

**NO. 4 ELECTRONIC SWITCHING SYSTEM
NETWORK MANAGEMENT
SYSTEM PRINTER**

CONTENTS	PAGE
1. GENERAL	1
2. OFFICE DATA DUMPING TRAP	2
3. TRUNK SUBGROUP DATA DUMPING TRAP	2
4. TRUNK SUBGROUP CALL IRREGULARITIES COUNTING TRAP	2
5. REFERENCE DOCUMENTS	2

1. GENERAL

1.01 The network management (NM) system includes a teletypewriter (TTY) associated with the exception panel. This is referred to as the system printer and is not related to the printers associated with the NM CRTs. The objective is to provide a record of the occurrence of certain exceptions. Figures 1 through 3 provide illustrations of DATASPEED® 40 configurations.

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 The NM messages output by the system will be output by priority. The three priorities will be manual controls, automatic controls, and all other NM messages. The message output will contain four items:

- Abbreviated time (Msg output time)
- Identification (event name)
- Data
- Date and hour (Msg load time)

FIGURES

1. DATASPEED® 40 Terminal (KDP)	3
2. DATASPEED® 40 Terminal (KD)	4
3. DATASPEED® 40 Terminal (Receive Only)	5

TABLES

A. EXCEPTION TTY MESSAGE	6
B. OFFICE DATA DUMPING TRAP	7
C. TRUNK SUBGROUP DATA DUMPING TRAP	8
D. TRUNK SUBGROUP CALL IRREGULARITIES COUNTING TRAP	8
E. ABBREVIATIONS AND ACRONYMS	9

There are three time frames associated with message outputs, event occurrence, 5 minute, and 15 minute. Table A is a list of lamps on the exception panel which have teletype outputs associated with them. Time intervals are indicated by:

A—Event occurrence

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SECTION 9i(4)

B—5-Minute

C—15-Minute

The items in Table A which are marked with an asterisk are those messages which will be available for the Kansas City machine; other messages listed will be available for Chicago 7.

1.05 The No. 4 Electronic Switching System (ESS) conducts system audits. All audit failures are identified by a TTY message at the maintenance operating center (MOC). Those audits which are related to the NM system will also be output on the NM system printer. The NM should then refer to the input/output manual to determine the impact on the NM system operation.

2. OFFICE DATA DUMPING TRAP

2.01 The system printer will have access to the trapping capabilities of the No. 4 ESS. The trapping functions are similar to the *reorder trap* in other switching machines. The basic operation of the trap is to detect the occurrence of a specified event. Three types of traps are provided, office data dumping trap, trunk subgroup call irregularities counting trap and trunk subgroup data dumping trap. The trapping capabilities are the same as those provided the maintenance forces. The NM will only use this approach when other analysis methods cannot be used.

2.02 Office data dumping trap (Table B) can be used by the NM to detect ineffective machine attempts (IMAs). To use the trap, the NM will specify the type of occurrence to be trapped, the sampling rate which limits the number of printouts, the time to start trapping and the time to stop the trapping operation. The trap can run for as little as one minute or as long as one hour.

Some trap outputs are available for every trapped call. Each line of print will indicate the time of day, the type of occurrence and the incoming trunk from which the failed call was received.

3. TRUNK SUBGROUP DATA DUMPING TRAP

3.01 Trunk subgroup data dumping trap (Table C) performs trapping functions for specified trunk subgroups (TSGs) only. The trap output provides a line of print for each event. As many as 31 sets of TSGs can be specified with each set including six TSGs.

3.02 The trapping functions will be used frequently in analysis of IMAs. The input required for this trap requires identity of the TSG or TSGs, the sample rate, IMA type and turn on, turn off time.

4. TRUNK SUBGROUP CALL IRREGULARITIES COUNTING TRAP

4.01 The TSG call irregularities counting trap (Table D) provides a count for each type of failure on the designated TSG or TSGs.

4.02 There are 18 types of failures which can be monitored with this trap. The trap presents a line of print for each event.

5. REFERENCE DOCUMENTS

5.01 The following documents contain more detailed information on the use of these traps.

BSP 234-100-051

Output Manual—OM-4AXXX-01

Input Manual—IM-4AXXX-01

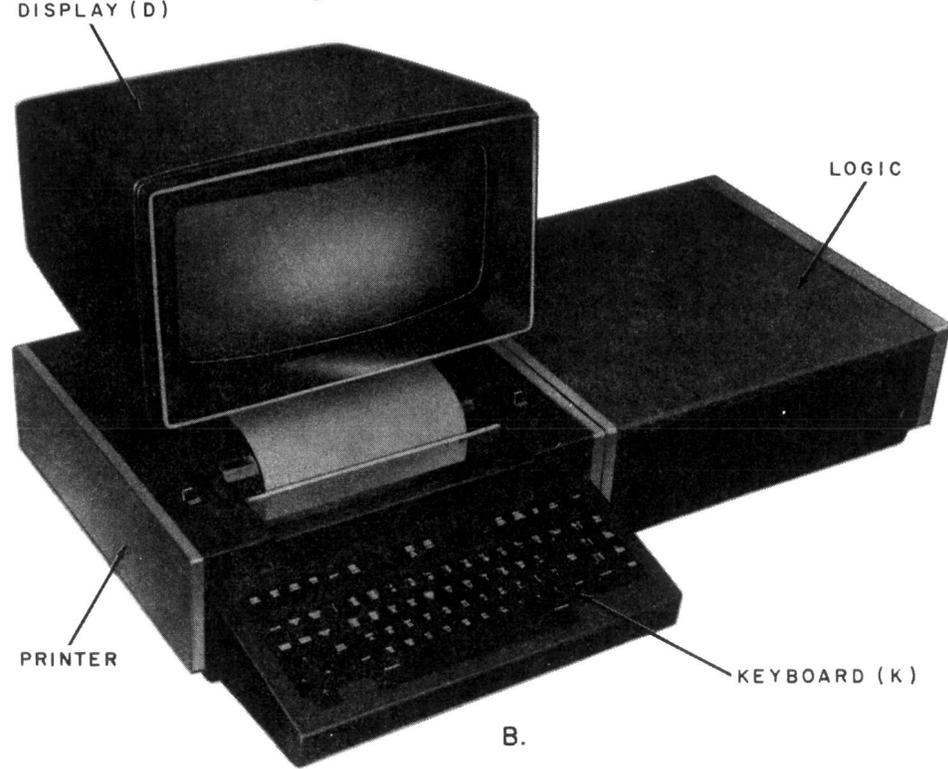
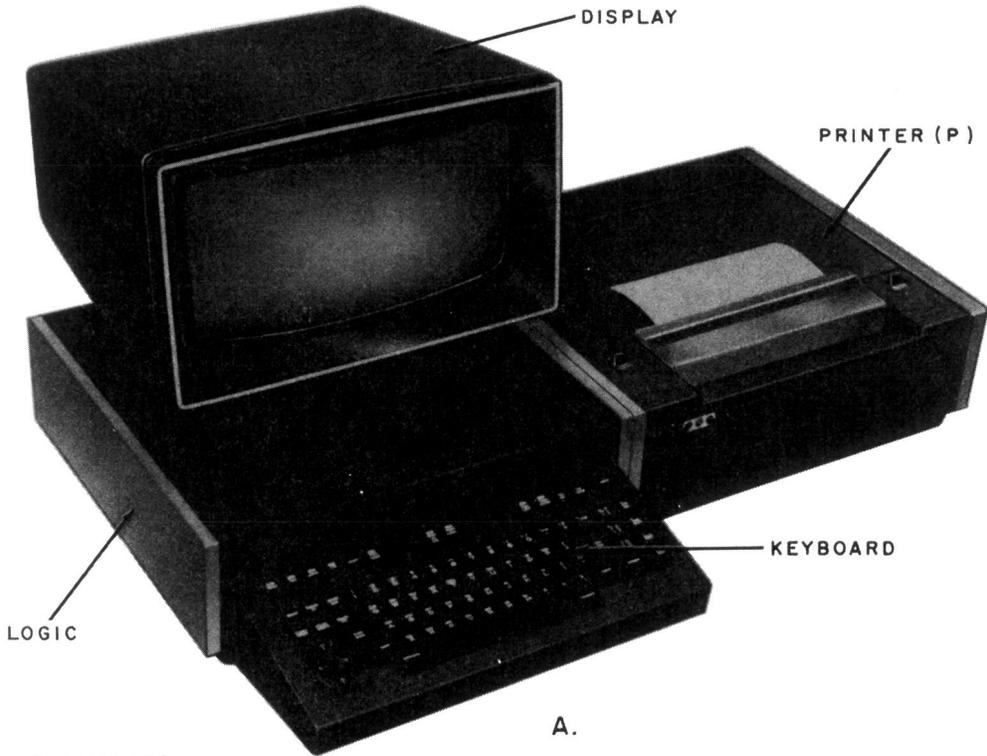


Fig. 1—DATASPEED® 40 Terminal (KDP) (1.01)



Fig. 2—DATASPEED® 40 Terminal (KD) (1.01)

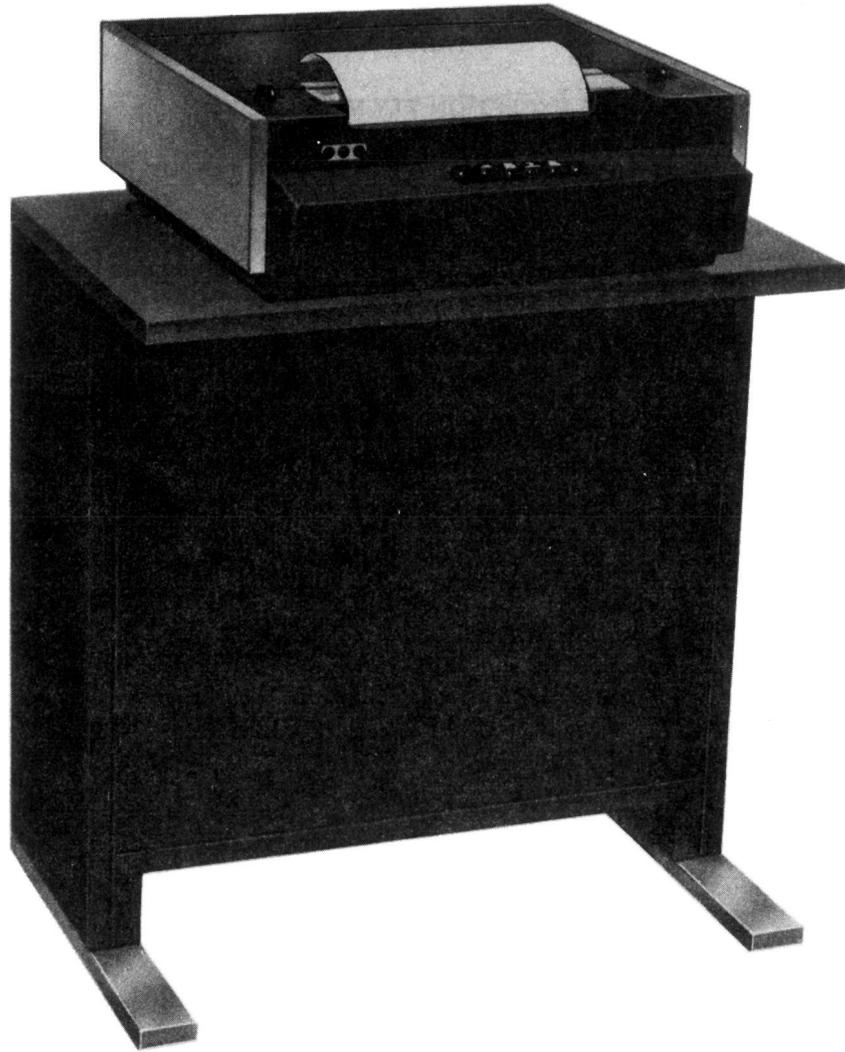


Fig. 3—DATASPEED® 40 Terminal (Receive Only) (1.01)

TABLE A
EXCEPTION TTY MESSAGE

<u>LAMPS</u>	<u>TYPE OF MESSAGE OUTPUT</u>	<u>INTERVALS</u>
* Traffic Pattern Incoming	Peg Count	C
* Traffic Pattern Outgoing	No Output	
* IMA Type	Ineffective Type Percent	C
Ineffectives	HTR Code Data	B
TG Performance	TSG Data	B
Manual Controls	Manual Controls	A
* Manual Control Reroute	Manual Reroute TSG NA	A
HTR List IA Source	No Output	
HTR Lists Changes	No Output	
HTR Lists Overflow	HTR Code List Limit	A
TG Controls STR	No Output	
TG Controls Auto OCR	AOOC Turnoff	A
DOC Received	DOC Level Rec	A
Test Calls	No Output	
Operation, Phase, Overload	No Output	
Eqpt OSS	No Output	
Carrier Group Alarm	TSG Data	A
Machine Controls DOC Sent	MC3 DOC Level Act	A
Internal Controls	No Output	
Alarms DOC ACK	False ACK	A
	No ACK	A

* Messages available for the Kansas City machine.
All other messages available for Chicago 7.

TABLE B
OFFICE DATA DUMPING TRAP

<u>INPUTS</u>	<u>OUTPUTS</u>
1. IMA Type(s)	1. Per Trapped Call
2. Sample Rate(s)*	(a) Time of Day
3. Turnon Time**	(b) IMA Type
4. Turnoff Time**	(c) Incoming Trunk
	2. When Available
	(a) Called Digits
	(b) Outgoing Trunk
	(c) Area of Origin
	(d) Calling Number
	(e) Maximum Zonal Band
	(f) Source Rate Band
	(g) CCIS Signal Progress
	(h) CAMA Operator Trunk
	(i) Digit Receiver
	(j) CCIS Terminal
	(k) Digit Transmitter
	(l) Signal Link Identity
	(m) CCIS Service Circuit

* 1/n, Where n = 1, 2, 4, 8, or 16

** Clock Minute

TABLE C

TRUNK SUBGROUP DATA DUMPING TRAP

INPUT	OUTPUT
Same as for monitor, plus IMA type(s) to be trapped.	Same as Office Data Dumping Trap, but restricted to specified subgroups.

TABLE D

TRUNK SUBGROUP CALL IRREGULARITIES COUNTING TRAP

INPUTS	OUTPUTS
1. Subgroup Identities*	1. Time of Day
2. Sample Rate**	2. Subgroup Identities
3. Turnon Time***	3. Counts for each of following per set of subgroups: PST, PDT, PER, FSA, NSD, PDA, ANF, AIF, CST, GLC, CDT, UXS, IKF, CPF, XST, MAB, CKF, GLR

* Up to 31 sets of 1 to 6 subgroups each

** 1/n, where n = 1, 2, 4, 8, or 16

*** Clock Minute

TABLE E

ABBREVIATIONS AND ACRONYMS

ABBREVIATIONS	TITLE
ACK	Acknowledge
AIF	ANI Office Failure
ANF	Automatic Number Failure
AOOC	Automatic Out of Chain Routing
CDT	CAMA Discount Timeout
CKF	CCIS Continuity Failure
GLR	Glare — Other Office Control
CRT	Cathode Ray Tube
CST	CAMA Seizure Time Out
CPF	Continuity/Polarity
DOC	Dynamic Overload Control
ESS	Electronic Switching System
FSA	Abandon False Start
GLC	Glare — Control in this Office
HTR	Hard To Reach
IKF	Integrity Check Fail
IMA	Ineffective Machine Attempt
MAB	Miscellaneous Abandon
MOC	Maintenance Operating Center
NA	Not Available
NM	Network Management
NSD	No Start Dial
OCR	Out of Chain Route
OSS	Out of Service
PDA	Partial Dial Abandon
PDT	Partial Dial Time Out
PER	Pulsing Error
PST	Permanent Signal Time Out
STR	Selective Trunk Reservation
TG	Trunk Group
TSG	Trunk Subgroup
TTY	Teletypewriter
XST	Expect Stop Time Out