MATCHING LOSS AND DIAL TONE DELAY DATA COLLECTION PROCEDURES FOR NETWORK SWITCHING PERFORMANCE MEASUREMENT PLANS NETWORK SERVICES METHODS

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1. GENERAL

1.01 This section describes network administration procedures related to data collection for the Network Switching Performance Measurement Plans (NSPMPs). It includes matching loss and dial tone speed (DTS) component data collection requirements for all types of switching systems presently measured by the NSPMP. The information in this section replaces instructions previously contained in Division F, Sections 2A-2C of the Service Evaluation Practice (SEP).

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

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

1.04 Matching loss and DTS results may be collected using a mechanized system, eg, Engineering and Administrative Acquisition System/ Network Operations Report Generator System (EADAS/NORGEN) or they may be collected manually. This section provides worksheets for those locations not using a mechanized system. These worksheets are not required for locations on EADAS/NORGEN (or equivalent) as the results may be taken directly from the NORGEN printouts and entered on the appropriate NSPMP report forms. (See Part 7, NORGEN NSPMP Reports.) The NORGEN functions are performed by the Network Data Analyzer (NDA) with the EADAS generic 1AED3 and later. However, for simplicity, the term NORGEN is used throughout this section.

1.05 Instructions for other NSPMP components are found in the NSPMP sections listed in Part 8.

2. NETWORK SWITCHING PERFORMANCE MEASUREMENT PLAN

2.01 The Network Switching Performance Measurement Plan (NSPMP) is designed to use measured components, from which the overall index is derived, and performance indicators which identify actual or potential problem areas. These components and indicators are sufficiently sensitive to reflect changes in switching performance quality caused by maintenance, administrative, and provisioning conditions.

2.02 Component performance levels that are expressed as percentages are grouped into four bands producing an index and a band for each component and a total overall index. The indexed components are called measured components. Measured components and performance indicators related to dial tone speed and matching loss include:

(a) ***Measured Components:*** The following DTS and matching loss measurements are measured components:

- Dial tone speed - all systems
- Incoming matching loss (IML) - No. 5 Crossbar, No. 1 Crossbar.

(b) ***Performance Indicators:*** The following matching loss measurements are performance indicators:

- Matching loss (ML) - 1/1A ESS switches
- Network matching loss (NML) - 2 and 3ESS switches
- Incoming first failure to match (IFFM) - No. 5 Crossbar
- Originating matching loss (OML) - No. 1 Crossbar, No. 5 Crossbar
- Dial tone matching loss - No. 5 Crossbar.

3. NETWORK ADMINISTRATION RESPONSIBILITY

3.01 Network administration is responsible for the collection and validation of the busy hour data used to produce the NSPMP. The responsibility includes reviewing NSPMP daily results to ensure that they represent the service provided. If the monthly results include inaccurate data, the reasons for inaccuracy are to be documented and the affected daily results removed from the monthly calculations. Retain the documentation with the monthly results for review purposes.

4. MEASUREMENT CRITERIA

4.01 The *report month* for the NSPMP is from the twenty-third of the preceding calendar month through the twenty-second of the current calendar month (eg, February report month begins January 23 and ends February 22).

4.02 Dial tone speed and matching loss data are collected during the busy hour for 5 business days each week, generally Monday through Friday. (For busy hour determination, see Section 780-200-031.) Saturday or Sunday may be used in place of a Monday through Friday business day, if Saturday or Sunday is consistently one of the 5 high days. A minimum of 15 days of valid data is required for each report month. If the busy hour changes, a note to that effect should be entered on the applicable NSPMP report form under *Remarks* and retained locally for review purposes.

4.03 **All business days of the month are to be reported and included in NSPMP results, regardless of service conditions (eg, storms, civil disturbances, impaired switching facilities, installation, or rearrangement activity.) The only periods other than national holidays that may be excluded are those during which data are unavailable or inaccurate.** (See paragraphs 6.04 through 6.07 for additional details on excluding DTS data.) Written documentation (as locally directed) of excluded data, jointly signed by administrative and maintenance or data center personnel, is required. If the number of usable days is less than 15, the reason(s) is to be documented and retained with the NSPMP report.

4.04 For those locations on a mechanized system such as EADAS/NORGEN, and the system is lost before 15 days of valid data is accumulated, continue to accumulate data on a manual basis (where feasible, ie, an stored program control system as opposed to an electromechanical environment) until the minimum 15-day requirement is met. Under these conditions, the accumulation of data beyond the required 15-day period is not recommended. If the loss of data occurs in the middle of the month (eg, 8 days of data is gathered, 3 days are lost and then 9 additional days are gathered) combine the results of the two measured periods and manually calculate the month's results.

4.05 The following national holidays are to be excluded from NSPMP busy hour results:

- Christmas
- New Year
- Memorial Day
- Independence Day (July 4th)
- Labor Day
- Thanksgiving.

If there are other local holidays that have a comparable impact on traffic, the day may be excluded as locally directed.

4.06 Performance results expressed as percentages are to be carried to two decimal places. The second decimal number is to be rounded up if the third number is 5 or more, eg, 0.005 = 0.01, 0.096 = 0.10 or rounded down if the third number is less than 5, eg, 0.094 = 0.09, 0.003 = 0.00.

4.07 All monthly forms used to prepare results data for NSPMP reports are to be retained at least 1 year. Daily worksheets, printouts, etc, are to be retained for 3 months in addition to the current month.

5. DATA COLLECTION PROCEDURES FOR MATCHING LOSS RESULTS

GENERAL

5.01 This part describes matching loss data collection procedures. It also provides instructions for compiling measurement results for the NSPMP. Procedures for manual calculations are given and examples of NSPMP printouts are provided for those locations using EADAS/NORGEN.

MATCHING LOSS

A. 1/1A ESS Switches

5.02 Matching loss (ML) for 1/1A ESS switches measures the degree to which the equipment fails to establish talking paths from incoming trunks and originating lines to called lines, trunks, or service circuits.

5.03 For NSPMP purposes, a weighted percentage ML for total month is derived by calculating a busy hour percentage of IML and a percentage of intraoffice matching loss (IAML). These two measurements are combined based on the relative number (weight) of intraoffice and incoming call attempts.

5.04 Additional details about ML in 1/1A ESS switches may be found in Section 231-070-715.

5.05 The 1/1A ESS switches produces a record of incoming and intraoffice call attempts and overflows through the use of registers assigned to the hourly (H) schedule. The following registers designated by equipment group or office count (EGOs) number are used to calculate ML:

- EGO 015 Incoming peg count

- EGO 016 Incoming overflow
- EGO 031 Intraoffice peg count
- EGO 032 Intraoffice overflow
- EGO 131 Tandem calls peg count.

5.06 To meet the NSPMP requirements, a weighted ML must be developed. The formulas for deriving a weighted percentage of matching loss are as follows:

(1) $$\text{Percentage of IML} = \frac{\text{IML (EGO 016)}}{\text{Incoming Calls PC (EGO 015)} - \text{Tandem Calls PC (EGO 031)}} \times 100$$

(2) $$\text{Percentage of IAML} = \frac{\text{Intraoffice Calls OFL (EGO 032)} - \text{IAO Trunk OFL}}{\text{Intraoffice Calls PC (EGO 031)} - \text{IAO Trunk OFL}} \times 100$$

(3) $$\text{IML Weighting Factor} = \frac{\text{Incoming Calls PC (EGO 015)} - \text{Tandem Calls PC (EGO 131)}}{\text{Incoming Calls PC (EGO 015)} - \text{Tandem Calls PC (EGO 131)} + \text{Intraoffice Calls PC (EGO 031)}}$$

(4) $$\text{IAML Weighting Factor} \quad \frac{\text{Intraoffice Calls PC (EGO 031)}}{\text{Incoming Calls PC (EGO 015)} - \text{Tandem Calls PC (EGO 131)} + \text{Intraoffice Calls PC (EGO 031)}}$$

(5) Weighted Percentage of ML Total Month = (Average Daily Busy Hour percentage of IML × IML Weighting Factor) + (Average Daily Busy Hour percentage of IAML × IAML Weighting Factor)

5.07 The 1/1A ESS Busy Hour Matching Loss form maybe used to record and manually compute the daily busy hour weighted percentage of matching loss for No. 1/1A ESS switches. Refer to Fig. 1 and Table A for a sample form along with instructions for preparing it. This form is to be reproduced locally.

B. 2ESS Switches

5.08 The basic matching loss measurement for 2ESS switches is Network Matching Loss (NML). It measures the degree to which the 2ESS switching equipment fails to establish network talking paths to complete incoming, intraoffice, outgoing, or tandem calls on the final (second) attempt.

5.09 For NSPMP purposes, IML, tandem matching loss (TML), IAML, and OML are combined to derive NML.

5.10 The H schedule for 2ESS switches produces a record of attempts and overflows hourly. The following office total (OFT) registers are used to calculate NML:

- OFT08 incoming call attempts
- OFT09 incoming path overflow
- OFT11 intraoffice call attempts
- OFT12 intraoffice path overflows
- OFT14 outgoing call attempts
- OFT15 outgoing path overflows
- OFT17 office TAndem call attempts
- OFT18 tandem path overflows
- OFT27 lines busy intraoffice
- OFT28 lines busy incoming.

5.11 A detailed description of each of the OFT registers may be found in Section 232-070-041.

5.12 Matching loss performance for 2ESS switches is expressed as percentage of NML. The formula for calculating percentage of NML is:

$$\text{Percentage of NML} = \frac{\text{OFT09} + \text{OFT15} + \text{OFT12} + \text{OFT18}}{[(\text{OFT08} - \text{OFT28}) + \text{OFT14} + (\text{OFT11} - \text{OFT27}) + \text{OFT17}]} \times 100$$

5.13 Worksheet C (Fig. 2) from Section 232-070-041 may be used to obtain the monthly percentage of NML for the NSPMP. Detailed instructions for preparing Worksheet C may also be found in Section 232-070-041. The percentage of NML result (column 11) shown on the TOTALS line is the performance results figure reported for the NSPMP.

C. 3ESS Switches

5.14 The NML for a 3ESS switch measures the degree to which the 3ESS switching equipment fails to establish network talking paths to complete incoming calls (IML), originating calls (ORML), or tandem calls (TML) on the final attempt. For NSPMP purposes IML, ORML, and TML results are combined to derive NML. Details about 3ESS matching loss may be found in Section 233-020-034.

5.15 The 3ESS switch H schedule makes a hourly record of call attempts and overflows hourly. The following OFT registers are used to calculate NML:

- OFT17 total originating calls
- OFT23 partial dial abandons
- OFT26 IAO calls to busy lines
- OFT34 incoming call attempts
- OFT52 ineffective originating signaling
- OFT55 no path tandem
- OFT56 no path incoming terminating
- OFT57 no path outgoing and IAO
- OFT69 incoming calls to busy lines.

5.16 A detailed description of each of the OFT registers may be found in Section 233-020-034.

5.17 Matching loss performance for a 3ESS switch is expressed as a percentage of NML. The formula for calculating percentage of NML is:

$$\text{Percentage of NML} = \frac{(OFT55 + OFT56 + OFT57)}{[(OFT17 + OFT34) - (OFT23 + OFT\ 26 + OFT52 + OFT69)]} \times 100$$

5.18 Worksheet D (Fig. 3) from Section 233-020-034 may be used to obtain the monthly percentage of NML for the NSPMP. Detailed instructions for preparing Worksheet D can be found in Section 233-020-034. Current *% NML* (column 11) shown on the last day of the service month is the performance results figure to be reported for NSPMP.

D. No. 5 Crossbar

5.19 There are three matching loss measurements that are reported with the No. 5 Crossbar (5XB) NSPMP. These measurements are IML, IFFM, and OML.

Incoming Matching Loss

5.20 In the No. 5XB offices, IML is a measured component of the NSPMP. It reflects the number of incoming calls during the IML busy hour which are not completed due to the inability of the markers to find a channel between an incoming trunk and an idle called line.

5.21 The following registers are used to calculate No. 5XB IML results:

- Total incoming peg count
- Incoming matching loss.

5.22 The IML calculation is expressed as follows:

$$\text{Percentage of IML} = \frac{\text{IML PC}}{\text{Total Incoming PC}} \times 100$$

5.23 Separate loading divisions exist when a No. 5XB office is equipped with both paired and nonpaired line link frames. In those offices with more than one loading division, weighting factors are calculated and applied to derive the monthly weighted percentage of IML. A sample No. 5XB Busy Hour Matching Loss Worksheet along with instructions for preparing it are contained in Fig. 4 and Table B. This form may also be used for No. 1XB offices.

Incoming First Failure to Match

5.24 The IFFM includes a count of incoming calls which on first attempt to complete the connection fail to find an idle channel to the called line, regardless of subsequent action taken by the marker. The following registers are used to calculate IFFM for No. 5XB offices:

- Incoming first failure to match

- Total incoming peg count or trunk link frame incoming peg count (rated manufacture discontinue)

- Incoming calls to busy line peg count.

5.25 Further information on No. 5XB measurements may be in Section 218-040-022.

5.26 The IFFM measurement is expressed as a percentage. The formula for calculating the percentage of IFFM for No. 5XB is as follows:

$$\text{Percentage of IFFM} = \frac{\text{IFFM PC}}{\text{Total Incoming PC} - \text{Incoming Calls to Busy Line PC}} \times 100$$

5.27 Form E-6182 Busy Hour Incoming First Failure to Match Worksheet is used to record and calculate percentage of IFFM. A sample form along with instructions for preparation are contained in Fig. 5 and Table C. Separate loading divisions for IFFM exist if the No. 5XB office contains paired and nonpaired frames. If more than one loading division is reported the weighting factors section (Item 24) must be completed and a weighted percentage of IFFM is reported in column E of NSPMP Form E-6420A.

Originating Matching Loss

5.28 In No. 5XB offices OML is a NSPMP performance indicator. Originating matching loss occurs when a completing or combined marker is unable to establish a channel between a line equipment and an available trunk on other than a terminating class of call. The following registers are used to calculate No. 5XB OML results:

- Originating matching loss peg count

- Total originating peg count

- Total through-switched calls peg count (if applicable).

5.29 The OML calculation is expressed as follows:

$$\text{Percentage of OML} = \frac{\text{OML PC}}{\text{Total Originating PC} + \text{Total Thru Switched Calls PC}} \times 100$$

5.30 The OML results are computed for the dial tone speed busy hour. If the office has more than one busy hour, then OML must be measured for each busy hour and the poorest performance is reported on NSPMP Form E-6420A.

5.31 A sample Originating Matching Loss Worksheet and instructions for preparation are contained in Fig. 6 and Table D. This worksheet may be reproduced locally.

E. No. 1 Crossbar

5.32 The NSPMP for No. 1XB offices contains two matching loss measurements. They are OML a performance indicator, and IML a measured component.

Originating Matching Loss

5.33 An OML, also known as all channels busy, occurs when an originating marker is unable to establish a channel between a district link frame and an office link frame. The percentage of OML measurement makes use of the following registers:

- Originating matching loss peg count

- Originating marker peg count

- Office link frame overflow.

The percentage of OML measurement is expressed as follows:

$$\text{Percentage of OML} = \frac{\text{OML PC}}{\text{Originating Marker PC} - \text{Office Link Frame Overflow}} \times 100$$

5.34 The OML results are taken during the dial tone speed busy hours. If the office has more than one dial tone speed busy hour, the hour with the poorest OML performance is reported on the NSPMP Form E-6423A. A sample OML worksheet and in-

structions for preparation are contained in Fig. 7 and Table E. This worksheet may be reproduced locally.

Incoming Matching Loss

5.35 In No. 1XB, IML is a measured component of the NSPMP. It reflects the number of incoming calls, during the IML busy hour, which are not completed due to the inability of the terminating marker to find an idle channel between an incoming trunk and the called line. The following registers are used to calculate No. 1XB IML results:

- Incoming link frame peg count
- Incoming matching loss peg count.

5.36 The IML calculations are expressed as follows:

$$\text{Percentage of IML} = \frac{\text{IML PC}}{\text{Incoming Link Frame PC}} \times 100$$

5.37 Each terminating marker group in the entity must be measured separately for both peg count and IML. The results of the terminating marker group with the poorer service is reported on the NSPMP. A sample No. 1XB Busy Hour Matching Loss Worksheet, along with instructions for preparation are contained in Fig. 4 and Table B.

6. DATA COLLECTION PROCEDURES FOR DIAL TONE SPEED RESULTS

GENERAL

6.01 This part describes the procedures for computing dial tone speed (DTS) results to meet the NSPMP reporting requirements. The compilation of DTS results is the responsibility of the network administration organization.

6.02 The DTS component measures the switching system's capability to provide dial tone within 3 seconds and is a measured component in each of the NPSMPs. Descriptions of DTS measuring machines and assignment considerations are contained in Section 780-200-040. Tables G and H, Dial Tone Speed-Busy Hour, contain index points for DTS and adjustment factors when the number of measured days is more or less than 22 days.

WEIGHTING FACTORS FOR DIAL TONE SPEED RESULTS

6.03 If an office has more than one DTS loading division, the results must be weighted. The weighting factors developed each month for computing the daily weighted DTS results are based on originating calls or DTS tests (2ESS and 3ESS switches) taken during the busy hour, for 2 to 5 days each month. If practical, these weighting factors may be used for weighting the current report month's DTS results; however, the factors may be used for weighting the DTS results in the month immediately following the study. Once it has been determined how the factors are to be applied (current report month, or the first month following), the procedure should remain consistent. Factors shall not be used, in any case, for computing DTS results beyond the first month following the current report month. For entities (except step-by-step) on EADAS/NORGEN, the program will develop and apply weighting factors on a daily basis in calculating the daily weighted percentage of DTS. The EADAS/NORGEN results should be used for official reporting.

DAYS TO BE EXCLUDED

Step-by-Step and Crossbar Offices

6.04 The following guidelines should be used when excluding DTS data for step-by-step and crossbar offices in addition to the holidays listed in paragraph 4.05.

(a) Exclude days on which the DTS equipment fails to function properly during the busy hour; for example, the DTS equipment trouble causes false delays to register. Care should be taken to exclude results only when the DTS equipment is specifically proven to be out of order. With routine maintenance and testing of equipment, these cases should be infrequent. An investigation should be made anytime DTS data are not available.

(b) Exclude the entire day whenever DTS results are not available for all classes of service represented by weighting factors within an entity, for example, coin register readings not available for a day. (In these cases, the traffic engineer may de-

sire the results for the classes of service not affected.)

6.05 Exclude all days for modified and synchronous timer machines; electronic DTS recorders, and offices using the all finders busy usage (AFBU) method when the following conditions occur:

(a) When registers are under camera or data is obtained from a mechanized method with results exceeding ±3 percent from the number of calculated tests

(b) When data is read manually, the deviation is ±8 percent. This does not preclude the necessity to obtain the register readings in a precise manner.

6.06 The day should be excluded for unmodified DTS machines when registers are under camera or read manually with results exceeding a ±10 percent deviation from the number of calculated tests.

ESS Switches

6.07 The DTS results for a day should be excluded in ESS switches whenever the DTS program fails to function properly during the busy hour, eg, the call store memory is temporarily erased.

DIAL TONE SPEED DATA COMPILATION PROCEDURES

1ESS Switches

6.08 In 1ESS switches, the DTS tests are generated over idle assigned lines. The tests are performed throughout the office line equipment in a programmed sequence. This sequence is described in detail in Section 231-070-710.

6.09 The following registers designated by equipment group or office count (EGO) number are used to calculate DTS performance.

- Dial pulse DTS tests peg count (EGO 017)
- TOUCH-TONE service DTS tests peg count (EGO 018)
- Dial pulse dial tone delays peg count (EGO 019)
- TOUCH-TONE service dial tone delays peg count (EGO 020).

6.10 There are 225 dial tone tests made every quarter-hour for a total of 900 tests per hour. In some offices the number of tests may be slightly less than 900 per hour due to the amount of unassigned line equipment. Except for offices with large amounts of unassigned line equipment, the number of tests should not be below 895, (NORGEN default). In those cases where dial tone tests are below 895, a written explanation, showing the number of assigned and spare line equipment, should be retained with the NSPMP DTS report. A statement should also be made as to when the number of tests will again be above 895.

6.11 In 1ESS switches DTS tests are made in relative proportion to dial pulse and TOUCH-TONE service lines in the office; therefore, no weighting of results is required.

6.12 A sample Busy Hour Dial Tone Speed Worksheet, along with instructions for preparation, are contained in Fig. 8 and Table F for use if manual posting is required.

2ESS Switches

6.13 The method for measuring DTS in 2ESS switches uses actual customer requests for dial tone. If a sufficient number of actual calls are not originated to make 225 tests per quarter-hour, then simulated call tests are performed to supplement the actual calls.

6.14 Traffic counts are made of the total number of tests and delays by customer digits receiver (CDR) type (dial pulse or TOUCH-TONE service). The total number of tests should normally be 900.

6.15 The following registers, listed with their designated office total (OFT) numbers, are used to calculate DTS results for 2ESS offices:

- Dial pulse DTS tests (OFT 01)
- TOUCH-TONE service DTS tests (OFT 02)
- Dial pulse DTS failures (OFT 03)
- TOUCH-TONE service DTS failures (OFT 04).

6.16 In 2ESS switches with dial pulse and TOUCH-TONE service, the DTS results must be weighted in proportion to the number of dial pulse or TOUCH-TONE service DTS tests. If the office is 100 percent TOUCH-TONE service or 100 percent dial pulse service, no weighting is required.

6.17 For those offices having a mixture of dial pulse and TOUCH-TONE service, separate DTS results are to be obtained and weighted daily. The weighting factor is based on the percentage each DTS test type (dial pulse or TOUCH-TONE service) is of the total number of DTS tests. Figure 8 contains an example of a Busy Hour Dial Tone Speed Worksheet. Figure 9 contains an example of weighting DTS results for a 2ESS switch and instructions for preparation.

3ESS Switches

6.18 The method for measuring DTS for 3ESS switches uses only actual customer originated requests for dial tone. Therefore, the number of dial tone tests depends on the amount of traffic. If there are 600 originations during the DTS busy hour, there will be 600 DTS tests.

6.19 The following registers, listed with their OFT numbers, are used to calculate DTS results for 3ESS switches:

- Dial pulse originations (OFT03)
- Dial pulse calls delayed (OFT04)
- TOUCH-TONE service originations (OFT07)
- TOUCH-TONE service calls delayed (OFT 08).

6.20 In 3ESS switches having both dial pulse and TOUCH-TONE service, separate DTS results are to be obtained by type of customer digit receiver and the results weighted daily. Offices which are either 100 percent dial pulse or 100 percent TOUCH-TONE service require no weighting. Weighting for 3ESS DTS shall be based on the number of DTS tests made for dial pulse and TOUCH-TONE service. An example of developing weighting factors and deriving a weighted percentage of DTS is contained in Fig. 10.

6.21 Figure 8 contains an example of a Busy Hour Dial Tone Speed Worksheet, and the instructions for preparation are contained in Table F.

No. 5 Crossbar Offices

6.22 The method for measuring DTS for No. 5XB offices is an automatic DTS measuring device, eg, modified DTS machine, synchronous timer machine, Electronic Dial Tone Speed Recorder (EDTSR) or equivalent. (See Section 780-200-040.) The maximum number of DTS tests for these DTS machines is 900 per hour. The number of tests may deviate (except for the EDTSR) from the maximum depending on how they are assigned. Tests are performed on unassigned line equipment. The minimum number of expected tests is 818. If the expected number of tests is less than 818 a detailed explanation should be kept on file locally for review purposes.

Weighting Factors for No. 5 Crossbar

6.23 The No. 5XB offices with 100 percent dial pulse or 100 percent TOUCH-TONE service require no weighting since all classes of service are mixed on the line link frames.

6.24 For No. 5XB offices having some paired and some nonpaired line link frames, there may be occasions when the requirements of the traffic engineer or network administrator necessitate assignment of test lines to separate arcs on the DTS machine. In these cases, add the total number of registration tests and the total number of delays for both arcs. To obtain a combined percentage of DTS for both the paired and the nonpaired line link frames, divide the total number of delays by the total number of test registrations. No weighting is required.

6.25 In No. 5XB offices where separate originating register groups are provided, DTS results for each group must be obtained and weighted daily. This includes separate originating register groups for dial tone first coin service. The weighting is based on originating register peg count. An example of the procedures for developing weighting factors in No. 5XB offices with more than one originating register group is shown in Fig. 11. The Busy Hour Dial Tone Speed Worksheet may be used to record No. 5XB DTS results. Some No. 5XB offices are equipped with local overload announcement (LOA) facilities. On the unusual occasions that LOA is activated during the DTS

busy hour, certain steps must be taken to derive weighted DTS results. These steps are listed with the instructions for preparation of Busy Hour Dial Tone Speed Worksheet (Fig. 8) and Table F.

No. 1 Crossbar Office

6.26 The method of measuring DTS for No. 1XB offices is the same as for No. 5XB offices (paragraph 6.24). Separate DTS results by type of frame are to be obtained for No. 1XB offices with 100 percent dial pulse or 100 percent TOUCH-TONE service, ie, individual frame, party frame, coin frame, etc. The results are weighted daily (Fig. 12). The weight assigned to each type of line link frame is based on the originating calls busy hour for individual, party, and coin frames. The counts are obtained from the district junctor peg counts. The weight is the percentage of each type of frame count of the total originating call peg count. These weights are based on a 2 to 5 day busy hour study conducted each month.

6.27 Separate dial pulse and TOUCH-TONE service DTS results are to be obtained and weighted daily for No. 1XB offices which contain both dial pulse and TOUCH-TONE service equipment.

Weighting Factors for No. 1 Crossbar

6.28 The weighting factors are based on subscriber sender usage less maintenance usage. The weight is the percentage that the usage of each type of equipment is of the total entity being weighted. These weighting factors shall be based on subscriber sender usage recorded during the busy hour for at least 2 to 5 business days each month. Figure 13 is an example of developing weighting factors and computing weighted DTS for No. 1XB offices with both dial pulse and TOUCH-TONE service and with a common overflow sender group. Figure 14 is an example of weighting DTS for No. 1XB offices without a common overflow sender group. The Busy Hour Dial Tone Speed Worksheet in Fig. 8 may be used to record No. 1XB DTS results.

Step-by-Step Offices

6.29 The method for measuring DTS in step-by-step offices with 5000 or more lines is the same method as that used for No. 5XB offices (see paragraph 6.24). For noncommon control step-by-step offices with less than 5000 lines, the DTS results may be gathered by the Small Office Network Data System (SONDS). Refer to paragraph 6.34.

6.30 When switching offices are equipped with common control originating registers or tone converters, these groups should be treated as a separate loading division. Groups provided with TOUCH-TONE service converters on a per line finder basis (non-common control), should be included in the dial pulse loading division.

6.31 In offices having different size line finder groups within the same class of service, there may be occasions when the requirements of the traffic engineer or network administrator necessitate assignment of test lines to separate arcs on the DTS machine. In these cases, no attempt should be made to weight the results by line finder group. Combine the results for the line finder groups (total tests and total delays) and compute the weighted percentage of DTS for the office.

Weighting Factors for Step-by-Step

6.32 There are three sources for obtaining data to develop weighting factors for step-by-step offices. These sources are listed here in order of preference:

(a) The weight assigned to each loading division is based on originating calls by loading division busy hour, as obtained from first selector peg count registers for at least 2 to 5 days each month. The weighting factor by loading diminsion is the percentage that the calls in each loading division are of the total calls for the entity being weighted.

(b) Where traffic usage recorders (TURs) are installed and peg count data are not available, weighting factors may be based on the hundred call seconds (CCS) busy hour as used for engineering purposes.

(c) Where totalizers are installed and there are no TURs or line finder peg count registers, weighting factors shall be based on main stations by loading division.

6.33 An example of developing step-by-step weighting factors and weighting DTS results is contained in Fig. 15. The Busy Hour Dial Tone

Speed Worksheet in Fig. 8 may be used for recording DTS results.

Step-by-Step Offices Equipped With SONDS

6.34 The Small Office Network Data System (SONDS) equipped step-by-step offices use the all finders busy usage (AFBU) measurement technique for determining DTS (described in Sections 780-200-040 and 226-020-151). The SONDS collects the daily peak values of dial tone delay for each line finder group from the AFBU registers. These values are combined across each loading division and are shown as a single value for the office. This value is called percentage of peak dial tone delay. This peak value is equated to an equivalent time consistent busy hour result which is printed on the SONDS Monthly Report (Fig. 16) and is labeled as *% DTD (TCBH)* in the *TOTAL OFFICE* section of the report. This TCBH figure is used for official reporting of DTS to the NSPMP.

6.35 When a step-by-step office converts its data collection system from TURs to SONDS there will be a period of time normally not exceeding 30 days when loss of DTS measurement data is to be expected. Measurement reporting for this situation is to be handled as follows:

(a) The month in which the conversion starts is to be officially reported if 15 days or more of valid data have been obtained. If less than 15 days are available, the result should be coded ***EMPTY.***

(b) The first month following the conversion start date is to be coded ***EMPTY.***

(c) The second month following the conversion start date and all subsequent months are to be coded ***NA*** if less than 15 days of valid data have been obtained.

6.36 Another out-of-service interval will occur when an office on SONDS places a new line finder group into service. The group must pass through validation and start-up before results can be used. The group is placed in a separate loading division (normally up to 6 months) referred to as a "child" loading division. During this time the group is loaded and measured separately for balancing purposes. At the end of this period the group is place in the "parent" loading division and is measured with the other line finder groups. Results are to be reported as described in paragraph 6.35.

Digital Multiplex System Offices

6.37 Digital multiplex system (DMS) office (eg, DMS-10 digital switching system) measure dial tone speed in a manner similar to a 3ESS switch, ie, actual calls are timed. Results are generated separately for dial pulse and DIGITONE service. The following registers are provided in DMS-10 offices for measuring dial tone speed results:

- DIGITONE* calls (DGTC)
- Dial pulse calls (DPC)
- DIGITONE dial tone speed percentage (DGTs)
- Dial pulse dial tone speed percentage (DPS)

6.38 The DTS results from DMS-10 switching system which have both dial pulse and DIGITONE service should be weighted on a daily basis. An example of developing weighting factors and deriving a weighted percentage of DTS is contained in Fig. 17.

7. NORGEN NSPMP REPORTS

7.01 This part gives a brief description of the NORGEN NSPMP reports available in those locations using this mechanized reporting system.

7.02 The NORGEN reporting facility is a subsystem of EADAS.

7.03 The NORGEN NSPMP report results are available on a daily and monthly cumulative basis. The report may also be printed on a demand basis. This feature allows the user to obtain duplicate copies of the report which is especially useful in the case of out-of-service data links and paper jamming problems at the network terminals.

7.04 Figures 18 through 23 are examples of the NORGEN NSPMP formats for each of the switching systems. Details of these reports are contained in individual sections listed in Part 8.

* Registered service mark of Northern Telecom, Ltd.

1ESS NSPMP Report

7.05 An example of a 1ESS NSPMP report is shown in Fig. 18. The DTS and matching loss portions of the report which are used to prepare the Form E-6421A have been labeled. The DTS figures correspond to the Form E-6421A columns as follows:

- AVG % DTD — Column F (Failures)
- TOT PTS (monthly) — Column H (Performance)
- CI — Column J (Component Index).

The component index (CI) figure is read into the Measured Component Index Table for DTS contained in Section 231-001-005 to complete columns K and L of Form E-6421A.

7.06 The *MONTHLY RESULTS % IML* figures on the NORGEN NSPMP report may be used to report matching loss on Form E-6421A. This monthly result may entered directly into column C of Form E-6421A. Columns D and E are completed using instructions in Section 231-001-005.

2ESS NSPMP Report

7.07 An example of an NSPMP report for a 2ESS switch is shown in Fig. 19. The matching loss and DTS components have been labeled for the purpose of NSPMP reporting. Network matching loss (column C) of NSPMP Form E-6426A may be taken directly from the NORGEN NSPMP report under MONTHLY RESULTS, PERF (item labeled NETW MATCH I+O). Columns D and E are completed per the instructions in Section 232-001-005.

7.08 The DTS figures on the NORGEN NSPMP report correspond to the Form E-6426A columns as follows:

- AVG % DTD — Column F (Failures)
- POINTS — Column H (Performance)
- CI — Column J (Component Index).

The CI figure is read into the Measured Component Index Table contained in Section 232-001-005 to complete columns K and L of Form E-6421A.

7.09 An example of an NSPMP report for a 3ESS switch is shown in Fig. 20. The matching loss and DTS components have been labeled for the purpose of NSPMP reporting. Network matching loss (column C) of NSPMP for E-6422A may be taken directly from the NORGEN NSPMP report under MONTHLY RESULTS, PERF (item labeled NETW MATCH OFC). Columns D and E are completed per the instructions in Section 233-020-005.

7.10 The DTS figures on the NSPMP report correspond to the form E-6422A columns as follows:

- AVG%DTD — Column F (Failures)
- POINTS — Column H (Performance)
- CI — Column J (Component Index)

The CI figure is read into the Measured Component Index Table contained in Section 233-020-005 to complete columns K and L of Form E-6422A.

No. 5 Crossbar NSPMP Report

7.11 An example of a No. 5XB NORGEN NSPMP report is shown in Fig. 21. The matching loss and DTS components have been labeled for the purpose of NSPMP reporting.

7.12 The No. 5XB offices have four matching loss measurements. They are as follows:

- Dial tone matching loss (DTML)
- Originating matching loss (OML)
- Incoming first failure to match (IFFM)
- Incoming matching loss (IML).

7.13 If the DTML figures are required per Section 218-020-005, they may be taken directly from the NORGEN NSPMP report. The following lists the NSPMP Form E-6420A columns and items with the corresponding NORGEN NSPMP items in parentheses.

- Column E — Performance (PERF).
- Column F — Threshold Level (THRESH), refer to Section 218-020-005.

- Column G — Soft Spot (*).

7.14 The *OML* figures may be taken directly from the NORGEN NSPMP report. The *PERF* figure is entered into column E of Form E-6420A and if the result exceeds the Threshold Level, column F (Section 218-020-005), then the item will have a soft spot flag (*) which is entered in column G of Form E-6420A.

7.15 The *IFFM* results are printed with paired or nonpaired frame results. If there is a mixture of paired and nonpaired frames a weighted result is printed. These results may be taken directly from the NORGEN NSPMP report and entered in column E (Performance) and column G (Soft Spot) of Form E-6420A. The Threshold Level (column F) value may be found in Section 218-020-005.

7.16 The NORGEN NSPMP *IML* results are arranged in a similar manner as IFFM results. They are printed for paired or nonpaired or a mixture of both types. When paired and nonpaired frames are mixed, a weighted percentage of IML is produced. In any of these arrangements, the NSPMP Form E-6420A, Performance (column M) and Component Index (CI, column N) results may be taken directly from the NORGEN NSPMP report. Refer to Section 218-020-005 for the Index Points (column P) and Band (column R) of the NSPMP report.

7.17 The DTS component results on the NORGEN NSPMP report correspond to the Form E-6420A columns as follows:

- AVG % DTD — Column H (Failures)
- PERF — Column M (Performance)
- CI — Column N (Component Index).

The CI is read into the Measured Component Index Table to derive the Index Points (column P). (See Section 218-020-005.) The CI determines the Band (column R) entry.

No. 1 Crossbar NSPMP Report

7.18 An example of a No. 1XB NORGEN NSPMP report is shown in Fig. 22. The DTS and matching loss portions of the report which are used to prepare Form E-6423A have been labeled. The matching loss components for No. 1XB are IML and OML.

7.19 The IML results for four individual loading divisions may be obtained from the NORGEN NSPMP. The worst performance and CI of the loading divisions should be reported on NSPMP Form E-6423A (columns M and N respectively). The Index Points (column P) and Band (column R) are derived following the instructions in Section 216-020-005.

7.20 The OML results for up to six loading divisions may be obtained from the NORGEN NSPMP. The worst performance of the six loading divisions should be reported on NSPMP Form E-6423A (column E). The Threshold Level (column F) should be determined from Section 216-020-005. If the performance exceeds the threshold level, the NORGEN NSPMP will indicate this with an asterisk (*) under the heading SOFT (column G on Form E-6423A).

Step-by-Step NSPMP

7.21 An example of a step-by-step NSPMP report is contained in Fig. 23. The DTS data used to complete Form E-6424A are labeled.

7.22 The DTS figures on the NORGEN NSPMP report correspond to the Form E-6423A columns as follows:

- PERF — Column M (Performance)
- CI — Column N (Component Index).

The CI figure is read into the Measured Component Index Table, contained in Section 226-020-005, to complete columns P and R of Form E-6423A.

8. REFERENCES

8.01 The following sections are applicable to the support of this section.

SECTION	TITLE
216-020-005	Network Switching Performance Measurement Plan No. 1 Crossbar Offices
218-020-005	Network Switching Performance Measurement Plan - No. 5 Crossbar

SECTION	TITLE
226-020-005	Network Switching Performance Measurement Plan - Step-By-Step
231-001-005	Network Switching Performance Measurement Plan - No. 1/1A ESS Switches
231-070-715	Matching Loss - No. 1/1A Electronic Switching Systems
232-001-005	Network Switching Performance Measurement Plan - No. 2/2B ESS Switches
232-070-040	Dial Tone Speed - No. 2 Electronic Switching System
232-070-041	Matching Loss - No. 2 Electronic Switching System
233-020-005	Network Switching Performance Measurement Plan - No. 3 ESS Switch
233-020-032	Dial Tone Speed - No. 3 Electronic Switching System
233-020-034	Matching Loss - No. 3 Electronic Switching System
241-140-005	Network Switching Performance Measurement Plan - DMS-10 Exchange Switching System

TABLE A

INSTRUCTIONS FOR PREPARING BUSY HOUR MATCHING LOSS 1/1A "ESS" SWITCHES WORKSHEET

This form is used to record and manually compute the daily busy hour weighted percentage of matching loss for 1/1A ESS switches.

ITEM	PROCEDURE
Entity	Enter office identification.
Type of Central Office Equipment	Enter the type of switching equipment provided to the entity.
Report Month	Enter the month name and year in which the report period ends.
1	***Date-Business Day:*** Enter the date of data collection.
Load Group	This space is provided for identifying separately, each loading division. In ESS switches the loading divisions are ***incoming*** and ***intraoffice***.
Time	Enter the matching loss busy hour for each loading division (load group).
Factor	Enter the weighting factor for each loading division.
2	***Incoming Calls BH:*** Enter the number of registrations recorded for incoming calls (office count 015). Enter NA in this item whenever incoming calls or losses data are not available for a loading division. Line designated ***TOTAL:*** Enter the total incoming calls for the month. Line designated ***AVG:*** Divide the total month incoming calls by the number of days reported and enter the results.
3	***Tandem Calls — BH:*** Enter the number of tandem calls (office count 131). Enter NA in this item whenever this data is not available for a loading division. Line designated ***TOTAL:*** Enter the total tandem calls for the month. Line designated ***AVG:*** Divide the total month tandem calls by the number of days reported.
4	***Incoming Calls Minus TDM:*** Substract the tandem calls from the incoming calls and enter result (Item 2 minus Item 3). Enter NA in this item whenever code NA has been entered in Item 2 or Item 3. Line designated ***TOTAL:*** Enter total for the month of incoming minus tandem calls. Line designated ***AVG:*** Divide the total of incoming minus tandem calls by the number of days reported and enter the results.

TABLE A (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR MATCHING LOSS 1/1A "ESS" SWITCHES WORKSHEET

ITEM	PROCEDURE
5	***Matching Loss — BH:*** Enter the number of incoming overflows (office count 016). Enter NA if this data is unavailable.
6	***% IML:*** Divide the number of incoming overflows by the incoming calls minus tandem calls (Item 5 ÷ Item 4) multiply the result by 100 and report to two decimal places. Enter NA where these data are not available. Line designated ***TOTAL:*** Enter the total percentage figures for the month. Line designated ***AVG:*** Divide the total percentage IML by the number of days reported and enter results.
7	***Intraoffice calls — BH:*** Enter the number of registrations recorded on the intraoffice peg count (office count 031). Enter NA when this data is not available. Line designated ***TOTAL:*** Enter the total intraoffice calls — BH for the month. Line designated ***AVG:*** Divide the total intraoffice calls — BH by the number of days reported.
8	***Intraoffice Matching Loss — BH:*** Enter the number of registrations recorded on the intraoffice overflow registers (office count 032).
9	***% Intraoffice Matching Loss — BH:*** Divide the number of intraoffice overflows by the intraoffice calls (Item 8 ÷ Item 7) multiply the results by 100 and report to two decimal places. Enter NA when this data is not available. Line designated ***TOTAL:*** Enter the total percentage of intraoffice matching loss for the month. Line designated ***AVG:*** Divide the total % intraoffice matching loss by the number of days reported and enter results.
10	***Total Calls — BH:*** Enter for each day, the total incoming calls minus tandem calls plus intraoffice calls (Item 4 plus Item 7). Enter NA in this item whenever data is not available for any component (Item 2, 3, 5, 6, 7, 8, or 9). Line designated ***TOTAL:*** Enter the monthly total number of calls obtained during the busy hour(s). This is the sum of the entries in Items 4 and 7 on the line designated TOTAL. Line designated ***AVG:*** Divide Total Calls — BH by the number of days reported and enter the result. This is the sum of the entries in Item 4 and 7 on the line designated AVG.

TABLE A (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR MATCHING LOSS 1/1A "ESS" SWITCHES WORKSHEET

ITEM	PROCEDURE
11	***Unusable Days (✓) — Total Busy Hours:*** Enter a checkmark (✓) in this item whenever the code NA has been entered in Item 10. Line designated ***TOTAL:*** Enter the total number of checkmarks in Item 11.
12	***Weighting Factor:*** Compute the weighting factor for each loading division. ***Load Group:*** Identify each loading division. ***Average Calls:*** Enter the average calls reported on the line designated ***Average.*** (Total of Items 4 and 7). ***Factor:*** Divide the average calls for each loading division by the total monthly average calls for the entity. Express each factor to three decimal places. The sum of the weighting factors must always equal 1.000. Line designated ***WTD % ML:*** Calculate an average weighted percentage of matching loss for the entity. Multiply the percentage figure in Items 6 and 9 on the line designated ***AVG*** by the corresponding weighting factor in Item 12. Enter each weighted result on the line designated ***WTD % ML,*** reported to two decimal places, for each loading division.
13	***Weighting % ML — Total Month:*** Enter the monthly percentage matching loss results for the entity, reported to two decimal places. Add the weighted results in the line designated ***WTD % ML*** for Items 6 and 9 and report the figure to two decimal places.
14	***Soft Spot (✓) Total Month:*** Enter a checkmark (✓) in Item 14 whenever the matching loss component (Item 13) exceeds the threshold for matching loss (refer to Section 231-001-005).
15	***Notes:*** To be used for brief explanations of results or to record unusual occurrences, etc.

BUSY HOUR MATCHING LOSS
1/1A ESS SWITCHES

Entity _____ Type Of C.O. Equipment _____ Month _____ 19 ____

Load Group	IML					IAML			Total Calls BH	Unusable Days (√)
	Time:		Factor:			Time:		Factor:		
Date Bus. Day	Inc. Calls BH	TDM Calls BH	Inc. Calls Minus TDM (2-3)	Match. Loss BH	% IML	IAO Calls BH	March. Loss BH	% IAML		
1	2	3	4	5	6	7	8	9	10	11
Tot.										
Avg.										
Wtd. % ML										

Weighting Factor 12 15 Notes: Total Month 13 Weighted % ML 14 Soft Spot (√)

Load Group	Average Calls (Busy Hour)	Factor
IML		
IAML		
Total		1,000

Fig. 1—Busy Hour Matching Loss 1/1A ESS Switches Worksheet (5.07)

SECTION 232-070-041
OFFICE: Smalltown

2ESS NETWORK MATCHING LOSS

WORK SHEET C (1/80)
DATES: March

	DATE	WORK SHEET A		WORK SHEET B		TOTAL OVFL (1+2+3+4)	WORK SHEET A		WORK SHEET B		TOTAL ATTEMPTS (6+7+8+9)	% NML (5/10X100)	CUR. NML	
		COL. 1 INC OFL	COL. 8 TDM OFL	COL. 1 IAO OFL	COL. 8 OTG OFL		COL. 4 ADJ INC ATT	COL. 9 TDM ATT	COL. 4 ADJ IAO ATT	COL. 9 OTG ATT			CUM	AVG
		1	2	3	4	5	6	7	8	9	10	11	12	
1	2/21	TTY Trouble		-	-	-	-	-	-	-	-	-	-	-
2	22	TTY Trouble		-	-	-	-	-	-	-	-	-	-	-
3	23	0	10	0	0	10	1272	1910	2348	5244	8864	.11	.11	.11
4	26	3	16	0	0	19	1127	1807	2118	4976	8221	.23	.34	.14
5	27	Data garbled		-	-	-	-	-	-	-	-	-	-	-
6	28	0	57	0	0	57	1140	1952	2314	5304	8758	.65	.99	.33
7	3/1	Lost data		-	-	-	-	-	-	-	-	-	-	-
8	2	0	2	25	0	27	1197	1814	2099	4810	8106	.33	1.32	.33
9	5	0	62	0	0	62	1212	2286	2348	5210	8770	.71	2.03	.41
10	6	0	7	0	0	7	1129	1864	2319	4498	7946	.09	2.12	.35
11	7	0	35	0	0	35	1085	2044	2279	4764	8128	.43	2.55	.36
12	8	0	24	0	0	24	1127	1960	2694	5260	9081	.26	2.81	.35
13	9	Lost data		-	-	-	-	-	-	-	-	-	-	-
14	12	0	22	0	0	22	1095	1851	2220	5097	8412	.26	3.07	.34
15	13	0	23	0	0	23	1180	1942	2517	4408	8105	.28	3.35	.34
16	14	0	7	0	0	7	1008	1814	2205	4392	9605	.09	3.44	.31
17	15	0	6	0	0	6	1087	2020	2456	5020	8563	.07	3.51	.29
18	16	0	18	0	0	18	1197	1946	2720	4680	8597	.21	3.72	.29
19	19	5	76	0	0	81	1182	2065	2279	5451	8910	.91	4.63	.33
20	20	0	0	0	0	0	1142	1789	2219	4768	8129	0	4.63	.31
21														
22														
23														
	TOTALS					398					126195	.31		

Fig. 2—Example of Completed Network Matching Loss Worksheet C (5.13)

SECTION 233-020-034
OFFICE Ruraltown

3 ESS MATCHING LOSS
NETWORK

WORK SHEET D (6/80)
DATES 4/23-5/22/80

	DATE	NO PATH INC/TERM (COL. 5 WRKSHT A) 1	NO PATH OUT & IAO (COL. 6 WRKSHT B) 2	NO PATH TDM (COL. 6 WRKSHT C) 3	NO PATH TOTAL (1+2+3) 4	ADJ INC ATTEMPTS (COL. 4 WRKSHT A) 5	TDM CALL ATTEMPTS (COL. 2 WRKSHT A) 6	ADJ ORIG ATTEMPTS (COL. 5 WRKSHT B) 7	ADJ TOTAL ATTEMPTS (5+6+7) 8	DAILY % NML (4/8 X 100) 9	CUM % NML 10	CURRENT % NML (10/DAYS) 11
1	4/23	0	0	0	0	96	5	181	282	0	0	0
2	24	0	0	0	0	112	5	200	317	0	0	0
3	25	0	1	0	1	106	3	226	335	.30	.30	.10
4	28	0	0	0	0	88	2	207	297	0	.30	.08
5	29	TTY Ribbon Torn			-	-	-	-	-	-	-	-
6	30	0	0	0	0	96	7	196	299	0	.30	.06
7	5/1	0	0	0	0	85	2	168	255	0	.30	.05
8	2	0	0	0	0	93	1	176	270	0	.30	.04
9	5	1	0	0	1	115	7	191	313	.32	.62	.08
10	6	TTY Trouble			-	-	-	-	-	-	-	-
11	7	0	1	0	1	112	7	222	341	.29	.91	.10
12	8	0	0	0	0	97	2	137	346	0	.91	.09
13	9	0	0	0	0	106	3	148	257	0	.91	.08
14	12	0	1	0	1	116	1	225	342	.29	1.20	.10
15	13	0	0	0	0	99	12	234	345	0	1.20	.09
16	14	0	0	0	0	107	3	246	356	0	1.20	.09
17	15	0	0	0	0	71	6	203	280	0	1.20	.08
18	16	0	0	0	0	105	2	152	259	0	1.20	.08
19	19	Printout Not Available			-	-	-	-	-	-	-	-
20	20	0	0	0	0	113	5	222	340	0	1.20	.07
21	21	0	0	0	0	112	1	200	313	0	1.20	.07
22	22	1	0	0	1	134	6	209	349	.29	1.49	.08
23												

Fig. 3—Example of Completed Network Matching Loss Worksheet D (5.18)

TABLE B

INSTRUCTIONS FOR PREPARING
BUSY HOUR MATCHING LOSS WORKSHEET
(NO. 1 AND NO. 5 CROSSBAR)

ITEM	PROCEDURE
Entity	Enter office identification.
Type of CO Equipment	Enter No. 5 Crossbar or No. 1 Crossbar.
Report Month	Enter the month name and year in which report ends.
Local Group	Enter identification or each loading division (load group).
Time	Enter matching loss busy hour for each loading division.
Factor	Enter the weighting factor for each loading division as obtained from Item 18.
1	***Date-Business Day:*** Enter date of data collection.
2, 5, 8, and 11	***Inc. Calls-BH:*** Enter number of busy hour incoming calls for each loading division.
3, 6, 9, and 12	***Losses-BH:*** Enter separately for each loading division the number of incoming matching losses. Total and average these items at bottom of form at the end of the report month.
4, 7, 10, and 13	***% IML:*** Calculate each day for each loading division, the percentage of incoming matching loss by dividing the number of losses by the number of incoming calls. Multiply the result by 100. Express to two decimal places. Total and average these items at bottom of form at the end of the report month.
14	***Total Inc Calls-BH:*** Enter each day the total number of incoming calls (sum of Items 2, 5, 8, and 11).
15	***Unusable Days (✓):*** Enter checkmark in this item whenever the code NA has been entered in Item 14.
16	***Total Losses-BH:*** Enter for each day the total number of incoming matching losses (sum of Items 3, 6, 9, and 12). This item only required for local administration.
17	***Wtd. % IML:*** For offices with more than one loading division, a weighted percentage of incoming matching loss results for an entity may be calculated if locally desired.

TABLE B (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR MATCHING LOSS WORKSHEET
(NO. 1 AND NO. 5 CROSSBAR)

ITEM	PROCEDURE
18	***Weighting Factor:*** Weighting factors are used to weight incoming matching loss results for an entity having more than one loading division. (a) ***Load Group:*** Identify each separately measured loading division. These should correspond with the headings shown at the top of the form. (b) ***Average Calls-BH*** Enter the monthly average incoming calls-busy hour, for each loading division. These figures may be obtained from Items 2, 5, 8, and 11 on the line designated ***Average.*** Enter the total number of average incoming calls on the line designated ***Total.*** (c) ***Weighting Factor:*** Compute the weighting factor for each loading division. Divide the ***average incoming calls*** for each loading division by the total monthly average incoming calls for the entry. Express each factor to three decimal places. The sum of the weighting factors must always equal 1.000.
Wtd. % IML	For offices having more than one loading division, calculate a monthly average weighted percentage of incoming matching loss for the entity. Multiply the percentage figure in Items 4, 7, 10, and 13 on the line designated ***Average*** by the corresponding weighting factor. Enter each weighted result on the line designated ***Wtd % IML,*** reported to two decimal places, for each loading division. Add the Wtd % IML for each loading division and enter the result in Item 17. Express to two decimal places.
19	***Weighted % IML-Total Month:*** Enter the monthly weighted percentage of incoming matching loss for the entity, reported to two decimal places. This figure should be used for No. 1 and No. 5 Crossbar NSPMP results data.
20	Blank
21	***Component Index-Total Month:*** This is an NSPMP component. Read the Weighted % IML (Item 19) into the performance column of the Incoming Matching Loss Measured Component Index Table (refer to appropriate NSPMP). Express the results to two decimal places.
22	***Band U (✓)-Total Month:*** Enter a checkmark (✓) in Item 22 whenever the Incoming Matching Loss Component Index (Item 21) is 89.50 or lower.
23	***Notes:*** Provided for written explanation of any pertinent service item or unusual occurrence.

BUSY HOUR MATCHING LOSS
NO. 1 AND NO. 5 CROSSBAR

ENTITY _____ TYPE OF CO EQUIPMENT _____ REPORT MONTH _____ 19____

LOAD GROUP	TIME:	FACTOR:		TIME:	FACTOR:		TIME:	FACTOR:		TIME:	FACTOR:		TOTAL BUSY HOURS			
DATE BUS DAY	INC CALLS BH	LOSSES BH	% IML	INC CALLS BH	LOSSES BH	% IML	INC CALLS BH	LOSSES BH	% IML	INC CALLS BH	LOSSES BH	% IML	TOTAL INC CALLS BH	UNUS-ABLE DAYS (1)	TOTAL LOSSES BH	WTD % IML
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
TOT																
AVG																
WTD % IML																

	WEIGHTING FACTOR		18	23	NOTES:
LOAD GRP	AVG CALLS - BH	FACTOR			
TOTAL		1,000			

TOTAL MONTH		
	WEIGHTED % IML	19
		20
	COMPONENT INDEXES	21
	BAND U (1)	22

Fig. 4—Example of Busy Hour Matching Loss Worksheet (5.23, 5.37)

TABLE C

INSTRUCTIONS FOR PREPARING BUSY HOUR INCOMING FIRST FAILURE TO MATCH WORKSHEET (NO. 5 CROSSBAR)

ITEM	PROCEDURE
Entity	Enter office indentification.
Type of CO Equipment	Enter the type of switching equipment being measured.
Report Month 1	***Date-Business Day:*** Enter the date of each business day.
2 thru 21	Form E-6182 is designed to accommodate four load groups reporting incoming first failure to match. ***Load Group:*** Identify each loading division. ***Time:*** Enter the incoming first failure to match busy hour for each loading division (load group). This hour should be the same as incoming matching loss busy hour. ***Factor:*** Enter the weighting factor for each loading division obtained in Item 24.
2, 7, 12, and 17	***Incoming Calls-BH:*** Enter the number of registrations on the incoming peg count register(s) for the loading division. Enter NA in this item whenever data is not available for a particular loading division.
3, 8, 13, and 18	***Busies-BH:*** Enter the number of incoming calls to busy lines for each loading division. Enter NA whenever data is not available.
4, 9, 14, and 19	***Incoming Calls Minus Busies:*** Subtract busies from incoming calls (Item 2 — Item 3; 7-8, 12-13; and 17-18). Enter code NA whenever these data are not available. Line designated ***Total:*** Total for the month, the number of incoming calls minus busies. Line designated ***Average:*** Divide the ***Total*** by the number of days reported.
5, 10, 15, and 20	***Incoming First Failure to Match-BH:*** Enter the number of incoming first failures to match, separately, for each loading division. Enter code NA whenever this data is not available for a particular loading division.

TABLE C (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR INCOMING FIRST FAILURE TO MATCH WORKSHEET
(NO. 5 CROSSBAR)

ITEM	PROCEDURE
6, 11, 16, and 21	***% Incoming First Failure to Match:*** Calculate for each loading division, the percentage of incoming first failure to match by dividing the number of incoming first failures by the incoming calls minus busies (Item 5 ÷ 4, 10 ÷ 9, 15 ÷ 14, and 20 ÷ 19). Multiply the result by 100 and report to one decimal place. Enter NA in ths item whenever data is not available for a particular loading division. Line designated ***Total (Tot.):*** Total the percentage figures, separately, for each loading division. Line designated ***Average:*** Divide the ***Total*** by the number of days reported.
22	***Total Incoming Minus Busies-BH:*** Enter for each day, the total of incoming minus busies. This is the sum of entries in Items 4, 9, 14, and 19. Enter NA in Item 22 whenever data is not available for any loading division, as indicated with NA in any Items 2 through 21. Line designated ***Total (Tot.):*** Enter the monthly total number of incoming calls minus busies, obtained during the busy hour. This is the sum of the entries in Items 4, 9, 14, and 19 on the line designated Total. Line designated ***Average:*** Enter the monthly average number of incoming calls obtained during the busy hour. This is the sum of the entries in Items 4, 9, 14, and 19 on line designated Average.
23	***Unusable Days (✓)-Total Busy Hours:*** Enter a checkmark (✓) in this item whenever the code NA has been entered in Items 2 through 22. Line designated ***Total (Tot.):*** Enter the total number of checkmarks in Item 23.
24	***Weighting Factor:*** Weighting factors are used to weight incoming first failure to match results for an entity with more than one loading division. ***Load Group:*** Identify each separately measured loading division. These should correspond to the headings at the top of the form. ***Average Incoming Calls Minus Busies-BH:*** Enter the monthly average incoming calls minus busies for each loading division. This figure may be obtained from Items 4, 9, 14, and 19 on the line designated Average. Enter the total number of incoming calls minus busies on the line designated Total (Tot.).

TABLE C (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR INCOMING FIRST FAILURE TO MATCH WORKSHEET
(NO. 5 CROSSBAR)

ITEM	PROCEDURE
	Weighting Factor: Compute the weighting factor for each loading division. Divide the average incoming calls minus busies (Items 4, 9, 14, and 19) for each loading division by the total monthly average incoming calls minus busies (Item 22) for the entity. Express each factor to three decimal places. The sum of the weighting factors must always equal 1.000. Line designated ***WTD % IFFM:*** Calculate a monthly average weighted percentage of incoming first failure to match for offices having more than one loading division. Multiply the percentage figure in Items 6, 11, 16, and 21 on the line designated Average by the corresponding weighting factor in the block above Items 6, 11, 16, and 21. Enter each weighted result in the line designated WTD % IFFM for Items 6, 11, 16, and 21 and reort to two decimal places.
25	***Weighted % IFFM-Total Month:*** Enter the monthly weighted percentage of incoming first failure to match results for the entity. Enter the weighted result on the line designated WTD % IFFM, for Items 6, 11, 16, and 21 and report to two decimal places. ***Note:*** Enter the result to the next higher number whenever the fraction is 0.5 or larger. For example, 2.455 to be reported 2.46; 1.494 to 1.49. ***Note:*** Space is provided at the bottom of the form for entering a written explanation of any pertinent service item or unusual occurrence.

BUSY HOUR INCOMING FIRST FAILURE TO MATCH
NO. 5 CROSSBAR

ENTITY _____ TYPE OF CO EQUIPMENT _____ MONTH _____ 19____

LOAD GROUP	TIME:		FACTOR:			TIME:		FACTOR:			TIME:		FACTOR:			TIME:		FACTOR:			TOTAL INC CALLS MINUS BUSIES BH	UNUSABLE DAYS ( )
DATE BUS DAY	INC CALLS BH	BUSIES BH	INC CALLS MINUS BUSIES (2-3)	IFFM BH	% IFFM (5÷4)	INC CALLS BH	BUSIES BH	INC CALLS MINUS BUSIES (7-8)	IFFM BH	% IFFM (10÷9)	INC CALLS BH	BUSIES BH	INC CALLS MINUS BUSIES (12-13)	IFFM BH	% IFFM (15÷14)	INC CALLS BH	BUSIES BH	INC CALLS MINUS BUSIES (17-18)	IFFM BH	% IFFM (20÷19)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
TOT																						
AVG																						
WTD % IFFM																						

WEIGHTING FACTOR		24	26	NOTES:
LOAD GRP	AVG INC CH - BUSIES	FACTOR		
TOTAL		1,000		

TOTAL MONTH	25 WEIGHTED % IFFM

Fig. 5—Example of Busy Hour Incoming First Failure to Match Worksheet (No. 5 Crossbar) (5.27)

TABLE D

INSTRUCTIONS FOR PREPARING ORIGINATING MATCHING LOSS WORKSHEET (NO. 5 CROSSBAR)

ITEM	PROCEDURE
Entity	Enter identification of entity being measured.
Report Month	Enter month and year in which the report period ends.
Date	Enter date of day being measured.
Busy Hour	Enter dial tone speed busy hour. (If more than one busy hour record data for each hour. Report poorest performance to NSPMP).
1	***OML PC:*** Enter originating matching loss (OML) peg count (PC).
2	***Originating PC:*** Enter originating calls peg count.
3	***Through Switched PC:*** Enter the through switched calls peg count (if applicable).
4	***Total Originating & Through Switched PC:*** Enter the total originating plus switched through calls peg count (columns 2 plus 3). Round to two decimal places.
5	***Percent OML:*** Divide originating matching loss peg count by the total originating plus through switched calls peg count. Multiply the result by 100 (columns 1 ÷ 4 × 100). Enter NA in this item whenever OML data is not available.
6	***Unusable Days (✓):*** Enter a checkmark (✓) whenever OML data is unavailable or unusable.
7	***Total:*** Add the daily percentages of OML and enter at bottom of column 5. Add the number of unusable days (✓) and enter at bottom of column 6.
8	***Average:*** Divide the total percentage of OML by the number of measured days (exclude NA days).
	Note: Use this space for written explanations of any pertinent service item or unusual occurrence.

ORIGINATING MATCHING LOSS
(NO. 5 CROSSBAR)

Entity_____ Report Month _____ 19 ____

DATE	BUSY HOUR: CML PC	ORIGINATING PC	THROUGH SWITCHED PC	TOTAL ORIGINATING + THROUGH SWITCHED (2 + 3)	PERCENT CML 1 – 4 X 100	(√) UNUS-ABLE DAYS
	1	2	3	4	5	6
7 TOTAL						
8 AVG.						

NOTES:

Fig. 6—Example of Originating Matching Loss Worksheet (No. 5 Crossbar) (5.31)

TABLE E

INSTRUCTIONS FOR PREPARING ORIGINATING MATCHING LOSS WORKSHEET (NO. 1 CROSSBAR)

ITEM	PROCEDURE
Entity	Enter identification of entity being measured.
Report Month	Enter month and year in which the report period ends.
Date	Enter date of day being measured.
Busy Hour	Enter dial tone speed busy hour. (If more than one busy hour record data for each hour. Report poorest performance to NSPMP.)
1	***OML PC:*** Enter originating matching loss (OML) peg count (PC).
2	***Originating PC:*** Enter originating marker peg count.
3	***Office Link Frame Overflow PC:*** Enter the office link frame overflow peg count.
4	***Adjusted Originating Marker PC:*** Enter originating marker peg count minus office link frame overflow peg count (columns 2 minus 3).
5	***Percent OML:*** Divide originating matching loss peg count by the adjusted originating marker peg count. Multiply the result by 100 (columns $1 \div 4 \times 100$). Enter NA in this item whenever OML data is not available.
6	***Unusable Days (✓):*** Enter a checkmark (✓) whenever OML data is unavailable or unusable.
7	***Total:*** Add the daily percentages of OML and enter at bottom of column 5. Add the number of unusable days (✓) and enter at bottom of column 6.
8	***Average:*** Divide the total percentage of OML by the number of measured days (exclude NA days).
	Note: Use this space for written explanations of any pertinent service item or unusual occurrence.

ORIGINATING MATCHING LOSS
(NO. 1 CROSSBAR)

Entity _____ Report Month _____ 19___

DATE	BUSY HOUR: OML PC	BUSY HOUR: ORIGINATING MARKER PC	BUSY HOUR: OFFICE LINK FRAME OVERFLOW PC	ADJUSTED ORIGINATING MARKER PC 2-3	PERCENT OML 1 ÷ 4 x 100	(√) UNUSABLE DAYS
	1	2	3	4	5	6
7 TOTAL						
8 AVG.						

NOTES:

Fig. 7—Originating Matching Loss Worksheet (No. 1 Crossbar) (5.34)

TABLE F

INSTRUCTIONS FOR PREPARING BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
Report Month	Enter the observed month and year for which the dial tone speed data is reported.
Entity	Enter office identification.
Type of CO Equipment	Enter type of switching equipment.
Type of DTS Equipment	Enter type of dial tone speed equipment (modified, synchronous timer, EDTSR, etc) provided.
Page__ of__	Enter the page number and total number of pages for the office.
1	***Date Business Days:*** Enter the date of each business day on which dial tone speed is measured.
2 thru 17	The form is designed for reporting dial tone speed for a single entity. It provides for reporting a maximum of four separately measured classes of service. (a) Space is provided for identifying each class and type (class of service, class of frame, or type of receiver) that is measured separately on the dial tone speed machine(s) provided for the entity. (b) ***Time:*** Enter the dial tone speed busy hour for each class and type, whether the selected busy hour is the same or different for each class and type. (c) ***Factor:*** Enter the weighting factor for each class and type as determined in Item 24.
2, 6, 10, and 14	***Number of Tests:*** Enter the number of dial tone speed tests obtained during the dial tone speed busy hour separately for each class and type. Enter NA in this item whenever dial tone speed registrations are not available for any class or type.
3, 7, 11, and 15	***Percent Over 3 Seconds:*** Enter for each day, the number of delays registered during the dial tone speed busy hour, separately for each class and type. Enter code NA whenever these registrations are unavailable for any class or type.

TABLE F (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
4, 8, 12, and 16	***Percent Over 3 Seconds:*** Calculate, separately for each class and type, the percentage of dial tone speed delay. (Item 3 ÷ Item 2; 7 ÷ 6, 11 ÷ 10, and 15 ÷ 14). Multiply the result by 100 and express to one decimal place. (a) Enter NA whenever a code NA has been entered under ***No. Tests*** and/or ***No. Over 3 Seconds*** for a type or class. (b) Line Designated ***Total:*** Total the percentage figures, separately, for each class and type, for the month. (c) Line Designated ***Average:*** Divide the ***Total*** as determined in (b) by the number of days used to arrive at that total.
5, 9, 13, and 17	***Weighted Percent Over 3 Seconds:*** Enter for each day, the weighted dial tone speed over 3 seconds for each class and type. Multiply the ***% Over 3 Seconds*** items by the corresponding class and type weighting factors. (a) Enter the code NA in this item whenever the code NA has been entered in the item ***% Over 3 Seconds*** for any class or type. (b) Enter the code NA in this item whenever a checkmark (✓) has been entered in Item 19.
18	***Number of Tests-Total Class Busy Hour:*** (a) Enter for each day, the total number of dial tone speed tests. This is the sum of entries recorded in Items 2, 6, 10, and 14. (b) Enter the code NA in Item 18 whenever dial tone speed results are not available for one (or more) class and type, as indicated by the code NA in any of Items 2 through 17.
19	***Unusable Days (✓)-Total Class Busy Hours:*** Enter a checkmark (✓) in this item under the conditions described in (a) and (b) following: (a) Whenever the code NA has been entered in Item 18. (b) Whenever the total number of dial tone speed tests made during the dial tone speed busy hour for the entire entity (Item 18) deviates from the number of calculated dial tone speed tests expected for the entity (Item 25).

TABLE F (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
20	***Daily Weighted Percent Over 3 Seconds-Total Class Busy Hour:*** Enter for each day, the daily weighted percentage of dial tone speed for the entire entity. Report the result to one decimal place. This is the sum of entries recorded in Items 5, 9, 13, and 17. Enter NA in Item 20 whenever a checkmark (✓) has been entered in Item 19. ***No. 5 Crossbar Offices with Local Overload Announcement:*** Local Overload Announcement (LOA) is not intended for daily use when it is used during the dial tone speed busy hour the following steps should be taken. ***Step 1:*** Multiply (total originating peg count plus abandoned partial dial peg count minus permanent signal holding peg count) by (the number of vertical groups having LOA access, divided by the total number of vertical groups). ***Step 2:*** Add the LOA peg count to the figure obtained in Step 1. ***Step 3:*** Divide the LOA peg count by the figure derived in Step 2, and multiply this quotient by 100. This represents the percentage of dial tone speed over 3 seconds for the vertical groups not measured by the dial tone speed equipment in the office. ***Step 4:*** Compute the weighted percentage of dial tone speed over 3 seconds for the entity by weighting and adding derived (***d***) percentage of dial tone delay and measured (***m***) percentage of dial tone delay as follows: $(1.00-L)(DTS^{m})+(L)(DTS)$ L = Number of vertical groups having LOA access divided by the total number of vertical groups. DTS^{m} = Percentage of measured dial tone speed over 3 seconds (weighted for TOUCH-TONE service and dial pulse service) DTS^{d} = Percentage of derived dial tone speed over 3 seconds as determined by Step 3. ***Note:*** The LOA trunks busy overflow registrations are excluded from these computations because these scorings will normally be sufficiently low with adequate trunk provisions that they may be disregarded. Conversely, if there is a substantial shortage of announcement trunks, the overflow data will be inflated due to the ***churning*** effect caused by repeated dial tone attempts per call. Each time the dial tone marker finds all announcement trunks are busy, it disconnects and a new dial tone start is made.

TABLE F (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
	Average Class Busy Hour Peg Count: Enter the average class busy hour peg count (line, finder, district selector, DP-TT, DP) registrations corresponding to the class and type entered in (a). These counts should be based on studies taken for at least 2 to 5 business days each month in the class busy hour. Enter the total number of "average registrations" for the entity on the line designated TOTAL. ***Factor:*** Compute the weighting factor for each class and type. Divide the registrations of each class and type by the total of the class busy hour registrations for the entity. Report the weighting factor to three decimal places. The sum of the weighting factors must always equal 1.000.
25	***Dial Tone Speed Tests:*** For each entity, enter the number of dial tone speed tests that can be expected for the dial tone speed busy hour for the entity. ***Number of Expected Tests:*** Enter the number of dial tone speed tests that can be expected for the dial tone speed busy hour for the entity. ***Allowable Deviation:*** Multiply the number of dial tone speed tests expected by 3.0 percent (registers under camera or mechanized method used) or 8.0 percent (registers read manually). Apply this figure as follows: ***Max-:*** Enter in this space the maximum number of dial tone speed tests allowable. Add the allowable deviation figure to the number of dial tone speed tests expected. ***Min-:*** Enter in this space the minimum number of dial tone speed tests allowable. Subtract the allowable deviation figure from the number of dial tone speed tests expected.
26	***Adjustment Factor-Total Month:*** Enter the Adjustment Factor (Crossbar and SPCS offices) corresponding to the total number of days dial tone speed is reported and indexed for the total observing month. This factor is obtained from the Dial Tone Speed Table (see Table G).
27	***Total Adjusted Index points Earned-Total Month:*** ***Crossbar, ESS switches, DMS offices, or Panel:*** Multiply the points earned cumulative in Items 23, line designated Total, by the conversion factor in Item 26. Enter the result in Item 27. Report to two decimal places.

TABLE F (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
	Step-by-Step Office 100 Percent DP 100 Percent TOUCH-TONE Service, and Step-by-Step Offices with Common Control TOUCH-TONE Service Equipment: Read the Accumulated Weighted % Over 3 Seconds reported in Item 21, designated Average, directly into the Performance column of the Dial Tone Speed-BH Table (Table H). Enter the corresponding points earned in Item 27.
28	***Component Index-Total Month:***
	Crossbar, ESS switches, DMS offices, and Panel: Read the Total Adjusted Points Earned reported to two decimal places, as shown in Item 27, into the Measured Component Index Table (See related NSPMP Section, eg, Section 231-001-005 for No. 1 ESS switch.)
	Step-by-Step Offices 100 Percent Dial Pulse, 100 Percent TOUCH-TONE Service, and Step-by-Step Offices Partialy Equipped Common Control TOUCH-TONE Service Equipment: Determine the Component Index by reading the total points earned, reported to two decimal places, into the Dial Tone Speed Measured Component Index Table.
29	***Band U (✓)-Total Month:*** Enter a checkmark (✓) in Item 29 whenever the Dial Tone Speed Component Index for the entity, as reported in Item 28, is 89.50 or lower.
30	***No. 1 ESS-Number Blocked Dial Tone-Busy Hour:*** Enter for each day, the Blocked Dial Tone reading for the busy hour (measurement code 05 and office count 087). If no blockage has occurred, enter a zero. Whenever these data are not available, enter code NA in this item and fully explain in Remarks (Item 31).
	Line designated ***Total:*** Total for the month. The number of entries in Item 30.
	Line designated ***Average:*** Divide the Total figure as determine in previous step by the number of days used in arriving at the TOTAL. This includes zero entries and excludes NA entries.
31	***Notes:*** Space is provided at the bottom of the form for entering written explanation of any pertinent service item or unusual occurrence.

TABLE F (Contd)

INSTRUCTIONS FOR PREPARING
BUSY HOUR DIAL TONE SPEED WORKSHEET

ITEM	PROCEDURE
	Items 1-19: Compute in usual manner. Items 21-23: Compute in usual manner. Item 31: Enter the figures used to compute Item 20 on days when the LOA is operated.
21	***Accumulated Weighted Percent Over 3 Seconds-Total Class Busy Hours:*** Enter each day the accumulated weighted percentage of dial tone speed over 3 seconds. Add the ***Daily Wtd % Over 3 Seconds,*** in Item 20, to the previous days accumulated weighted percentage over 3 seconds. Line designated ***Total:*** Enter the same figures as shown on the last day reported in Item 21. Line designated ***Average:*** Divide the ***Total*** as already determined by the number of days used in arriving at the total.
22	***Points Earned-Daily:*** Read the ***Daily Wtd. % Over 3 Seconds*** in Item 20 directly into the ***Performance*** column of the Dial Tone Speed-BH table (labeled Crossbar-SPCS-Panel) (Table G). Enter the corresponding points earned in Item 22. Report the result to two decimal places.
23	***Points Earned-Cumulative:*** Enter for each measured day, the accumulated dial tone speed index points earned. Add these points to the previous days accumulated points earned. Express to two decimal places. Line designated ***Total:*** Enter the accumulated index points earned for all days reported in the total month. This is the same figure as shown for the last day, reported in Item 23. Report the result to two decimal places. Enter the code NA whenever less than 15 days are measured in the report month.
24	***Weighting Factors:*** Weighting factors are used to weight dial tone speed results for an entity having more than one class and type. Compute a weighting factor for each "class and type" that is separately measured on the dial tone speed machine(s), used for an entity. ***Class:*** Identify each separately measured "class and type" in the entity. These should correspond with the headings shown in class and type at the top of the form.

REPORT MONTH _____ 19 _____ **BUSY HOUR DIAL TONE SPEED** PAGE _____ OF _____

ENTITY _____ TYPE OF CO EQUIPMENT _____ TYPES OF DTS EQUIPMENT _____

CLASS AND TYPE	TIME		FACTOR		TIME		FACTOR		TIME		FACTOR		TIME		FACTOR		TOTAL CLASS BUSY HOUR						"ESS" SWITCH
DATE BUS. DAYS	NO. TESTS	NO. OVER 3"	% OVER 3"	WTD % OVER 3"	NO. TESTS	NO. OVER 3"	% OVER 3"	WTD % OVER 3"	NO. TESTS	NO. OVER 3"	% OVER 3"	WTD % OVER 3"	NO. TESTS	NO. OVER 3"	% OVER 3"	WTD % OVER 3"	NO. TESTS	UNUS-ABLE DAYS (↓)	DAILY WTD % OVER 3"	ACCUM. WTD % OVER 3"	SPCS-CROSSBAR PANEL "TOUCH-TONE" SERVICE POINTS EARNED DAILY	SPCS-CROSSBAR PANEL "TOUCH-TONE" SERVICE POINTS EARNED CUM.	NO. BLOCKED DT BH
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	30
TOT.																							
AVG.																							

WEIGHTING FACTORS		24
CLASS	AVG. CLASS BH PEG COUNT	FACTOR
TOTAL		1,000

CALCULATED DIAL TONE SPEED TESTS 25 31

NO. EXPECTED TESTS: _____

ALLOWABLE DEVIATION:

MAX: _____ MIN: _____

NOTES

TOTAL MONTH		
	ADJUSTMENT FACTOR	26
	TOTAL ADJ INDEX POINTS EARNED	27
	COMPONENT INDEX	28
	BAND U (↓)	29

IF MORE THAN ONE PAGE IS USED SHOW TOTALS ON THE LAST PAGE

Fig. 8—Example of Busy Hour Dial Tone Speed Worksheet (6.12, 6.17, 6.21, 6.25, 6.33)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	TOTAL NUMBER DTS TESTS (3)	WEIGHTING FACTOR (4)
DIAL PULSE	9:15 A.M. TO 10:15 A.M.	362	.402
TOUCH-TONE SERVICE	10:45 A.M. TO 11:45 A.M.	538	.598
TOTAL		900	1.000

WEIGHTED PERCENTAGE

TYPE OF SERVICE (1)	NO. OF DTS TESTS (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
		COL 3 ÷ COL 2 X 100			COL 4 X COL 5
DIAL PULSE	362	5	1.4	.402	.6
TOUCH-TONE SERVICE	538	11	2.0	.598	1.2
TOTAL	900			1.000	1.8*

NOTES:
1. ASSUME 2ESS SWITCH WITH DIAL PULSE AND TOUCH-TONE SERVICE.
2. TO DERIVE EACH WEIGHTING FACTOR, DIVIDE THE NUMBER OF DTS TESTS PER TYPE BY THE TOTAL NUMBER OF TESTS. COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE DTS OVER 3 SECONDS = 1.8 PERCENT

Fig. 9—Example of Weighting Dial Tone Speed Results for 2ESS Switches (6.17)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	TOTAL NUMBER DTS TESTS (3)	WEIGHTING FACTOR (4)
DIAL PULSE	9:15 A.M. TO 10:15 A.M.	230	.383
TOUCH-TONE SERVICE	10:45 A.M. TO 11:45 A.M.	370	.617
TOTAL		600	1.000

WEIGHTED PERCENTAGE

TYPE OF SERVICE (1)	NO. OF DTS TESTS (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
		COL 3 ÷ COL 2 X 100			COL 4 X COL 5
DIAL PULSE	230	2	.9	.383	.3
TOUCH-TONE SERVICE	370	3	.8	.617	.5
TOTAL	600			1.000	.8*

NOTES:
1. ASSUME 3 ESS SWITCH WITH DIAL PULSE AND TOUCH-TONE SERVICE.
2. TO DERIVE EACH WEIGHTING FACTOR, DIVIDE THE NUMBER OF DTS TESTS PER TYPE BY THE TOTAL NUMBER OF TESTS. COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE DTS OVER 3 SECONDS = .8 PERCENT

Fig. 10—Example of Weighting Dial Tone Speed Results for 3ESS Switches (6.20)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	ORIG. REG PEG COUNT (2 DAYS-BH) (3)	WEIGHTING FACTOR (4)
DIAL PULSE	10:30 A.M. TO 11:00 A.M.	9,642	.821
TOUCH-TONE SERVICE	9:00 A.M. TO 10:00 A.M.	2,106	.179
TOTAL		11,748	1.000

WEIGHTED PERCENTAGE OF DIAL TONE SPEED

CLASS OF SERVICE (1)	NO. TEST REG. (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
		COL 3 ÷ COL 2 X 100			COL 4 X COL 5
DIAL PULSE	783	14	1.8	.821	1.5
TOUCH-TONE SERVICE	117	7	6.0	.179	1.1
TOTAL	900			1.000	2.6*

NOTES:
1. ASSUME NO. 5 CROSSBAR OFFICE WITH DIAL PULSE AND TOUCH-TONE SERVICE.
2. TO DERIVE EACH WEIGHTING FACTOR, DIVIDE EACH TYPE OF SERVICE'S ORIGINATING REGISTER PEG COUNT BY THE TOTAL ORIGINATING REGISTER PEG COUNT. COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE OF DTS OVER 3 SECONDS = 2.6 PERCENT

Fig. 11—Example of Weighting Dial Tone Speed Results for No. 5 Crossbar Offices (6.25)

WEIGHTING FACTORS

CLASS OF FRAME (1)	TIME (BH) (2)	DISTRICT JUNCTOR PEG COUNT (3)	WEIGHTING FACTOR (4)
INDIVIDUAL	10:00 A.M. TO 11:00 A.M.	4,899	.518
PARTY	7:00 P.M. TO 8:00 P.M.	3,949	.418
COIN	1:30 P.M. TO 2:30 P.M.	604	.064
TOTAL		9,452	1.000

WEIGHTED PERCENTAGE OF DIAL TONE SPEED

CLASS OF FRAME (1)	NO. TEST REG. (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
			COL 3 ÷ COL 2 X 100		COL 4 X COL 5
INDIVIDUAL	466	5	1.1	.518	.6
PARTY	376	6	1.6	.418	.7
COIN	58	2	3.4	.064	.2
TOTAL	900			1.000	1.5*

NOTES:
1. ASSUME THAT THREE TYPES OF LINE LINK FRAMES WITH SEPARATE BUSY HOURS ARE SERVED FROM TWO TERMINATING MARKER GROUPS.
2. TO DERIVE EACH WEIGHTING FACTOR, DIVIDE EACH FRAME'S DISTRICT JUNCTOR PEG COUNT BY THE TOTAL DISTRICT JUNCTOR PEG COUNT. COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE OF DTS OVER 3 SECONDS = 1.5 PERCENT

Fig. 12—Example of Weighting Dial Tone Speed Results for No. 1 Crossbar Offices With 100 Percent TOUCH-TONE Service or 100 Percent Dial Pulse (6.26)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	SUBSCRIBER SENDER USAGE BH (3)	WEIGHTING FACTOR (4)
DIAL PULSE	10:30 A.M. TO 11:00 A.M.	964	.821
TOUCH-TONE SERVICE	9:00 A.M. TO 10:00 A.M.	210	.179
TOTAL		1,174	1.000

WEIGHTED PERCENTAGE OF DIAL TONE SPEED

CLASS OF SERVICE (1)	NO. TEST REG. (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
		COL 3 ÷ COL 2 X 100			COL 4 X COL 5
DIAL PULSE	783	14	1.8	.821	1.5
TOUCH-TONE SERVICE	117	7	6.0	.179	1.1
TOTAL	900			1.000	2.6*

NOTES:
1. ASSUME NO. 1 CROSSBAR OFFICE WITH DP AND TOUCH-TONE SERVICE (NO COMMON OVERFLOW SENDER GROUP).
2. TO DERIVE EACH WEIGHTING FACTOR DIVIDE EACH TYPE OF FRAME'S DISTRICT JUNCTOR PEG COUNT BY THE TOTAL DISTRICT JUNCTOR PEG COUNT. COMPUTE TO THREE DECIMAL PLACES.

*WEIGHTED BUSY HOUR PERCENTAGE OF DTS OVER 3 SECONDS = 2.6 PERCENT

Fig. 13—Example of Weighting Dial Tone Speed Results for No. 1 Crossbar Offices With Dial Tone and TOUCH-TONE Service Without Common Overflow Sender Group (6.28)

COMBINING DIAL TONE SPEED RESULTS

INDIVIDUAL FRAME	TIME (BH)	NO. TEST REG.	NO. TESTS OVER 3 SECONDS	% DTS OVER 3 SECONDS
DIAL PULSE	10 A.M. TO 11 A.M.	500	3	.6
TOUCH-TONE SERVICE	10 A.M. TO 11 A.M.	200	2	1.0
TOTAL		700	5	1.6

PARTY FRAME	TIME (BH)	NO. TEST REG.	NO. TESTS OVER 3 SECONDS	% DTS OVER 3 SECONDS
DIAL PULSE	7 P.M. TO 8 A.M.	150	3	2.0
TOUCH-TONE SERVICE		-	-	-
TOTAL		150	3	2.0

COIN FRAME	TIME (BH)	NO. TEST REG.	NO. TESTS OVER 3 SECONDS	% DTS OVER 3 SECONDS
DIAL PULSE	1:30 P.M. TO 2:30 P.M.	50	2	4.0
TOUCH-TONE SERVICE		-	-	-
TOTAL		50	2	4.0

NOTES:
1. ASSUME NO. 1 CROSSBAR OFFICE WITH DIAL PULSE AND TOUCH-TONE SERVICE (COMMON OVERFLOW SENDER GROUP).
2. WEIGHT THE RESULTS AS OUTLINED IN PARAGRAPH 6.28.

Fig. 14—Example of Calculating Dial Tone Speed Results for a No. 1 Crossbar Offices With Dial Pulse and TOUCH-TONE Service and Senders Arranged With Common Overflow Group (6.28)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	LINE FINDER PEG COUNT REG. (3)	WEIGHTING FACTOR (4)
FLAT (DP)	9:00 A.M. TO 10:00 A.M.	8,510	.809
COIN (DP)	7:00 P.M. TO 8:00 P.M.	439	.042
FLAT (TT)	10:00 A.M. TO 11:00 A.M.	1,372	.130
COIN (TT)	7:00 P.M. TO 8:00 P.M.	200	.019
TOTAL		10,521	1.000

WEIGHTED PERCENTAGE OF DIAL TONE SPEED

CLASS OF SERVICE (1)	NO. TEST REG. (2)	NO. TESTS OVER 3 SECONDS (3)	% DTS OVER 3 SECONDS (4)	WEIGHTING FACTOR (5)	WEIGHTED % DTS OVER 3 SECONDS (6)
		COL 3 ÷ COL 2 X 100			COL 4 X COL 5
FLAT (DP)	470	9	1.9	.809	1.5
COIN (DP)	200	4	2.0	.042	.1
FLAT (TT)	200	7	3.5	.130	.5
COIN (TT)	20	0	0	.019	.0
TOTAL	890			1.000	2.1*

NOTES:
1. ASSUME FOUR CLASSES OF SERVICE WITH SEPARATE BUSY HOURS.
2. TO DERIVE EACH WEIGHTING FACTOR (COL. 4) DIVIDE EACH LINE FINDER PEG COUNT (COL. 3) BY THE TOTAL OF THE LINE FINDER PEG COUNTS (COL. 3) COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE OF DTS OVER 3 SECONDS = 2.1 PERCENT

Fig. 15—Example of Weighting Dial Tone Speed Results for a Step-by-Step Office With Dial Pulse Service and Common Control TOUCH-TONE Service Equipment (6.33)

WEIGHTING FACTORS

CLASS OF SERVICE (1)	TIME (BH) (2)	TOTAL NUMBER DTS TESTS (3)	WEIGHTING FACTOR (4)
DIAL PULSE	9:15 A.M. TO 10:15 A.M.	2300	.383
DIGITONE	10:45 A.M. TO 11:45 A.M.	3700	.617
TOTAL		6000	1.000

WEIGHTED PERCENTAGE

TYPE OF SERVICE (1)	% DTS OVER 3 SECONDS (2)	WEIGHTING FACTOR (3)	WEIGHTED % DTS OVER 3 SECONDS (4)
			COL 2 X COL 3
DIAL PULSE	.9	.383	.3
DIGITONE	.8	.617	.5
TOTAL		1.000	.8*

NOTES:
1. ASSUME NO. DMS-10 OFFICE WITH DIAL PULSE AND DIGITONE SERVICE.
2. TO DERIVE EACH WEIGHTING FACTOR DIVIDE THE NUMBER OF CALLS PER TYPE BY THE TOTAL NUMBER OF CALLS. COMPUTE TO THREE DECIMAL PLACES. COMPUTE DAILY.

*WEIGHTED BUSY HOUR PERCENTAGE OF DTS OVER 3 SECONDS = .8 PERCENT

Fig. 16—Example of SONDS Monthly Report (6.34)

SONDS MONTHLY REPORT PAGE 1

OFFICE B MONTH ENDING: SEP 22, 1982

OFFICE FILE UPDATE: SEP 19, 1982 DAYS OF VALID EVE DATA: 20

ORIGINATING RESULTS

LINE FINDER GROUP NAME	NO. LFS	NO. MS & LINES	DAILY PEAKS AVG CCS	MONTH PEAK CCS	MONTH LOAD CCS/M	PEAK LOAD CAP. CCS	% CAP	MS ASSIGN GUIDE	PERCENT DTD AVG/MAX
FR TT LG14	14	184/181	337	401	2.18	349	115	-1	7.9/33.9
FR TT LG15	14	188/184	305	364	1.93	349	104	+8	3.6/11.4
FR TT LG16	14	194/193	329	415	2.14	349	119	-3	6.3/28.4
FR TT LG17	14	192/189	316	400	2.08	349	115	-1	6.1/27.6
FR TT LG18	14	195/194	331	415	2.13	349	119	-3	8.6/25.5
LOAD DIV. F1	TCT.	953/941							
	AVG.	190/188	324	399	2.09	349	114		6.5
	IMBALANCE FACTOR		0.1	INDEX 100					
FR TT LG1	13	187/181	275	351	1.88	318	110	+1	1.2/4.9
FR TT LG2	13	198/195	292	366	1.85	318	115	-6	4.8/14.8
FR TT LG3	13	187/184	308	364	1.94	318	114	-3	10.7/30.6
FR TT LG4	13	187/184	232	282	1.51	318	89	+26	0.6/4.0
FR TT LG5	13	166/167	322	385	2.32	318	121	-15	9.8/27.3
FR TT LG6	13	183/179	264	311	1.70	318	98	+16	1.1/3.9
FR TT LG7	13	193/190	318	393	2.03	318	123	-13	9.0/30.3
FR TT LG8	13	185/182	271	331	1.79	318	104	+12	3.6/18.3
FR TT LG10	13	192/191	317	421	2.19	318	132	-19	12.4/37.2
FR TT LG11	13	181/176	299	349	1.93	318	110	+2	6.7/37.3
FR TT LG12	131	176/173	307	380	2.16	318	119	-9	6.9/24.1
FR TT LG13	13	180/178	386	331	1.84	318	104	+8	5.0/23.6
LOAD DIV. F2	TCT.	2215/2180							
	AVG.	184/181	291	355	1.93	318	112		6.0
	IMBALANCE FACTOR		1.5	INDEX 98					
CN TT LG9	8	37/37	76	100	2.69	170	59	0	0.0/0.0

TOTAL OFFICE: 3205 MS, 1.01 MS/L, 1.98 CCS/MS
6.1% DTD (AMPS), 2.8% DTD (TCBH), 20 DAYS OF DTD DATA
29.25 (DLI), 71.00 (COMP INDEX), 14.20 (NSPMP)
113% CAP, 1.1 IMBALANCE FACTOR 99 LBI

* START-UP MODE
? < 7 DAYS OF DATA IN CURRENT REPORT PERIOD

Fig. 17—Example of Weighting Dial Tone Speed Results for DMS-10 Digital Switching System Office (6.38)

```
*** NO. 1 ESS NETWORK SWITCHING PERFORMANCE RESULTS ***

ENTITY:ENTITY_NAME   DATE:MM/DD/YY   TIME:HH:MM   INTERVAL:XX  HOURS

                    ----------PERFORMANCE INDICATORS----------
          ----------DAILY RESULTS----------   ----MONTHLY RESULTS----

ACCESS        BH   FAIL   BASE   PERF  SOFT          #DAYS    PERF SOFT

CDR OFL       DTS XXXXXX XXXXXXX XXX.XX                XX       XX
BLK DT DEL    -   XXXXXX XXXXXXX XXX.XX                XX       XX

                  FAIL   BASE   PERF  SOFT    TOT%  #DAYS    PERF SOFT

%RADR MF      MFR XXXXXX XXXXXXX XXX.XX       XXX.XX   XX   XXX.XX
%RADR DP      DPR XXXXXX XXXXXXX XXX.XX       XXX.XX   XX   XXX.XX
%RADR RP      RPR XXXXXX XXXXXXX XXX.XX      XXXX.XX   XX   XXX.XX

SWITCHING         FAIL   BASE   PERF  SOFT    TOT%  #DAYS    PERF SOFT

% IML         IML XXXXXX XXXXXXX XXX.XX      XXX.XX   XX   XXX.XX

                  FAIL   BASE   PERF

T-T MEM OFL   INC XXXXXX XXXXXXX XXX.XX
T-T MEM OFL   TAN XXXXXX XXXXXXX XXX.XX      USE THESE FIGURES

BILLING           FAIL   BASE   PERF        FOR NSPMP REPORTING

DET AMA       DET XXXXXX XXXXXXX XXX.XX
BLK AMA       BLK XXXXXX XXXXXXX XXX.XX
TTL AMA       TTL XXXXXX XXXXXXX XXX.XX

                    ----------MEASURED COMPONENTS----------
          ----------DAILY RESULTS----------   ----MONTHLY RESULTS----

ACCESS        BH   FAIL   BASE   PERF    CI   FAIL   BASE   PERF    CI

RCVR OFL      O+I XXXXXX XXXXXXX XXX.XX XXX.XX XXXXXX XXXXXXX XXX.XX XXX.XX

SWITCHING     BH   FAIL   BASE   PERF    CI   FAIL   BASE   PERF    CI

OFC OFL       O+I XXXXXX XXXXXXX XXX.XX XXX.XX XXXXXX XXXXXXX XXX.XX XXX.XX

DTS RESULTS           TSTS     DLYS     %DTS

TT              DTS     XXXX     XXXX   XXX.XX
DP              DTS     XXXX     XXXX   XXX.XX
TOTAL           DTS     XXXX     XXXX   XXX.XX
                                          AVG % DTD=XXX.XX

INDEX  DAILY PTS = X.XX  CI = XXX.XX TOT  DAILY PTS = XX.XX CI = XXX.XX
```

Fig. 18—Example of NORGEN NSPMP Report for 1ESS Switch Dial Tone Speed and Matching Loss Results (7.05)

```
          * * * NO. 2 ESS NETWORK SWITCHING PERFORMANCE RESULTS * * *

ENTITY:ENTITY_NAME    DATE:MM/DD/YY          INTERVAL:XX HOURS

    -------------------------PERFORMANCE INDICATORS-------------------------
    -----------DAILY RESULTS---------------     ---MONTHLY RESULTS---------
ACCESS        BH    FAIL      BASE    PERF       FAIL      BASE     PERF     SOFT

CDR OFL      DP    XXXXXX XXXXXXX XXX.XX                           XXX.XX
RCVR OFL     TT    XXXXXX XXXXXXX XXX.XX                           XXX.XX
CDR OFL      DTS   XXXXXX XXXXXXX XXX.XX                           XXX.XX

RCVR OFL     TTOR  XXXXXX XXXXXXX XXX.XX    XXXXXX    XXXXXXX XXX.XX

SWITCHING    BH    FAIL    BASE    PERF      FAIL      BASE    PERF     SOFT

 CONT FAIL   -     XXXXXX XXXXXXX           XXXXXX    XXXXXXX XXX.XX

NETW MATCH  0+I    XXXXXX XXXXXXX XXX.XX                      [XXX.XX]

AUDITS        -    XXXXXX XXXXXXX

MRF           -                   XXX.XX
                                                      USE THESE FIGURES
BILLING      BH    FAIL     BASE
                                                      FOR NSPMP REPORTING
 AMA OFL      -    XXXXXX XXXXXXX

 COIN CTL     -    XXXXXX XXXXXXX

     ------------------------MEASURED COMPONENTS------------------------
     ---------DAILY RESULTS--------------    -------MONTHLY RESULTS--------

ACCESS        BH     FAIL             PERF     FAIL      PERF        CI   POINTS

DTS          DTS   XXXXXX           XXX.XX  | XXXXXX    XXX.XX  XXX.XX    XX.XX |
                                            |                                   |
DTS RESULTS         TSTS    DLYS   % DTD    |                                   |
                                            |                                   |
TT           DTS    XXXX    XXXX XXX.XX     |                                   |
DP           DTS    XXXX    XXXX XXX.XX     |                                   |
TOTAL        DTS    XXXX    XXXX XXX.XX     |                                   |
                                            | AVG % DTD=XX.XX                   |

 RES/VFY      -   XXXXXX XXXXXXX            XXXXXX XXXXXXX XXX.XX  XXX.XX

SWITCHING    BH    FAIL     BASE    PERF     FAIL     BASE    PERF     CI   POINTS

 XMTR TO      -   XXXXXX XXXXXXX            XXXXXX XXXXXXX XXX.XX XXX.XX

OFCOFL      0+I   XXXXXX XXXXXXX XXX.XX     XXXXXX XXXXXXX XXX.XX XXX.XX   XX.XX

FCG FAIL     -    XXXXXX XXXXXXX            XXXXXX XXXXXXX XXX.XX XXX.XX

RCVR TO      -    XXXXXX XXXXXXX            XXXXXX XXXXXXX XXX.XX XXX.XX
```

Fig. 19—Example of NORGEN NSPMP for 2 ESS Switch Dial Tone Speed on Network Matching Loss Results (7.07)

```
          * * * 3 ESS NETWORK SWITCHING PERFORMANCE RESULTS * * *

ENTITY:ENTITY_NAME     DATE:MM/DD/YY          INTERVAL:XX HOURS

    -----------------------PERFORMANCE INDICATORS----------------------
    ----------DAILY RESULTS----------  ----------MONTHLY RESULTS---------
ACCESS       BH    FAIL     BASE     PERF      FAIL     BASE     PERF    SOFT

CDR OFL      DTS   XXXXXX XXXXXXX XXX.XX                         XXX.XX

RCVR OFL     OFC   XXXXXX XXXXXXX XXX.XX     XXXXXX   XXXXXXX  XXX.XX

NETW MATCH OFC                    XXX.XX             [XXXXXXX  XXX.XX]

     -----------------------MEASURED COMPONENTS----------------------
     ---------DAILY RESULTS---------------------MONTHLY RESULTS-------

ACCESS       BH    FAIL             PERF      FAIL     PERF      CI   POINTS

DTS          DTS   XXXXXX           XXX.XX   XXXXXX   XXX.XX   XXX.XX   XX.XX

DTS RESULTS        TSTS    DLYS  % DTD

TT           DTS   XXXX    XXXX XXX.XX
DP           DTS   XXXX    XXXX XXX.XX
TOTAL        DTS   XXXX    XXXX XXX.XX
                                       AVG % DTD=XXX.XX

ACCESS       BH    FAIL    BASE    PERF

OFF SW       OFC XXXXXX XXXXXXX XXX.XX
                                                   USE THESE FIGURES
EQ BL        OFC XXXXXX XXXXXXX XXX.XX
                                                   FOR NSPMP REPORTING
INF SG       OFC XXXXXX XXXXXXX XXX.XX

CURRENT SCHEDULED COLLECTION DAYS(*) FOI

    SUN, MON*, TUE*, WED*, THU*, FRI*, S

CURRENT BH COLLECTION SCHEDULES    MONTH
                                     NO.

DP DTS   =  XX.XX TO XX.XX            XX                *
TT DTS   =  XX.XX TO XX.XX            XX                *
OFF SW   =  XX.XX TO XX.XX            XX                *

NOTICE: 'X' INDICATES TODAY'S DATA MISSING
      : '*' INDICATES TODAY'S DATA COLLECTED

    ******************************************************************
```

Fig. 20—Example of NORGEN NSPMP Report for 3ESS Switch Dial Tone Speed and Network Matching Loss Results (7.09)

* * * NO. 5XB NETWORK SWITCHING PERFORMANCE RESULTS * * *

ENTITY: XXXXXXXXXXXX DATE: XX/XX/XX

PERFORMNCE INDICATORS

		DAILY RESULTS				MONTHLY RESULTS			
ACCESS	BH	FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
AORB	TT	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
AORB	DP	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
		FAIL	BASE	PERF	SOFT	TOT%	#DAYS	PERF	SOFT
DIML	TT	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
	DIM CCC =				XX.XX				XX.XX
	CCS/LLF -				XXXXX				XXXXX
	THRESH =				XX.XX				XX.XX
DIML	DP	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
	DIM CCC =				XX.XX				XX.XX
	CCS/LLF =				XXXXX				XXXXX
	THRESH =				XX.XX				XX.XX
		FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
COM OFL	TT	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
COM OFL	DP	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
SWITCHING		FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
CM TRL	-	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
TV TRL	-	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
OS OFL	TT	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
OS OFL	DP	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
		FAIL	BASE	PERF	SOFT	TOT%	#DAYS	PERF	SOFT
OML	TT	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
OML	DP	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
IFFM	NP	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
IFFM	PR	XXXXXX	XXXXXX	XXX.XX	*	XXXX.XX	XX	XXX.XX	*
WEIGHTING		USE THESE FIGURES				AVG INC		WTD%	
		FOR NSPMP REPORTING							
NP IFFM	NP					XXXX.XX		XXX.XX	
PR IFFM	PR					XXXX.XX		XXX.XX	
WTD TOTAL	-					XXXX.XX		XXX.X%	
BILLING		FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
RCDR TRL	-	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*
CN TRL	-	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXXX	XXX.XX	*

Fig. 21—Example of NORGEN NSPMP Report for No. 5 Crossbar Dial Tone Speed and Matching Loss Results (Sheet 1 of 2) (7.11)

* * * NO. 5XB NETWORK SWITCHING PERFORMANCE RESULTS (Cont) * * *

		MEASURED COMPONENTS							
		DAILY RESULTS				MONTHLY RESULTS			
SWITCHING		FAIL	BASE	PERF	CI	FAIL	BASE	PERF	CI
STK SDR	-	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X
CM STT	-	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X
TV STT	-	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X
OFC OFL	TT	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X
OFC OFL	DP	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X
LK RLS	-	XXXXXX	XXXXXX	XXX.XX	XXX.X	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X

IML RESULTS		FAIL	BASE	PERF	CI	TOT%	# DAYS	PERF	CI
NP IML	NP	XXXXXX	XXXXXXX	XXX.XX	XXX.XX	TTTT.T	XX	XXX.XX	XXX.XX
PR IML	PR	XXXXXX	XXXXXXX	XXX.XX	XXX.XX	TTTT.T	XX	XXX.XX	XXX.XX

WEIGHING			TOT INC	AVG INC
NP IML	NP	USE THESE FIGURES	XXXXXX	XXXXX.XX
PR LLF	PR	FOR NSPMP REPORTING	XXXXXX	XXXXX.XX
INDEX			WTD IML - XXX.XX%	CI = XXX.XX

DTS RESULTS		TSTS	DLYS	%DTD	OR PC	AVG%DTD	
TT GRP	TT	XXXXXX	XXXXXX	XXX.XX	XXXXXX		
DP GRP	DP	XXXXXX	XXXXXX	XXX.XX	XXXXXX		
WTD DTD				XXX.XX		XXX.XX	
INDEX		DAY PTS = XXX.XX		CI = XXX.XX		PERF = XXX.XX	CI = XXX.XX

Fig. 21—Example of NORGEN NSPMP Report for No. 5 Crossbar Dial Tone Speed and Matching Loss Results (Sheet 2 of 2) (7.11)

* * * NO. 1XB NSPMP REPORT * * *

ENTITY: [A1A...A] DATE:MM/DD/YY

MEASURED COMPONENTS

DAILY RESULTS — MONTHLY RESULTS

ACCESS	DLYS	TSTS	%DTD
DP-IND	XXXXXX	XXXXXX	XXX.XX
DP-PTY	XXXXXX	XXXXXX	XXX.XX
DP-CN	XXXXXX	XXXXXX	XXX.XX
TT-IND	XXXXXX	XXXXXX	XXX.XX
TT-PTY	XXXXXX	XXXXXX	XXX.XX
TT-CN	XXXXXX	XXXXXX	XXX.XX

USE THESE FIGURES

FOR NSPMP REPORTING

WTD DIAL TNE DLY	%WTD	%WTD	CI	POINTS
IND WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
PTY WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
CN WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
TT TOTAL WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
(OR)				
IND WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
PTY WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
CN WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
DP TOTAL WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
(OR)				
IND WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
PTY WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
CN WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
TOT WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
(OR)				
DP WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
TT WTD	XXX.XX	XXX.XX	XXX.X	XX.XX
TOT WTD	XXX.XX	XXX.XX	XXX.X	XX.XX

SWITCHING	FAIL	BASE	PERF	FAIL	BASE	PERF	CI	POINTS
STSE	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
CM2F	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
TM2F	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
TVTR	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX

Fig. 22—Example of NORGEN NSPMP Report for No. 1 Crossbar Dial Tone Speed and Matching Loss Results (Sheet 1 of 3) (7.18)

* * * NO. 1XB NSPMP REPORT * * *

ENTITY: [A1A...A] DATE:MM/DD/YY

----------MEASURED COMPONENTS----------
- - -DAILY RESULTS- - - - - MONTHLY RESULTS- - -

%ORD	FAIL	BASE	PERF	FAIL	BASE	PERF	CI	POINTS
DIND	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
DPTY	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
DCN	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
TIND	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
TPTY	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
TCN	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
IML0	XXXXXX	XXXXXX	XXX.X	USE THESE FIGURES		XXX.XX	XXX.X	XX.XX
IML1	XXXXXX	XXXXXX	XXX.X			XXX.XX	XXX.X	XX.XX
IML2	XXXXXX	XXXXXX	XXX.X	FOR NSPMP REPORTING		XXX.XX	XXX.X	XX.XX
IML3	XXXXXX	XXXXXX	XXX.XX			XXX.XX	XXX.X	XX.XX

BILLING	FAIL	BASE	PERF	FAIL	BASE	PERF	CI	POINTS
LAMA	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
ANII	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX
ANIF	XXXXXX	XXXXXX	XXX.XX	XXXXXXX	XXXXXXXX	XXX.XX	XXX.X	XX.XX

----------1XB REVIEW AND REJECT HISTORY----------

* DIAL TONE SPEED RESULTS REMOVED *

DATA	USER ID

* * NO DIAL TONE SPEED RESULTS REMOVED TO DATE * *

* * * END OF 1XB REVIEW AND REJECT HISTORY * * *

Fig. 22—Example of NORGEN NSPMP Report for No. 1 Crossbar Dial Tone Speed and Matching Loss Results (Sheet 2 of 3) (7.18)

* * * NO. 1XB NSPMP REPORT * * *

ENTITY: [A1A...A] DATE:MM/DD/YY

PERFORMANCE INDICATORS

	DAILY RESULTS				MONTHLY RESULTS			
ACCESS	FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
LCTD	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
SWITCHING	FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
OMTR	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXXX	XXXXXXX	XXX.XX	*
TMTR	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXXX	XXXXXXX	XXX.XX	*
TltF	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXXX	XXXXXXX	XXX.XX	*
PSTO	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXXX	XXXXXXX	XXX.XX	*
DP IND BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
DP PTY BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
DP CN BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
TT IND BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
TT PTY BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
TT CN BH OML	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
BILLING	FAIL	BASE	PERF	SOFT	FAIL	BASE	PERF	SOFT
BBF	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*
ANII	XXXXXX	XXXXXX	XXX.XX	*	XXXXXXX	XXXXXXX	XXX.XX	*

USE THESE FIGURES

FOR NSPMP REPORTING

Fig. 22—Example of NORGEN NSPMP Report for No. 1 Crossbar Dial Tone Speed and Matching Loss Results (Sheet 3 of 3) (7.18)

```
                *** SXS NETWORK SWITCHING PERFORMANCE RESULTS ***

ENTITY: AlAAAAAAAAAA  DATE: MM/DD/YY  TIME:   00:00   INTERVAL: 24 HRS
          ----------PERFORMANCE INDICATORS----------
     --------DAILY RESULTS-----          ------MONTHLY RESULTS-----

ACCESS          FAIL    BASE    PERF SOFT   FAIL     BASE     PERF #DAYS  SOFT

ALL L.F. BUSY XXXXXX                       XXXXXXX

ALL O.R. BUSY-DTS
     LABEL1  XXXXXX  XXXXXX XXX.XX  *   XXXXXXX  XXXXXXX  XXX.XX  XX    *
       .
     LABEL10

BILLING       BH  FAIL   BASE   PERF SOFT   FAIL      BASE   PERF  SOFT
ANI/SAMA  ID1TF XXXXXX XXXXXX  XXX.XX *   XXXXXX  XXXXXXX  XXX.XX   *
SAMA TRANSV.1TF XXXXXX XXXXXX  XXX.XX *   XXXXXX  XXXXXXX  XXX.XX   *
SAMA REC        XXXXXX XXXXXX  XXX.XX *   XXXXXX  XXXXXXX  XXX.XX   *

                ----------MEASURED COMPONENTS----------
                --------DAILY RESULTS------- ------MONTHLY RESULTS------
ACCESS                TESTS    DLYS   %DLY
DTS DELAY
  CLASS
LGCLS YYYYYYYYYYYY     XXXX    XXXX  XXX.XX
  LABEL1
    .
  LABEL10
   OR                                                 USE THESE FIGURES
AFB DELAY
  CLASS               LGQTY    DLYS   %DLY            FOR NSPMP REPORTING
LGCLS YYYYYYYYYYYY     XXXX    XXXX  XXX.XX                    |
  LABEL1                                                      |
    .                                                         |
  LABEL10                                                     |
                                                              |
INDEX              PERF=XXX.X      CI=XXX.XX        [PERF=XXX.X  CI=XXX.XX]
BILLING             FAIL    BASE   PERF    CI    FAIL    BASE   PERF    CI
ANI OPF/SAMA TV    XXXXXX XXXXXXX XXX.XX XXX.XX XXXXXX XXXXXXX XXX.XX XXX.XX
ANI OSF/SAMA SS+ID XXXXXX XXXXXXX XXX.XX XXX.XX XXXXXX XXXXXXX XXX.XX XXX.XX
ANI ID2TF          XXXXXX XXXXXXX XXX.XX XXX.XX XXXXXX XXXXXXX XXX.XX XXX.XX
```

Fig. 23—Example of NORGEN NSPMP Report for Step-by-Step Dial Tone Speed Results (7.21)

TABLE G

DIAL TONE SPEED — BUSY HOUR
CROSSBAR — SPCS

PERFORMANCE	POINTS
0.0 — 1.1	1.59
1.2 — 1.4	1.57
1.5 — 1.6	1.56
1.7 — 1.8	1.54
1.9 — 2.0	1.53
2.1	1.51
2.2	1.49
2.3	1.48
2.4	1.46
2.5	1.45
2.6	1.43
2.7 — 3.0	1.40
3.1 — 3.4	1.35
3.5 — 3.8	1.30
3.9 — 4.2	1.24
4.3 — 4.7	1.18
4.8 — 5.2	1.11
5.3 — 5.7	1.03
5.8 — 6.2	.95
6.3 — 6.8	.87
6.9 — 7.5	.80
7.6 — 8.4	.64
8.5 — 9.4	.48
9.5 — 10.5	.32
10.6 — 15.0	.16
Over 15.0	.00

DIAL TONE SPEED ADJUSTMENT FACTORS

24 DA.- .9167	19 DA.-1.1579
23 DA.- .9565	18 DA.-1.2222
22 DA.-1.0000	17 DA.-1.2941
21 DA.-1.0476	16 DA.-1.3750
20 DA.-1.1000	15 DA.-1.4667

TABLE H

DIAL TONE SPEED — BUSY HOUR
STEP-BY-STEP
DIAL PULSE — "TOUCH-TONE" SERVICE

PERFORMANCE	POINTS	PERFORMANCE	POINTS
0.0 — 1.2	35.00	3.7	25.55
1.3	34.85	3.8	25.20
1.4	34.70	3.9	24.85
1.5	34.50	4.0	24.50
1.6	34.30	4.1	24.16
1.7	34.00	4.2	23.82
1.8	33.60	4.3	23.48
1.9	33.30	4.4	23.14
2.0	32.90	4.5	22.80
2.1	32.60	4.6	22.51
2.2	32.20	4.7	22.22
2.3	31.50	4.8	21.93
2.4	31.15	4.9	21.64
2.5	30.80	Over 4.9	.00
2.6	30.30		
2.7	29.80		
2.8	29.25		
2.9	28.70		
3.0	28.24		
3.1	27.77		
3.2	27.30		
3.3	26.95		
3.4	26.60		
3.5	26.25		
3.6	25.90		

DIAL TONE SPEED ADJUSTMENT FACTORS

24 DA.- .9167	19 DA.-1.1579
23 DA.- .9565	18 DA.-1.2222
22 DA.-1.0000	17 DA.-1.2941
21 DA.-1.0476	16 DA.-1.3750
20 DA.-1.1000	15 DA.-1.4667