ELECTRONIC TANDEM NETWORK (ETN)
NETWORK ANALYSIS
SWITCHED SERVICE NETWORKS

CONTENTS PAGE

1. GENERAL

1.01 This section covers network analysis for the Electronic Tandem Network (ETN) configuration. Network analysis is assigned to a work center which has a capability of analyzing trouble summaries and other reports for ETN.

1.02 This section is reissued to provide information on analysis, and includes NCOSS usage. Revision arrows are used to emphasize the more significant changes.

1.03 The Network Control Office (NCO) is assigned the task of network analysis. Its objective is to identify soft spots or potential trouble areas on the network and to request remedial action prior to initiation of customer trouble reports. These duties are in addition to those defined in Sections 660-005-011 and 309-400-001.

1.04 The NCO's analysis is performed in addition to that performed by the Plant Control Offices (PCOs) for those circuits which they control. The primary tool for this NCO function is the Special Service System (SSS) plan, using the output reports generated by it.

2. SPECIAL SERVICE SYSTEM (SSS) ANALYSIS PLAN

2.01 The SSS Analysis Plan enables line and staff managers to access trouble history data for aid in analyzing performance and planning needs. It also provides circuit inventory records including counts of serving links, priority codes, types of customer provided equipment and other inventory data to serving bureau and network management personnel.

2.02 The NCO will receive the following reports automatically after a Network Grouping Identification (NGID) and a network inventory for ▶CLASS OF SERVICE 14 have been placed in the computer. An ETN NCO using an NGID appears to the SSS computer to be a service manager.◀ (NGID for ETN is covered in Section 309-400-007.)

(a) Report 52: Network Detailed Trouble Listing (See Fig. 1.)

(b) Report 53: Network Results Summary (See Fig. 2)

(c) Report 54: Network Disposition Summary (See Fig. 3.)

(d) Report 55: Network Summary (See Fig. 4.)

(e) Report 58: Network Inventory Report. (See Fig. 5.)

2.03 The reports mentioned above are described in Section 660-225-106. Additional analysis reports, Section 660-225-107, may be requested.

2.04 ▶There are ten types of analysis reports from the SSS plan that can be used by NCO. The report types, mode of transmission and turnaround time are as follows:

TYPE	DESCRIPTION	MODE OF OUTPUT TRANSMISSION	TURNAROUND TIME †
A	Trouble Tally	ADNet/Dataphone®	Daily, Nightly
B	Trouble Listing	ADNet/Dataphone	Daily, Nightly
C	Detail Trouble Listing	Mail †	Weekly
D	Circuit Tally	ADNet/Dataphone	Daily, Nightly
E	Circuit Listing	Mail	Weekly
F	Customer Dialing Analysis	ADNet/Dataphone	Nightly
G	Trouble Code Summary	Mail	Nightly
I	Index	Mail	Nightly
K	Input-Output Summary	Mail	Nightly
L	Mean Time Between Outage, Mean Time Restored, Percent Availability	ADNet/Dataphone	Nightly

+Turnaround time means frequency of processing.

*These reports will be mailed if the output exceeds 250 lines.

†Regarding all requests that are indicated as weekly turnaround, if the request passes the edits, the NCO will receive feedback on Monday morning via.

2.05 The Trouble Tally report (Type A) allows the retrieval of any information from the trouble file in the form of a numerical tally. These reports are useful if a numerical total of trouble occurrences is desired and not an actual listing of the data. One possible use would be to determine how many customer reports were test OKs on PL data circuits in a given period of time. (See Fig. 6.)

2.06 The Trouble Listing report (Type B) can be used when a listing is desired of all trouble reports that would fit a given category. This will result in a printout of all troubles on file for the specified time period (previous month) and reduction parameters. An example of this would be an NCO requesting a listing of all troubles with a duration over five hours. (See Fig. 7.)

2.07 Detail Trouble Listing (Type C) from the trouble file is designed for larger retrievals. This report is available to the NCO for the previous month using ETN NGID format. For example, a NCO could determine which tickets have over a certain amount of outage in a certain area. (See Fig. 8.)

2.08 A Circuit Tally report (Type D) can be used to obtain a tally of specific inventory data for the previous month. For example, a PCO/NCO may want a tally of circuits with a specific customer base number. (See Fig. 9.)

2.09 The Circuit Listing report (Type E) is helpful if a selective inventory printout is desired. For example a PCO or NCO may want a printout of its circuit inventory for a particular customer. (See Fig. 10.)

2.10 The Customer Dialing Analysis report (Type F) is to be used to analyze Calling-Called or Called-Calling reports on switched service troubles. A listing of all reports submitted with information

in Variable Field "G" on the E-6944 Trouble Ticket during the specified time period is printed out. It can be sorted on either the Called number or the Calling number as desired. (See Fig. 11.)

2.11 The Trouble Code Summary (Type G) provides a breakout of Analysis Codes within Trouble Codes. Figure 11B shows the resulting printout. A request for information on a specific Analysis Code can be made. (See Fig. 12.)

2.12 An Index report (Type I) allows a study to be made on a select group of circuits, troubles, organizations, etc. For example a network may wish to look at its index for all customer reports and referred in cases. (See Fig. 13.)

2.13 The Input-Output Summary report (Type K) provides a summary of trouble disposition and trouble ticket inputs by class of service. (See Fig. 14.)

2.14 MBO-MTR-AVL report (Type L) is used to study the mean time between outages, mean time to restore and the percent availability for a group of circuits. For example, an NCO using ETN NGID could look at the parameters for the ETN network. (See Fig. 15.) The formulas for figuring MBO, MTR, and AVL are as follows:

(a) $\text{MBO} = \dfrac{\#\text{ Circuits} \times \#\text{ Days}}{\#\text{ Troubles}}$

(b) $\text{MTR} = \dfrac{\text{Total Outage Hours}}{\text{Total Outages}}$

(c) $\%\text{ AVL} = \dfrac{\#\text{ of Days} \times 24\text{ Hrs.} \times \#\text{ of Circuits} - \text{Outage Time}}{\#\text{ of Days} \times 24\text{ Hrs.} \times \#\text{ of Circuits}}$

When considering the use of the "L" Report the following should be remembered.

(a) The L Report, if not given RPC = as a reduction keyword, will give you all troubles both measured and nonmeasured.

(b) If you see the RPC = Reduction keyword and the main selection is NGRPID, be careful not to double count the troubles. For example: if you say RPC = (1, 2) you will be double counting the troubles because all referred-in troubles start out as some other type of trouble.◀

2.15 In order to provide meaningful results and effective analysis, an accurate circuit inventory must be maintained. Each serving bureau is required to input an inventory ticket, supplying serving link counts and related data for each customer location district (CLD) termination. The PCO supplies overall circuit data such as class of service, customer billing number, etc. Receipt of the inventory report will allow the NCO to verify that all circuits on the network have been entered into the plan by the responsible PCO.

2.16 If circuits are missing from the inventory, the NCO must advise the responsible PCO to enter the circuits into the plan. Likewise, discontinued circuits must be removed from the inventory.

2.17 The detailed trouble listing will provide the NCO with a list of troubles that have occurred within the last report period. Repeat reports are readily seen and, if it appears that no trouble has been found, the NCO should contact the responsible PCO and verify that positive action will be taken to resolve the problem. The NCO may suggest that a routine inspection of the circuit is in order. Follow-up is required to insure satisfactory results.

2.18 ▶The PCO will use the administration circuit number for non-circuit specific troubles (ie, calling-called number trouble reports). This will enable the PCO and NCO to perform analysis to determine faulty circuits (BSP 660-225-ZZZ).

2.19 Transmission results will be entered into the SSS plan on a monthly basis. The results are available on a monthly printout.◀

(a) Manual Circuit Measurements will be scheduled on an annual basis. These will include transmission and noise. The monthly report will show 12-month period results.

(b) Automatic circuit measurements (ie, circuits that can be measured by CAROT) are measured on a monthly basis and the results printed out monthly.

3. PERFORMANCE AND SURVEILLANCE REPORTS

3.01 The automatically generated SSS reports will assist a qualified analyzer in identification of soft spots and potential troubles. When reports indicate less than satisfactory performance, detailed analysis of troubles and maintenance activities can lead to appropriate corrective action.

3.02 The NCO is responsible for generating a monthly report depicting overall network service and performance. This report should be distributed to Marketing (upon request), upper management and the various responsible work centers.

3.03 The SSS on ETN produces results and summaries based upon a monthly reporting period. The NCO monthly network summary includes the following (some of this information is obtained from the SSS results on ETN):

(a) Service order performance

(1) Total orders due

(2) Number on time

(3) Percent on time.

(b) Circuit maintenance performance

(1) Results

(2) Class 1 (found) troubles

(3) Class 2 (not found) troubles

(4) Duration time.

(c) Service characterization (from Report "L")

(1) Meantime between outages (MBO)

(2) Meantime to repair (MTR)

(3) Percent availability (% AVL)

(4) MBO - MTR - AVL.

(d) Work center portion of organizational summary for work center involved.

(e) The NCO may add pertinent remarks (optional) concerning network operation. These remarks may be comments regarding major failures, their cause and affects on the network. Appropriate comments concerning major changes to the network or other items of interest may also be included.

3.04 The service order component of the report is manually generated from the NCO record of service order and completion information on network service orders due in a report period.

3.05 The circuit maintenance performance report is derived from the Network Results Summary, SSS Report 53 (Section 660-225-106). To obtain this report, the NCO must use a network grouping identification number (Section 309-400-007) and input inventory tickets per Section 660-225-102. Once an accurate inventory has been established, it must be continually updated.

3.06 The NCO cannot submit inventory tickets until the PCOs have fulfilled their responsibilities to SSS. In this manner the NCO will be able to verify that network circuits have been inventoried. The NCO will receive a monthly Network Inventory Report, Report 58 (Section 660-225-106), for this purpose.

3.07 Service characterization for the network is oriented toward circuit performance. This report may be used by marketing in discussing performance with the customer. This SSS output, Analysis Report "L" (Section 660-225-107), must be requested by the NCO.

3.08 The work center summary is a characterization of the performance of an individual work center. These results are transmitted with the first three parts of the network summary, only to the involved work center. The information for this portion of the report is derived from the Network Summary Report 55, (see Section 660-225-106) and compares the individual work center performance to that of the total network.

4. NCOSS USAGE AND ANALYSIS

4.01 The Network Control Operations Support System (NCOSS) performs network support functions for ETNs. In this ETN network, support role NCOSS is a tool for both the NCO, the organization with overall ETN Installation and

Maintenance (I&M) responsibilities, and the Business Services team, responsible for traffic network administration for a particular ETN. From the NCO user perspective, NCOSS permits access to Message Detail Record (MDR) data, Facilities Traffic Measurement (FTM) data and Automatic Circuit Assurance (ACA) data derived from the tandem switches in the ETN for which that NCO has I&M responsibility. These data elements, described below, are available through a set of reports and searches specified by the NCO to permit accurate and timely network trouble localization (eg, to a particular network node or a particular circuit).

Message Detail Recording (MDR)

Details of each network call including ineffective attempts

- Calling, called numbers
- Circuit groups and members
- Timing information
- Call privileges information
- Special call indicators

FACILITY TRAFFIC MEASUREMENTS (FTM)

Hourly measurements on trunk group and queue traffic including peg, usage, overflow, etc.

AUTOMATIC CIRCUIT ASSURANCE (ACA)

Circuits identified with exceptionally short or long holding time calls (DIMENSION tandems only)

NCOSS usage usually covers two to four weeks prior to cutover and includes call throughs, if scheduled, and remains for two to six weeks after cutover to help resolve network trouble. In addition, NCOSS may be used on a revisit basis (two to six weeks) to help resolve difficult maintenance problems.

4.02 The NCO has access to the data in NCOSS for the ETN it is responsible for by using a remote terminal and a dial up connection to the NCOSS computer. The NCO uses NCOSS in four major areas.

(a) ***Response to customer trouble reports***—The NCO accesses NCOSS in response to a customer trouble report, referred by the PCO, to determine if a trouble exists and to localize the trouble to a tandem node or a specific circuit. After the trouble is localized, the NCO refers the trouble to the specific work center that is responsible for the repair.

(b) ***Major Problem Detection***—Through the examination of the MDR, ACA and FTM data in proper processed form, the NCO detects and localizes the source of a major network problem affecting network call completion (eg, multiple outages in a circuit group, network switch failures to seize circuits in the circuit group).

(c) ***Network Performance Monitoring***—Using summarized ACA statistics, the NCO examines the performance of the network as a whole and of individual TELCO work centers responsible for the performance of particular elements of the network. In particular, if the network performance monitoring indicates sub-par performance, the NCO determines if this is due to specific soft spot and identifies the responsible work center.

(d) ***Trouble Pattern Analysis***—Based on a number of correlated customer trouble reports and/or other network performance indicators, the NCO uses the MDR and ACA data to analyze patterns of troubles and to locate sources of troubles that would otherwise remain undetected.

4.03 Figure 16 provides a list of commands that the NCO can use to get specific information from NCOSS.

4.04 The following commands are frequently used by the NCO to access NCOSS reports for analysis and trouble localization.

(a) By using the "MT" command, the NCO can get data from NCOSS to assist in identifying specific circuits that were involved in a reported trouble. This type trouble is normally a non-circuit specific (called/calling) type report. The NCOSS report (see Fig. 17) displays the called number, the calling number, the Trunk Dial Access Code and member number of the circuits used for the call. It displays both incoming facility or station number and the outgoing facility.

(b) The "MP" command provides NCOSS data for trouble analysis for any one of the following specific items:

(a) Calling number

(b) Called number

(c) Authorization code

(d) Dial access code incoming

(e) Dial access code outgoing

(f) Facility restriction level

(g) Event code

(h) System access code

(i) Short holding time (variable time as requested).

Figure 18 is an example of an NCOSS printout to a specific NPA(214) for a given time period from 1300 to 1330 on a given day.

(c) The "CS" command is used to provide usage by a specific dial access group. It can be used to determine the trunk usage of each trunk in the dial access group. Figure 19 is a sample of this report. A given trunk with high usage and low average duration, either in or out would be suspect as a faulty circuit. Low or no usage indications for a trunk could also indicate a possible trunk problem.

(d) Automatic Circuit Assurance (ACA) is available to the NCO either through "CACS" or from NCOSS if the particular ETN customer does not have a CACS. Figure 20 is an example of an NCOSS provided ACA report by using the "AX" command. The report indicates the trunk dial access code, the member or circuit number, the time of the ACA occurrence, the type (long holding time or short holding time), whether the customer attendant tested the circuit and the number of reports for a circuit for a given time period. In this example, DAC 173 circuit 076 had 6 short holding times which may indicate a circuit trouble.

4.05 The NCO should use the "NCOSS How to Operate" book as a guide for accessing and inputting the various commands for data from NCOSS.

5. NETWORK DESCRIPTION

5.01 The NCO is required to maintain an accurate network description. Table A lists the elements and sources for this document.

5.02 The required information for each network-related element is delineated below. For the circuits (elements 1 through 10, Table A) the following items are required by group.

- Trunk group identification number and number of circuits
- Terminal PBX/CTX's
- Control office
- Telphone number of control office
- Bell System or OCC circuit indicator.

5.03 For off-net facilities the following should be provided:

- NNX's served if not available in routing guide (elements 5, 6, 8 and 9)
- Band NNX's if not available in routing guide (elements 7 and 10).

5.04 For the PBX and tandem switchers (elements 11, 12 and 13) the following should be retained:

- Location
- Type of vehicle
- DDD and network telephone number
- Attendant telephone number and alternate
- Repair Service Bureau (RSB) or Switching Control Center (SCC) responsible

- Telephone number of responsible RSB or SCC
- Additional RNX if used (RNX is a restricted network address code)
- Network and DDD (local) access codes (ie, ◗8=NTWK, 9=LOCAL or DDD◖).

5.05 The CACS and Message Detail Recording (elements 14 and 15) require the following information:

- Location
- Telephone number and alternate
- RSB responsible
- RSB telephone number.

5.06 Authorization codes (element 16) should include the

- Availability (PBX/Centrex tandem basis)
- Portable or stationary codes (or both).

5.07 The details of queuing (element 17) in the network needed are:

- Trunk groups with queuing
- Type of queues
- Location of queues
- Queue slots provided.

5.08 The required information for off premise extensions (element 18) include:

- Location
- Network telephone number
- Circuit identification number if available
- ◗For DIM FP8, indicate circuit pack type (LC02 or LC361).◖
- Control office
- Control office telephone number.

5.09 For developing information on Dimension® switches, the following data on the Remote Maintenance Administration and Traffic System (RMATS) vehicle (element 19) is required:

- Location
- Telephone number
- PBXs covered by RMATS.

5.10 The Network routing guide (element 20) including each PBX/Centrex tandem is needed for:

- Automatic alternate routing
- Automatic route selection.

5.11 The directory (element 21) is a listing of special customer and TELCO phone numbers. The numbers needed are:

- Customer number for CACS
- TELCO numbers for Marketing, Business Services and Engineering.

5.12 The information listed in Table A should be maintained in an ETN book with a recommended format shown in Fig. 21 through 24.

5.13 A network map (Fig. 22) should be developed to provide most of the required information in a readily accessible format. This map should contain the following items.

- PBX/CTX tandems, main PBX's and satellite/tributary PBX's
- Trunk group identities including DAC'S and RNX'S
- CACS and MDR
- Trunk groups with queuing (indicated by "Q")
- Network and DDD listed numbers
- Interexchange off premise extensions.

5.14 Additional information concerning a tandem subtending PBX's should be developed (see

Fig. 23). Information on FX's, WATS, and CO trunks used for automatic off network calls should be listed on this page where applicable. Also include the data RNX (if any), the authorization code information, RMATS location (if applicable), and SMDR capabilities.

5.15 Circuit information, Fig. 4, should be listed separately due to the need for updating. The Common Language Circuit Identification codes are:

- IT - Intertandem Tie Trunk
- SA - Satellite Tie Trunk
- TA - Tandem Tie Trunk.

5.16 A directory of telephone numbers not included with circuit and tandem information should also be included. Numbers for Marketing, Business Services and other TELCO support groups may be included. An organization chart of the customer's communications division may be included in the section along with the appropriate numbers. Other information may be included as necessary.

5.17 The NCO should arrange to distribute a copy of this information to all PCOs, Switching Control Centers (SCCs) and RSBs. It is suggested that RSBs arrange for the document to be left at FP8 tandem locations.

6. REFERENCES

6.01 The following Bell System Practices are related to this section.

SECTION	TITLE
309-400-000	ETN General Description
309-400-001	General Procedures and Responsibilities
309-400-002	CACS/CAP/◗LCAS◖
309-400-004	Trouble Reporting
309-400-007	Network Identification
309-400-300	Service Maintenance
660-225-100	Special Services System—General
660-225-101	Special Services System—General Procedures and requirements
660-225-102	Special Services System—General Input Documents, E-6948, E-6945, E-6946
660-225-103	Special Services System Inventory Ticket E-6943
660-225-104	Special Services System Trouble Ticket E-6944
660-225-105	Special Services System—General Index Plan and Weighting Tables
660-225-106	Special Services System—Output Reports and Results Summaries
660-225-107	Special Services System Analysis Plan
660-225-108	Special Services System Billing Adjustments and Billing Reports
660-225-109	Special Services System—Special Outputs and Summaries
795-402-100	Bell System Common Language Special Service Circuits

TABLE A

ETN NETWORK DESCRIPTION

ELEMENT	SOURCE
1. Intertandem tie trunks	
2. Access tie trunks	
3. Bypass tie trunks	
4. Sat/Trib tie trunks	
5. PBX/CTX FX's	
6. PBX/CTX CO trunks	
7. PBX/CTX WATS	
8. Main FX's	Service Orders
9. Main CO trunks	(Elements 1-18)
10. Main WATS	
11. PBX/CTX Tandem switches	
12. Main PBX	
13. Sat/Trib PBX	
14. CDAC - local & centralized	
15. MDR (Message detail recorder) local and centralized	
16. Authorization codes	
17. Trunk groups and queuing	
18. Off premise extensions	
19. RMATS locations	PCO/STC
20. Routing guides CACS/RMATS	Bus. Services
21. Directory	
Telco Service Order	PCO/STC
Customer	Marketing

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                                   A.
    REPORT FOR 2DD03     NETWRK SVCS OPPRNS      SPECIAL SERVICES SYSTEM                PAGE 00013          REPORT 52
B.  PERIOD ENDING 09/22/78                       NETWORK DETAIL TROUBLE LISTING                        RET. CODE 20R-01000

                                E.    F.     G.        H.    I.        J.        K.        L.        M.   N.  O. P. Q.    R.    S.  T. U. V. W.
                                                                                                              A  D                    C  M  P  T
                                                  SVB FRM        SVB TO    RECEIVE   REFER     RESTORE   RPT TRBL N  S    DURATION     C  S  R  Y
    CIRCUIT NUMBER              SVB     SEG CLD W/RPT  SEG CLD W/TBL DATE TIME DATE TIME DATE TIME   TYP CODE  L  P  SVB   LP    RO A  C  I  P

INTRASTATE
CLASS OF SERVICE 08 PLDT

D.  6FDDC   1012          1BF425      DD3188       DEABA     0915 0952 0915 0955 0915 1345    CR   RO     N  0000 0000 0003      0  7
                        X.TRACKING NO 1BF425   12854 =) SEND HAN SEG IN FOK<
                                                    Y.
    6FDDC   1012          DEABA       1BF425                 0915 0955 0000 0000 0000 0000    RN             0000 0000 0000      0  M
                          TRACKING NO 1BF425   12854

    6FDDC   1012          1BF425      1DD3188      DBAEA     0918 1000 0918 1010 0918 1125    CR RONM     N  0000 0000 0010      0  7
                          TRACKING NO 1BF425   12881 M)CSD =)SEG 14 FOK E6700<

    6FDDC   1012          DBAEA  014  1BF425       014 DB1813   0918 1000 0918 1001 0918 1047    RN ACPE 76  Y  0001 0046 0000   M  0  7
                          TRACKING NO 1BF425   12881 D)09181001CH09181047 1431 VERNON RD H)CHCHCSD =)CPE TBL<

    6FDDC   1013          1BF425      DD3188       DDBEA     0823 1445 0823 1455 0823 2055    CR   RO     N  0000 0000 0010      0  7
                          TRACKING NO 1BF425   11794 =)LINE DOWN SEG 8 CABLE CROSS JHTN TO STN<

    6FDDC   1013          DDBEA       1BF425       DD5167    0823 1450 0823 1455 1823 2055    RN   LF 11  N  0005 0600 0000      0  7
                          TRACKING NO 1BF425   11794 M)FOR =)BAD CA PR AT JNTWN <

    6FDDC   1013          DDBEA       1BF425       DD5167    0915 1048 0915 1050 0915 1100    RN   IT 31  N  0002 0010 0000      0  7
                          TRACKING NO 1BF425   12857 M)NSY =)CHANGED RESTORAL UNIT <

    . MISSING TICKET = M IN TYP COLUMN

**** NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT ****
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Fig. 1—REPORT 52—Network Detailed Trouble Listing

A.
REPORT FOR 31GUT3 NOAM DOW JONES SPECIAL SERVICES SYSTEM PAGE 001 REPORT 53
B. PERIOD ENDING 09/22/78 G. NETWORK RESULTS SUMMARY RET. CODE 20R-01000
L.

C. CLASS SVC	E. SVNG LINK (A)	F. %TOT (B)	H. CLASS 1 1 (C)	I. CLASS 1 1/100 (D)	J. COMP (E)	K. WTD PTS (F)	M. CLASS 2 1 (G)	N. CLASS 2 1/100 (H)	O. COMP (J)	P. WTD PTS (K)	Q. ----RO---- 1 (L)	Q. ----RO---- T/C (M)	R. ----SVB--- 1 (N)	R. ----SVB--- T/C (P)	S. ----LP---- 1 (Q)	S. ----LP---- T/C (R)	T. COMP (S)	U. WTD PTS (T)	V. INDEX (U)
D. INTERSTATE																			
08 PLDT	6924	100.00	166	2.3	99.5	99.5	99	1.4	99.5	99.5	107	0.3	259	1.0	107	3.9	93.6	93.6	97.1
TOTAL	6924		166		99.5000		99		99.5000		107		259		107		93.6310		

YEAR-TO-DATE PERFORMANCE MONTH BAND J F M A M J J A S O N D
0

MISSING TICKETS 000040

SPECIAL SERVICES INDEX

	COMP INDEX (X)	WTG (Y)	WTD INDEX (Z)
CLASS 1 TROUBLE REPORTS	99.5000	.35	34.8250
CLASS 2 TROUBLE REPORTS	99.5000	.25	24.8750
DURATION	93.6310	.40	37.4524
COMBINED INDEX			97.2

Fig. 2—REPORT 53—Network Results Summary

A.
REPORT FOR 31G612 NOAM N A PHILLIPS SPECIAL SERVICES SYSTEM PAGE 0001 REPORT 54
B. PERIOD ENDING 09/22/78 NETWORK DISPOSITION SUMMARY RET. CODE 20R-01000

C. CLASS 1 TROUBLE DISPOSITIONS

CLASS OF SVC	ST	PCA	LP CASES IT	LF	TP	TOTAL	SVB	SVB CASES CA	NPC	TOTAL	IS CASES	FC CASES	TOTAL
INTERSTATE													
08 PLDT	2	0	1	0	0	3	0	2	0	2	2	0	7
TOTAL CLASS 1	2	0	1	0	0	3	0	2	0	2	2	0	7

D. CLASS 2 TROUBLE DISPOSITIONS

CLASS OF SVC	TOK	FOK	SQ	ER	CC	TOTAL	CLASS OF SVC	TOK	FOK	SQ	ER	CC	TOTAL
							INTERSTATE						
08 PLDT	4	0	0	1	2	7		0	0	0	0	0	0
TOTAL CLASS 2	4	0	0	1	2	7							

E. OTHER TROUBLE DISPOSITIONS

CLASS OF SVC	INF	ACPE	UCPE	RO	TOTAL	CLASS OF SVC	INF	ACPE	UCPE	RO	TOTAL
						INTERSTATE					
08 PLDT	0	1	0	7	8		0	0	0	0	0
TOTAL OTHER	00000	1	0	7	8						

F. REPORT TYPE INPUT

CLASS OF SVC	CR	RN	INF	AD	RLS	AST	TOTAL	CLASS OF SVC	CR	RN	INF	AD	RLS	AST	TOTAL
								INTERSTATE							
08 PLDT	18	4	1	0	0	0	23		0	0	0	0	0	0	0
TOTAL REPORTS	18	4	1	0	0	0	23								

****NOTICE-NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT****

Fig. 3—REPORT 54—Network Disposition Summary

A.
REPORT FOR 2DD03 NETWRK SVCS OPPRNS — SPECIAL SERVICES SYSTEM NETWORK SUMMARY — PAGE 0001 — REPORT 55
B. PERIOD ENDING 09/22/78 — RET. CODE 20R-01000

	E. -SVB/CLD BAND- H/O (A)	L (B)	U (C)	INDEX (D)	F. SVNG LINK (E)	G. CLS 1 1/100 (F)	H. CLS 2 1/100 (G)	I. -----RO----- 1 (H)	T/C (J)	J. ----SVB---- 1 (K)	T/C (L)	K. ----LP---- 1 (M)	T/C (N)	L. --CR-- 1/100 (P)	M. --RN-- 1/100 (Q)	N. --CPE-- 1/100 (R)	O. AVG DUR (S)	P. Z+2 (T)
C. INTRASTATE																		
D. CLASS OF SERVICE 14 SSN																		
NETWRK SVCS OPPRNS	18	0	1	H	3045	0.4	0.0	0	0.0	14	0.4	9	1.1	0.2	0.1	0.0	1.2	25.0
EAST STC.	****	****	****	H	9	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
ALLENTOWN SVB	****	****	****	H	1	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
HAZLETON SVB	****	****	****	H	6	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
WILLIAMSPORT SVB	****	****	****	U	1	100.0	0.0	0	0.0	1	0.5	1	0.7	0.0	100.0	0.0	0.0	0.0
LANCASTER SVB	****	****	****	H	1	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
POTTSVILLE SVB	****	****	****	H	30	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
LEBANON SVB	****	****	****	H	17	5.8	0.0	0	0.0	1	0.5	0	0.0	0.0	5.8	0.0	0.0	0.0
ALTOONA SVB	****	****	****	H	67	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
STATE COLLEGE SVB	****	****	****	H	1	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
CLEARFIELD SVB	****	****	****	H	16	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
PITTSBURGH PA	****	****	****	H	1	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
PHILADELPHIA 2A STC	****	****	****	H	423	1.1	0.0	0	0.0	5	0.6	3	1.8	0.7	0.4	0.0	2.0	66.6
HARRISBURG SPC SVC	****	****	****	H	1756	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
ALENTOWN IA	****	****	****	H	3	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
SCRANTON LL STC	****	****	****	H	56	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
READING	****	****	****	H	24	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
WAYNE FACILITY	****	****	****	H	2	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
ERIE STC	****	****	****	H	1	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0
PITTSBURGH IE STC	****	****	****	H	630	1.1	0.0	0	0.0	7	0.1	5	0.8	0.7	0.3	0.0	0.8	0.0
YEAR-TO-DATE: UNITS IN H/O BAND										48/ 90.6%								
UNITS IN L BAND										3/ 5.7%								
UNITS IN U BAND										2/ 3.8%								
CLASS OF SERVICE 80 PLDT																		
NETWRK SVCS OPPRNS	20	5	1	0	1141	9.9	5.2	169	0.2	174	0.5	110	1.9	17.6	13.9	0.9	0.4	3.9
EAST STCLD SVB	****	****	****	L	204	15.6	2.4	0	0.0	37	0.6	33	1.4	0.0	20.0	0.9	0.0	0.0
BETHLEHEM SVB	****	****	****	H	32	0.0	0.0	0	0.0	0	0.0	0	0.0	0.0	3.1	3.1	0.0	0.0
FORT WASHINGTON SVB	****	****	****	0	42	2.3	4.7	0	0.0	3	0.8	1	4.0	0.0	7.1	0.0	0.0	0.0

Fig. 4—REPORT 55—Network Summary

A. NETWRK SVCS OPPRNS — SPECIAL SERVICES SYSTEM — PAGE 00001 — REPORT 58

REPORT FOR 20D03 — NETWORK INVENTORY REPORT

B. PERIOD ENDING 09/22/78 — RET. CODE 20R-01000

C. CIRCUIT NUMBER (A)		F. SVC TYP (B)	G. START DATE (C)	H. CPE (D)	K. SVB (E)	L. NET CHG (F)	M. SL (G)	O. OWN (H)	P. PRI (J)	Q. ACC OFC (K)	R. CUSTOMER BILLING (L)	S. CCA (M)	J. PCO (N)	T. PCO TBL LMT (O)
D. INTRASTATE														
E. CLASS OF SERVICE 14 SSN														
2AC	5035	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5036	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5037	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5038	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5039	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5040	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5041	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5042	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5043	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5044	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5046	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5047	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5048	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5049	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5050	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5051	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5052	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5053	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5054	000	4	03/16/78	7	1BF114		002	PA	00	000	2150977000	B400	1BF114	03
2AC	5055		4	01/18/78	7	1BF114		001	PA	00	000	2150977000	B400	1BF114	03
2AC	5055	000	4	01/18/78	7	1BF114		001	PA	00	000	2150977000	B400	1BF114	03
2AC	5056		4	01/18/78	7	1BF114		001	PA	00	000	2150977000	B400	1BF114	03
2AC	5056	000	4	01/18/78	7	1BF114		001	PA	00	000	2150977000	B400	1BF114	03

Fig. 5—REPORT 58—Network Inventory Report

```
SPECIAL SERVICE SYSTEM
ANALYSIS REPORT TYPE A          RECEIVED Ø3-23-78

PERIOD COVERED Ø1-23-78 TO Ø2-22-78

MAIN REPORT SELECTION
+SVB=1DJ114+

REDUCTION PARAMETERS
+CLS=08+

SORT SEQUENCE
+ANALYS=(8Ø,81,82,83,84)+

REDUCTION  ANALYS    ANALYS    ANALYS    ANALYS    ANALYS
KEYWORD      8Ø        81        82        83        84
---------- --------- --------- --------- --------- ---------
TRBCDE  =
   07          Ø         Ø         Ø         Ø         Ø


TOTAL RECORDS DEFINED BY REDUCTION PARAMETERS =         1

END OF TRANSMISSION FOR 4Z
```

Fig. 6—Report Type A—Trouble Tally

```
NGID 31"XXXX"
REDUCTION PARAMETERS
+DUOVER=0500+
SORT SEQUENCE
+CKT,DURTYM+

                                        TROUBLE LISTING
 O REC CL RPT  RES    SVB FRM  TR/AN  SVB TO    D   SVB      DUR  LPCT
 W TYP SV TYP DATE  CLD W/RPT         CLD W/TBL S            HHHMM HHHMM
 N                                              P
 - --- -- --- ----- --------- ------ --------- - -------- ----- -----
 CIRCUIT   FW  2126414233
 NY 7  14  1  02-23 BD4232   22-31  BD4232    N 1GU519   00610 00557
 CIRCUIT   FW  2126414234
 NY 7  14  1  02-23 BD4232   22-31  BD4232    N 1GU519   00610 00557
 CIRCUIT   FW  2126414246
 NY 7  14  1  02-23 BD4232   22-31  BD4232    N 1GU519   00610 00557
 CIRCUIT   FW  2126414248
 NY 7  14  6  02-23 BD4232   22-31  BD4232    N 1GU519   00610 00557
          REPORTS =     4    DUR =    2440     LPCT =  2348
END OF TRANSMISSION FOR 4Z
```

Fig. 7—Report Type B—Trouble Listing

CIRCUIT NUMBER		SVB	SVB FRM SEG	SVB FRM CLD	SVB FRM W/RPT	SVB TO SEG	SVB TO CLD	SVB TO W/TBL	RECEIVE DATE	RECEIVE TIME	REFER DATE	REFER TIME	RESTORE DATE	RESTORE TIME	RPT TYP	TRBL CODE	A N L	D S P	DURATION SVB	DURATION LP	DURATION RO	M S C	T Y P
FAFXNT 14495	SN	SCAFC		SC0532					0223	1545			0223	1555	CR	T-OK	00	N	0010	0000	0000		7
		TRACKING NO SCAFC			03021	M)NDT -)TOK																	
FAFXNT 16243	SN	SCAGC		SC0231					0307	1155			0307	1210	CR	T-OK	00	N	0015	0000	0000		7
		TRACKING NO SCAGC			03016	C)1157 =)TOK																	
FAFXNT 18389	SN	SCACB		SC0240					0309	1245	0309	1250	0309	1530	CR	IS	30	N	0245	0000	0000		7
		TRACKING NO SCAGB			03045	0)1246 =)CAR FAIL																	
FAFXNT 23606	SN	SCAFB		SC0511			SC0511		0302	1045	0302	1100	0302	1230	CR	F-OK	42	Y	0015	0130	0000		7
		TRACKING NO SCAFB			03013	0)1047 =)TOK FOK																	
FAFXNT 27138	SN	SCABB		SC0113					0307	1030			0307	1050	CR	T-OK	00	N	0020	0000	0000		7
		TRACKING NO SCABB			03116	M)CBC =)GL TOK																	
FAFXNT 28985	SN	SCAGC		SC0231			SC0231		0316	1120	0316	1230	0316	1330	CR	ST	01	Y	0110	0100	0000		7
		TRACKING NO SCAGC			03026	L)161130 =)CC																	
FAFXNT 91763	SN	SCAGC		SC0231					0302	0920			0302	0930	CR	T-OK	00	N	0010	0000	0000		7
		TRACKING NO SCAGC			03008	C)0925 =)TOK																	
FAFXNT 91763	SN	SCAGC		SC0231			SC0231		0320	1430	0320	1550	0320	1700	CR	F-OK	00	Y	0120	0110	0000		7
		TRACKING NO SCAGC			03036	C)1431 =)FOK																	
FAFXNT 91767	SN	SCAGG		SC0231			SC0231		0320	1430	0320	1550	0320	1700	CR	F-OK	00	Y	0120	0110	0000		7
		TRACKING NO SCAGC			03037	C)1435 =)FOK																	
FAOPNT 10744	SN	SCAGB		SC0240					0227	1000			0227	1015	CR	T-OK	00	N	0015	0000	0000		7
		TRACKING NO SCAGB			03009	C)1005 =)TOK																	
FAOSNT 10775	SN	SCAGC		SC0231					0306	1005			0306	1045	CR	CC	01	N	0040	0000	0000		7
		TRACKING NO SCAGC			03012	C)1006 =)CC																	
FAOSNT 17621	SN	SCAFC		SC0532			SC0532		0228	1330	0228	1445	0228	1500	CR	ST	4A	Y	0115	0015	0000		7
		TRACKING NO SCAFC			03004	M)CBC =)LCKED UP WIL PX																	
FAOSNT 18913	SN	SCAGC		SC0231			SC0231		0223	1015	0223	1030	0223	1105	CR	ST	42	Y	0015	0035	0000		7
		TRACKING NO SCAGC			03001	C)1040 =)HUNGUP																	
FAOSNT 29775	SN	SCABB		SCAGB					0223	1145			0223	2300	RN	IS	30	N	0015	0000	0000		7
		TRACKING NO SCAGB			03002	M)CSO =)Y OPT ON TCXR=																	
FAOSNT 29775	SN	SCAGB		SC0222			SBABB		0223	1130	0223	1145	0223	1200	CR	RO	30	N	0000	0000	0015		7
		TRACKING NO SCAGB			03002	G)1135 =)RO																	

Fig. 8—Report Type C—Detail Trouble Listing

```
SPECIAL SERVICE SYSTEM
ANALYSIS REPORT TYPE D          RECEIVED Ø3-15-78

PERIOD COVERED Ø2-23-78 TO  -  -

MAIN REPORT SELECTION
+PCO=DFACA +

REDUCTION PARAMETERS
+CUSTBN=24Ø7Ø

SORT SEQUENCE


REDUCTION
KEYWARD    CIRCUITS
---------  --------
 CUSTBN =
  24Ø7Ø       23Ø1

TOTAL RECORDS DEFINED BY REDUCTION PARAMETERS +     23Ø1

END OF TRANSMISSION FOR 4Z
```

Fig. 9—Report Type D—Circuit Tally

PERIOD COVERED ------ TO 09/02/78

MAIN SELECTION
NCO = 31 "XXXX"

REDUCTION PARAMETERS
+CSTBLN=1683873790

SORT SEQUENCE
+CKT

REPORT FOR IDS613 SPECIAL SERVICES SYSTEM PAGE 00001 REPORT E
PROCESS DATE 09/03/78 ANALYSIS REPORT E

CIRCUIT NUMBER	I/I	CLS SVC	SVC TYP	START DATE	CPE	PCO	CLD	SL	SUB SVB	PRI	ACC OFC	CUSTOMER BILLING	CCA	TBL LMT	WORK TAC	UNITS TABC
PLNT 18667-001	2	14	1	04/01/71	7	IDK712	MB4534	002		0	KC-	1683873790	0030	3	01	02
PLNT 18667-002	2	14	1	04/01/71	7	IDK712	MB4534	002		0	KC-	1683873790	0030	3	01	02
PLNT 18667-003	2	14	1	04/01/71	7	IDK712	MB4432	002		0	KC-	1683873790	0030	3	02	01
PLNT 18667-004	2	14	1	04/01/72	7	IDK712	MB4432	002		0	KC-	1683873790	0030	3	02	01
PLNT 18667-005	2	14	1	06/11/72	7	IDK712	MB4534	002		0	KC-	1683873790	0030	3	01	02
PLNT 18667-006	2	14	1	01/11/72	7	IDK712	MB4534	002		0	KC-	1683873790	0030	3	02	02

Fig. 10—Report Type E—Circuit Listing

SPECIAL SERVICES SYSTEM
ANALYSIS REPORT TYPE F RECEIVED Ø3-17-78

PERIOD COVERED Ø1-23-78 TO Ø2-22-78

MAIN REPORT SELECTION
NCO = 31 "XXXX"

REDUCTION PARAMETERS
+CLS=Ø5,VFI=G+

SORT SEQUENCE
+CALLED+

CUSTOMER DIALING ANALYSIS

CALLED	CALLING	RPT LOC	R	TRB RPT	TRB DATE MO	DA	HR	TRB LOC	TR-AN	STUDY CODE
ØØØ3211241	ØØØ3281Ø11		1	CCO	Ø2	Ø9	Ø9		17-Ø1	CJS
ØØØ3261241	ØØØ3211171		1	CBH	Ø1	25	15		26-ØØ	FD =
ØØØ3291101	ØØØ3281Ø11		1	NRA	Ø2	Ø8	12		17-Ø1	CJS
ØØØ3652592	ØØØ4284665		1	CSD	Ø1	25	14		Ø7-ØØ	
ØØØ5212Ø2Ø	ØØØ332422Ø		1	CBC	Ø2	Ø9	14	VTATC	Ø4-23	WRH
ØØØ7212Ø6	ØØØ5435Ø11		1	ROR	Ø1	25	Ø8	VTATC	25-ØØ	BNN
2154364554	ØØØ488ØØØ1		1	CTO	Ø1	25	14		Ø7-ØØ	
4Ø43211247	4Ø43281Ø11		1	BSY	Ø2	Ø8	1Ø		17-Ø1	FD
4Ø45212151	4Ø47226658		1	NDT	Ø2	Ø6	15	VTATC	Ø4-12	JES
4Ø45615134	ØØØ7511277	VTATC	3	CTO	9	Ø2	14	14	25-ØØ	KJD
41942313ØØ	ØØØ4611Ø1Ø		1	NRA	Ø2	1Ø	12		Ø7-ØØ	
5Ø17776781	ØØØ7415ØØØ		1	ROC	Ø1	25	1Ø		29-29	BNH EH
5162946662	ØØØ4611Ø1Ø		1	NRA	Ø2	Ø8	16		Ø7-ØØ	
5184387841	ØØØ4665199		1	NRA	Ø2	Ø3	1Ø		Ø7-ØØ	
5188833436	ØØØ4611Ø10		1	ROC	Ø2	Ø8	14		Ø4-Ø2	
6Ø13344497	ØØØ7415Ø6		1	ROC	Ø2	Ø8	16	VTATC	Ø4-Ø2	PTHEH
6153281132	4Ø432812ØØ		1	CKD	Ø2	Ø8	1Ø		17-Ø1	FD =
7Ø33441461	ØØØ4611Ø1Ø		1	NRA	Ø2	Ø9	15		29-1Ø	
7Ø38857623	ØØØ4611Ø1Ø		1	ROC	Ø2	Ø2	16		25-ØØ	

END OF TRANSMISSION FOR 4Z

SIMULATED

Fig. 11—Report Type F—Customer Dialing Analysis

REPORT FOR 4Z — SPECIAL SERVICES SYSTEM — PAGE 1 — REPORT G
PROCESS DATE 03/25/78 — ANALYSIS CODE SUMMARY

TR/AN	TOTAL CASES	MEASURED HOURS/MIN	AVG T/C	RO T/C	SVB T/C	LPCT T/C	NA CASES	NA HOURS/MIN	DM CASES	DM HOURS/MIN	TOTAL HOURS/MIN
TRBCDE=01											
TOTAL	5	7 54	1.6	.0	.9	.7	0	0 00	0	0 00	7 54

Fig. 12—Report Type G—Trouble Code Summary

REPORT FOR 4Z — SPECIAL SERVICES SYSTEM — PAGE 0001 — REPORT I
PROCESS DATE 03/26/78 — NETWORK RESULTS SUMMARY

CLASS SVC	SVNG LINK (A)	%TOT (B)	CLASS 1 # (C)	#/100 (D)	COMP (E)	WTD PTS (F)	CLASS 2 # (G)	#/100 (H)	COMP (J)	WTD PTS (K)	---RO--- # (L)	T/C (M)	---SVB--- # (N)	T/C (P)	---LP--- # (Q)	T/C (R)	COMP (S)	WTD PTS (T)	INDEX (U)
INTERSTATE																			
14 SPXT	0000006	00.21	000000	00.0	100.0	00.2	000000	00.0	100.0	00.2	000000	00.0	000000	00.0	000000	00.0	100.0	00.2	100.0
14 IWAT	0000054	01.96	000001	01.8	100.0	01.9	000000	00.0	100.0	01.9	000000	00.0	000001	01.3	000000	00.0	100.0	01.9	100.0
14 PLDT	0000374	13.62	000007	01.8	100.0	13.6	000005	01.3	100.0	13.6	000005	00.5	000012	00.5	000006	01.5	100.0	13.6	100.0
INTERSTATE																			
14 SSTP	0000002	00.07	000000	00.0	100.0	00.0	000000	00.0	100.0	00.0	000000	00.0	000000	00.0	000000	00.0	100.0	00.0	100.0
14 SPXT	0000008	00.29	000000	00.0	100.0	00.2	000000	00.0	100.0	00.2	000000	00.0	000000	00.0	000000	00.0	100.0	00.2	100.0
14 IWAT	0000004	00.14	000000	00.0	100.0	00.1	000000	00.0	100.0	00.1	000000	00.0	000000	00.0	000000	00.0	100.0	00.1	100.0
14 MBLE	0000014	00.51	000000	00.0	100.0	00.5	000000	00.0	100.0	00.5	000000	00.0	000000	00.0	000000	00.0	100.0	00.5	100.0
14 SSTG	0000007	00.25	000001	14.2	100.0	00.2	000000	00.0	100.0	00.2	000000	00.0	000001	00.6	000001	02.0	100.0	00.2	100.0
14 PLDT	0002276	82.91	000093	04.0	100.0	82.9	000057	02.5	100.0	82.9	000135	05.7	000146	01.1	000059	01.4	100.0	82.9	100.0
TOTAL	0002745		000102		99.9600		000062		99.960		000140		000160		000066		99.9600		100.0

Fig. 13—Report Type I—Index

```
REPORT FOR 4Z                                SPECIAL SERVICES SYSTEM                    PAGE 0001     REPORT K
PERIOD ENDING 02/22/78                       SVB DISPOSITION SUMMARY

CLASS 1 TROUBLE DISPOSITIONS
                                  LP CASES                          SVB  CASES            IS    TOTAL
     CLASS OF SVC   ST    PCA     IT    L=     TP    TOTAL   SVB    CA   NPC   TOTAL   CASES
          INTERSTATE
        14 SSTP    00000 00000 00001 00001 00000 00002   00000 00000 00000 000000   000000 000002
        14 SPXT    00001 00000 00000 00001 00001 00003   00000 00000 00000 000000   000000 000003
        14 PLDT    00001 00000 00000 00000 00000 00001   00000 00000 00000 000000   000000 000001

    TOTAL CLASS 1 00002 00000 00001 00002 00001 00006   00000 00000 00000 000000   000000 000006


CLASS 2 TROUBLE DISPOSITIONS
          CLASS OF SVC  TOK   FOK    SW    ER    CC   TOTAL          CLASS OF SVC  TOK   FOK    SQ    ER    CC   TOTAL
                                                                INTERSTATE

            14  PLDT   00001 00000 00000 00000 00000 000001

     TOTAL CLASS 2     00001 00000 00000 00000 00000 000001

NO OTHER TROUBLE DISPOSITIONS


REPORT CLASS INPUT
          CLASS OF SVC   CP    RN   INF    AD   RLS   AST   TOTAL   CLASS OF SVC    CR   RN   INF    AD   RLS   AST   TOTAL
                                                                INTERSTATE

             14 SSTP   00000 00002 00000 00000 00000 00000 000002     02 SPXT     00003 00000 00000 00000 00000 00000 000003
             14 PLDT   00001 00001 00000 00000 00000 00000 000002

     TOTAL REPORTS     00004 00003 00000 00000 00000 00000 000007
```

Fig. 14—Report Type K—Input-Output Summary

SPECIAL SERVICES SYSTEM
ANALYSIS REPORT TYPE L RECEIVED Ø3-23-78

PERIOD COVERED Ø1-23-78 TO Ø2-22-78

MAIN REPORT SELECTION
NGID = 31 "XXXX"

REDUCTION PARAMETERS
+RPC=(1,2,6)+

SORT SEQUENCE

DAYS	HRS	CIRCUITS	TROUBLES	DURATION	AVL	MTR H/M	MBO
31	24.0	2473	265	448	99.97%	1 41	289.29

END OF TRANSMISSION FOR 4Z

Fig. 15—Report Type L—Mean Time Between Outage/Mean Time Restored/Percent Availability

NCOSS NCO COMMANDS:

```
?      - DISPLAY THIS HELP FILE
*      - DISPLAY NCO COMMANDS AND PARAMETERS
* CMD  - DISPLAY THE PARAMETERS AND DEFAULTS FOR CMD
.      - EXIT NCOSS
CTI    - RUN CIRCUIT TROUBLE INDICATOR REPORT
MT     - RUN MDR TRACE SEARCH
MP     - RUN MDR PATTERN SEARCH
AX     - RUN ACA EXCEPTION REPORT
APS    - RUN ACA PERFORMANCE SUMMARY
TR     - RUN TRAFFIC REPORT
CT     - RUN CUMULATIVE TRAFFIC REPORT
DX     - RUN DATA COLLECTION EXCEPTION REPORT
DS     - RUN DATA COLLECTION SUMMARY
CS     - RUN CIRCUIT SURVEILLANCE REPORT
```

REMEMBER, TYPE '?' ANYTIME, ANYWHERE YOU ARE CONFUSED.

Fig. 16—NCOSS NCO Commands

```
NCOSS                                   RPST
MDR TRACE SEARCH                        MON AUG  4 09:38 1980 CENTRAL
-------------------------------------------------------------------

                      TANDEM:  1 (DIM PBX)  AUG 1

TIME SAC CALLED_NUMBR INCFAX OUTFAX E F AUTH_CD DURATN QT AC_CD
0800   8     233-1411 361.01 332.00 7 2
0807   8     233-1411 361.01 361.01 7 2           00.1
0810   8     233-1411 361.09 332.02 7 2           00.1
0811   8     233-1411 361.09 332.00 7 2           00.1
0819   8     233-1411 361.01 332.00 7 2             .
0830   8     233-1411 361.08 332.   E 2           00.0
0835   8     233-1411 361.07 332.   E 2           00.0
0855   8     233-1411 361.01 361.02 7 2           00.1
0856   8     233-1411 361.01 332.01 7 2           00.4
TDM  1 SUMMARY: 3181 MDRS SEARCHED; 9 MATCHED: 2 INCOMPLETE

        TDMSN  DAY  TIME      CLDNX      CLGNX      AUCDX
        1      FR   800-900   233-1411   250-1234   ALL
```

Fig. 17—NCOSS "MDR Trace Search" Printout ("MT" Command)

```
NCOSS
MDR PATTERN SEARCH                      MON AUG  4 11:43 1980 CENTRAL
-------------------------------------------------------------------

                      TANDEM: 1 (DIM PBX)  AUG 2

TIME SAC CALLED_NUMBR INCFAX OUTFAX E F AUTH_CD DURATN QT AC_CD
1303   8 214-220-6832 105.00 122.00 7 1           00.2
1305   8 214-330-6832 105.12 122.00 7 1           00.7
1306   8 214-330-6832 105.14 122.00 7 1           00.2
1307   8 214-748-1190 105.10 122.00 7 1           11.6
1309   8 214-555-1212  X3321 107.16 7 5           00.2
1309   8 214-555-1212  X3321 107.15 7 5           00.5
1314   8 214-369-8041 106.15 122.00 7 1           00.9
TDM  1 SUMMARY: 574 MDRS SEARCHED; 7 MATCHED: 0 INCOMPLETE

        TDMSN  DAYS  TIME       CLDNSNX        CLGNSNX  AUCDSNX
        1      SA    1300-1330  214-XXX-XXXX   ALL      ALL
```

Fig. 18—NCOSS "MDR Pattern Search" Printout ("MP" Command)

NCOSS
MDR CIRCUIT SURVEILLANCE REPORT MON AUG 4 11:46 1980 CENTRAL

TANDEM: 1 (DIM) DAC: 104
DAYS: AUG-4 TIME: 800-
LONG CALL DURATION THRESHOLD T: 0:0 (HH:MM)

TOTAL MDRS SEARCHED: 4676 MATCHED: 167 INCOMPLETE: 0
INCOMING: 101 INCOMING: 0
OUTGOING: 66 OUTGOING: 0

CKT.	MDRS			DUR.			AVG. DUR.		
ID	IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
01	32	1	33	1:01	01	1:02	01.9	01.0	01.8
02	25	5	30	32	07	40	01.3	01.4	01.3
03	15	5	20	18	11	30	01.2	02.3	01.5
04	12	4	16	36	03	39	03.0	00.9	02.4
05	8	8	16	16	12	28	02.0	01.5	01.7
06	5	10	15	05	09	14	01.1	00.9	00.9
07	2	3	5	01	01	02	00.5	00.4	00.4
08	0	5	5	00	05	05	00.0	01.1	01.1
09	2	5	7	02	10	12	01.1	02.0	01.7
10	0	6	6	00	10	10	00.0	01.7	01.7
11	0	8	8	00	03	03	00.0	00.4	00.4
12	0	6	6	00	11	11	00.0	01.9	01.9
TOT	101	66	167	2:53	1:27	4:20	01.7	01.3	01.5

Fig. 19—NCOSS MDR Circuit Surveillance Report ("CS" Command)

```
NCOSS
ACA EXCEPTION REPORT                MON AUG  4 12:08 1980 CENTRAL
-------------------------------------------------------------

                        TANDEM 1 DIMENSION  (PBX)

 DATE  REFERRALS  SHORT  LONG  LOST  CIRCUITS  S_THRESHOLD L_THRESHOLD

08/04         13     13     0     0        7            0           0

              DAC.CKT      TIME      TYPE      TEST   REPORTS
               57.023     10:33     SHORT       NO         1
              172.005     10:11     SHORT       NO         1
              172.063     08:08     SHORT       NO         1
              172.066     10:25     SHORT       NO         1
              173.017     09:08     SHORT       NO         2
              173.017     11:01     SHORT       NO
              173.024     08:29     SHORT       NO         1
              173.076     00:45     SHORT       NO         6
              173.076     02:33     SHORT       NO
              173.076     04:06     SHORT       NO
              173.076     06:23     SHORT       NO
              173.076     07:02     SHORT       NO
              173.076     07:53     SHORT       NO

        TDMS  DATES   SHT_THR  LHT_THR
        1     TODAY   0        0
```

Fig. 20—NCOSS ACA Exception Report ("AX" Command)

1. MAP

   A. Tandems and PBX's
   B. Trunk Group Information
   C. CACS and CAP Locations
   D. Trunk Groups and Queuing

2. ROUTING GUIDE

   A. Automatic Alternate Routing
   B. Automatic Route Selection

3. TANDEM AND PBX INFORMATION

   A. Location and Type
   B. DDD and Network Listed Number
   C. Telephone Number Responsible RSB or SCC
   D. Additional RNX if Used
   E. Network and DDD Access Codes
   F. Authorization Codes

4. CIRCUIT INFORMATION

   A. Circuit Identification Numbers and Terminals
   B. Control Office and Telephone Number
   C. Bell System or OCC Circuit

5. DIRECTORY

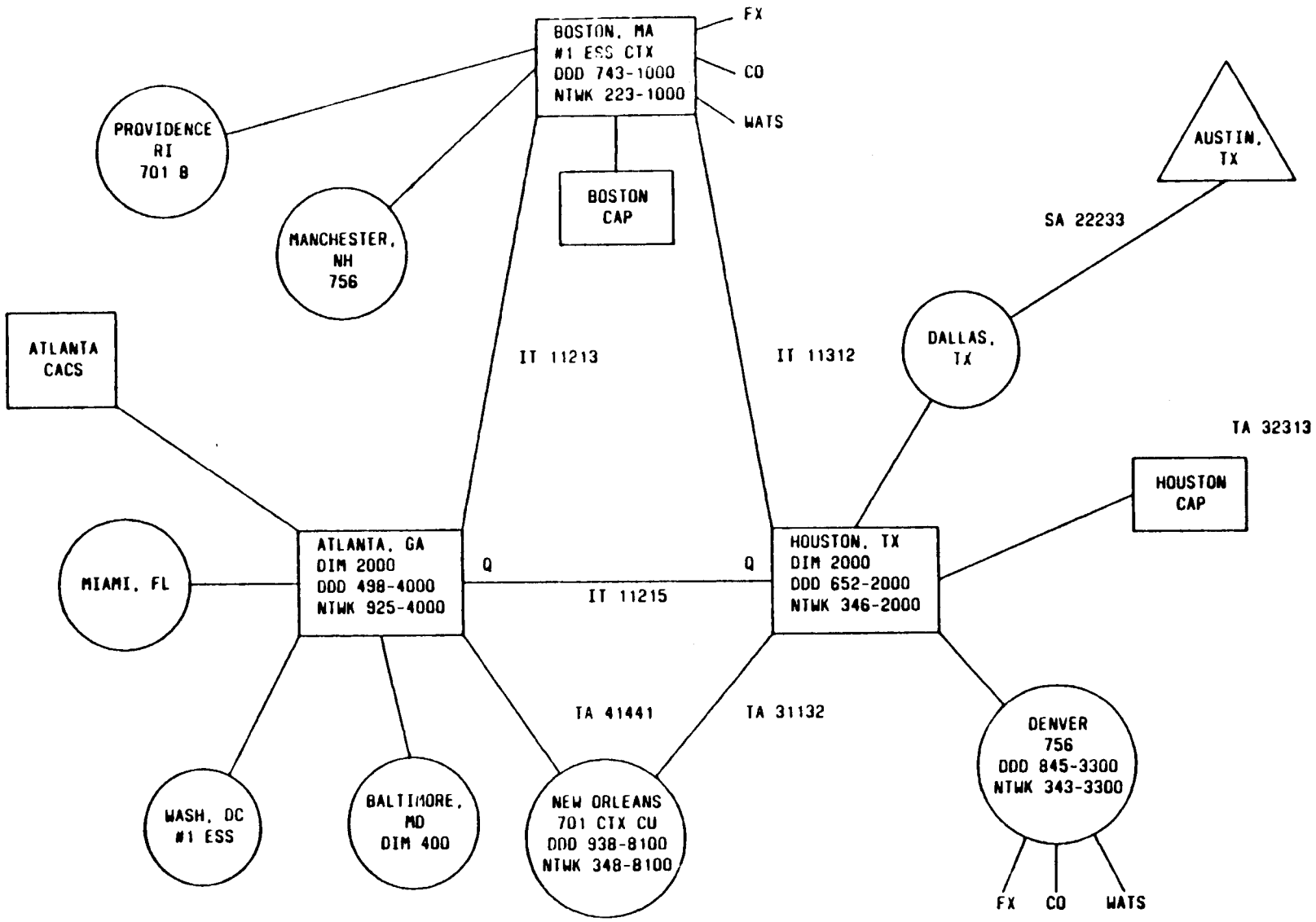
   A. Customer

      1. Attendant Telephone Numbers
      2. CAC Telephone Number
      3. Communications Division Organization Chart

   B. TelCo

      1. Business Services, Marketing, ISC Team, OSM

Fig. 21—ETN Description Contents



NOTE: COMPLETE INFORMATION ON ALL ELEMENTS (E.G. TYPE OF VEHICLE, TELEPHONE NUMBERS) HAS BEEN SUPPPESSED FOR EASE IN READING.

Fig. 22—Example of an ETN Description Map

Atlanta, GA
1735 Peachtree Street

DIM 2000 PBX Tandem

Attendant	DDD 498-4000	
	Ntwk 925-4000	
Chief Oper.	DDD 498-444	
Mrs. Smith	Ntwk 925-444	
RSB	Atlanta Uptown	537-9991
	Foreman Bob Smith	537-9936

Data RNX 833
Network Access 8
DDD Access 9

CACS	DDD 498-4501	
Cust. John Jones	Ntwk 925-4501	

Authorization Codes Portable

Local SMDR Tape Unit

Fig. 23—Example of Tandem PBX Information

TERMINALS	CIRCUIT ID	CONTROL	TEL NO.	BELL OR OCC
Atlanta — Boston	IT 11213-001 to 008	Atlanta	404-529-8881	OCC
Atlanta — Houston	IT11215-001 to 015	Atlanta	404-529-8881	Bell
Atlanta — New Orleans	TA 41441-001 to 003	Atlanta	404-529-8881	OCC
Boston — Houston	IT 11212-001 to 006	Boston	617-723-9942	Bell
Houston — Dallas	TA 32213-001 to 009	Houston	713-521-6387	Bell
Houston — New Orleans	TA 31134-001 to 003	Houston	713-521-6387	Bell
Dallas — Austin	SA 22233-001 to 004	Dallas	214-826-4168	Bell

Fig. 24—Example of an ETN Circuit Information Chart