Form EO-1715) provides all management with a specific report to identify the number and percentage of offices performing in the H, O, L, and U bands. It also provides the number and percentage of offices exceeding the threshold for each performance indicator. For companies on OTC-CRS, all Form EO-1715 reports are prepared by CRS. Check that all offices reporting results are using Form EO-1715. All data recorded on Form EO-1715 (except percentage calculations) are taken directly from the represented Form EO-1714 reports. Percentage entries should be rounded to one decimal. The form serves three purposes:

- Multioffice, single month
- Multimonth, single office
- Multioffice, multimonth.

**12.22** It is imperative that all personnel involved with any discrepancies in preparing the NSPMP be thoroughly instructed to prevent any further errors.

**12.23** Daily printouts of data used for computation of the results reported on

Forms EO-1714 and EO-1715 should be kept for the current report month and the previous 3 months. The monthly printouts should be retained for 1 year. Forms EO-1714 and EO-1715 should be retained for at least 1 year. It is recommended that a retention system similar to that described in Practice 190-130-010, SPCS/SCC Control Maintenance Plan, be used. The printouts and reports should be filed in the appropriate month's folder and retained until the results report for the same month of the following year replaces them.









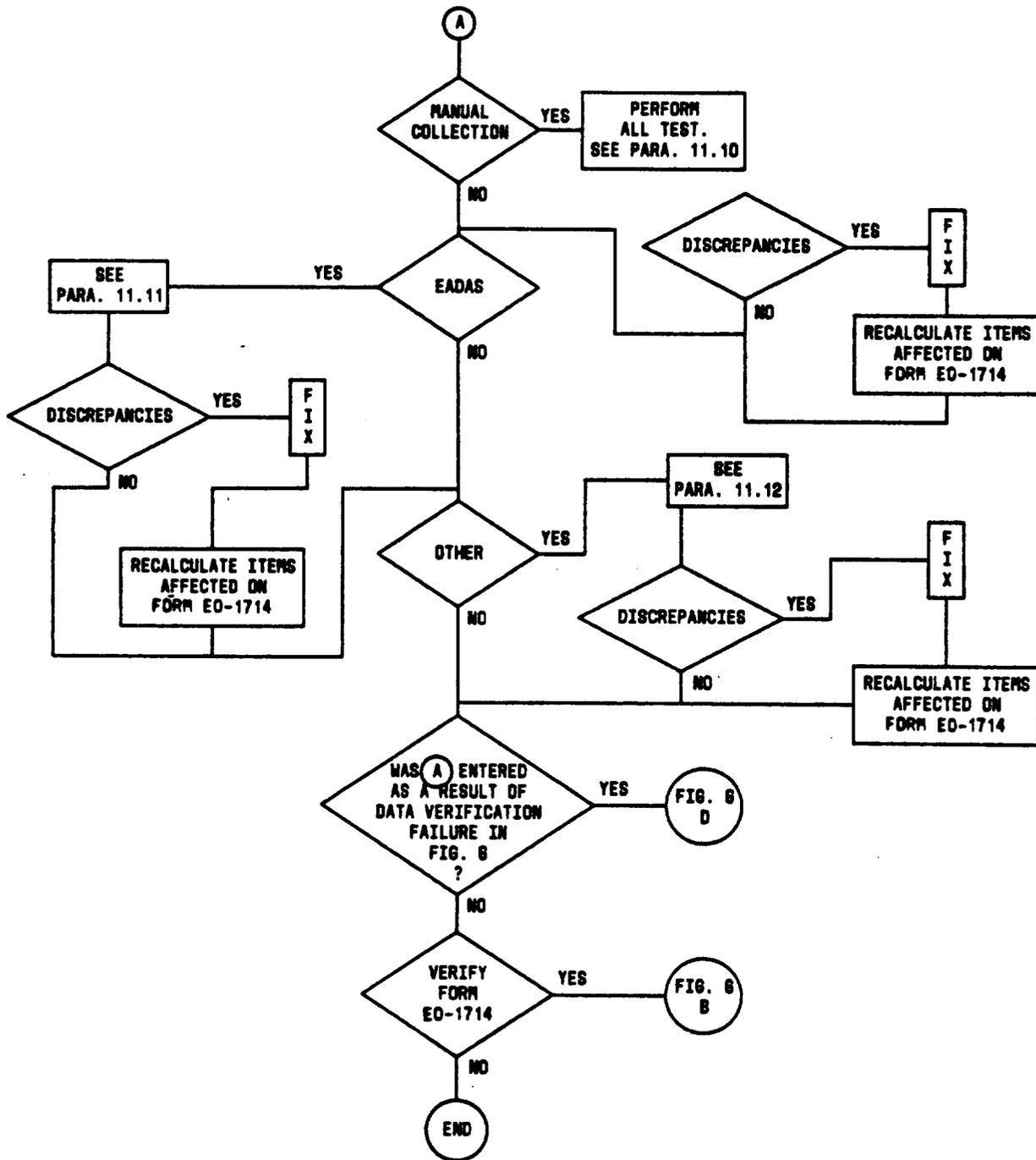


Figure 5 - Data Collection Flowchart (11.02, 11.09)

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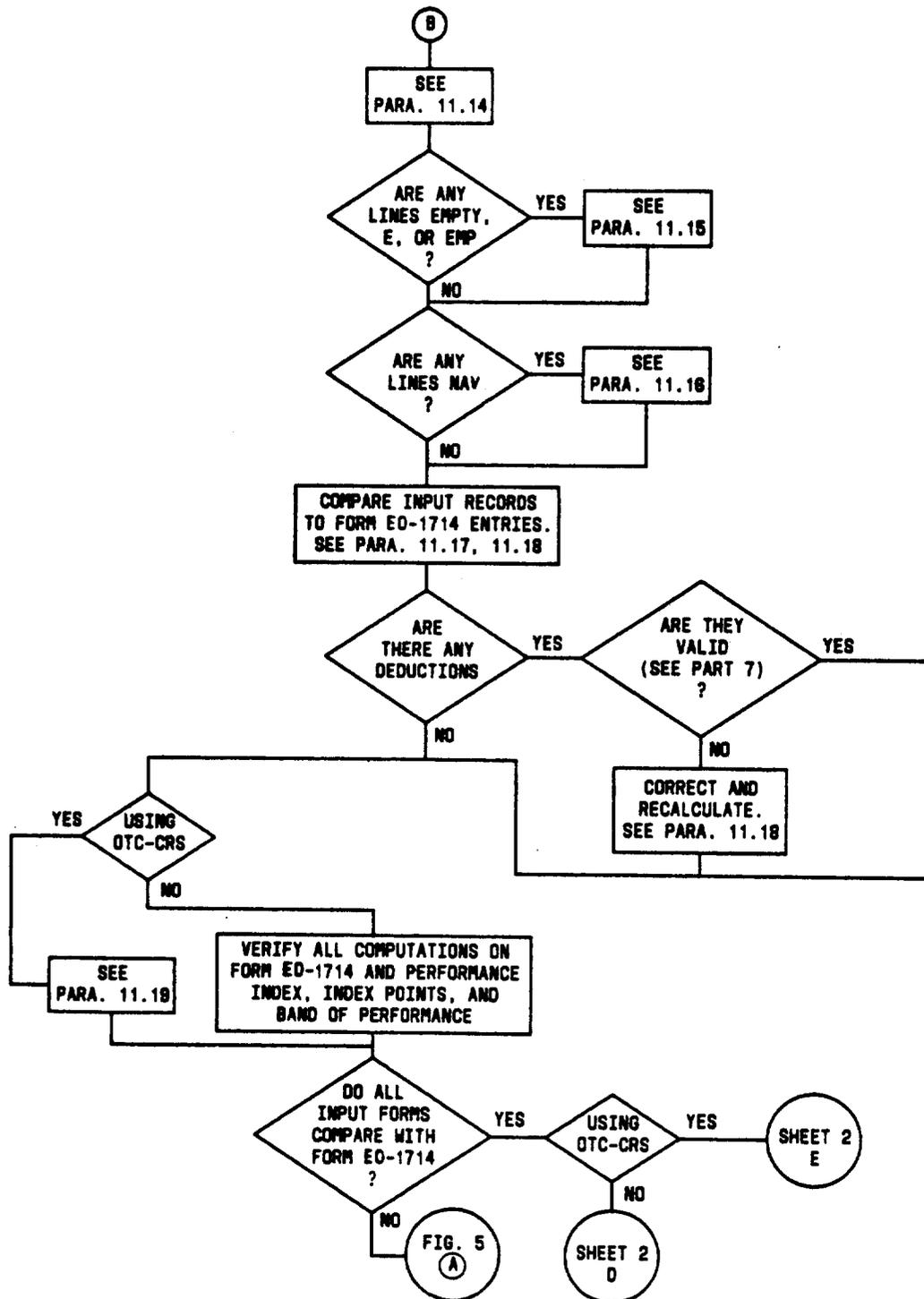


Figure 6 - Form EO-1714 Verification Flowchart (Sheet 1 of 2) (11.02, 11.13)

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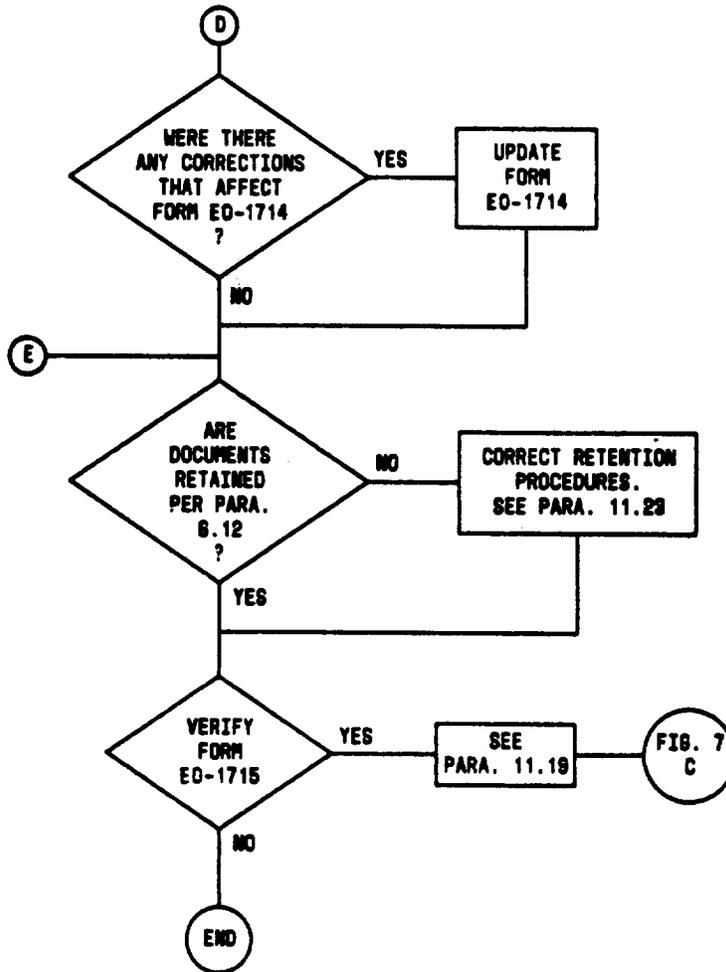


Figure 6 - Form EO-1714 Verification Flowchart (Sheet 2 of 2) (11.02, 11.13)

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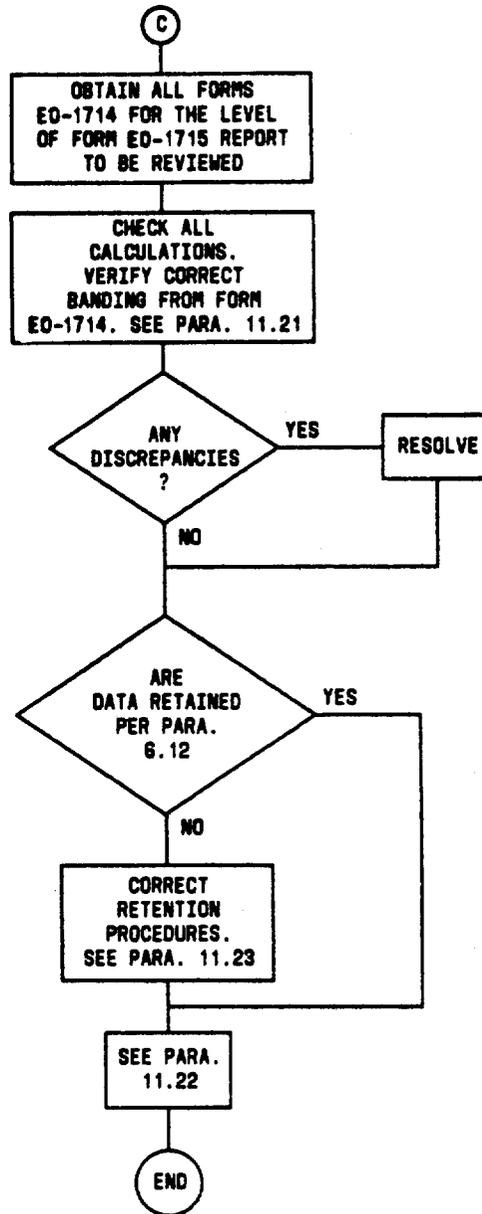


Figure 7 - Form EO-1715 Verification Flowchart (11.02, 11.20)

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TABLE A - Dial Tone Speed Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
35.00 — 34.98	100.00	15.00	29.33 — 29.27	72.00	10.80
34.97 — 34.79	99.50	14.92	29.26 — 29.19	71.00	10.65
34.78 — 34.61	99.00	14.85	29.18 — 29.12	70.00	10.50
34.60 — 34.42	98.50	14.77	29.11 — 29.05	69.00	10.35
34.41 — 34.24	98.00	14.70	29.04 — 29.98	68.00	10.20
34.23 — 34.06	97.50	14.62	29.97 — 28.92	67.00	10.05
34.05 — 33.88	97.00	14.55	28.91 — 28.85	66.00	9.90
33.87 — 33.70	96.50	14.47	28.84 — 28.79	65.00	9.75
33.69 — 33.52	96.00	14.40	28.78 — 28.72	64.00	9.60
33.51 — 33.35	95.50	14.32	28.71 — 28.66	63.00	9.45
33.34 — 33.17	95.00	14.25	28.65 — 28.60	62.00	9.30
33.16 — 32.99	94.50	14.17	28.59 — 28.54	61.00	9.15
32.98 — 32.82	94.00	14.10	28.53 — 28.48	60.00	9.00
32.81 — 32.65	93.50	14.02	28.47 — 28.42	59.00	8.85
32.64 — 32.47	93.00	13.95	28.41 — 28.37	58.00	8.70
32.46 — 32.30	92.50	13.87	28.36 — 28.31	57.00	8.55
32.29 — 32.13	92.00	13.80	28.30 — 28.26	56.00	8.40
32.12 — 31.96	91.50	13.72	28.25 — 28.20	55.00	8.25
31.95 — 31.79	91.00	13.65	28.19 — 28.15	54.00	8.10
31.78 — 31.63	90.50	13.57	28.14 — 28.10	53.00	7.95
31.62 — 31.46	90.00	13.50	28.09 — 28.04	52.00	7.80
31.45 — 31.31	89.50	13.42	28.03 — 27.99	51.00	7.65
31.30 — 31.19	89.00	13.35	27.98 — 27.94	50.00	7.50
31.18 — 31.08	88.50	13.27	27.93 — 27.84	48.00	7.20
31.07 — 30.98	88.00	13.20	27.83 — 27.73	46.00	6.90
30.97 — 30.89	87.50	13.12	27.72 — 27.62	44.00	6.60
30.88 — 30.80	87.00	13.05	27.61 — 27.51	42.00	6.30
30.79 — 30.72	86.50	12.97	27.50 — 27.40	40.00	6.00
30.71 — 30.65	86.00	12.90	27.39 — 27.28	38.00	5.70
30.64 — 30.58	85.50	12.82	27.27 — 27.16	36.00	5.40
30.57 — 30.51	85.00	12.75	27.15 — 27.03	34.00	5.10
30.50 — 30.44	84.50	12.67	27.02 — 26.90	32.00	4.80
30.43 — 30.38	84.00	12.60	26.89 — 26.76	30.00	4.50
30.37 — 30.32	83.50	12.52	26.75 — 26.61	28.00	4.20
30.31 — 30.26	83.00	12.45	26.60 — 26.46	26.00	3.90
30.25 — 30.21	82.50	12.37	26.45 — 26.30	24.00	3.60
30.20 — 30.15	82.00	12.30	26.29 — 26.12	22.00	3.30
30.14 — 30.10	81.50	12.22	26.11 — 25.93	20.00	3.00
30.09 — 30.05	81.00	12.15	25.92 — 25.73	18.00	2.70
30.04 — 29.99	80.50	12.07	25.72 — 25.50	16.00	2.40
29.98 — 29.95	80.00	12.00	25.49 — 25.23	14.00	2.10
29.94 — 29.85	79.00	11.85	25.22 — 24.90	12.00	1.80
29.84 — 29.76	78.00	11.70	24.89 — 24.42	10.00	1.50
29.75 — 29.67	77.00	11.55	24.41 — 23.75	8.00	1.20
29.66 — 29.58	76.00	11.40	23.74 — 23.06	6.00	0.90
29.57 — 29.50	75.00	11.25	23.05 — 22.36	4.00	0.60
29.49 — 29.42	74.00	11.10	22.35 — 21.64	2.00	0.30
29.41 — 29.34	73.00	10.95	21.63 — Below	0.00	0.00

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TABLE B - Transmitter Time-Outs Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.0 — 2.31	100.00	10.00	64.87 — 65.33	73.00	7.30
2.32 — 3.76	99.50	9.95	65.34 — 65.81	72.00	7.20
3.77 — 4.87	99.00	9.90	65.82 — 66.28	71.00	7.10
4.88 — 5.66	98.50	9.85	66.29 — 66.76	70.00	7.00
5.67 — 6.82	98.00	9.80	66.77 — 67.23	69.00	6.90
6.83 — 8.37	97.50	9.75	67.24 — 67.71	68.00	6.80
8.38 — 10.11	97.00	9.70	67.72 — 68.18	67.00	6.70
10.12 — 12.04	96.50	9.65	68.19 — 68.66	66.00	6.60
12.05 — 14.78	96.00	9.60	68.67 — 69.13	65.00	6.50
14.79 — 18.31	95.50	9.55	69.14 — 69.61	64.00	6.40
18.32 — 21.93	95.00	9.50	69.62 — 70.08	63.00	6.30
21.94 — 25.62	94.50	9.45	70.09 — 70.56	62.00	6.20
25.63 — 30.73	94.00	9.40	70.57 — 71.03	61.00	6.10
30.74 — 37.24	93.50	9.35	71.04 — 71.51	60.00	6.00
37.25 — 42.83	93.00	9.30	71.52 — 71.98	59.00	5.90
42.84 — 47.49	92.50	9.25	71.99 — 72.46	58.00	5.80
47.50 — 51.21	92.00	9.20	72.47 — 72.93	57.00	5.70
51.22 — 54.00	91.50	9.15	72.94 — 73.41	56.00	5.60
54.01 — 55.86	91.00	9.10	73.42 — 73.88	55.00	5.50
55.87 — 56.79	90.50	9.05	73.89 — 74.36	54.00	5.40
56.80 — 57.26	90.00	9.00	74.37 — 74.83	53.00	5.30
57.27 — 57.50	89.50	8.95	74.84 — 75.31	52.00	5.20
57.51 — 57.73	89.00	8.90	75.32 — 75.78	51.00	5.10
57.74 — 57.97	88.50	8.85	75.79 — 76.26	50.00	5.00
57.98 — 58.21	88.00	8.80	76.27 — 77.21	48.00	4.80
58.22 — 58.45	87.50	8.75	77.22 — 78.16	46.00	4.60
58.46 — 58.68	87.00	8.70	78.17 — 79.10	44.00	4.40
58.69 — 58.92	86.50	8.65	79.11 — 80.05	42.00	4.20
58.93 — 59.16	86.00	8.60	80.06 — 81.00	40.00	4.00
59.17 — 59.40	85.50	8.55	81.01 — 81.95	38.00	3.80
59.41 — 59.63	85.00	8.50	81.96 — 82.90	36.00	3.60
59.64 — 59.87	84.50	8.45	82.91 — 83.85	34.00	3.40
59.88 — 60.11	84.00	8.40	83.86 — 84.80	32.00	3.20
60.12 — 60.35	83.50	8.35	84.81 — 85.75	30.00	3.00
60.36 — 60.58	83.00	8.30	85.76 — 86.70	28.00	2.80
60.59 — 60.82	82.50	8.25	86.71 — 87.65	26.00	2.60
60.83 — 61.06	82.00	8.20	87.66 — 88.60	24.00	2.40
61.07 — 61.30	81.50	8.15	88.61 — 89.55	22.00	2.20
61.31 — 61.53	81.00	8.10	89.56 — 90.50	20.00	2.00
61.54 — 61.77	80.50	8.05	90.51 — 91.45	18.00	1.80
61.78 — 62.01	80.00	8.00	91.46 — 92.40	16.00	1.60
62.02 — 62.48	79.00	7.90	92.41 — 93.35	14.00	1.40
62.49 — 62.96	78.00	7.80	93.36 — 94.30	12.00	1.20
62.97 — 63.43	77.00	7.70	94.31 — 95.25	10.00	1.00
63.44 — 63.91	76.00	7.60	95.26 — 96.20	8.00	0.80
63.92 — 64.38	75.00	7.50	96.21 — 97.15	6.00	0.60
64.39 — 64.86	74.00	7.40	97.16 — 98.10	4.00	0.40
			98.11 — 99.05	2.00	0.20
			99.06 — 99.53	0.00	0.00

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TABLE C - Receiver Time-Outs Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.00 — 0.69	100.00	10.00	38.05 — 38.54	72.00	7.20
0.70 — 2.03	99.50	9.95	38.55 — 39.04	71.00	7.10
2.04 — 3.34	99.00	9.90	39.05 — 39.52	70.00	7.00
3.35 — 4.63	98.50	9.85	39.53 — 39.99	69.00	6.90
4.64 — 5.90	98.00	9.80	40.00 — 40.45	68.00	6.80
5.91 — 7.16	97.50	9.75	40.46 — 40.89	67.00	6.70
7.17 — 8.39	97.00	9.70	40.90 — 41.33	66.00	6.60
8.40 — 9.61	96.50	9.65	41.34 — 41.77	65.00	6.50
9.62 — 10.80	96.00	9.60	41.78 — 42.19	64.00	6.40
10.81 — 11.99	95.50	9.55	42.20 — 42.60	63.00	6.30
12.00 — 13.15	95.00	9.50	42.61 — 43.01	62.00	6.20
13.16 — 14.30	94.50	9.45	43.02 — 43.41	61.00	6.10
14.31 — 15.44	94.00	9.40	43.42 — 43.81	60.00	6.00
15.45 — 16.56	93.50	9.35	43.82 — 44.20	59.00	5.90
16.57 — 17.67	93.00	9.30	44.21 — 44.58	58.00	5.80
17.68 — 18.77	92.50	9.25	44.59 — 44.96	57.00	5.70
18.78 — 19.85	92.00	9.20	44.97 — 45.33	56.00	5.60
19.86 — 20.92	91.50	9.15	45.34 — 45.69	55.00	5.50
20.93 — 21.98	91.00	9.10	45.70 — 46.05	54.00	5.40
21.99 — 23.03	90.50	9.05	46.06 — 46.41	53.00	5.30
23.04 — 24.07	90.00	9.00	46.42 — 46.76	52.00	5.20
24.08 — 25.01	89.50	8.95	46.77 — 47.11	51.00	5.10
25.02 — 25.81	89.00	8.90	47.12 — 47.45	50.00	5.00
25.82 — 26.52	88.50	8.85	47.46 — 48.14	48.00	4.80
26.53 — 27.16	88.00	8.80	48.15 — 48.85	46.00	4.60
27.17 — 27.76	87.50	8.75	48.86 — 49.57	44.00	4.40
27.77 — 28.31	87.00	8.70	49.58 — 50.32	42.00	4.20
28.32 — 28.84	86.50	8.65	50.33 — 51.09	40.00	4.00
28.85 — 29.33	86.00	8.60	51.10 — 51.89	38.00	3.80
29.34 — 29.80	85.50	8.55	51.90 — 52.71	36.00	3.60
29.81 — 30.25	85.00	8.50	52.72 — 53.57	34.00	3.40
30.26 — 30.68	84.50	8.45	53.58 — 54.45	32.00	3.20
30.69 — 31.10	84.00	8.40	54.46 — 55.38	30.00	3.00
31.11 — 31.50	83.50	8.35	55.39 — 56.36	28.00	2.80
31.51 — 31.89	83.00	8.30	56.37 — 57.38	26.00	2.60
31.90 — 32.27	82.50	8.25	57.39 — 58.47	24.00	2.40
32.28 — 32.64	82.00	8.20	58.48 — 59.63	22.00	2.20
32.65 — 32.99	81.50	8.15	59.64 — 60.89	20.00	2.00
33.00 — 33.34	81.00	8.10	60.90 — 62.26	18.00	1.80
33.35 — 33.68	80.50	8.05	62.27 — 63.80	16.00	1.60
33.69 — 34.01	80.00	8.00	63.81 — 65.57	14.00	1.40
34.02 — 34.65	79.00	7.90	65.58 — 67.74	12.00	1.20
34.66 — 35.27	78.00	7.80	67.75 — 70.83	10.00	1.00
35.28 — 35.86	77.00	7.70	70.84 — 75.05	8.00	0.80
35.87 — 36.43	76.00	7.60	75.06 — 79.46	6.00	0.60
36.44 — 36.98	75.00	7.50	79.47 — 84.10	4.00	0.40
36.99 — 37.52	74.00	7.40	84.11 — 89.00	2.00	0.20
37.53 — 38.04	73.00	7.30	Above 89.00	0.00	0.00

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY

See proprietary restrictions on title page.

TABLE D - Network Faults Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.00 — 0.70	100.00	10.00	44.08 — 44.71	72.00	7.20
0.71 — 4.30	99.50	9.95	44.72 — 45.33	71.00	7.10
4.31 — 6.86	99.00	9.90	45.34 — 45.94	70.00	7.00
6.87 — 8.96	98.50	9.85	45.95 — 46.53	69.00	6.90
8.97 — 10.78	98.00	9.80	46.54 — 47.11	68.00	6.80
10.79 — 12.41	97.50	9.75	47.12 — 47.69	67.00	6.70
12.42 — 13.90	97.00	9.70	47.70 — 48.25	66.00	6.60
13.91 — 15.28	96.50	9.65	48.26 — 48.80	65.00	6.50
15.29 — 16.58	96.00	9.60	48.81 — 49.34	64.00	6.40
16.59 — 17.80	95.50	9.55	49.35 — 49.87	63.00	6.30
17.81 — 18.96	95.00	9.50	49.88 — 50.39	62.00	6.20
18.97 — 20.06	94.50	9.45	50.40 — 50.90	61.00	6.10
20.07 — 21.12	94.00	9.40	50.91 — 51.41	60.00	6.00
21.13 — 22.14	93.50	9.35	51.42 — 51.91	59.00	5.90
22.15 — 23.12	93.00	9.30	51.92 — 52.40	58.00	5.80
23.13 — 24.06	92.50	9.25	52.41 — 52.88	57.00	5.70
24.07 — 24.98	92.00	9.20	52.89 — 53.36	56.00	5.60
24.99 — 25.87	91.50	9.15	53.37 — 53.83	55.00	5.50
25.88 — 26.74	91.00	9.10	53.84 — 54.30	54.00	5.40
26.75 — 27.58	90.50	9.05	54.31 — 54.76	53.00	5.30
27.59 — 28.40	90.00	9.00	54.77 — 55.21	52.00	5.20
28.41 — 29.18	89.50	8.95	55.22 — 55.66	51.00	5.10
29.19 — 29.92	89.00	8.90	55.67 — 56.10	50.00	5.00
29.93 — 30.60	88.50	8.85	56.11 — 56.99	48.00	4.80
30.61 — 31.25	88.00	8.80	57.00 — 57.90	46.00	4.60
31.26 — 31.87	87.50	8.75	57.91 — 58.84	44.00	4.40
31.88 — 32.47	87.00	8.70	58.85 — 59.80	42.00	4.20
32.48 — 33.04	86.50	8.65	59.81 — 60.79	40.00	4.00
33.05 — 33.59	86.00	8.60	60.80 — 61.81	38.00	3.80
33.60 — 34.12	85.50	8.55	61.82 — 62.87	36.00	3.60
34.13 — 34.63	85.00	8.50	62.88 — 63.96	34.00	3.40
34.64 — 35.13	84.50	8.45	63.97 — 65.09	32.00	3.20
35.14 — 35.61	84.00	8.40	65.10 — 66.26	30.00	3.00
35.62 — 36.08	83.50	8.35	66.27 — 67.49	28.00	2.80
36.09 — 36.54	83.00	8.30	67.50 — 68.78	26.00	2.60
36.55 — 36.99	82.50	8.25	68.79 — 70.14	24.00	2.40
37.00 — 37.43	82.00	8.20	70.15 — 71.58	22.00	2.20
37.44 — 37.86	81.50	8.15	71.59 — 73.11	20.00	2.00
37.87 — 38.27	81.00	8.10	73.12 — 74.77	18.00	1.80
38.28 — 38.68	80.50	8.05	74.78 — 76.59	16.00	1.60
38.69 — 39.09	80.00	8.00	76.60 — 78.62	14.00	1.40
39.10 — 39.87	79.00	7.90	78.63 — 80.95	12.00	1.20
39.88 — 40.62	78.00	7.80	80.96 — 83.80	10.00	1.00
40.63 — 41.35	77.00	7.70	83.81 — 87.22	8.00	0.80
41.36 — 42.06	76.00	7.60	87.23 — 91.08	6.00	0.60
42.07 — 42.75	75.00	7.50	91.09 — 95.62	4.00	0.40
42.76 — 43.42	74.00	7.40	95.63 — 101.42	2.00	0.20
43.43 — 44.07	73.00	7.30	Above 101.43	0.00	0.00

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY

See proprietary restrictions on title page.

TABLE E - Peripheral Faults Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.00 — 0.06	100.00	10.00	11.20 — 11.38	72.00	7.20
0.07 — 0.11	99.50	9.95	11.39 — 11.58	71.00	7.10
0.12 — 0.17	99.00	9.90	11.59 — 11.77	70.00	7.00
0.18 — 0.24	98.50	9.85	11.78 — 11.97	69.00	6.90
0.25 — 0.31	98.00	9.80	11.98 — 12.16	68.00	6.80
0.32 — 0.38	97.50	9.75	12.17 — 12.36	67.00	6.70
0.39 — 0.47	97.00	9.70	12.37 — 12.55	66.00	6.60
0.48 — 0.57	96.50	9.65	12.56 — 12.75	65.00	6.50
0.58 — 0.71	96.00	9.60	12.76 — 12.94	64.00	6.40
0.72 — 0.90	95.50	9.55	12.95 — 13.14	63.00	6.30
0.91 — 1.10	95.00	9.50	13.15 — 13.34	62.00	6.20
1.11 — 1.32	94.50	9.45	13.35 — 13.53	61.00	6.10
1.33 — 2.13	94.00	9.40	13.54 — 13.73	60.00	6.00
2.14 — 3.54	93.50	9.35	13.74 — 13.92	59.00	5.90
3.55 — 4.75	93.00	9.30	13.93 — 14.12	58.00	5.80
4.76 — 5.76	92.50	9.25	14.13 — 14.31	57.00	5.70
5.77 — 6.56	92.00	9.20	14.32 — 14.51	56.00	5.60
6.57 — 7.17	91.50	9.15	14.52 — 14.70	55.00	5.50
7.18 — 7.57	91.00	9.10	14.71 — 14.90	54.00	5.40
7.58 — 7.77	90.50	9.05	14.91 — 15.09	53.00	5.30
7.78 — 7.87	90.00	9.00	15.10 — 15.29	52.00	5.20
7.88 — 7.97	89.50	8.95	15.30 — 15.48	51.00	5.10
7.98 — 8.07	89.00	8.90	15.49 — 15.68	50.00	5.00
8.08 — 8.16	88.50	8.85	15.69 — 16.07	48.00	4.80
8.17 — 8.26	88.00	8.80	16.08 — 16.46	46.00	4.60
8.27 — 8.36	87.50	8.75	16.47 — 16.85	44.00	4.40
8.37 — 8.46	87.00	8.70	16.86 — 17.24	42.00	4.20
8.47 — 8.55	86.50	8.65	17.25 — 17.63	40.00	4.00
8.56 — 8.65	86.00	8.60	17.64 — 18.02	38.00	3.80
8.66 — 8.75	85.50	8.55	18.03 — 18.41	36.00	3.60
8.76 — 8.85	85.00	8.50	18.42 — 18.80	34.00	3.40
8.86 — 8.94	84.50	8.45	18.81 — 19.19	32.00	3.20
8.95 — 9.04	84.00	8.40	19.20 — 19.58	30.00	3.00
9.05 — 9.14	83.50	8.35	19.59 — 19.97	28.00	2.80
9.15 — 9.24	83.00	8.30	19.98 — 20.36	26.00	2.60
9.25 — 9.33	82.50	8.25	20.37 — 20.75	24.00	2.40
9.34 — 9.43	82.00	8.20	20.76 — 21.14	22.00	2.20
9.44 — 9.53	81.50	8.15	21.15 — 21.53	20.00	2.00
9.54 — 9.63	81.00	8.10	21.54 — 21.92	18.00	1.80
9.64 — 9.72	80.50	8.05	21.93 — 22.31	16.00	1.60
9.73 — 9.82	80.00	8.00	22.32 — 22.70	14.00	1.40
9.83 — 10.02	79.00	7.90	22.71 — 23.09	12.00	1.20
10.03 — 10.21	78.00	7.80	23.10 — 23.48	10.00	1.00
10.22 — 10.41	77.00	7.70	23.49 — 23.88	8.00	0.80
10.42 — 10.60	76.00	7.60	23.89 — 24.27	6.00	0.60
10.61 — 10.80	75.00	7.50	24.28 — 24.66	4.00	0.40
10.81 — 10.99	74.00	7.40	24.67 — 25.05	2.00	0.20
11.00 — 11.19	73.00	7.30	25.06 — 25.24	0.00	0.00

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY

See proprietary restrictions on title page.

TABLE F - Equipment Blockage Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.00 — 0.50	100.00	20.00	3.52 — 3.56	72.00	14.40
0.51 — 1.00	99.50	19.90	3.57 — 3.61	71.00	14.20
1.01 — 1.25	99.00	19.80	3.62 — 3.66	70.00	14.00
1.26 — 1.42	98.50	19.70	3.67 — 3.70	69.00	13.80
1.43 — 1.55	98.00	19.60	3.71 — 3.75	68.00	13.60
1.56 — 1.66	97.50	19.50	3.76 — 3.80	67.00	13.40
1.67 — 1.75	97.00	19.40	3.81 — 3.84	66.00	13.20
1.76 — 1.83	96.50	19.30	3.85 — 3.89	65.00	13.00
1.84 — 1.91	96.00	19.20	3.90 — 3.93	64.00	12.80
1.92 — 1.97	95.50	19.10	3.94 — 3.98	63.00	12.60
1.98 — 2.04	95.00	19.00	3.99 — 4.02	62.00	12.40
2.05 — 2.10	94.50	18.90	4.03 — 4.06	61.00	12.20
2.11 — 2.15	94.00	18.80	4.07 — 4.10	60.00	12.00
2.16 — 2.20	93.50	18.70	4.11 — 4.14	59.00	11.80
2.21 — 2.25	93.00	18.60	4.15 — 4.19	58.00	11.60
2.26 — 2.30	92.50	18.50	4.20 — 4.23	57.00	11.40
2.31 — 2.34	92.00	18.40	4.24 — 4.27	56.00	11.20
2.35 — 2.38	91.50	18.30	4.28 — 4.31	55.00	11.00
2.39 — 2.42	91.00	18.20	4.32 — 4.35	54.00	10.80
2.43 — 2.46	90.50	18.10	4.36 — 4.39	53.00	10.60
2.47 — 2.50	90.00	18.00	4.40 — 4.42	52.00	10.40
2.51 — 2.54	89.50	17.90	4.43 — 4.46	51.00	10.20
2.55 — 2.57	89.00	17.80	4.47 — 4.50	50.00	10.00
2.58 — 2.61	88.50	17.70	4.51 — 4.58	48.00	9.60
2.62 — 2.64	88.00	17.60	4.59 — 4.65	46.00	9.20
2.65 — 2.68	87.50	17.50	4.66 — 4.73	44.00	8.80
2.69 — 2.71	87.00	17.40	4.74 — 4.81	42.00	8.40
2.72 — 2.74	86.50	17.30	4.82 — 4.90	40.00	8.00
2.75 — 2.78	86.00	17.20	4.91 — 4.98	38.00	7.60
2.79 — 2.81	85.50	17.10	4.99 — 5.07	36.00	7.20
2.82 — 2.84	85.00	17.00	5.08 — 5.16	34.00	6.80
2.85 — 2.87	84.50	16.90	5.17 — 5.25	32.00	6.40
2.88 — 2.90	84.00	16.80	5.26 — 5.34	30.00	6.00
2.91 — 2.94	83.50	16.70	5.35 — 5.44	28.00	5.60
2.95 — 2.97	83.00	16.60	5.45 — 5.54	26.00	5.20
2.98 — 3.00	82.50	16.50	5.55 — 5.64	24.00	4.80
3.01 — 3.03	82.00	16.40	5.65 — 5.75	22.00	4.40
3.04 — 3.05	81.50	16.30	5.76 — 5.86	20.00	4.00
3.06 — 3.08	81.00	16.20	5.87 — 5.97	18.00	3.60
3.09 — 3.11	80.50	16.10	5.98 — 6.10	16.00	3.20
3.12 — 3.14	80.00	16.00	6.11 — 6.22	14.00	2.80
3.15 — 3.20	79.00	15.80	6.23 — 6.36	12.00	2.40
3.21 — 3.25	78.00	15.60	6.37 — 6.50	10.00	2.00
3.26 — 3.31	77.00	15.40	6.51 — 6.66	8.00	1.60
3.32 — 3.36	76.00	15.20	6.67 — 6.85	6.00	1.20
3.37 — 3.41	75.00	15.00	6.86 — 7.09	4.00	0.80
3.42 — 3.46	74.00	14.80	7.10 — 7.45	2.00	0.40
3.47 — 3.51	73.00	14.50	Above 7.45	0.00	0.00

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY  
 See proprietary restrictions on title page.

TABLE G - Lost Billing Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.0 — 0.0	100.00	10.00	478.96 — 485.45	72.00	7.20
0.01 — 17.47	99.50	9.95	485.46 — 491.79	71.00	7.10
17.48 — 34.59	99.00	9.90	491.80 — 497.97	70.00	7.00
34.60 — 51.39	98.50	9.85	497.98 — 504.01	69.00	6.90
51.40 — 67.88	98.00	9.80	504.02 — 509.91	68.00	6.80
67.89 — 84.08	97.50	9.75	509.92 — 515.69	67.00	6.70
84.09 — 100.00	97.00	9.70	515.70 — 521.35	66.00	6.60
100.01 — 115.66	96.50	9.65	521.36 — 526.90	65.00	6.50
115.67 — 131.07	96.00	9.60	526.90 — 532.34	64.00	6.40
131.08 — 146.24	95.50	9.55	532.35 — 537.68	63.00	6.30
146.25 — 161.19	95.00	9.50	537.69 — 542.93	62.00	6.20
161.20 — 175.91	94.50	9.45	542.94 — 548.09	61.00	6.10
175.92 — 190.43	94.00	9.40	548.10 — 553.16	60.00	6.00
190.44 — 204.75	93.50	9.35	553.17 — 558.16	59.00	5.90
204.76 — 218.88	93.00	9.30	558.17 — 563.07	58.00	5.80
218.89 — 232.82	92.50	9.25	563.08 — 567.92	57.00	5.70
232.83 — 246.59	92.00	9.20	567.93 — 572.69	56.00	5.60
246.60 — 260.18	91.50	9.15	572.70 — 577.39	55.00	5.50
260.19 — 273.61	91.00	9.10	577.40 — 582.03	54.00	5.40
273.62 — 286.88	90.50	9.05	582.04 — 586.61	53.00	5.30
286.89 — 300.00	90.00	9.00	586.62 — 591.13	52.00	5.20
300.01 — 311.82	89.50	8.95	591.14 — 595.59	51.00	5.10
311.89 — 322.06	89.00	8.90	595.60 — 600.00	50.00	5.00
322.07 — 331.13	88.50	8.85	600.01 — 608.87	48.00	4.80
331.14 — 339.37	88.00	8.80	608.88 — 617.97	46.00	4.60
339.38 — 346.98	87.50	8.75	617.98 — 627.31	44.00	4.40
346.99 — 354.09	87.00	8.70	627.32 — 636.93	42.00	4.20
354.10 — 360.78	86.50	8.65	636.94 — 646.84	40.00	4.00
360.79 — 367.13	86.00	8.60	646.85 — 657.07	38.00	3.80
367.14 — 373.17	85.50	8.55	657.08 — 667.66	36.00	3.60
373.18 — 378.95	85.00	8.50	667.67 — 678.65	34.00	3.40
378.96 — 384.50	84.50	8.45	678.66 — 690.09	32.00	3.20
384.51 — 389.84	84.00	8.40	690.10 — 702.03	30.00	3.00
389.85 — 395.00	83.50	8.35	702.04 — 714.55	28.00	2.80
395.01 — 400.00	83.00	8.30	714.56 — 727.74	26.00	2.60
400.01 — 404.84	82.50	8.25	727.75 — 741.72	24.00	2.40
404.85 — 409.55	82.00	8.20	741.73 — 756.67	22.00	2.20
409.56 — 414.13	81.50	8.15	756.68 — 772.80	20.00	2.00
414.14 — 418.59	81.00	8.10	772.81 — 790.45	18.00	1.80
418.60 — 422.95	80.50	8.05	790.46 — 810.27	16.00	1.60
422.96 — 427.20	80.00	8.00	810.28 — 832.87	14.00	1.40
427.21 — 435.43	79.00	7.90	832.88 — 860.63	12.00	1.20
435.44 — 443.33	78.00	7.80	860.64 — 900.00	10.00	1.00
443.34 — 450.94	77.00	7.70	900.01 — 953.41	8.00	0.80
450.95 — 458.28	76.00	7.60	953.42 — 1009.57	6.00	0.60
458.28 — 465.38	75.00	7.50	1009.58 — 1068.93	4.00	0.40
465.39 — 472.26	74.00	7.40	1068.94 — 1132.12	2.00	0.20
472.27 — 478.95	73.00	7.30	Above 1132.12	0.0	0.0

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY

See proprietary restrictions on title page.

TABLE H - Code 5 Equipment Measured Component Index Table

PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS	PERFORMANCE RANGE	COMPONENT INDEX	INDEX POINTS
0.00 — 0.03	100.00	15.00	3.10 — 3.15	72.00	10.80
0.04 — 0.10	99.50	14.92	3.16 — 3.20	71.00	10.65
0.11 — 0.17	99.00	14.85	3.21 — 3.25	70.00	10.50
0.18 — 0.23	98.50	14.77	3.26 — 3.31	69.00	10.35
0.24 — 0.30	98.00	14.70	3.32 — 3.36	68.00	10.20
0.31 — 0.39	97.50	14.62	3.37 — 3.41	67.00	10.05
0.40 — 0.45	97.00	14.55	3.42 — 3.47	66.00	9.90
0.46 — 0.48	96.50	14.47	3.48 — 3.52	65.00	9.75
0.49 — 0.51	96.00	14.40	3.53 — 3.57	64.00	9.60
0.52 — 0.54	95.50	14.32	3.58 — 3.63	63.00	9.45
0.55 — 0.59	95.00	14.25	3.64 — 3.68	62.00	9.30
0.60 — 0.65	94.50	14.17	3.69 — 3.74	61.00	9.15
0.66 — 0.84	94.00	14.10	3.75 — 3.79	60.00	9.00
0.85 — 1.17	93.50	14.02	3.80 — 3.84	59.00	8.85
1.18 — 1.45	93.00	13.95	3.85 — 3.90	58.00	8.70
1.46 — 1.69	92.50	13.87	3.91 — 3.95	57.00	8.55
1.70 — 1.88	92.00	13.80	3.96 — 4.00	56.00	8.40
1.89 — 2.02	91.50	13.72	4.01 — 4.06	55.00	8.25
2.03 — 2.11	91.00	13.65	4.07 — 4.11	54.00	8.10
2.12 — 2.16	90.50	13.57	4.12 — 4.16	53.00	7.95
2.17 — 2.18	90.00	13.50	4.17 — 4.22	52.00	7.80
2.19 — 2.21	89.50	13.42	4.23 — 4.27	51.00	7.65
2.22 — 2.23	89.00	13.35	4.28 — 4.32	50.00	7.50
2.24 — 2.26	88.50	13.27	4.33 — 4.43	48.00	7.20
2.27 — 2.29	88.00	13.20	4.44 — 4.54	46.00	6.90
2.30 — 2.31	87.50	13.12	4.55 — 4.65	44.00	6.60
2.32 — 2.34	87.00	13.05	4.66 — 4.75	42.00	6.30
2.35 — 2.37	86.50	12.97	4.76 — 4.86	40.00	6.00
2.38 — 2.39	86.00	12.90	4.87 — 4.97	38.00	5.70
2.40 — 2.42	85.50	12.82	4.98 — 5.08	36.00	5.40
2.43 — 2.45	85.00	12.75	5.09 — 5.18	34.00	5.10
2.46 — 2.47	84.50	12.67	5.19 — 5.29	32.00	4.80
2.48 — 2.50	84.00	12.60	5.30 — 5.40	30.00	4.50
2.51 — 2.53	83.50	12.52	5.41 — 5.50	28.00	4.20
2.54 — 2.56	83.00	12.45	5.51 — 5.61	26.00	3.90
2.57 — 2.58	82.50	12.37	5.62 — 5.72	24.00	3.60
2.59 — 2.61	82.00	12.30	5.73 — 5.83	22.00	3.30
2.62 — 2.64	81.50	12.22	5.84 — 5.93	20.00	3.00
2.65 — 2.66	81.00	12.15	5.94 — 6.04	18.00	2.70
2.67 — 2.69	80.50	12.07	6.05 — 6.15	16.00	2.40
2.70 — 2.72	80.00	12.00	6.16 — 6.26	14.00	2.10
2.73 — 2.77	79.00	11.85	6.27 — 6.36	12.00	1.80
2.78 — 2.82	78.00	11.70	6.37 — 6.47	10.00	1.50
2.83 — 2.88	77.00	11.55	6.48 — 6.58	8.00	1.20
2.89 — 2.93	76.00	11.40	6.59 — 6.68	6.00	0.90
2.94 — 2.98	75.00	11.25	6.69 — 6.79	4.00	0.60
2.99 — 3.04	74.00	11.10	6.80 — 6.90	2.00	0.30
3.05 — 3.09	73.00	10.95	Above 6.90	0.00	0.00

PROPRIETARY — BELLCORE AND AUTHORIZED CLIENTS ONLY

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