

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

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<b>1. GENERAL</b>	
1.01 The display system permits interaction between the network manager (NM) and the No. 4 Electronic Switching System (ESS). Real time information is provided for the purpose of detecting, investigating and controlling the network.	
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 Six distinct packages are available for call-up at the NMC DATASPEED® 40 Display. The packages are related to the basic arrangement of the exception panel and are labeled traffic patterns, ineffective machine attempt (IMA), trunk subgroup (TSG) performance, completions, control effects and machine status.	
1.05 The directory page is a display containing an inventory of all the display pages in the system. The NM accesses the system by calling up this page and designating the display page to be viewed.	
1.06 <b>Display Format:</b> Common to all pages are three major areas, identification, data and transfer. Figure 1.1 illustrates the general organization of display format.	
(a) <b>Identification:</b> This area will consist of the topmost portion of the display. Each page will have a display title. Each page also will have a unique two digit <b>P</b> number (P**) shown in the upper left corner of the display.	
(b) <b>Data:</b> The main portion of the page will provide the data to be used by the NM. This area will have a variable format dependent on display design.	
(c) <b>Transfer:</b> This section is reserved to provide a means to transfer from one display to another without returning to the directory page. A limited number of displays can be listed by	

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display title. By designating one of these items and performing the transmit operation, the present display is removed and the designated display is presented. A second method of transfer is provided by typing the *P* number in the block indicated on the bottom line and performing the transmit operation.

**1.07** The designation operation is the means provided to cause the system to perform some required action. The designate blank used throughout the system is a set of parentheses ( ). The designate symbol is the plus sign +. The designation operation consists of typing the designate symbol into a designate blank and activating the transmit key.

**1.08** The system is capable of removing a display from the cathode ray tube (CRT) and storing it in a temporary scratch pad memory to be recalled at some later time. This is accomplished by designating *STORE* ( ) in the transfer area of a display and performing the transmit operation. The NM should use caution when using this function because the scratch pad memory will hold only one page and the memory is unprotected. If a page is in scratch pad and another page is stored, the first page in memory will be lost and the second will be restored.

**1.09** A page in the *stored* state can be returned to the CRT by designating *RETRIEVE* ( ) on line 24 and performing the transmit operation. The present display is removed and the page contained in the temporary memory will be presented.

**1.10** Unless otherwise specified, data for a page being displayed may be updated by reoperation of the transmit key.

**1.11** Throughout the display system, brackets [ ] will be used to indicate locations on a page where variable information can be input.

**1.12** It is expected that there will be some variations in the format and content of the display pages between design proposals and actual development. The illustrations provided in these paragraphs are based on design proposals.

**1.13** The term *default* is used to identify operations which are performed by the system when no specific instructions have been received. As an example, if no instructions have been received

regarding time interval, the system may default to or present data from the most recent 5 minute period.

## 2. DIRECTORY PAGES

**2.01** Five unique directory pages provide access to the NM display system. The format for these pages is illustrated in Fig. 2.1 through 2.5. The pages are divided into two sections. The left half of the page contains a list of pages in the selected directory. The right half of the page provides a list of all directories that are available.

**2.02** Each directory page is identified by a two character alpha designation:

- CN—Control input
- CN—Threshold input
- CC—Code completions data
- TG—Trunk subgroup data
- PA—Traffic patterns data
- MA—IMA data
- MA—Machine status data.

**2.03** Inputting the two character designation for the desired directory in the directory select brackets in the upper right portion of the page causes that directory page to be displayed. This identical list of directories will be presented on each directory page.

**2.04** Listed on the left side of the page are all pages included in the specified directory. Each page number includes the 2-digit alpha characters of the associated directory as a prefix. A set of parentheses is associated with each page number. Designating a given page and performing the transmit operation causes that page to be displayed on the CRT.

**2.05** If the NM knows which page of a specific directory is required, the 2-digit alpha characters can be entered in the page select brackets in the upper left portion of the page. This will call-up the desired page directly without first calling up the directory page index called out in 2.03.

**2.06** When the system is activated after being in the *off* position, the control input (CN) directory page will automatically be displayed.

**3. TRAFFIC PATTERNS**

**GENERAL**

**3.01** The traffic patterns package is comprised of nine display packages (Fig. 2.1). The primary purpose of traffic separations is to satisfy Division of Revenue requirements. However, this data also can be useful to the NM in analyzing traffic flow through the machine and network.

**3.02** Traffic separations are contained in two matrices. One matrix records peg count (PC) and the other matrix records usage. Each matrix consists of 32 horizontal rows and 64 vertical columns. The 32 rows correspond to the 32 incoming separations (INSEP) classes. The 64 columns correspond to the 63 destination separation (DESEP) classes. The place where an INSEP row intersects with a DESEP column is referred to as a cell. A matrix contains 32 by 63 = 2016 cells. There are 64 columns but the 64th column is used for audit purposes.

The matrix recording usage is scanned every 180 seconds, and the result is expressed in units of 3 minutes. The PC matrix is read, recorded and reset every 15 minutes. The four most recent 15 minute readings are retained.

The available number of INSEP and DESEP classes will be large enough to permit additional distinctions, through subdivision of the revenue categories, that are of interest to the NM.

**3.03** The machine administrator (MA) is responsible for assignment of INSEP and DESEP classes to meet Department of Revenue requirements. Cooperation between the NM and MA will be required to devise a system of assignments that distinguishes between the required classes and also the major network categories.

**3.04** If certain constants are observed during the assignment process, it is possible to subdivide the matrix into a system of 16 submatrices, each of which corresponds to a traffic category having

NM interest. The first criteria is that all incoming TSGs be divided into one of four categories:

- From foreign region
- From home region
- From subtending
- From home TCA.

The second consideration is that TSGs assigned to INSEP classes must be composed entirely of TSGs having the same category type.

The same rules must be applied to the assignment of DESEP classes. The code group categories are:

- To foreign region
- To home region
- To subtending
- To home TCA.

Using the rules stated and applying the category concept, the matrix can be divided into 16 submatrices. These submatrices are not part of the data base but are established by observing certain groups of cells. Initial lists must be input by the NM to determine which cells belong to a submatrix. By adding the counts in the various cells specified in the submatrix list, it is possible to obtain counts relevant to the categories into which INSEP and DESEP are divided. The NM will assign a percentage threshold for each category. To provide the grouping of cells, five traffic pattern index numbers are used.

- 0 - No assignment
- 1 - Foreign region
- 2 - Home region
- 3 - Subtending
- 4 - Home TCA.

These index numbers will be applied to both INSEP and DESEP classes. For example all INSEP classes which contain TSGs from foreign regions will be assigned the number one. Likewise all DESEP

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classes which contain codes which reside in foreign regions will be assigned the INDEX number 1. Initial assignment will be made on Office Data Assembler (ODA) Form 409B. A copy of this form should be retained for future reference.

The counts from the matrices are used to provide information for the activation of the lamps in the traffic pattern section of the exception panel.

**3.05** From the two measures (PC and U) provided, it is possible to compute the mean holding time for outpulsed calls. The holding time (HT) is calculated as:

$$HT = \frac{3 \times \text{Usage}}{\text{Peg Count}}$$

The factor is used to provide the output expressed in minutes, rather than units of 3 minutes. This results from the usage being recorded every 3 minutes. Usage expressed as calls per hundred seconds (CCS) is computed as:

$$CCS = \frac{3 \times 60 \times \text{Usage}}{100}$$

The formulas stated above are calculated on a per-cell basis.

**Note:** It is important that the NM have access to and use of a listing of all TSGs and codes assigned to each INSEP and DESEP class in order to fully utilize the following traffic pattern displays. The machine administrator shall be responsible for forwarding to the NM current copies of INSEP and DESEP record forms 6352A and B which are generated by the machine administrator.

### SEPARATIONS SUMMARY DISPLAY (PA-1)

**3.06** This display (Fig. 3.1) provides the NM a summary view of the 16 submatrices. The holding time and peg count results are displayed as related to each category. The numerical output indicates the calculations performed to determine the status of the exception panel lamps.

**3.07** The output from the separation summary mode appears on the left half of the CRT and contains five major components:

- (a) **Time of Day:** The time the program was executed.
- (b) **Calls Switched:** The sum of all peg counts in the 32 by 64 array of cells.
- (c) **Count Percentage:** This is a 4 by 4 array of percentages that sum to 100. Each fraction expressed is the ratio of the submatrix peg count to the count of calls switched. If the percentage of any count exceeds the threshold set for the corresponding lamp on the exception panel, an E will be displayed near the percentage figure. Each element in the 4 by 4 array is accompanied by a set of parenthesis. These provide a method of transfer to the submatrix analysis mode.
- (d) **Holding Time:** Presents holding time (HT) in minutes and tenths. Each value summarizes the average HT associated with a submatrix. As in the percentage portion, if a threshold is exceeded an E will be displayed. The HT is a computed as:

$$HT = \frac{3 \times \text{Submatrix Occupancy}}{\text{Submatrix PC}}$$

The 3 factor is used to convert the HT to minutes rather than units of 3 minutes.

- (e) **Traffic Pattern:** Near the bottom of the page are percentage results associated with VIA, OUTBOUND, INBOUND, AND INTRA. These percentages will total to 100.

The NM must designate the time for the display to encompass. Also, the NM must input 17 initial lists which define the contents of the various submatrices. These lists will identify the cells associated with each submatrix.

**3.08** Displayed on the right-hand portion of the page is the submatrix mode. When the NM designates a submatrix on the left-hand side of the page, the analysis from that submatrix will appear in the right portion of the page. The label will correspond to the selected submatrix, followed by the time of day the analysis was performed and a total peg count for all cells in the submatrix.

The first two columns of the analysis displays the INSEP and DESEP indices. The next two columns contain peg count and holding time corresponding to the indices in the first two columns. If the NM designates, a submatrix analysis will be rank-ordered by peg count. The same applies if the designation is made in the HT area, the analysis will be rank-ordered by HT values.

If the list exceeds 12 lines, only the first 12 items will be displayed. The next and back commands permit the NM to scroll the first forward and back to view the whole list.

**3.09** This mode will require the NM to input two initial lists. The list that contains the 16 labels identifying the submatrix types and a label marked **overflow** that is presented when the list exceeds 12 elements.

**TRAFFIC CELL MONITOR (PA-2)**

*Note:* The format of the display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.10** This display (Fig. 3.2) allows the NM to monitor trends in separations data for an individual cell in the 32 by 64 matrix. Up to four cells may be monitored at one time.

**3.11** The only input required is the INSEP and DESEP indices of a cell. The output will be peg count, average HT and CCS. The four previous segments of data will be displayed.

**TRAFFIC ORIGINS SUMMARY (PA-3)**

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.12** This display (Fig. 3.3) provides the NM with a total peg count and average call holding time for each of the 32 INSEP classes. The data is derived by summing up the 60 entries that appear in each row of the separations matrices.

**3.13** The NM will designate, in the upper left-hand corner under the page title, the type of ranking desired. When PEG is designated, the output will be in four major columns labeled FROM

FOREIGN REGION, FROM HOME REGION, etc. Within each column will be a ranked list of INSEP classes by peg count. If HT is designated, the ranking will be by holding time. For each INSEP class, the index, PC and average HT are provided.

**3.14** At the top of the page, after the label **switched**, the sum of all peg counts in the 32 by 64 separations matrix.

**3.15** The left-hand margin contains summaries computed for the four major categories of INSEP classes. The data provided will be, percentage of switched calls, associated with that category. Also peg count and overflow are presented.

**3.16** If the list within a category exceeds 14 items, only 13 items will be displayed. After the legend list, the word **overflow** will appear if there are more than 13 items. The remainder of the list can be displayed by scrolling the list using the next and back command.

**3.17** Five initial lists must be stored to implement this display. The first four consist of INSEP classes in each category. The fifth is the **overflow** list which indicates more than 12 items comprise a given list.

**DESEP COUNT ANALYSIS (PA-4)**

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.18** This display (Fig. 3.4) provides the NM a means of determining how each of the 32 INSEP classes are contributing to a specific DESEP class. Three inputs are required. The NM must specify the DESEP class to be displayed. This is input in the upper left-hand corner of the display. Secondly, the NM must select the desired time from one of the four choices in the lower left portion of the display. The third selection is the type of rank order in which the lists are displayed.

**3.19** The NM will be required to establish five initial lists. The first four lists are constructed of the INSEP indices in the four major categories. The fifth list is the **overflow** message. If the list exceeds ten items, only the first ten will be displayed. The remainder of the list can be viewed

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by scrolling the list using the next and back commands.

**3.20** The main portion of this display will be four columns corresponding to the four categories. Under each heading will be a list of INSEP indices with the peg count and average holding time associated with each item.

### SUBGROUPS PER INSEP (PA-5)

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.21** This display (Fig. 3.5) permits the NM to view the TSGs belonging to a specific INSEP class.

**3.22** The output is a list of TSGs, by circuit identification number (CIN), with associated data related to incoming calls. The list is rank ordered by incoming connections per circuit per hour (ICCH) with TSGs having the largest number of inseizures appearing at the top of the list. If the list contains more than 16 items, only the first 16 will be displayed. The remaining items can be viewed by moving the list up and down, using the next and back commands.

**3.23** The NM will input an INSEP index and designate a time frame to activate this display.

### TRAFFIC DESTINATIONS SUMMARY (PA-6)

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.24** This display (Fig. 3.6) presents the NM with the total peg count and average holding time for each of 63 DESEP classes. The data is derived by summing up the 32 entries appearing on each column of the separations matrices.

**3.25** The main portion of this display consists of four columns corresponding to the four major categories, TO FOREIGN, TO HOME REGION, TO SUBTEND, and TO HOME TCA. The DESEP classes relating to each category are displayed with their associated peg count and average holding

time. The lists are rank ordered by either peg count or holding time as designated by the NM.

In the upper right-hand corner of the display will be the sum of all peg counts in the 32 by 63 matrix. The left-hand column contains data relating to the four major categories. The percentage of each category contributes to the total traffic offered. Also, the peg count and average holding time are presented.

**3.26** The NM will input five initial lists. The first four specify the DESEP classes associated with the four main categories. The fifth list is the *overflow* message.

### INSEP COUNT ANALYSIS (PA-7)

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.27** This display (Fig. 3.7) provides the NM with an indication of how each of the 63 DESEP classes relate to the content of a specific INSEP class. The NM, by using this display, can determine the destination of traffic from a particular INSEP class.

**3.28** The NM will designate a specific INSEP in the upper left-hand corner of the display and also the rank ordering, either by peg count or holding time. To the right of these entries will appear the INSEP summary comprised of HT and PC. The HT will be the average of all traffic in the INSEP class. The PC is the total of the row in the matrix associated with INSEP class.

**3.29** The main portion of the display consists of four columns relating to the four major categories. The percent of PC that each category contributes to the total PC is displayed at the left of each heading. The associated PC and average HT for each index also is displayed.

**3.30** Each list can be scrolled up and down by using the next and back commands. This will be necessary if a column contains more than ten items.

**3.31** The NM must also specify a time frame for this display.

**3.32** To establish this display, the NM will be required to input five initial lists. The first four lists consist of the DESEP indices associated with each DESEP class. The fifth list is the *overflow* message.

**DESEP TSG BY DEGREE OF ACH (PA-8)**

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**3.33** This display (Fig. 3.8) provides the NM with a list of routing data blocks (RDBs) associated with a specific DESEP class.

**3.34** To activate this display, the NM will designate a DESEP index in the upper left-hand portion of the display, and a time frame in the lower left-hand portion.

**3.35** At the top of the page, the total PC for the DESEP class specified will be displayed.

**3.36** The main output of this display will be a list of RDB indices associated with the designated DESEP index. The first choice TSG of that RDB identified by CIN will be to the right of each RDB index. Also presented will be the far end NPA (FENPA) for that TSG as well as TSG related data. Only the first 16 items will be displayed. If there are more than 16 items, the NEXT and BACK commands permit the NM to view the remaining items.

**ROUTING DATA BLOCKS PER DESEP (PA-9)**

**3.37** The format of this display has not been defined as of this issue.

**OTHER TRAFFIC PATTERNS DISPLAYS**

**3.38** Traffic patterns displays, PA-11 through PA-16, shown on the traffic patterns directory page (Fig. 2.1) will be addressed in Part 7 of this document.

**4. INEFFECTIVE MACHINE ATTEMPTS**

**GENERAL**

**4.01** In the No. 4 ESS, every recognized seizure that does not result in successful completion

of address signaling is considered an ineffective machine attempt (IMA). The IMA display package includes pages that summarize all unsuccessful attempts to switch calls.

**4.02** The NM requires information concerning IMAs to effectively administer the network. The information provided will allow the NM to take precise actions to bypass or correct each type of IMA problem. The information available will be more precise and detailed than counts in most present day switching machines.

**4.03** There are 65 types of IMAs identified in the No. 4 ESS. The IMA counts are maintained on a total office basis. Table A lists the 65 types of IMAs and provides a brief explanation of each. It is expected that this list will increase as the No. 4 ESS becomes fully developed (common channel interoffice signaling (CCIS), satellite, etc).

**4.04** In addition to IMAs which are maintained on a total office basis, the No. 4 ESS will provide equipment ineffective attempts (EIA) which can be collected for each individual TSG. The EIA counts indicate certain IMA counts but also include failure conditions that do not result in IMAs. For example, EIA counts measure retrial attempts as well as final trial features. The EIA counts are divided into four different cases. The four cases are described below:

CASE I = Restricted to equipment problems that do not directly result in call failures. There is no second trial for CASE I and no IMA count is scored.

CASE II = There is only one chance to process an incoming seizure and there is a failure on the first and only trial. An IMA count is scored for each failure.

CASE III = There is a first trial failure and a second trial succeeds.

CASE IV = There is a first and second trial feature. The call is aborted and an IMA is scored.

The EIA counts total all first and second trial feature occurrences. The total count for a TSG is a single number that includes any occurrences of

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the above cases. The EIA counts are recorded on CCIS, multifrequency (MF) (non-oper), MF (oper), dial pulse (DP) (non-oper), and DP (oper). The EIA counts are considered to be either incoming or outgoing. Cases I and II discussed above are considered incoming and cases III and IV are considered outgoing.

**4.05** Table B is a list of 39 types of failures.

All but automatic number failure (ANF), ANI office failure (AIF), and CAMA discount timeout (CDT) can result in IMAs. This represents 36 of the 65 types of IMAs. The remaining 29 IMAs are listed in Table C. Calls which are blocked by NM controls are included in Table C. Each type of IMA represents a distinct problem, yet there are similarities among certain types of IMAs. These similarities allow grouping of IMAs into a small number of categories.

Figure 4.1 illustrates failure scoring of IMA counters due to various attempts along the call processing chain. The IMAs are categorized as follows:

- **Failure:** Due to equipment malfunction or dial error
- **Blocking:** Due to equipment shortages.

In Fig. 4.1, the grouping of IMAs are separated with a horizontal line. Those IMAs above the line are due to failures and those below are due to blocking. Distinction is not clear cut, IMAs of the same type may be due to either failure or blocking.

**4.06** Failures are categorized as two types, incoming and outgoing. Incoming is considered as failure before trunk hunt is performed. Failure after trunk hunt is considered outgoing failure.

**4.07** Blocking categories are internal and external.

Internal blocking is represented by congestion in the reference machine and external blocking occurs in the TSGs or within the network. Blockage occurring from NM control is considered external blockage.

**4.08** Table D illustrates the types of IMAs that fall into the different categories. At the request of many NMs, the IMAs are divided into ten subcategories that match the exception panel display. The IMA assignments to these subcategories are not completely resolved at this writing.

## IMA DISPLAY PACKAGE

**4.09** The IMA package is composed of 11 display packages (Fig. 2.2). This package will show conditions which cause the onset of lamps in the IMA section of the exception panel. The pages included permit the NM to determine the source of the IMA problem.

**4.10** This package uses a general format for all pages. Each page in this package will contain at least three of the five sections discussed in 1.03.

**4.11** The identification section for these pages contain two time entries.

- (a) **Data time** will indicate the time segment in the data base from which the data displayed is taken.
- (b) **Sent at** is the time that the display was executed.

## IMA OVERVIEW (MA-1)

**4.12** This display (Fig. 4.2) provides the NM with an overview of the IMA status of the No. 4 ESS. This display permits the NM to determine which type IMA caused the onset of one or more lamps on the exception panel and which failure categories have exceeded preset thresholds.

**4.13** The main data section consists of six columns. These columns contain the IMA categories and the IMA types associated with each category. Any IMA type which exceeds the exception threshold will be indicated by an asterisk (\*) to the right of the IMA name.

**4.14** The IMAs are counted on a call-type basis. The legend at the bottom of the third column provides a means of associating IMAs to call types.

Example:

IMA PST3 = Call Type-Permanent Signal  
timeout of an MF Trunk—Operator Trunk

This number code will be used in all displays of this package.

**4.15** The block of data headed **announcements** indicates the type of treatment received by IMAs. This area presents the count of attempts

sent to each type of tone or announcement, and also provides the percentage by the counts.

**4.16** The block in the lower right-hand corner of the page provides expanded information for a selected IMA so that the network manager can see the calculations that caused exceptions to appear. The NM types the IMA category name in the appropriate window. The display then shows the actual failure count, the base count, the actual percent IMA and the percentage threshold. Thereby allowing the NM to see whether the initial threshold settings are in line with actual traffic conditions.

**4.17** The figures used in calculating IMAs can be presented for any of the IMAs in the main body of the display. The NM can obtain this information by entering the IMA name in the brackets in the upper left corner of the expanded information box.

**4.18** The parentheses associated with each IMA category in the data section permits the NM to designate transfer to that summary page. This is accomplished by designating an IMA category and also the IMA summary at the bottom of the display.

**IMA SUMMARY DISPLAYS (MA-2 Through MA-8)**

**4.19** Seven display pages will be available to summarize IMA data within the different IMA categories. Each of these pages employ the same format and display technique.

Fig. 4.3—NC, Timeouts, and Out Fail Summary (MA-2)

Fig. 4.4—Controls and CAMA Queue Summary Display (MA-3)

Fig. 4.5—Internal Queue Summary Display (MA-4)

Fig. 4.6—VAC/IWK and INC Fail (CAMA) Summary Display (MA-5)

Fig. 4.7—Non-CAMA Incoming Failure Summary Display (MA-6)

Fig. 4.8—PSTO/FSA Summary Display (MA-7)

Fig. 4.9—Abandoned Call Summary Display (MA-8)

**4.20** The data sections of these pages (Fig. 4.3 through 4.9) contain seven columns of information for each IMA category.

- (a) **IMA Description:** In this column, the name of each IMA in a category is spelled out.
- (b) **TYPE:** The abbreviation for each IMA type and the associated call type code is provided. The parentheses associated with each type permits the NM to designate the type of IMA that has exceeded the exception threshold. An asterisk will appear to the right of the parentheses.
- (c) **% IMA:** The percent of IMA that each type contributes is displayed to the nearest 0.1 percent.
- (d) **THLD:** The threshold against which the IMA type was compared. The EIA display presents the percent of EIA in place of the threshold.
- (e) **COUNT:** This column presents the actual numerical count for each IMA type. In the EIA display the EIA count is presented.
- (f) **BASE:** This column identifies the base count which was used in the calculations.
- (g) **BASE DESCRIPTION:** This column describes the measure used as the base for calculation.

**4.21** Trend information will be presented in the lower portion of the displays. Percentage and count results are provided for the previous four 15 minute segments. The current percentage figure displayed is based on the segment of time from the end of the last complete 15 minute period to the time of execution of the trend display.

**TRUNK SUBGROUP IMA DISPLAY (MA-9)**

**4.22** This display (Fig. 4.10) provides the NM with a list identifying the TSGs affected by high IMA problems.

**4.23** The request for additional or supplementary data section contain commands which permit the NM to specify the type of failure information required. The NM may designate EIA-IN, EIA-OUT, or no start dial (NSD). The system will determine the TSGs with the highest count in the failure

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category designated and display the 12 TSGs with the largest number of failures.

**4.24** The number of TSGs with EIA or IMA counts may be quite large. By inserting a number in the brackets labeled *CUTOFF*, a threshold is set which limits those TSGs that are displayed. To be considered for display, the TSG must have an IMA count greater than the threshold.

**4.25** In the main data section, for the type of failure designated, the 10 TSGs with the largest number of failures will be listed by CIN. To the left of the CIN, the total number of trunks in the TSG and the total number of trunks in the TSG and the number currently out-of-service are displayed. To the right of each CIN is shown the percent of seizures and failure count since the end of the most recent complete 15 minute segment.

**4.26** The NM may request data for a single TSG by inputting the CIN of the selected TSG in the area labeled *OPTIONAL TSG INPUT*. The NM must specify the type of failure at the time the CIN is input. The NM can transfer the entire list of TSGs to the network-analysis or network trend displays for further analysis.

### CAMA DETAIL (MA-10)

**4.27** This display (Fig. 4.11) provides the NM with a view of failures that are affecting CAMA calls. This display provides a means to explain the onset of the CAMA lamp in the IMA section of the exception panel.

**4.28** The format for this page is similar to that discussed in 4.19. The data provided consists of:

- Failure description
- Type of failure
- Percent failure
- Count of failures
- Base count
- Base Description.

**4.29** The data base can be further examined to determine the trend for the four most recent

15 minute time periods plus the current time period for the individual CAMA failure categories, one at a time. Both the failure percentages and failure counts will be displayed in this section.

### MACHINE SUMMARY REPORT PART 1 (MA-11)

**4.30** The MSR Part 1 (Fig. 4.12) is provided for machine administration purposes. Information for the use of this display will be provided in DFMP, Division H, Section 9F, Traffic Measurements.

### OTHER MACHINES STATUS DISPLAYS

**4.31** Machine status displays, MA-13 through MA-20, shown on the machine status directory page (Fig. 2.2) will be addressed in Part 9 of this document.

## 5. CODE COMPLETIONS

### GENERAL

**5.01** The code completions package is comprised of 11 display pages. These pages which are listed on directory page (Fig. 2.3), permit the NM to investigate the No. 4 ESS machine code completion data for 3- and 6-digit destination codes. The individual displays differ both in scope and function. Some displays have broad coverage showing exception information as completion data for a region or entire network. Other displays provide greater detail about some limited set of destination codes. All code-completion displays use data from the *per-code* data base. The 11 display pages can be divided into three subsets.

- (a) Four pages are restricted to data relevant to 3-digit (NPA) codes only. The first two of these four displays cover only the 3-digit codes that represent valid NPAs. Exceptions to these codes cause activation of the top two rows of lamps belonging to the *INEFFECTIVES* area of the exception panel. The remaining two pages cover all 3-digit codes for which counts are accumulated, including INWATS codes.
- (b) Three pages are used to show both 3- and 6-digit code data.
- (c) Four displays are provided to display data on central office codes (NXX) with the home NPA or any foreign numbering plan area (NPA) currently on NXX resolution. All of these

displays with the exception of one (TOLL CENTER area exception) are restricted to 6-digit codes with a common 3-digit (NPA) prefix. The major analytic capability is provided in the routing analysis and TOLL center exception displays.

**5.02** Most of the displays list one or more *go to* options that list specific displays the NM might often want to see next. The *go to* options simply let the NM designate a display by name and obtain the display as would be accomplished by using the directory pages. Options that transfer information developed on one display to some other display are labeled *transfer to* options; those that transfer no information are labeled as *go to* options.

**NPA EXCEPTIONS OVERVIEW (CC-1)**

**5.03** This display (Fig. 5.1) provides the NM with an overview of percent IMA and percent INA exceptions for all NPA codes. The NM can quickly discover how many NPAs have exceptions, where they are geographically located in the network, and which codes had MA or NA counts too small for exception calculations. The NM can also request all available data for any particular NPA code.

**5.04** The top portion of this page contains the title of the page, the last update time, and the time of the NMs last send section. At the left of the page is displayed percentage and volume thresholds being used by the system. Supplemental information and displays that the NM can request are also included.

**5.05** The main portion of this page displays all NPA codes grouped by region. The regions are positioned in an approximate geographic location, the West to the left, East to the right, etc. The two Canadian regions are placed together at the far right. The NPA codes are listed numerically within each region. The exception information for each NPA code appears in the two variable locations to the left of the NPA name.

The presence of an exception is indicated by a W, A, or R in the left variable location next to the NPA name. These letters relate to the white, amber, and red thresholds associated with the exception panel. There are two spaces associated with each NPA name. If the exception is percent IMA, the letter appears in the left space and if the exception is percent INA, the letter appears in the right location. If the volume threshold is

satisfied and no failure rate is exceeded, two *dots* will be displayed next to the code. If the volume threshold is not exceeded, indicating that little traffic is being switched to a location the variable location will be left blank.

**5.06** The supplementary data area is to the left of the page. By entering the name of an NPA in this area, the NM is presented with all of the data for that particular NPA. The MA, percent IMA and percent INA values for the most recent 5 minute intervals are presented.

**5.07** Updates of the main body can be accomplished by performing the send operation. In general, updates of the main body are independent of the supplementary data, neither affecting the information displayed in the other.

**5.08** Twelve "initial" lists, one for each region, are required to establish this display.

**NPA COMPLETIONS OVERVIEW (CC-2)**

**5.09** The display (Fig. 5.2) allows the NM to select a particular completion measure and see its values for all NPA codes. The measures which may be selected are percent IMA, percent INA, or the MA count. The MA count is displayed in units of ten attempts MA/10. This means the digit at the far right is the 10s digit of the actual MA count.

**5.10** The measure, time interval and supplementary data sections are contained in the left portion of this page. The NM must select one of three measure selections and one of three time intervals.

**5.11** The requested data will appear in the main body of the page in three variable locations next to the NPA name. The codes are arranged by regions as in the NPA exceptions overview. This display defaults the MA/10 count for the most recent 5 minute period when this display is called up.

**5.12** Twelve "initial" lists, one for each region, are required to initially establish this display.

**NPA TREND BY REGION (CC-3)**

**5.13** This display (Fig. 5.3) provides the NM with current trends in percent IMA, percent INA and MA counts for the three available 5 minute

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intervals for a specified set of 3-digit codes (ie, the NPA codes within one of the 12 regions). The NPA trend display provides all available data for 3-digit INWATS codes and the 3-digit codes manually assigned to the *special* lamps of the exception panel.

**5.14** At the left of this page the NM must designate the set of 3-digit codes for which data is required. The initial display will default the home region. (Displayed as all zeros.) The initial display also presents the NPAs which are currently on NXX resolution.

**5.15** The main body lists each 3-digit code in the selected set and its value of percent IMA, percent INA and MA counts. The results of the last three 5 minute intervals are presented. An asterisk appearing to the left of a code indicates code block control is currently in effect.

**5.16** If the selected set of codes contains more than 17 codes, the NM must scroll the list to view all the items.

**5.17** Twelve "initial" lists, one per region, are required by this display. The information for INWATS, SPECIAL, and ALL are provided by the system. An initial list of 15 labels must also be input. This list will consist of the names of the regions and the label INWAT, SPEC, and ALL.

### THREE-DIGIT CODE INVENTORY (CC-4)

**5.18** This display (Fig. 5.4) provides the NM with a listing which covers all 3-digit codes for which counts are taken, including INWATS, mass calling, WADS, and overseas. Codes are ranked by percent IMA, percent INA, and MA counts from largest to smallest values. All three ordered lists are displayed.

**5.19** The display, when called up, presents the three lists including the results of the latest 5 minute interval. Volume cutoffs are those which are used by the system. The NM can adjust these cutoffs as desired.

**5.20** On the left side of this page is the section which permits the NM to designate the time interval and volume threshold desired. Also presented are the NPAs which are on NXX resolution.

**5.21** The main body of this display contains the three ordered lists. An asterisk immediately to the left of any code name indicates the presence of a "*code block*" control on that 3-digit code.

**5.22** Only 15 codes on each list can be displayed at a time. The lower ranking codes can be presented by scrolling the list. The display always indicates the currently displayed part of the list and the total number of parts. These lists have a maximum size of 4 parts or 60 codes. The NM can request any particular part of a list by entering the digit and naming that part at the bottom of the list in brackets designated *PART*. Update for this page can be accomplished by performing the send operation.

**5.23** There are no "initial" lists required for this display.

### THREE-DIGIT CODE TREND (CC-5)

**5.24** This display (Fig. 5.5) provides the NM with all the computation data presently available for any list of NPA codes. The initial display will show data for the home NPA and foreign NPAs on NXX resolution if this page is called directly. The NM can also transfer a list of codes from display CC-4, 3-digit code inventory.

**5.25** The main body of this display shows three different trends; percent IMA, percent INA, and MA over three 5 minute intervals as well as a 15-minute summary. Since lists transferred from other pages may be up to 60 items long, the windows may be scrolled.

**5.26** After the initial display, the NM can enter manually up to fifteen 3-digit codes of special interest. These entries must start with item one in order for the system to read the window properly. The NM depresses the SEND key, the initial codes will be erased and data for the new code list will appear on the screen. This means that if a list of sixty 3-digit codes was transferred from the 3-DIGIT CODE INVENTORY and a subsequent manual entry is made, the entire transferred list will be overwritten.

**5.27** After the first display of data, the NM can update the page by simply pressing the SEND key. In this situation, he can see the most recent completion information available for the NPAs listed.

**SIX-DIGIT CODE INVENTORY (CC-6)**

**5.28** This display (Fig. 5.6) provides the NM with the volume of traffic and failures for NXX codes within a 3-digit NPA currently on "NXX Resolution." The 3-digit NPA prefix of any 10-digit code can be put on NXX resolution. This includes INWATS, mass calling, overseas, etc. This display, performs a screening function to generate lists of 6-digit codes that have the largest percent IMA, percent INA, and MA counts. It lets the NM determine whether a problem condition exists.

**5.29** The main portion of the page presents the three ordered lists of codes. Additional parts of these lists can be viewed by scrolling the list. A maximum of 60 NXX codes, 4 parts of 15 codes each, can be contained in a list.

**5.30** All NPAs which are currently on NXX resolution are displayed on the left side of the page. Cutoff thresholds are also displayed. The cutoff values, which can be changed by the NM, are defaulted to the system parameters established for the exception panel. These cutoff values determine the volume required to allow a code to be added to the list. The time frame selection is also made in this area of the page.

**5.31** At the right side of the page, the NM may transfer to either the *NXX trend or routing analysis* displays. To transfer to one of these displays, the NM must also designate which display and which list of codes is wanted next. Failure to make both selections produces an error message.

**5.32** There are no initial lists required for this display.

**SIX-DIGIT CODE TREND (CC-7)**

**5.33** This display (Fig. 5.7) provides the NM all the completion data presently available for any list of NXX codes within NPA. The list of codes can be transferred from one of five other code completion displays or up to 15 codes can be entered manually. The main body of the display shows three different trends; percent IMA, percent INA, and MA counts for three 5 minute intervals as well as a 15-minute summary.

**5.34** The name of the common 3-digit NPA appears at the top left of this page, with the individual NXX codes listed below. Data relating to each

code appears in a line to the right of that code. The first three sets of columns represent trends in percent IMA, percent INA and MA counts over the three 5-minute intervals. The column at the extreme right provides the 15-minute summary.

A list of 3-digit codes currently on NXX resolution appears to the far right. A manually entered 3-digit code must be one of these seven codes. The NM must enter one of the listed 3-digit codes and the remaining 3-digits for up to 15 codes.

**5.35** The list of codes can include up to 60 NXX codes. Fifteen codes will be displayed at a time. The remaining codes are displayed by scrolling the list. The entire list of NXX codes in the NPA can be transferred directly to the routing analysis display in either IMA or INA mode, or the NM can specify a shorter list by entering the desired end-point item numbers.

**5.36** There are no initial lists required for this page.

**ROUTING ANALYSIS DISPLAY (CC-8)**

*Note:* The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

**5.37** This display (Fig. 5.8) provides the NM with group codes by RDB and provides *pooled* completion data for each code assigned to that RDB. For any specified pair of RDBs, the display presents the following:

- (a) The individual TSGs in the RDB with related data for each.
- (b) The IMA or INA data for each transferred code assigned to that RDB.
- (c) Detailed data for any designated TSG.

The *pooled* completion data for each code consists of percent IMA and MA or percent INA and NA. The information in this display identifies the TSGs being used by codes with excessive percent IMA or percent INA. High percent IMA reflects blockage in the No. 4 ESS, either in an adjacent office or on the TSG between them. High percent INA indicates blockage in the distant network after calls have been outpulsed.

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**5.38** For the initial display, the system translates each 6-digit code on the transferred list to obtain the 4-digit RDB index number. It then groups the codes by kDB and retrieves the most recent 5 minute data. If the display is requested in the IMA mode the system obtains the IMA and MA counts; in the INA mode, the INA and NA counts are obtained. These counts are summed over codes that have the same RDB to present average values of percent IMA or percent INA. The average values are then used to rank RDBs from highest to lowest percent failures.

The initial display represents an ordered list of RDB indices with the number of NXX codes using each RDB, the average percent IMA or percent INA, and the total IMA or INA count for these codes. This data is presented on the left portion of the page.

**5.39** The NM obtains the main body of the display by entering a 4-digit RDB index for one or both of the RDB entry spaces. The CIN for each TSG in the RDB is presented along with the percent OFL and HT from the last 15 minute interval of the traffic measurements program. Each RDB has a maximum of 14 TSGs. When there are more than seven, the list must be scrolled to view the remaining TSGs. To the right of the TSGs for each RDB, the display shows the individual NXX codes from the transferred list which use that RDB. Associated with each code is the percent IMA and MA count or its percent INA and NA count, depending on the display mode. The list of codes for each RDB is in the same rank order as they were on the original transferred list.

**5.40** Supplementary data for any TSG in either of the RDBs appears at the right of the page. The CIN and TSG characteristics are provided. The first two rows of data always give data from the most recently completed 15 minute period. The data in the second two rows shows 5 minute data if the designated TSG is assigned to a study class. For other TSGs for which 5 minute data is not available, the system retrieves the *current* counts accumulated since the last 15-minute update. The type of data presented is identified by either **5** or **CUR** in the window to the left of the data.

**5.41** This display requires transferred information and can only be accessed from five specific displays that are designed to perform the proper transfer operation. If this display is requested

from the directory or any other *illegal* display, an error message will be displayed. The valid displays from which transfer can be accomplished are as follows:

- (a) Ordered NXX inventory
- (b) 100 percent failure codes inventory
- (c) Special codes inventory
- (d) NXX trends within NPA
- (e) Toll center area expansion.

**5.42** The *transfer to* options each require an additional input. Transfer to the **NXX trend within NPA** requires the NM to enter at least one 4-digit RDB index to indicate which codes should be transferred. If two RDBs are entered, the codes using the second RDB will be added to the end of the code list for the first RDB. These entries are made within the brackets at the top of the lists of TSGs in the main body. Transfer to the TSG detail display requires the NM to designate a TSG in one of the two currently displayed RDBs.

**5.43** By simply performing the send operation the NM can receive updated data, providing a new time interval is available.

**5.44** This display requires no initial lists.

### 100 PERCENT FAILURE CODES INVENTORY (CC-9)

**5.45** This display (Fig. 5.9) provides the NM with 3- and 6-digit codes with 100 percent IMA or 100 percent INA in the past 5 minutes. These represent "vacant" codes and areas of the network that are currently isolated either because of network blockage, restrictive controls or data errors. Vacant codes with large attempt counts could represent traffic inappropriately routed.

**5.46** The main body consists of four lists. Two lists of 3-digit codes appear on the left, ordered by IMA counts for codes whose IMA equal MA and ordered by INA counts for codes whose INA equal NA. The display presents fifteen 3-digit codes in each list and their IMA or INA counts, provided that this count exceeds a predetermined threshold. The two lists included all 6-digit codes with 100 percent failures whose 3-digit prefix is

on **NXX resolution** and provided that the MA or NA exceeds the predetermined threshold. An asterisk is used to indicate those codes which are **code blocked**.

**5.47** The cutoff parameters and transfer section of this page are contained on the far rightmost portion of the page. The defaulted cutoff thresholds for this page are five counts for IMA and INA. These values can be changed by inputting new values and performing the send operation. This change does not affect the default parameters which the system will use the next time the page is called up.

**5.48** A total of 15 NPA NXX codes can be displayed on each of the lists. If more than 15 codes are on the list, the remaining codes can be viewed by scrolling the list.

**5.49** When the NM designates a **transfer to** option, a code in the 6-digit 100 percent IMA or 100 percent INA list must be designated. This causes the system to transfer all codes on that list having the same 3-digit prefix to the requested display.

**5.50** This display requires no initial lists.

**SPECIAL CODE INVENTORY (CC-10)**

**5.51** This display (Fig. 5.10) provides the NM with a convenient way to check exceptional percent IMA and percent INA of the 3- and 6-digit codes kept for special purposes by the system. These include codes assigned to the **special** lamps of the exception panel, codes currently excluded from the exception panel and codes currently on the HTR list.

The display separately ranks the 3- and 6-digit codes on the selected list by percent IMA and percent INA in a specified time interval. The major function of this display is to provide a means to investigate exception reports on the **special** lamps of the exception panel.

**5.52** The main portion of this page consists of the lists of 3- and 6-digit codes. For each code presented, the percent IMA, percent INA, MA and NA are displayed.

**5.53** At the extreme left portion of the page, the NM can select the category of codes and the time interval for which data is desired.

**5.54** The options provided are **all special, INWATS, man special, excluded, and HTR CNTRL**. The **man special** consists of all codes which have been manually assigned to the **special** lamps.

**5.55** The lists will accommodate 15 codes per list. If more than 15 codes are involved, the NM can view the remaining codes by scrolling the list.

**5.56** Only one initial list is required for this display. This list consists of the labels which identify the category of codes (ie, ALL SPEC, INWATS, etc).

**COMPLETION CODE MONITOR (CC-11)**

**5.57** This display (Fig. 5.11) provides the NM with all available completion data on any four manually specified destination codes. For each code, it shows MA, INA, and percent IMA for the three most recent 5 minute intervals, as well as the 15-minute total. The NM can use this display for close surveillance of destination codes of special current interest.

**5.58** The NM can enter up to four 3- or 6-digit codes on the left of this page and the data will be presented to the right of the code. Three 5 minute intervals will be displayed for percent IMA, percent INA and the MA counts. The overall value for the entire 15 minute period will be presented on the far right of the display.

**5.59** The initial display **defaults** the 3-digit home NPA in the first code location. To obtain data for a 3-digit code, the NM enters only the 3-digit NPA name. The data for an NXX code in the home or a foreign NPA (or any other 6-digit code) requires a full 6-digit input. The first three of these six digits must represent a 3-digit code that is currently on NXX resolution. An error message is provided if the code is not on NXX resolution.

**5.60** There are no "initial" lists required for this display.

## 6. TRUNK SUBGROUP PERFORMANCE

### GENERAL

**6.01** The trunk subgroups package is comprised of ten display packages (Fig. 2.4). This package provides the NM the answers to a variety of questions related to TSG performance.

### NETWORK NC SERIES 1 (TG-1)

**6.02** This display (Fig. 6.1) provides the NM the capability to establish surveillance for no circuits available (NC) condition over five preestablished networks of TSGs. Each network is an arbitrary listing of TSGs created by the NM for retention as display program data. A network may contain a maximum of 16 TSGs. Any TSG controllable or not may be included in a network. The networks will be initially established during the ODA input. Instructions for changing and updating the networks will be issued at a later date.

**6.03** For most No. 4 ESS displays, TSGs are identified by their circuit identification names (CINs), which are elaborated common language location identification (CLLIs). For TG-1 and TG-2 displays, however, TSGs are identified by preestablished distinct names determined by the NM. This procedure provides a more readily identifiable indicator than the proper CIN designation. (This same TSG name identification method is used in the TG-3 and TG-4 standard network displays.)

**6.04** The display format has five column areas where the various network TSGs are listed. Each column is headed by the network name and a network index. The TSGs in each network are listed below in the order they are searched when hunting for a vacant trunk. To the left of each TSG is a position where an asterisk will appear if the TSG is NC at the time the display is activated. The NC condition is an instantaneous one that can be updated at any time by the NM.

**6.05** This display offers a transfer function that allows the TSG membership list for any single network to be transferred to either TG-5, network analysis, or TG-6, network trend displays which analyze networks more closely.

### NETWORK NC SERIES 2 (TG-2)

**6.06** This display is the same as the TG-1 display (Fig. 6.1) except the name and content differ

slightly. It is intended to provide the NM with a display that can be established using criteria other than geographical. An example of functional would be CAMA, operator or toll completing TSGs.

### STORED NETWORKS SERIES 1 (TG-3)

**6.07** This display (Fig. 6.2) provides the NM with the capability to establish groups of TSGs into a network for which special monitor capabilities are desired. The design of the networks are at the discretion of the NM and may be geographic by nature. For example, a network may include all TSGs terminating in a certain Region or all down chain finals. The NM may establish up to 26 networks composed of 16 TSGs so that 416 TSGs can be independently stored with this display. These networks will be initially established during the office data assembler (ODA) input. Instructions for changing and updating the networks will be issued at a later date.

**6.08** For most No. 4 ESS displays, TSGs are identified by their CINs, which are elaborated CLLIs. For TG-3 and TG-4 displays, however, TSGs are identified by preestablished distinct names determined by the NM. This procedure provides a more readily identifiable indicator than the proper CIN designation.

**6.09** Two considerations must be made by the NM when this display is used.

**Type of Measurement:** The NM must determine the basis to be used for the calculations. The choices available are:

- Percent OVF
- ACH
- CCH
- Percent NSD
- Percent OOS
- Percent OCC
- HT
- OCCH
- ICCH

- Percent RRT.

The NM must designate one type of measure. If there is no type indicated, the program will implement a percent overflow measurement.

**Time Frame:** A choice of time frames must be selected. Four choices are available:

- 15 minute—The latest 15 minute traffic measurements interval
- 30 minute—Combined results for the last two intervals
- 45 minute—Combined results for the last three intervals
- Hour—Combined results for the last four intervals.

**6.10 Page Format:** Under the column designated *measure* will be the types of measurements that may be selected by the NM. By placing the designate symbol in the parentheses to the right of the specified measurement, the computations will be made on the basis of selected type.

The time category permits the NM to designate the time frame desired for information to be displayed. By placing a designate symbol in the parentheses next to the desired time frame, the program is directed to the desired time frame.

The "Network-Index" column provides a complete directory listing of all networks identified with this display. To obtain a listing and analysis of TSGs in a specific network, the network index number is entered in the brackets of one of the three "INDEX" data columns on the right portion of the display. Up to three networks may be displayed at one time.

At the top of the three index columns, the name of each network being displayed appears. The exact time the analysis was performed also appears in the upper right portion of the display.

Listed under the network name are the TSG names which make up the network. All network TSGs (16 maximum) will be displayed in this single column. They are displayed in the same order as input on the initial list. Associated with each TSG name are results of the measurement computation

for that TSG and a set of parenthesis. The type of measurement being computed will be displayed at the top of each index column.

By placing the designate symbol in the parentheses associated with a specific network or TSG and placing a designate symbol in the transfer parentheses, the network list can be automatically transferred to either TG-5 (network analysis) or TG-6 (network trend) for detailed analysis, or a specific TSG can be transferred to TG-8 (TSG detail) or TG-9 (TSG trend) or to either of the relevant TSG control displays, all of which operate on a single TSG at a time.

**6.11 Display Functions:** The transmit operation executes the program to present the desired information. To change from one display to another display, the NM must delete the first display. If the NM determines that significant time has passed to justify an update in the data, the only action required is to repeat the transmit operations.

#### STORED NETWORKS SERIES 2 (TG-4)

**6.12** This display is the same as the TG-3 display (Fig. 6.2) except the name and content differ slightly. The difference between these two displays lies in the assignment of the initial network lists. It is intended to provide the NM with a display that can be established using criteria other than geographical. An example of functional would be CAMA, operator or toll completing TSGs.

#### NETWORK ANALYSIS (TG-5)

**6.13** This display (Fig. 6.3) allows the NM to assemble an arbitrary list of up to 16 TSGs and monitor their performance both selectively and in relation to each other.

**6.14** To activate this display, two inputs are required: a list containing no more than 16 items and a time frame selection. The list is not permanently stored and is cleared from the CRT. The information and list can be saved by placing the display in temporary store. However, only one display can occupy the store state at any given time.

The NM has two methods available for establishing the display TSG list. First, there is a manual entry made by which the NM manually inputs a list of CINs for the TSGs. Alternatively, a TSG

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list can be transferred from any of the TG-1, TG-2, TG-3, TG-4, or TG-7 displays. If the TSG list is entered by means of such a transfer, the manual input of CINs is not required.

**6.15** The output of this display is identified by their CINs. To the right of each CIN will be eight items of TSG-related data.

- Percent OFL
- TSG size
- ACH
- OUT CCH
- In CCH
- Percent OCC
- Hold time
- Percent RRT.

The item set of parentheses beside the CIN will be used for transferring the CIN to other TSG displays.

**6.16** The NM will designate the time segment to be displayed. The information for this display is retrieved from the 15-minute data base.

### NETWORK TREND (TG-6)

**6.17** The display (Fig. 6.4) is a companion to TG-5, network analysis. It allows the NM to assemble an arbitrary list of up to 16 TSGs and monitor their performance histories both selectively and in relation to each other.

**6.18** To activate this display, three inputs are required: a list containing no more than 16 items, a TSG traffic measure selecting and a time frame selection. The list is not permanently stored and is cleared from the CRT. The information and list can be saved by placing the display in temporary store. However, only one display can occupy the store state at any given time.

The NM has two methods available for establishing the display TSG list. First, there is a manual entry mode by which the NM manually inputs a list of CINs for the TSGs. Alternatively, a TSG

list can be transferred from any of the TG-1, TG-2, TG-3, TG-4, or TG-7 displays. If the TSG list is entered by means of such a transfer, the manual input of CINs is not required.

**6.19** The measure and time interval data sections are contained in the left portion of the page. The NM must select a measure and time interval. All measures are available on a 15-minute basis for all TSGs. Some measures are also available on a 5-minute basis for TSGs assigned to study classes.

**6.20** The output of this display is identified by this CINs. To the right of each CIN will be the TSG measures for the current and three preceding time intervals. The parentheses beside each CIN will be used for transferring the CIN to other TSG displays.

### STUDY CLASS INVENTORY (TG-7)

**6.21** This display (Fig. 6.5) provides the NM with surveillance capability over only the "network management" TSGs. A "network management" TSG is any TSG that presently has a trunk subgroup headcell adjunct assigned to it. The assignment of an adjunct implies that the TSG presently has control capability and that extensive data is available on a 5-minute, 3 interval basis, in addition to the standard 15-minute, 4 interval basis. There can be a maximum of 512 adjuncts assigned to TSGs.

**6.22** There are two modes of operation associated with this display, ranking and detail. The ranking mode has been executed first. Then a specific TSG may be specified for detailed analysis. To use this display the NM supplies three items of information: the group of TSGs to be displayed, the type of measure to be computed and the time frame desired.

**6.23** By programming the TSG headcell adjunct, the network management TSGs can be partitioned into eight "study groups," numbered 0 to 7. Selected TSG performance data for study groups 1 through 5 are displayed on the TSG performance lamps on the exception panel. This display provides detailed information for the exception panel summary.

**6.24 *Ranking Mode:*** The ranking mode rank orders all TSGs assigned to a specific study group. In this mode the NM designates which

study group (0 through 7) is to be ranked in the class parentheses in the upper left portion of the display, designates which interval of time to be considered in the interval parentheses in the upper left portion of the display, and designates which TSG measure should be used as the basis for ordering the TSGs in the measure parentheses.

After the options have been selected and the transmit operation is performed, the selected group of TSGs will be displayed in rank order, with the worst case at the top of the list by TSG name (CIN).

The computed value for the type of measurement will be displayed to the right of the TSG name. At the top of this column the type of measurement will be displayed. The top 16 items will be displayed. At the bottom of the column the total length of the list in pages will be indicated. The list can be scrolled up or down in step 16 by using the controls labeled NEXT and BACK. A column of parentheses is provided to permit the NM to designate a specific TSG for detailed analysis. By inserting the designate symbol in the set of parentheses associated with a TSG, the NM specifies that TSG for detailed analysis.

As additional information to the ranking mode, this display provides an inventory of how many TSGs are assigned to each study group in the lower left portion of this display. By adding these numbers, the NM can determine how many adjuncts are currently assigned to TSGs, and how many adjuncts are available for assignment to other TSGs.

**6.25 Detail Mode:** The NM selects the desired TSG and executes the transmit operation, the detail mode is displayed as two blocks of information on the right side of the display page. The first block contains static information relating to the selected TSG.

- Percent OCC
- HT
- Percent out E1A
- Percent in E1A.

The second block of information is concerned with data that relates to TSG operation.

The data contained in this block is as follows:

- Total attempts
- Total outseizures
- Total inseizures
- Total overflow
- NSD
- RRT to
- CTO/Ship
- CFR/RRF
- ACH
- OCCH
- ICCH
- Percent OFL
- Percent NSD
- Percent RRT
- Size
- Idle
- OOS.

**6.26** Two types of transfer capability are provided. The NM can transfer 16 TSGs to either TG-5 (network analysis) or TG-6 (network trend) for detailed analysis. The NM can also transfer individual TSGs to TG-8 (TSG detail), TG-9 (TSR trend), or to one of the TSG control pages.

**TSG DETAIL (TG-8)**

**6.27** This display (Fig. 6.6) allows the NM to see a complete performance profile for any TSG whose name is known. This display is an expanded version of the detail mode in the study class inventory display (TG-7). The format of this display allows easy access to all significant facts relating to the TSG under study. Most data items are given as both counts and rates.

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**6.28** To use this page, the NM must specify a CIN for the TSG to be displayed and a time frame selection. The CIN may be inserted via keyboard entry or transferred from another display. Those TSGs described by an arbitrary name for ease in identification on other TG displays will be automatically converted to the proper CIN when transferred to this page.

**6.29** The time intervals permits the NM to designate the time frame desired for information to be displayed. All TSGs afford data on a quarter hour basis; TSGs assigned to study classes additionally offer most items on a 5-minute basis.

**6.30** This display contains both dynamic and static traffic data and the status of TSG controls. Items of dynamic data such as those listed below are presented as both counts and rates.

- Attempts
- ACH
- Outseizure
- OCCH
- Inseize
- ICCH
- OFL
- USD
- RRT
- EIA

Items of static data such as those listed below and numbers of circuits in the TSG are also displayed.

- Directionality
- Signaling study class
- Routing domain
- Multiple treatment screening class
- Incoming traffic separation class

## TSG TREND (TG-9)

**6.31** This display (Fig. 6.7) is a companion to TG-8, TSG detail display. It provides the NM with a comprehensive historical view of the performance of a selected TSG. The trend page displays items of both dynamic and TSG control data over a series of time intervals.

**6.32** The time intervals permit the NM to designate the time frame desired for information to be displayed. If 15-minute data is requested, four consecutive 15-minute values will be displayed. If 5-minute data is requested and is available, three consecutive 5-minute intervals will be displayed.

**6.33** The NM will have to input two items to activate this display. The CIN of the TSG and a time span selection must be made. Those TSGs described by arbitrary names for ease of identification on the TG displays will be automatically converted to the proper CIN when transferred to this page.

**6.34** The left half of this display is concerned with counts. The contents of this portion of the page include the following:

- Total attempts
- Outseizures
- Inseizures
- Overflow
- NSD
- RRTE TO
- Out E1A
- In E1A
- DOC CTO
- STR CTO
- MAN SKIP
- MAN CTO
- MAN FROM

- No Start Dial
- Inseizures.

The right-hand portion of this page presents parameter histories. The parameters are aligned with the most closely related counts on the left side of the page. The measures displayed are the following:

- ACH
- OCCH
- ICCH
- Percent OFL
- Percent NSD
- Percent RRT
- Percent Out E1A
- Percent in E1A
- Hold time
- Percent occupancy.

The CIN for the TSG are presented at the top of the page along with the time at which the program was executed. At the bottom of the left portion of the page are four status items associated with the TSG. The four status items are as follows:

- Study size
- TSG Size
- OOS
- NOW.

**RDB PERFORMANCE SUMMARY (TG-10)**

**6.35** This display (Fig. 6.8) provides the NM with an overview of the status of all TSGs in a designated RDB. The TSGs in a RDB are listed in the order they will be searched when hunting for a vacant trunk. For each TSG, the display data includes HTR status, dynamic traffic measurements (eg, ACH), and the number of circuits in each TSG.

**6.36** Two methods are used to display a designated RDB. The first method is the RDB index method. Using this method the NM enters the RDB index number in order to obtain the designated RDB. The second method requires the NM to input the NPA-NXX code, routing domain, and multiple treatment screening class, if applicable. From this information the RDB index can be determined and the designated RDB displayed.

**6.37** The display when activated presents all the TSGs in the RDB by CIN in the order that they are searched. An RDB may contain up to 14 TSGs.

**6.38** Directly to the right of each item will be the TSG related information:

- HTR status
- Percent OFL
- TSG size
- ACH
- Out CCH
- Percent OCC
- Hold time
- Percent EIA.

By placing a designate symbol in the parentheses beside a specified TSG and executing the transfer function, the specified TSG can be transferred to TG-8, TSG Detail, or TG-9, TSG Trend for further analysis.

**6.39** The in and out of chain selection parentheses will appear immediately below the list of TSGs. The initial display will be defaulted to in-chain. Out-of-chain RDB access will be indicated by displaying OCR index as the last item of the in-chain TSG list. The OCR can be displayed by placing the designate symbol in the out chain parentheses.

**6.40** The NM will designate the time segment to be displayed. The information for this display is retrieved from the 15-minute data base.

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### 7. CONTROL EFFECTS

#### GENERAL

**7.01** The control effect package is designed to fulfill the NMs need for control-related information. The three major types of information provided are control status, control counts, and reference data. From the information contained in this package, the NM can determine the cause for the onset of lamps in the network control portion of the exception panel.

**7.02** Initially, there has been no provision to retain the control activation and deactivation times. Other considerations which the NM should be aware of are no separate records are kept on traffic previously skipped before reaching a TSG, and code block counts are retained on a total office basis rather than on a per code basis.

**7.03** The information provided will answer the two primary questions of interest to the NM—which controls are now active and how are these controls affecting traffic. Specifically, the NM needs to know what types of traffic are affected, how much traffic is affected and what routes are used by the controlled traffic. Additional information is provided in this package which relates to the following questions.

- Which controls are severely restricting traffic?
- Which controls are not taking effect?
- How are controls affecting traffic to a particular geographic area?
- Which controls of a particular type are now active?
- How many controls of each type are now active?
- Are there redundant or conflicting controls?

**7.04** The basic format for all pages in this package contains four major categories:

- Identification
- Data

- Supplemental data
- Request for transfer.

Although all pages contain the four sections, the size and content of each section will vary from page to page.

**7.05** The upper portion of the page will contain the page identification. The center portion of the page contains main data associated with the display. The bottom portion of the page is the request for transfer to another page, and display scrolling options.

#### MANUAL REROUTE INVENTORY (PA-11)

**7.06** This display (Fig. 7.1) provides the NM with the current inventory of manual reroute controls in effect.

**7.07** The main data section of this display is arranged in two parallel columns. The left column identifies the TSG for which a manual control is active. The right column identifies the TSGs to which the rerouted calls are directed.

**7.08** For each TSG under control, the currently effected control parameters are displayed:

- Percent traffic affected
- Type of traffic affected: HTR, (H) or Unspecified (HU)
- Reroute from count.

For each TSG to which reroutes are sent, the following items of traffic data are given on a designated 15-minute basis:

- Percent OFL
- OUT-CCH
- TSG size
- RPT count
- Percent OCC
- HT.

The parentheses associated with each data column allows the NM to transfer any TSG to another display for detailed analysis. TSGs on this display are rank ordered according to the percent OFL on the receiving TSG. If the percent OFL for several TSGs are equal, then these TSGs will be ordered on the basis of percent occupancy.

**7.09** The length of this list is displayed in the bottom portion of the page. This list may be scrolled to access entries not initially displayed.

**7.10** Individual TSGs can be transferred to other TSG displays for further analysis by placing the designate symbol in the parentheses beside the TSG.

**HTR CONTROL LIST (PA-12)**

**7.11** This display (Fig. 7.2) provides the NM with a current inventory of all codes on the hard to reach (HTR) control list. If a code appears on this list, the reason for its appearance is given by one or more of the following letters.

A—Indicates that the automatic system has declared the code HTR.

M—Indicates that the code has been manually declared HTR on one or more TSGs.

E—Indicates the code has been manually exempted from HTR treatment on one or more TSGs.

**7.12** Codes on the HTR control list are presented in three separate columns according to whether they are one of the following categories:

- NXXs within the home NPA
- 6-digit NPA-NXX codes not in the home NPA (foreign NPA-NXX status)
- 3-digit NPA codes (foreign NPA status).

**7.13** As an option, the NM can request that the display output should be restricted to those codes that appear on the list as a result of manual action (codes that are "M" or "E" but not "A").

**7.14** The length of each HTR column is displayed at the bottom of each column. The individual

columns may be scrolled to access entries not initially displayed.

**CODE BLOCK INVENTORY (PA-13)**

**7.15** This display (Fig. 7.3) provides the NM with all codes currently affected by code block control. Each blocked code (NPA-NXX-LINE) is listed and accompanied by the following information:

- Switching domain (0 through 63) for which the code is in effect
- Percentage of calls to be affected
- Specified announcement treatment (NC, EA1, EA2).

**7.16** Blocked codes are arranged in two columns according to whether they are:

- NXX-LINE numbers for POTS codes in served NPA
- CCSA codes (6 digit maximum) or POTS codes (10 digit maximum) in foreign NPAs.

In each column, blocked codes are listed from small to large according to either their NXX or NPA numbers.

**7.17** The length of each code block inventory column is displayed at the bottom of each column. The individual columns may be scrolled to access entries not initially displayed.

**STR INVENTORY (PA-14)**

**7.18** This display (Fig. 7.4) provides the NM with a list of all TSGs affected by the selective trunk reservation (STR) control.

**7.19** There are two modes of operation associated with this display:

- Active Mode—Lists all TSGs with STR control in effect
- Override Mode—Lists all TSGs with STR control turned off.

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**7.20** Each TSG on the list is accompanied by the following items:

- Treatment option (ship or cancel to)
- Reservation level
- Current selective reservation level
- Average percent occupancy of the TSG for the most recent 15 minute interval
- The number of trunks in the TSG.

For the active mode, TSGs are ranked according to the current value of the STR control count. For the override mode, TSGs are ranked by percent occupancy.

**Note:** All controllable TSGs (adjunct headcell assigned) have STR control and are either in the active or override states. Override is accomplished by setting both STR thresholds to zero.

**7.21** Individual TSGs can be transferred to other TSG displays for further analysis by placing the designate symbol in the parentheses beside the TSG.

**7.22** The length of this list is displayed at the bottom of the page. This list may be scrolled to access entries not initially displayed.

### DOC RECEIVED INVENTORY (PA-15)

**7.23** This display (Fig. 7.5) provides the NM with a list of all TSGs affected by dynamic overload control (DOC) received control. Each TSG is accompanied by the following information:

- Treatment option (ship or cancel)
- DOC level received
- An asterisk (\*) if control is manually overridden.

The TSGs are ordered by current MC level and control count in the preceding 5 minutes.

**7.24** The page initially displays 5-minute, 3 interval data. In addition to this, the standard 15-minute, 4 interval data is also available.

**7.25** The length of DOC received TSGs list is displayed at the bottom of the page. This list may be scrolled to access entries not initially displayed.

**7.26** Individual TSGs can be transferred to other TSG displays for further analysis by placing the designate symbol in the parentheses beside the TSG.

### AUTO OCR INVENTORY (PA-16)

**7.27** This display (Fig. 7.6) provides the NM with the list of automatic out-of-chain routing (AOCR) data blocks ranked by AOCR counts for the most recent 5 minutes. In addition, each AOCR RDB is accompanied by a count trend for the past 15-minutes and an asterisk (\*) if the automatic system has an inhibit in effect.

**7.28** By inserting a designate symbol opposite an AOCR RDB index, the NM can call up an expansion of up to seven TSGs in the AOCR RDB. For each TSG the following performance measures based on the most recent 15 minute data:

- Size
- Percent OFL
- OUT CCH
- Percent RRT
- Percent OCC
- Holding time.

Seven indications of current controls on each TSG is also displayed. The indication of a manual OCR inhibit will be displayed on the page at Chicago 7, but the indication of an automatic inhibit will not be available until Kansas City.

**7.29** Individual TSGs can be transferred to other TSG displays for further analysis by placing the designate symbol in the appropriate parentheses.

**7.30** The length of the AOCR list is displayed on this page. This list may be scrolled to access entries not initially displayed.

**8. CONTROL INPUT****GENERAL**

**8.01** To implement controls, the NM will use five control pages. Implementing manual controls or adjusting automatic controls are accomplished using the following pages:

- Code-block/HTR control (CN-1)
- Outgoing trunk control (CN-2)
- Incoming trunk control (CN-3)
- General control change (CN-4)
- Selective code reroute (CN-5).

**8.02** To protect against inadvertent manual control actions, a forced review of manual input is required. When the NM inputs a control action, the system feeds back information pertinent to the control action selected and controls already in effect. After the NM reviews the page, the action is implemented by performing the *execute* command. The system then displays the page showing the updated control status.

**8.03** All pages in this package will contain a message section. This block will be used to display error messages, instructions, and explanatory material.

**8.04** One command, unique to this package, is the *execute* command. The execute command causes the designated operation to be activated. The NM will input control activation information and perform the transmit operation. The system then forces the NM to review the desired action. If all data is correct, the *execute* operation is performed to activate the control. The time is shown each time the current control status is displayed.

**CODE BLOCK/HTR CONTROL (CN-1)**

*Note:* The format of this display page has not been finalized as of this issue. The final display should resemble the following preliminary format.

**8.05** This display (Fig. 8.1) provides the NM with a listing RDBs which have code-block/HTR

controls in effect. The block in the upper center of the page is used to identify the code on which control is to be taken. If the code to be blocked is not in the DDD domain, the NM must specify the domain number in the brackets beneath the label CCSA. The ISC brackets the means to designate the incoming screening class when the routing data block display is to be called up.

**8.06** Usually the NM will not have to type in the destination code, screening class and domain. This information can be transferred from another display and the system will print in the designations.

**8.07** When the NM designates a code block, the percentage of traffic to be blocked and the final treatment must be specified. To remove a code block the NM only designates the off commands. The number of code blocks now in effect will also be displayed.

**8.08** The remaining portion of this page is used to change the status of the specified code on the HTR list.

**8.09** Listed in the main portion of this page will be the TSGs associated with the IN-CHAIN RDB for the specified code.

The three columns to the right of this list permit the NM to make a code HTR (manual HTR), inhibit automatic HTR for the code (manual INH), or return HTR control to the automatic system (restore) for each TSG in the RDB. The columns labeled *HTR STATUS* indicate whether the code is actually being treated as HTR. The column labeled *automatic* indicates whether the automatic system has designated the code as HTR.

If the code has been specified as HTR automatically, a status mark will appear in the *automatic* column even though the code may be manually inhibited from automatic HTR control. An *S* in this *INHIBIT* designate blank will indicate this situation. In this case, the HTR status column will not indicate the code is HTR because it is not actually being treated HTR. Inhibit overrides the automatic.

An entire NPA may be designated as HTR using the block above this area. Commands are also available in this area to remove or inhibit a code from the HTR control list. The box in the lower

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right corner provides a message to the NM when the INTERNAL HTR control is not in operation.

### OUTGOING TRUNK CONTROL (CN-2)

**8.10** This display (Fig. 8.2) allows the NM to limit traffic on outgoing TSGs, implement reroutes, and adjust automatic controls that affect outgoing trunk traffic.

**8.11** The TSG identification section is at the top center of the page. This identity can either be input by keyboard, or transferred from another display. Once the CIN has been entered, the system will display two characters to the right of the CIN which indicate directionality and type of pulsing.

The first block below the identification sections is used to implement skip, cancel to, or cancel from. The NM must specify DAR or ALT routed, HTR or HTR and UNSPEC, traffic to be controlled and the type of final treatment. EA1 or EA2 may be specified in place of no circuit announcement (NCA).

The block to the left permits the NM to specify a reroute for the TSG. The NM must specify the percent and HTR or HTR and UNSPEC traffic to be rerouted.

Assigning a TSG to a study class is accomplished using the next line of this display which is shown at the right end of this line. The number of TSGs which has already been assigned to study classes is indicated.

The AOCR can be inhibited or returned to automatic activation using the commands in the area labeled **automatic OCR**.

The bottom three sections from left to right on this page are used for DOC and STR controls. Thresholds for STR are entered on this page along with the following items:

- (a) Variable control percentages for DOC and STR
- (b) Cancel or skip option for DOC and STR
- (c) Inhibit and restore for receive DOC.

**8.12** Each time the transmit key is depressed for this page with an OUT TSG CIN identified

and/or a reroute TSG CIN identified, the DOC receiver status for either TSG is updated.

**8.13** The ability to test MC3 on the DOC transmitters is included on this page. The test is requested by a designate symbol and results in the activation of MC3 on all transmitters. The signal is not sent but is hairpinned to the appropriate acknowledge point. Success of the test is indicated by failure to get any **ACK** failure indication on the exception panel.

### INCOMING TRUNK CONTROL (CN-3)

**8.14** This display (Fig. 8.3) allows the NM to manually activate inhibition of transmission of DOC signals to distant office.

**8.15** The identification section at the top of this page is accomplished as described in 8.10.

The command section allows the NM to equip the TSG with DOC signals or return the activation to the automatic system. Other commands allow the NM to send or inhibit ODC signals, the user may send **MC1** and **MC2**.

The **S** or status mark in a designation blank indicates that operation has been previously performed. The block to the right of the page informs the NM of DOC receive activity. The DOC send (automatic or manual) and all outgoing automatic DOC activity also is indicated.

### GENERAL CONTROL CHANGE (CN-4)

**8.16** This display (Fig. 8.4) allows the NM to change control parameters or inhibit control actions for the entire office, without specifying TSGs or designation codes.

**8.17** This page is used to designate the six foreign NPA codes for which NXX resolution is desired. A change is accomplished by typing over the previous entry.

**8.18** The NM can either inhibit all automatic outgoing DOC or internal HTR control. By designating the **auto** command, the NM returns control to the automatic system. This page is also used to set the total office parameters for HTR determination. These parameters were explained in Part 4.

The bottom line is a lamp check command. When this command is designated, a software program initiates a test of all lamps on the exception panel.

**SELECTIVE CODE REROUTE (CN-5)**

**8.19** This display (Fig. 8.5) combines features from control pages, code block/HTR, and outgoing trunk control page. The NM specifies one or more — up to five — destination codes in the top center box. All of these codes must use the same routing data block. When the codes have been specified, the TSGs in the in-chain routing data block are displayed at the left. The NM designates HTR control ON for one or more TSGs. The SKIP HTR ON and reroute HTR ON must also be specified. The NM then specifies a reroute TSG in the box at the upper left of the page. When these commands are executed, all traffic to the selected codes will skip the specified TSG and try the reroute TSG.

**8.20** An *S* in the reroute ON column indicates a reroute is in effect on that TSG. By designating the *READ* command, the NM can identify the reroute. The designated reroute is displayed in the box at the upper left. If the reroute is unsatisfactory, the NM can replace it with a different reroute.

**OTHER CN (THRESHOLD INPUT) DISPLAYS**

**8.21** The formats for displays CN-11, CN-12, CN-13, CN-19, and CN-20 shown on the Fig. 2.5 directory page have not been finalized as of this issue.

**9. MACHINE STATUS**

**GENERAL**

**9.01** This package provides the NM with real-time information about switching machine status. Current measures and recent history reflect the condition and performance of the No. 4 ESS. The conditions which cause lamps to be activated on the exception panel will be identified in this package. The major types of information are the following:

- Current status of equipment items
- Current software status

- Current network management and overload status
- Current system performance in terms of traffic (load, speed of service, and ineffective attempts)
- Recent history of the above items.

The pages in this package are formatted to include five basic sections:

- Identification
- Data
- Supplementary data
- Request for supplementary data
- Transfer.

Each page will contain at least three of the five sections. The sizes and shapes of the sections will vary from the display.

**9.02** The machine status package employs graphs and predictions to indicate trends in machine status. The predictions are estimates of data counts that will be obtained during the current clock 15 minutes. The estimates are based on the assumption that the counts obtained since the last clock quarter-hour will continue at the same rate until the end of the current clock quarter-hour. The estimates are always compared with the actual count obtained during the last complete quarter hour.

**MACHINE STATUS: TRAFFIC (MA-13)**

**9.03** Final display format not available as of this issue.

**MACHINE STATUS: CENTRAL CONTROL (MA-14)**

**9.04** Final display format not available as of this issue.

**MACHINE STATUS: OTHER EQUIPMENT (MA-15)**

**9.05** Final display format not available as of this issue.

## SECTION 9i(3)

### MACHINE STATUS: SERVICE CIRCUITS (MA-16)

9.06 Final display format not available as of this issue.

### MACHINE STATUS: CAMA (MA-17)

9.07 Final display format not available as of this issue.

### TEST-CALL ANALYSIS (MA-18)

9.08 The display (Fig. 9.6) provides the NM with a summary of all test-call data in a graphic form. The percentages of test-call times that exceeded threshold values for seizure time, address time, response time, or incompletes are displayed. Discrete percentages are calculated for the latest four sets of 32 test-calls categorized by signaling type and showing incomplete calls, network management thresholds, total test calls, and the fraction of test calls that exceeded the threshold.

9.09 The top portion of the data section contains MF test-call results and the middle portion contains DP test-call results. The bottom portion contains CCIS test-call results.

9.10 The test-calls are numbered with the most recent test-call being number 1.

9.11 The thresholds for each graph are preset but can be changed on this page by the NM. As an example, the NM could produce a graph of MF test-call seizure time greater than two seconds by typing 2.0 within the brackets for the MF seizures time threshold.

### TEST-CALL DETAIL (MA-19)

**Note:** The format of this display has not been finalized as of this issue. The final display should resemble the following preliminary format.

9.12 This display (Fig. 9.7) provides the NM with details of test-call results. The format of this page contains the results of 32 test-calls. The **next page** and **back page** commands allow the NM to view data for each of four sets of 32 test-calls.

9.13 The number 1 test-call is the most recently completed test-call. The **call type** indicates

the types of trunks on which the test-call originated and terminated.

9.14 Test-calls are grouped by the signaling type of the originating trunk. Within each group, the test-calls are listed in numerical order. All times are given in seconds.

### CAPACITY TREND SUMMARY (MA-20)

9.15 Final display format not available as of this issue.

## 10. PARAMETER INPUTS AND INITIAL LISTS

### GENERAL

10.01 A large number of parameters must be input to initialize the indicators on the exception panel. For the Chicago 7 office, three CRT pages have been designed to input parameters. For later machines, the number of pages required may be increased. The pages (CN-11 through CN-13) illustrated in Fig. 10.1 through 10.3 are samples of pages produced for Chicago 7.

10.02 Many of the display packages contain pages which depend on NM inputs. These inputs will be referred to as initial lists.

10.03 See DFMP, Division H, Section 9i(5), Network Management-Operating Consideration, for information concerning reinitialization of thresholds.

### PARAMETERS

10.04 Input parameters differ from control parameters in that they do not affect traffic load or call handling in the system. Some display pages will use thresholds which have been established for the exception panel.

The parameters associated with the exception panel must be numeric and are input via the CRT. The system performs no error check to ascertain that the values input are in an allowable range. Alpha inputs will be rejected by the system. Numeric inputs are only limited by the spaces available for input characters.

- (a) As an example, if the upper limit of a parameter is 100 and the NM inputs 900 the system will accept this value and only activate the appropriate indicator when 900 is exceeded.

With this condition, the indicator would probably never be activated. If the NM omits the input of a parameter, the system sets the value to zero.

(b) Parameter inputs have been divided into three groups. Using the update interval of the indicators, the groups are 30-seconds, 5-minutes, and 15-minutes. A CRT page has been provided for each group. These parameters are contained in disk storage.

(c) The parameter input pages will be listed in the directory pages of the CRT system and will be accessed in the same manner as all other CRT pages. When an input page is displayed, all values which have previously been input will be presented. A change in value can be accomplished by overwriting the unwanted value.

**10.05** Figure 10.1 illustrates the input page for parameters associated with the 30-second

update interval. At present only those parameters associated with the test-call portion of the exception panel are contained in this page.

**10.06** Figure 10.2 illustrates the input page for parameters associated with the 5-minute update interval. The major categories included in this group are trunk subgroups performance and hard-to-reach lists.

**10.07** Figure 10.3 represents those thresholds which are associated with the 15-minute update interval. Traffic pattern, IMA, and capacity areas are included on this page.

**10.08** *Initial Lists:* Various display pages require data to be input by the NM. These initial lists are discussed in the text associated with the various display pages. Information concerning the procedure for input of initial lists is not available at this time. This information will be forwarded as soon as it is available.

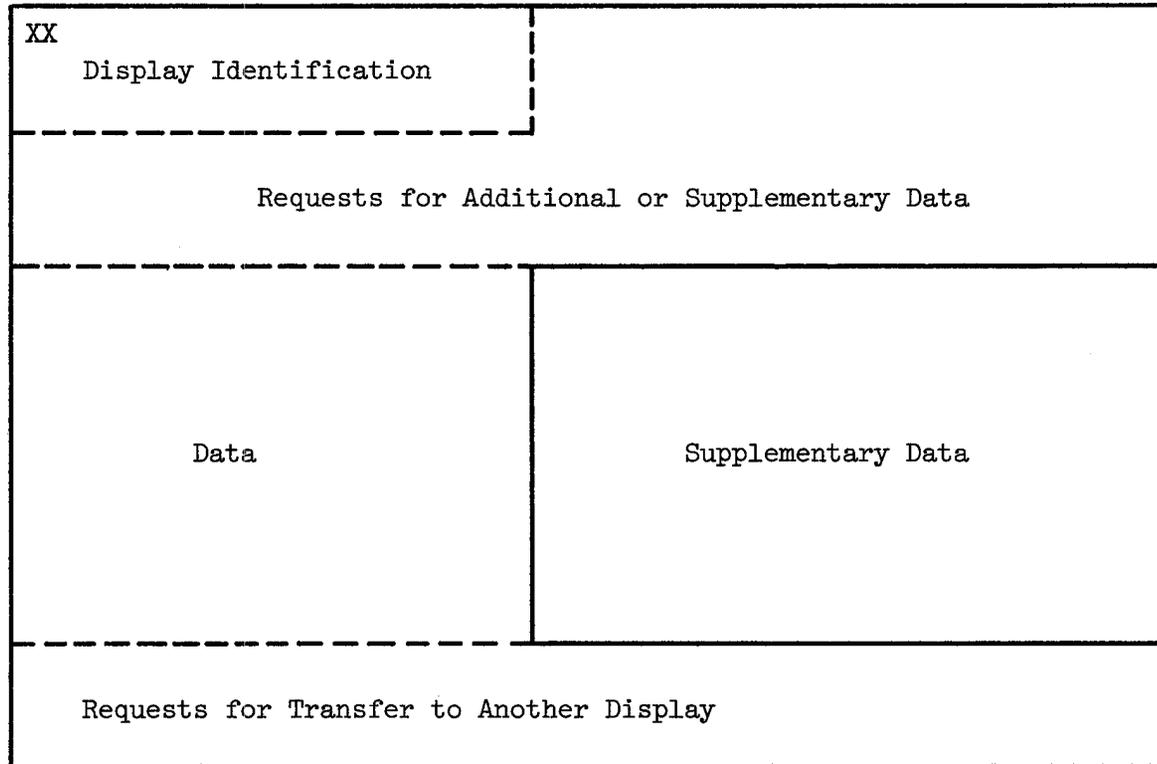


Fig. 1.1—Generalized Display Format (1.06)

[[ ]] PAGE		[[ ]] DIRECTORY	
PA1	<input type="checkbox"/> SEPARATIONS SUMMARY	CN	CONTROL INPUT
PA2	<input type="checkbox"/> TRAFFIC CELL MONITOR	CN	THRESHOLD INPUT
PA3	<input type="checkbox"/> TRAFFIC ORIGINS SUMMARY	PA	TRAFFIC PATTERNS
PA4	<input type="checkbox"/> DESEP COUNT ANALYSIS	MA	IMA DATA
PA5	<input type="checkbox"/> SUBGROUPS PER INSEP	CC	CODE COMPLETIONS
PA6	<input type="checkbox"/> TRAFFIC DESTINATION SUMMARY	TG	TRUNK SUBGROUPS
PA7	<input type="checkbox"/> INSEP COUNT ANALYSIS	MA	MACHINE STATUS
PA8	<input type="checkbox"/> DESEP TSG BY DEGREE OF ACH		
PA9	<input type="checkbox"/> ROUTING DATA BLOCKS PER DESEP		
PA10	<input type="checkbox"/>		
PA11	<input type="checkbox"/> MANUAL REROUTE INVENTORY		
PA12	<input type="checkbox"/> ETR CONTROL LIST INVENTORY		
PA13	<input type="checkbox"/> CODE BLOCK INVENTORY		
PA14	<input type="checkbox"/> STR INVENTORY		
PA15	<input type="checkbox"/> DOC RECEIVED INVENTORY		
PA16	<input type="checkbox"/> AUTO OCR INVENTORY		
PA17	<input type="checkbox"/>		
PA18	<input type="checkbox"/>		
PA19	<input type="checkbox"/>		
PA20	<input type="checkbox"/>		

Fig. 2.1—Traffic Patterns (PA) Directory (2.01, 3.01, 3.38)

[[ ]] PAGE		[[ ]] DIRECTORY	
MA1	( ) IMA OVERVIEW	CN	CONTROL INPUT
MA2	( ) SUMMARY: NC, TIMEOUTS & OUT FAIL	CN	THRESHOLD INPUT
MA3	( ) SUMMARY: CONTROLS & CAMA QUEUE	PA	TRAFFIC PATTERNS
MA4	( ) SUMMARY: INTERNAL QUEUE	MA	IMA DATA
MA5	( ) SUMMARY: VAC/IWK & CAMA INC FAIL	CC	CODE COMPLETIONS
MA6	( ) SUMMARY: NON-CAMA INC FAIL	TG	TRUNK SUBGROUPS
MA7	( ) SUMMARY: PSTO/FSA	MA	MACHINE STATUS
MA8	( ) SUMMARY: ABANDONED CALL		
MA9	( ) TRUNK SUBGROUP IMA		
MA10	( ) CAMA DETAIL		
MA11	( ) MSR PART I		
MA12	( )		
MA13	( ) MACHINE STATUS: TRAFFIC		
MA14	( ) MACHINE STATUS: CENTRAL CONTROL		
MA15	( ) MACHINE STATUS: OTHER EQUIPMENT		
MA16	( ) MACHINE STATUS: SERVICE CIRCUIT		
MA17	( ) MACHINE STATUS: CAMA		
MA18	( ) TEST CALL ANALYSIS		
MA19	( ) TEST CALL DETAIL		
MA20	( ) CAPACITY TREND SUMMARY		

Note: All backgrounds have been processed.

Fig. 2.2—IMA and Machine Status (MA) Directory (2.01, 4.09, 4.31)

[[ ]] PAGE		[[ ]] DIRECTORY	
CC1	( ) NPA EXCEPTIONS OVERVIEW	CN	CONTROL INPUT
CC2	( ) NPA COMPLETIONS OVERVIEW	CN	THRESHOLD INPUT
CC3	( ) NPA TRENDS BY REGION	PA	TRAFFIC PATTERNS
CC4	( ) 3-DIGIT CODE INVENTORY	MA	IMA DATA
CC5	( ) 3-DIGIT CODE TREND	CC	CODE COMPLETIONS
CC6	( ) 6-DIGIT CODE INVENTORY	TG	TRUNK SUBGROUPS
CC7	( ) 6-DIGIT CODE TREND	MA	MACHINE STATUS
CC8	( ) ROUTING ANALYSIS		
CC9	( ) 100% FAILURE CODE INVENTORY		
CC10	( ) SPECIAL CODE INVENTORY		
CC11	( ) COMPLETION CODE MONITOR		
CC12	( )		
CC13	( )		
CC14	( )		
CC15	( )		
CC16	( )		
CC17	( )		
CC18	( )		
CC19	( )		
CC20	( )		

Fig. 2.3—Code Completions (CC) Directory (2.01, 5.01)

[[ ]] PAGE		[[ ]] DIRECTORY	
TG1	( ) NETWORKS NC SERIES 1		
TG2	( ) NETWORKS NC SERIES 2	CN	CONTROL INPUT
TG3	( ) STORED NETWORKS SERIES 1	CN	THRESHOLD INPUT
TG4	( ) STORED NETWORKS SERIES 2		
TG5	( ) NETWORK ANALYSIS	PA	TRAFFIC PATTERNS
TG6	( ) NETWORK TREND	MA	IMA DATA
TG7	( ) STUDY CLASS INVENTORY	CC	CODE COMPLETIONS
TG8	( ) TSG DETAIL	TG	TRUNK SUBGROUPS
TG9	( ) TSG TREND	MA	MACHINE STATUS
TG10	( ) RDB PERFORMANCE SUMMARY		
TG11	( )		
TG12	( )		
TG13	( )		
TG14	( )		
TG15	( )		
TG16	( )		
TG17	( )		
TG18	( )		
TG19	( )		
TG20	( )		

Fig. 2.4—Trunk Group (TG) Directory (2.01, 6.01)

[[ ]] PAGE		[[ ]] DIRECTORY	
CN1	( ) CODE-BLOCK/HTR CONTROL	CN	CONTROL INPUT
CN2	( ) OUTGOING TRUNK CONTROL	CN	THRESHOLD INPUT
CN3	( ) INCOMING TRUNK CONTROL	PA	TRAFFIC PATTERNS
CN4	( ) GENERAL CONTROL CHANGE	MA	IMA DATA
CN5	( ) SELECTIVE CODE REROUTE	CC	CODE COMPLETIONS
CN6	( )	TG	TRUNK SUBGROUPS
CN7	( )	MA	MACHINE STATUS
CN8	( )		
CN9	( )		
CN10	( )		
CN11	( ) 30-SECOND THRESHOLD		
CN12	( ) 5-MINUTE THRESHOLD		
CN13	( ) 15-MINUTE THRESHOLD		
CN14	( )		
CN15	( )		
CN16	( )		
CN17	( )		
CN18	( )		
CN19	( ) DEBUG SYSTEM		
CN20	( ) PAGE MODIFICATION SYSTEM		

Fig. 2.5—Control and Input (CN) Directory (2.01, 8.21)



PER 19:37:23

		45-60	30-45	15-30	00-15
INSEP:12	COUNT:	50	48	53	80
DESEP:39	CCS:	90	86	95	141
	HT(MIN):	3.2	3.7	3.6	3.1

INSEP:13	COUNT:	39	45	70	80
DESEP:43	CCS:	70	81	84	48
	HT(MIN):	3.4	3.6	3.5	3.4

INSEP:**	COUNT:				
DESEP:**	CCS:				
	HT(MIN):				

INSEP:**	COUNT:				
DESEP:**	CCS:				
	HT(MIN):				

TRANSFER ITEMS

SEP SUM( )

Fig. 3.2—Traffic Call Monitor Display (PA-2) (3.10)

PER 14:27:17                      SWITCHED: 31692

RANK INSEPS BY PEG(#)  
HT( )

	FROM FOREIGN			FROM REGION			FROM SUBTEND			FROM HOME TCA		
	INSEP	PEG	HT	INSEP	PEG	HT	INSEP	PEG	HT	INSEP	PEG	HT
13% FOREIGN												
2916 PEG												
4.3 HT	04	520	4.6	07	1100	3.9	10	1000	2.8	23	370	4.2
	03	510	4.1	08	1019	3.8	17	990	3.4	29	365	3.0
14% REGION	01	481	4.2	09	994	4.0	12	979	3.1	30	360	3.0
3113 PEG	06	470	4.3				14	978	3.2	29	359	3.8
3.9 HT	05	465	4.4				16	960	3.5	28	358	3.9
	02	460	4.3				19	955	2.9	31	356	4.1
56% SUBTEND							11	949	3.2	25	355	3.7
12212 PEG							18	947	3.0	32	350	3.8
3.1 HT							15	940	2.8	24	290	3.9
							20	898	3.4	26	288	3.7
16% HOME TCA							21	888	3.1			
3451 PEG							13	865	3.0			
3.8 HT							22	863	2.9			
TIME FRAME	LIST			LIST			LIST			LIST		
00-15( ) 00-45( )	NEXT( )			NEXT( )			NEXT( )			NEXT( )		
00-30( ) 00-60( )	BACK( )			BACK( )			BACK( )			BACK( )		
	TRANSFER ITEMS											
SINGLE DESEP( )	TSGS PER INSEP( )			SEP SUM								

Fig. 3.3—Traffic Origins Summary Display (PA-3) (3.12)

```

                                PER 17:39:58
FOR DESEP:03 RANK INSEPS BY HT( )
                                PEG( #)
0% FROM FOREIGN      22% FROM REGION      47% FROM SUBTEND      31% FROM HOME TCA
INSEP PEG HT        INSEP PEG HT        INSEP PEG HT        INSEP PEG HT
01      0  --        05      70 5.8        11      80 5.7        22      60 6.0
04      0  --        09      68 4.9        14      80 7.1        24      54 5.9
03      0  --        06      62 7.1        12      72 6.8        23      49 6.3
02      0  --        07      59 6.0        17      71 4.9        32      47 6.7
                                10      58 6.3        13      69 6.3        25      46 6.1
                                08      54 5.9        16      65 6.6        27      44 6.0
                                19      64 5.9        28      43 5.9
                                15      64 5.4        26      42 5.4
                                20      62 6.0        30      41 6.2
                                18      61 6.2        29      40 6.7
LIST                                LIST                                LIST OVERFLOW      LIST OVERFLOW
NEXT( ) BACK( ) NEXT( ) BACK( ) NEXT( ) BACK( ) NEXT( ) BACK( )
TIME FRAME
00-15( #) 00-45( )
00-30( ) 00-60( )
                                TRANSFER ITEMS
ORIGINS SUM( ) TSGS PER INSEP( ) SEP SUM( )

```

Fig. 3.4—DESEP Count Analysis Display (PA-4) (3.18)



PER 13:29:06

SWITCHED: 14884

RANK DESEPS BY PER(#)		HT( )		
16% FOREIGN	TO FOREIGN	TO REGION	TO SUBTEND	TO HOME TCA
2323 PEG	DESEP PEG HT	DESEP PEG HT	DESEP PEG HT	DESEP PEG HT
4.8 HT	01 300 2.1	27 130 4.4	29 600 4.7	64 500 4.2
	12 231 4.8	13 120 4.7	44 584 4.3	57 425 3.9
12% REGION	11 230 5.1	21 120 4.1	30 580 4.5	58 423 4.1
1800 PEG	03 224 1.9	14 120 4.8	31 573 4.7	61 419 4.3
4.5 HT	06 219 4.9	22 118 4.9	32 573 4.4	62 380 3.8
	10 219 4.7	16 116 4.5	33 520 4.5	63 376 4.9
50% SUBTEND	02 218 4.3	24 112 4.7	34 501 4.3	59 370 4.7
7500 PEG	07 215 5.3	17 99 4.6	35 493 4.8	60 368 4.3
4.7 HT	04 200 4.9	18 80 4.3	36 420 4.6	
	08 190 4.6	19 70 4.9	37 419 4.7	
22% HOME TCA	09 50 4.8	27 68 5.1	39 417 4.9	
3261 PEG	05 27 4.7	23 68 4.5	40 390 4.1	
4.4 HT		20 67 4.6	41 324 5.0	
		15 54 4.7	38 319 4.7	
TIME FRAME	LIST	LIST OVF	LIST OVF	LIST
00-15( )	00-45( ) NEXT( )	NEXT( )	NEXT( )	NEXT( )
00-30( )	00-60( ) BACK( )	BACK( )	BACK( )	BACK( )
TRANSFER ITEMS				
SINGLE INSEP( )	TSGS PER DESEP( )	SEP SUM( )		

Fig. 3.6—Traffic Destinations Summary Display (PA-6) (3.24)

```

                                PER 17:38:29          INSEP SUMMARY
FOR INSEP:19 RANK DESEPS BY HT( )          HT:6.3
                                                PEG:#)          PEG:3352

11% TO FOREIGN          21% TO REGION          54% TO SUBTEND          14% TO HOME TCA
DESEP  PEG HT          DESEP  PEG HT          DESEP  PEG HT          DESEP  PEG HT
  01    40 7.2          13    60 5.3          31    148 6.7          61    121 6.3
  04    39 6.3          14    53 5.4          39    112 5.2          63    118 5.9
  06    37 5.8          16    53 6.1          33    98 5.1          62    117 6.1
  02    36 6.4          18    53 6.0          59    97 6.4          64    111 5.8
  09    33 6.2          15    51 5.7          50    90 6.9
  10    31 5.9          17    49 5.7          55    82 5.3
  05    29 6.7          24    40 5.6          57    79 6.1
  07    29 6.3          29    38 5.4          34    77 6.2
  08    27 5.1          26    37 6.1          52    75 6.0
  11    26 4.3          21    33 6.3          53    74 5.9

LIST OVERFLOW          LIST OVERFLOW          LIST OVERFLOW          LIST
NEXT( ) BACK( )          NEXT( ) BACK( )          NEXT( ) BACK( )          NEXT( ) BACK( )
TIME FRAME
00-15( ) 00-45( )
00-30( ) 00-60

                                TRANSFER ITEMS
DESTS SUM( ) TSGS PER CESEP( ) SEP SUM( )

```

Fig. 3.7—INSEP Count Analysis Display (PA-7) (3.27)



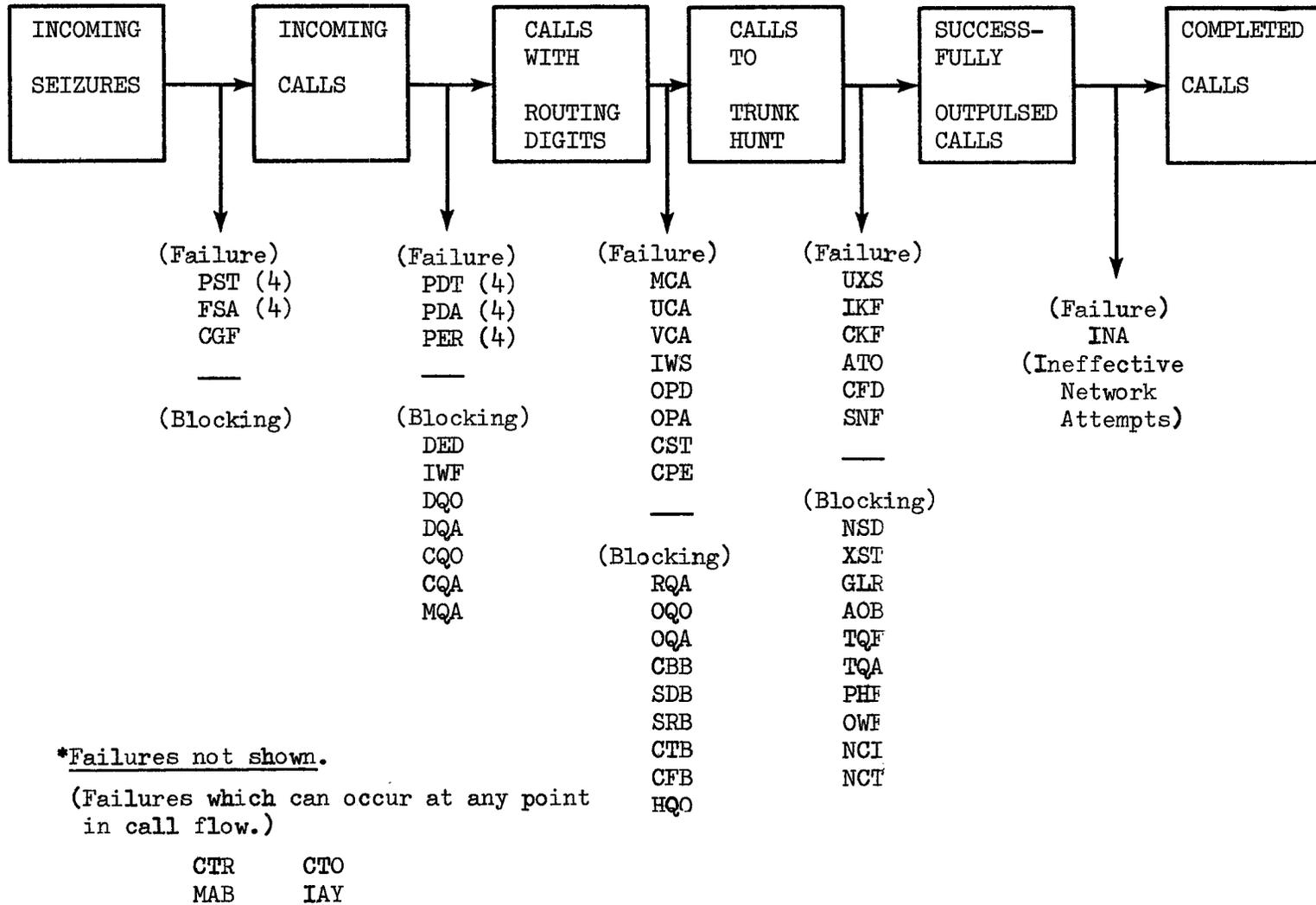


Fig. 4.1—Total Office Incoming Seizure Disposition (4.05)

MA1 IMA OVERVIEW				DATA TIME 10:15		SENT AT 10:24:01		
NC ( )	INT Q ( )	TIME-	VAC/	INC FAIL		IS 50000		
AOB *	CQA	OUTS ( )	IWK ( )	NON-				
NCI	CQO	NSD	IWS	CAMA ( )	CAMA ( )	ANN	COUNT	%IS
NCT	DED	XST	VCA	CTO	CPE	NCA	1618	3.2
GLR	DQA			IAD	CST	EA1	0	0.0
	DQO	OUT	PSTO/	PDA1	CTR	EA2	0	0.0
CTRL ( )	IWF	FAIL ( )	FSA ( )	PCA2	OPA	VCA	683	1.3
CBB	MQA	ATO	CGF	PLA3	OPD	ROA	1082	2.1
CFB	MAB	CFD	FSA1	PLA4	MCA	120	0	0.0
CTB	PHF	CKF	FSA2	PDT1	UCA *	60	0	0.0
SDB	OWF	SNF	FSA3	PDT2				
SRB	TQA	IKF *	FSA4	PDT3				
	TQF	UXS	PST1	PDT4		OFL	0	0.0
CAMA ( )	HQO		PST2	PER1		IMA[ ] AT 10:15		
OQA			PST3	PER2		UCA	IS 50000	
OQO	1 = DP-OP		PST4	PER3		%IMA .5	COUNT 13	
RQA	2 = DP-EQ			PER4		THLD .3	BASE 2500	
	3 = MF-OP							
	4 = MF-EQ							
LSG ABOVE FOR SUMMARY				GO TO TSG-IMA ( )	DOC-RCVD ( )	OCR-INV ( )	MACH-SUM ( )	
				RESTART ( )	DIRECTORY[ ]	P[ ]		

Fig. 4.2—IMA Overview Display (MA-1) (4.12)

MA2 SUMMARY: NC, TIMEOUTS & OUT FAIL DATA TIME 10:45							SENT AT 10:46:30	
	TYPE	%IMA	THLD	COUNT	BASE			
NC								
OUT-OF-CHAIN BLOCKED	AOB ( )	.1	.2	49	59580	TOTAL INCOMING CALLS		
NO CIRCUIT INTERTOLL	NCI ( )	.0	.2	21	59580	TOTAL INCOMING CALLS		
NO CIRCUIT TOLL COMP	NCT ( )	.1	.3	52	59580	TOTAL INCOMING CALLS		
GLARE	GLR ( )	.0	.1	12	57271	MF/DP OUTGOING PC		
TIMEOUTS								
NO SENDER AHEAD	NSD ( )	.1	.2	48	57271	MF/DP OUTGOING PC		
EXPECTED STOP TIMEOUT	XST ( )	.2	.3	4	2654	DP OUTGOING PC		
OUT FAIL								
ADDRESS COMP TIMEOUT	ATO ( )	.0	.2	0	1429	CCIS OUTGOING PC		
CALL FAIL DETECTION	CFD ( )	.0	.2	0	1429	CCIS OUTGOING PC		
CCIS CONTINUITY FAIL	CKF ( )	.1	.2	2	1429	CCIS OUTGOING PC		
SIGNAL NET FAILURE	SNF ( )	.0	.1	0	1429	CCIS OUTGOING PC		
INTEGRITY CHECK FAIL	IKF ( )	.1 *	.1	76	57271	MF/DP OUTGOING PC		
UNEXPECTED STOP	UXS ( )	.1	.2	45	57271	MF/DP OUTGOING PC		
IKF AT 10:45	4TH	3RD	2ND	NEW	CUR	GO TO	IMA-OVW (+)	
COUNT	19	37	57	76			TSG-IMA ( )	
PERCENT	.04	.07	.09	.13	.25		RDB-NA ( )	
RESTART ( )							DIRECTORY[ ] P[ ]	

Fig. 4.3—NC, Timeouts and Out Fail Summary Display (MA-2) (4.19, 4.20)

MA3 SUMMARY: CONTROLS & CAMA QUEUE		DATA TIME 15:45				SENT AT 15:46:50	
	TYPE	%IMA	THLD	COUNT	BASE		
CONTROL							
CODE BLOCKED CALLS	CEB ( )	.1	1.0	98	84371	TOTAL INCOMING CALLS	
CANCELLED FROM A TSG	CFB ( )	.0	1.0	0	84371	TOTAL INCOMING CALLS	
CANCELLED TO A TSG	CTB ( )	.0	1.0	0	84371	TOTAL INCOMING CALLS	
BLOCKED BY SDOC	SDB ( )	.0	.1	0	84371	TOTAL INCOMING CALLS	
BLOCKED BY STR	SRB ( )	.1 *	.1	89	84371	TOTAL INCOMING CALLS	
CAMA							
ABANDON CAMA OP QUEUE	OQA ( )	.0	.3	0	342	TOTAL ONI CALLS	
CAMA OP QUEUE FULL	OQO ( )	.0	.3	0	342	TOTAL ONI CALLS	
ABANDON MFR QUEUE	RQA ( )	.3 *	.3	2	584	TOTAL ANI CALLS	
RQA AT 15:45	4TH	3RD	2ND	NEW	CUR	GO TO	IMA-OVW ( )
COUNT	0	0	0	2			TSG-IMA ( )
PERCENT	.00	.00	.00	.34	.00		CAMA-DET(+)
RESTART ( ) DIRECTORY[ ] P[ ]							

Fig. 4.4—Controls and CAMA Queue Summary Display (MA-3) (4.19, 4.20)

MA4 SUMMARY: INTERNAL QUEUE		DATA TIME 13:15			SENT AT 13:19:26	
	TYPE	%IMA	THLD	COUNT	BASE	
ABANDON CCIS ORIG QUEUE	CQA ( )	.0	.1	0	8682	CCIS INCOMING PC
CCIS ORIG QUEUE FULL	CQO ( )	.0	.1	0	8682	CCIS INCOMING PC
DP EARLY DIGIT LOST	DED ( )	.0	.1	2	5650	DP INC SEIZURES
ABANDON DP ORIG QUEUE	DQA ( )	.0	.2	0	5650	DP INC SEIZURES
DP QUEUE FULL	DQO ( )	.0	.1	1	5650	DP INC SEIZURES
INC DP WORKLIST FULL	IWF ( )	.0	.1	2	5650	DP INC SEIZURES
ABANDON MF ORIG QUEUE	MQA ( )	.0	.2	0	84322	MF INC SEIZURES
MISCELLANEOUS ABANDON	MAB ( )	.5	.8	541	98654	TOTAL INC SEIZURES
NET PATH HUNT FAILURE	PHF ( )	.0	.1	0	97248	PHF & PH SUCCESSES
OUT DP WORKLIST FULL	OWF ( )	.0	.1	0	4242	DP OUTGOING PC
ABANDON MFT QUEUE	TQA ( )	.3 *	.2	248	83981	MF OUTGOING PC
MFT QUEUE FULL	TQF ( )	.0	.1	0	83981	MF OUTGOING PC
HP DISK QUEUE FULL	HQO ( )	.0	.1	0	97650	TOTAL INCOMING CALLS
AT	4TH	3RD	2ND	NEW	CUR	GO TO IMA-OVW( )
COUNT						TSG-IMA( )
PERCENT						
						RESTART( ) DIRECTORY[ ] P[ ]

Fig. 4.5—Internal Queue Summary Display (MA-4) (4.19, 4.20)

MA5 SUMMARY: VAC/IWK & CAMA INC FAIL DATA TIME 11:30							SENT AT 11:33:46	
	TYPE	%IMA	THLD	COUNT	BASE			
VAC/IWK								
INWATS SCREEN FAILURE	IWS ( )	.4	.5	8	2044	TOTAL	INWATS CALLS	
VACANT CODE	VCA ( )	2.0	5.0	1914	95318	TOTAL	INCOMING CALLS	
CAMA INC FAIL								
CAMA POS ERROR	CPE ( )	.7	1.0	6	817	TOTAL	POS SEIZURES	
CAMA SEIZURE TIMEOUT	CST ( )	.6	2.0	5	817	TOTAL	POS SEIZURES	
CAMA POS TROUBLE RPT	CTR ( )	1.5	2.0	12	817	TOTAL	POS SEIZURES	
ABANDON CAMA POS	OPA ( )	.4	1.0	3	817	TOTAL	POS SEIZURES	
CAMA POS DISCONNECT	OPD ( )	.5	1.0	4	817	TOTAL	POS SEIZURES	
MISROUTED CAMA	MCA ( )	4.5	5.0	38	841	TOTAL	CAMA CALLS	
UNAUTHORIZED CAMA	UCA ( )	3.2 *	3.0	27	841	TOTAL	CAMA CALLS	
UCA AT 11:30	4TH	3RD	2ND	NEW	CUR	GO TO NON-CAMA-INC-FAIL ( )		
COUNT	14	14	19	27		CAMA-DET (+)		
PERCENT	1.74	1.83	2.16	3.20	3.95	IMA-OVW ( ) TSG-IMA ( )		
							RESTART ( )	DIRECTORY[ ] P[ ]

Fig. 4.6—VAC/IWK and INC Fail (CAMA) Summary Display (MA-5) (4.19, 4.20)

MA6 SUMMARY: NON-CAMA INC FAIL		DATA TIME 10:45				SENT AT 10:53:46	
	TYPE	%IMA	THLD	COUNT	BASE		
CONTINUITY TIMEOUT	CIC ( )	.0	.5	0	1540	CCIS INCOMING PC	
INCOMPLTE ADDRESS	LAD ( )	.2	.5	4	1540	CCIS INCOMING PC	
PTL DIAL ABANDON	DP-OP PDA1 ( )	.1	1.5	6	5814	DP-OP INC SEIZURES	
"	DP-EQ PDA2 ( )	.3	.0	3	861	DP-EQ "	
"	MF-OP PDA3 ( )	.9	2.0	40	4486	MF-OP "	
"	MF-EQ PDA4 ( )	1.9 *	.1	1602	94843	MF-EQ "	
PTL DIAL TIMEOUT	DP-OP PDT1 ( )	.4	5.0	24	5814	DP-OP INC SEIZURES	
"	DP-EQ PDT2 ( )	.1 *	.1	1	861	DP-EQ "	
"	MF-OP PDT3 ( )	.5	1.0	22	4486	MF-OP "	
"	MF-EQ PDT4 ( )	.6 *	.3	759	94843	MF-EQ "	
PULSING ERROR	DP-OP PER1 ( )	.1	1.0	5	5814	DP-OP INC SEIZURES	
"	DP-EQ PER2 ( )	.2 *	.2	2	861	DP-EQ "	
"	MF-OP PER3 ( )	.1	1.0	5	4486	MF-OP "	
"	MF-EQ PER4 ( )	.2	.3	188	94843	MF-EQ "	
PDA4 AT 10:45	4TH	3RD	2ND	NEW	CUR	GO TO	CAMA-INC-FAIL ( )
COUNT	102	544	827	1602			TSG-IMA (+)
PERCENT	.15	.74	1.17	1.90	2.43		IMA-OVW ( )
		RESTART ( )		DIRECTORY[ ]		P[ ]	

Fig. 4.7—Non-CAMA Incoming Failure Summary Display (MA-6) (4.19, 4.20)

MA7		SUMMARY: PSTO/FSA			DATA TIME 15:30		SENT AT 15:38:20		
	TYPE	%IMA	THLD	COUNT	BASE				
CARRIER GROUP FAILURE	CGF ( )	.7	1.0	644	88659	TOTAL	INC	SEIZURES	
FALSE START	DP-OP FSA1 ( )	1.6	2.0	92	5943	DP-OP	INC	SEIZURES	
"	DP-EQ FSA2 ( )	.7 *	.5	6	804	DP-EQ	"	"	
"	MF-OP FSA3 ( )	.2	.3	146	75847	MF-OP	"	"	
"	MF-EQ FSA4 ( )	.0	.2	2	4419	MF-EQ	"	"	
PERM SIG TIMEOUT	DP-OP PST1 ( )	.4	.5	24	5943	DP-OP	INC	SEIZURES	
"	DP-EQ PST2 ( )	.5 *	.1	4	804	DP-EQ	"	"	
"	MF-OP PST3 ( )	.0	1.0	20	75847	MF-OP	"	"	
"	MF-EQ PST4 ( )	.1	.2	4	4419	MF-EQ	"	"	
PST2 AT 15:30	4TH	3RD	2ND	NEW	CUR		GO TO	IMA-OVW ( )	
COUNT	8	5	4	4				TSG-IMA (+)	
PERCENT	.62	.43	.29	.50	.24				
RESTART ( )    DIRECTORY[ ]    P[ ]									

Fig. 4.8—PSTO/FSA Summary Display (MA-7) (4.19, 4.20)

MA8		SUMMARY: ABANDONED CALL				DATA TIME 14:45	SENT AT 14:54:30	
	TYPE	%IMA	THLD	COUNT	BASE			
INT Q								
ABANDON CCIS ORIG QUEUE	CQA ( )	.2 *	.1	3	1687	CCIS INCOMING PC		
ABANDON DP ORIG QUEUE	DQA ( )	.0	.1	0	6844	DP INC SEIZURES		
ABANDON MF ORIG QUEUE	MQA ( )	.0	.1	0	91807	MF INC SEIZURES		
MISCELLANEOUS ABANDON	MAB ( )	.8	1.0	824	100338	TOTAL INC SEIZURES		
ABANDON MFT QUEUE	TQA ( )	.0	.1	0	90421	MF OUTGOING PC		
CAMA								
ABANDON CAMA OP QUEUE	OQA ( )	.0	.3	0	342	TOTAL ONI CALLS		
ABANDON MFR QUEUE	RQA ( )	.3 *	.2	2	584	TOTAL ANI CALLS		
RQA AT 14:45	4TH	3RD	2ND	NEW	CUR	GO TO	IMA-OVW ( )	
COUNT	0	0	0	2			CAMA-DET(+)	
PERCENT	.00	.00	.00	.34	.00			
RESTART ( ) DIRECTORY[ ] P[ ]								

Fig. 4.9—Abandoned Call Summary Display (MA-8) (4.19, 4.20)

MA9	TRUNK SUBGROUP IMA										DATA TIME 11:15				SENT AT 11:10:23			
EIA-IN( )S		NEW-COUNT-CUTOFF [ ]				50		OPTIONAL		BTFN TOWN ST BL FBS NBS								
EIA-OUT( )								TSG INPUT [		4351 PITB PA 3A 05T 07T ]								
NSD( )		'START HIGH'																
		TRUNK SUBGROUP				EIA-IN		% OF		IN SEIZ		EIA-IN		COUNT RATE				
TSG CUR											RANKED ON NEW COUNT							
SZ  OOS	BTFN	TOWN	ST	BL	FBS	NBS	ID	4TH	3RD	2ND	NEW	CUR	4TH	3RD	2ND	NEW	CUR	
36	1	4351	PITB	PA	3A	05T	07T IM	30	30	63	65	71	28	31	72	80	51	
GO TO IMA-OVW( )								TRANSFER TO		NET-ANAL(+)		NET-TREND( )						
								RESTART( )		DIRECTORY[ ]		P[ ]						

Fig. 4.10—Trunk Subgroup IMA Display (MA-9) (4.22)

MA10 CAMA DETAIL		DATA TIME 11:00			SENT AT 11:12:22	
	TYPE	%FAIL	COUNT	BASE		
ANI OFFICE FAILURE	AIF ( )	5.3	1169	22282	TOTAL ANI CALLS	
AUTOMATIC NUMBER FAILURE	ANF ( )	2.7	591	22282	TOTAL ANI CALLS	
CALLS BILLED FREE	FCL ( )	.3	89	25570	TOTAL CAMA CALLS	
MATCH CHECK FAILURE	MCF ( )	.0	6	12880	TOTAL POS SEIZURES	
WRONG CALLING CODE	WCC ( )	.0	3	12880	TOTAL POS SEIZURES	

AIF	AT 11:00	4TH	3RD	2ND	NEW	CUR		GO TO	CAMA-INC-FAIL ( )
	COUNT	846	938	1017	1169				CAMA-QUEUE(+)
	PERCENT	3.79	4.21	4.56	5.24	6.13		IMA-OVW ( )	TSG-IMA ( )

RESTART ( )	DIRECTORY[ ]	P[ ]
-------------	--------------	------

Fig. 4.11—CAMA Detail Display (MA-10) (4.27)

MA11 MSR PART I		DATA TIME [ ] [ ]		SENT AT [ ] [ ]	
	COUNT	%		COUNT	%
IS-- TOTAL INC SEIZURES	[ ]	[ ]	3. TOTAL ABANDONED: %IS	[ ]	[ ]
FSA: %IS	[ ]	[ ]	4. CAMA IRREG: %CA	[ ]	[ ]
IC-- IS MINUS FSA: %IS	[ ]	[ ]	6. ESTAB CALLS LOST: %OC		
CA-- TOTAL CAMA: %IC	[ ]	[ ]	CARRIER FAILURE	[ ]	[ ]
OC-- TOTAL OUTPULS: %IC	[ ]	[ ]	SOFTWARE OR PHASE	[ ]	[ ]
1. IMA REPORT: %IC			TRUNK OR BAND RESET	[ ]	[ ]
NC	[ ]	[ ]	7. SPEED OF SERVICE		
IT	[ ]	[ ]	TEST CALL SEIZURES	[ ]	[ ]
TC	[ ]	[ ]	% DELAY UNACCEPT	[ ]	[ ]
OTHER	[ ]	[ ]	ANNOUNCEMENTS: %IC		
VC	[ ]	[ ]	NCA	[ ]	[ ]
RO	[ ]	[ ]	EA1	[ ]	[ ]
ERO	[ ]	[ ]	EA2	[ ]	[ ]
NRO	[ ]	[ ]	VCA	[ ]	[ ]
PHF	[ ]	[ ]	ROA	[ ]	[ ]
IMA-- NOT INCL ABANDON	[ ]	[ ]	120 IPM	[ ]	[ ]
ADJUSTED IMA TOTAL	[ ]	[ ]	60 IPM	[ ]	[ ]
2. ANNOUNCEMENT OFL: %IC	[ ]	[ ]			
			RESTART ( )	DIRECTORY [ ] [ ]	P [ ] [ ]

Fig. 4.12—MSR Part 1 Display (MA-11) (4.30)

```

-----
| CC1      NPA EXCEPTIONS OVERVIEW                DATA TIME 10:15          SENT AT 10:18:15 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| THRESHOLDS      SAC      DENVER      NORWAY      PTSBGH      WH PLAINS      REGINA |
|   %IMA %INA     .. 206   .. 208   .. 217   .. 515   .. 216   .A 201   .. 518   204 |
| RED   15   75     .. 209   .. 303   .. 218   .. 605   .. 304   .. 203   .. 603   .. 306 |
| AMBER 10   60     .. 408   .. 307   .. 219   .. 608   .. 313   .. 207   .. 607   403 |
| WHITE  5   45     .. 415   .. 406   .. 308   W. 612   .. 412   WA 212   .. 617   .. 604 |
| FOR MA > 50     .. 503   .. 505   .W 309   R. 616   .. 419   .. 315   .. 716   |
|   NA > 50       .. 509   .. 801   .. 312   .. 701   A. 513   .. 401   .. 802   |
|               .. 702   .. 317   .. 712   .. 517   .. 413   .. 914   MONTRL |
| NPA[ ] TREND    .. 707   .. 319   .W 715   R. 606   .. 516   .. 416 |
| 414 AT 10:15 %  .A 808   .. 402   .. 812   614   .. 418 |
|   MA %IMA INA   907   DALLAS   WR 414   .. 815   .. 814   .. 506 |
| NEW 1078   8   77 .. 916   .. 214   .A 507   R. 906   .. 514 |
| 2ND  931   5   71   .. 405   .. 512   WAYNE   .. 205   .. 704   .. 519 |
| 3RD  857   3   65   .. 512   .. 215   .W 202   .. 305   .. 803   .. 613 |
|               SANBO   .. 713   .. ST LOUIS .. 215   .. 318   .. 809   .. 705 |
| GO TO          .. 213   .. 806   .. 314   .. 618   .. 301   .. 404   WW 813   709 |
| NPA CMPL OV(+) .. 602   .. 817   .. 316   .. 816   .. 302   .. 504   .. 904   807 |
| NPA/REGION( )  .. 714   .. 915   .. 417   .. 901   .. 609   .. 601   .. 912   .. 819 |
| ORDERED NPA( ) .. 805   .. 918   .. 501   .. 913   .. 703   .. 615   .. 919   .. 902 |
| ORDERED NXX( ) .. 903   .. 502   .. 717   W. 804 |
| 100% FAIL( )                                     RESTART( )  DIRECTORY[ ] P[ ] |
-----

```

Fig. 5.1—NPA Exceptions Overview Display (CC-1) (5.03)





```

-----
| CC4      3-DIGIT CCDE INVENTORY          DATA TIME 10:15          SENT AT 10:17:15 |
|-----|-----|-----|-----|
| 5-MIN          CODES BY %IMA          CODES BY %INA          CODES BY VOLUME |
| NEW ( )          % --COUNTS--          % --COUNTS--          % % |
| N+2 ( )          CB NPA IMA IMA MA          NPA INA INA NA          NPA MA IMA INA |
| ALL ( ) S          * 617 45 5632 12452          305 85 11876 13896          212 19841 15 31 |
|                   213 16 3238 19434          617 61 4198 6820          213 19434 16 40 |
| CUTOFFS          * 212 15 2995 19841          701 53 3127 5830          201 19046 11 34 |
| MA[ ]35          201 11 2253 19046          715 43 2614 6025          305 14579 4 85 |
| NA[ ]35          * 605 9 538 5605          414 43 2065 4773          617 12452 45 61 |
|                   402 7 404 5452          218 42 2303 5451          701 6168 5 53 |
| NPAS WITH          * 507 7 344 4892          612 41 2058 4909          715 6159 2 43 |
| NXX RES          712 6 327 4732          309 41 2292 5557          714 5659 0 40 |
| 312              701 5 338 6168          213 40 6575 16196          309 5659 1 41 |
| 212 617          319 5 290 5329          714 40 2274 5616          605 5605 9 35 |
| 201 213          815 4 258 5600          219 39 1755 4488          815 5600 4 28 |
| 305 808          305 4 683 14579          812 38 1725 4523          218 5564 2 42 |
|                   612 4 229 5138          217 37 2030 5391          308 5500 3 37 |
| XFER CODES BY          515 3 191 5202          308 37 1997 5312          217 5466 1 37 |
|   %IMA (+)          308 3 188 5500          906 37 1751 4717          402 5452 7 32 |
|   %INA ( ) |
| VOLUME ( )          FRWD ( ) PART 1          FRWD ( ) PART 1          FRWD ( ) PART 1 |
| TO 3-D TREND          BKWD ( ) OF 4          BKWD ( ) OF 6          BKWD ( ) PART 4 |
|                   RESTART ( ) DIRECTORY[ ] P[ ] |
-----

```

Fig. 5.4—Three-Digit Code Inventory Display (CC-4) (5.18)

```

-----
| CC5    3-DIGIT CODE TREND                      DATA TIME 12:15          SENT AT 12:18:55 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|          %IMA TREND      %INA TREND      MA COUNTS      ALL 15-MIN  NPAS |
|  ---NPA--- CB 3RD 2ND NEW   3RD 2ND NEW   3RD   2ND   NEW   MA %IMA %INA WITH |
|  [  ]608      1  0  1      32 33 34      1750 1799 1841   5390  1  33  NXX |
|  [  ]515      3  5  4      30 28 32      1775 1803 1837   5415  4  30  RES |
|  [  ]402---   1  1  1---   33 32 32---   1788 1794 1827--- 5409  1  32  312 |
|  [  ]612      1  2  3      45 50 55      1733 1701 1760   5194  2  50  212 |
|  [  ]314      1  0  0      25 29 30      1752 1743 1738   5233  0  28  201 |
|  [  ]906---   2  2  2---   35 37 39---   1625 1659 1674--- 4958  2  37  305 |
|  [  ]507      11 10  9      37 36 35      1601 1639 1665   4905 10  36  617 |
|  [  ]616      1  1  0      20 25 30      1599 1615 1629   4843  1  25  213 |
|  [  ]712---   0  0  1---   41 39 37---   1422 1587 1616--- 4625  0  39  808 |
|  [  ]812      0  0  0      36 34 32      1760 1675 1540   4975  0  34      |
|  [  ]414      1  1  0      33 33 35      1500 1525 1540   4565  1  34      |
|  [  ]219---   1  1  0---   37 35 30---   1211 1278 1332--- 3821  1  35      |
|  [  ]317      0  0  0      35 37 36      1187 1250 1287   3724  0  36      |
|  [  ]808      6  7  8      40 39 38      750  500  116   1366  7  39      |
|  [  ]907      0  0  0      24 29 19      250  90  36   376  0  24      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| START MANUAL ENTRY          FRWD( ) PART[ ] PART 2 |
| WITH ITEM #1              BKWD( )                OF 4 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     RESTART( )  DIRECTORY[ ] P[ ] |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|

```

Fig. 5.5—Three-Digit Code Trend (CC-5) (5.24)

CC6		6-DIGIT CODE INVENTORY						DATA TIME 12:05				SENT AT 12:08:33			
		CODES BY %IMA				CODES BY %INA				CODES BY VOLUME					
		% COUNTS				% COUNTS				% %					
NPA	201	CB	NXX	IMA	IMA	MA	NXX	INA	INA	NA	NXX	MA	IMA	INA	
	201 ( ) S														
	302 ( )		493	3	3	47	774	91	76	84	774	87	4	91	TRANSFER
	414 ( )		372	3	2	48	775	89	80	90	988	82	3	87	ITEM[ 1 ]
	914 ( )		286	3	2	43	988	87	69	79	922	76	2	85	THRU[ 10 ]
	( )	*	746	3	2	38	776	87	60	69	776	71	3	87	
	( )	*	774	3	3	87	922	85	63	74	531	68	3	54	OF CODES BY
	( )		681	3	3	65	681	84	52	62	731	68	3	82	%IMA ( )
			721	3	2	45	443	83	48	58	681	65	4	84	%INA (+)
	5-MIN		931	3	1	35	731	82	54	66	741	61	2	82	VOLUME ( )
	NEW ( ) S		887	3	1	32	741	82	49	60	871	60	2	73	TO
	N+2 ( )		775	3	3	93	747	78	44	57	443	59	2	83	6-D TREND ( )
	ALL ( )		988	3	3	82	842	77	41	53	671	59	1	83	IMA-RTG ( )
		*	776	2	2	71	946	74	41	55	747	58	2	78	INA-RTG (+)
	CUTOFFS		531	2	2	68	871	73	43	59	946	56	2	74	
	MA NA		731	1	2	68	671	73	42	58	372	48	5	55	GO TO
	[ I ]		532	1	2	55	532	72	38	53	431	45	1	51	100% FAIL ( )
	30 30														GEN CNTRL ( )
							FRWD ( )	PART 1		FRWD ( )	PART 1		FRWD ( )	PART 2	
							BKWD ( )	OF 2		BKWD ( )	OF 3		BKWD ( )	OF 2	
															RESTART ( )
															DIRECTORY[ ] P[ ]

Fig. 5.6—Six-Digit Code Inventory Display (CC-6) (5.28)

```

-----
|CC7 6-DIGIT CODE TREND DATA TIME 12:10 SENT AT 12:11:27|
|NPA[ ]|
|201|
|---NXX--- %IMA TREND %INA TREND MA COUNTS ALL 15-MIN NPAS|
|CE 3RD 2ND NEW 3RD 2ND NEW 3RD 2ND NEW MA %IMA %INA WITH|
|[ ]267 * 0 2 11 99 33 41 116 40 40 200 3 74 NXX|
|[ ]935 * 3 0 43 40 34 47 26 26 37 69 19 40 RES|
|[ ]496--- 0 7 0---- 35 100 44---- 26 92 29---- 149 4 76 312|
|[ ]279 * 0 0 38 40 34 50 35 32 42 109 14 40 212|
|[ ]489 * 0 0 38 41 38 46 34 34 49 117 16 41 201|
|[ ]755--- 0 0 0---- 35 27 97---- 28 29 89---- 146 0 71 305|
|[ ]362 0 3 4 33 97 47 24 77 24 125 3 75 617|
|[ ]477 * 35 23 21 55 50 36 14 13 14 41 26 46 213|
|[ ]780--- 0 6 0---- 36 100 46---- 25 82 26---- 133 3 76 808|
|[ ]627 * 5 6 31 37 40 63 17 16 16 49 14 45 |
|[ ]666 * 3 0 26 35 32 44 55 53 61 169 10 37 |
|[ ]377--- 2 0 0---- 70 32 36---- 98 46 44---- 188 1 53 |
|[ ] |
|[ ] |
|[ ] |
|FRWD ( ) PART[ ] PART 1 TRANSFER CODES TO |
|BKWD ( ) OF 1 ITEM[ 1] IMA ROUTING ANALYSIS(+)|
| THRU[ 5] INA ROUTING ANALYSIS( ) |
| RESTART ( ) DIRECTORY[ ] P[ ] |
-----

```

Fig. 5.7—Six-Digit Code Trend Display (CC-7) (5.33)

CC8 ROUTING ANALYSIS				TSG DATA TIME [ ] [ ] SENT AT[ ]	
NPA [ ]				CODE DATA TIME [ ] [ ]	
POOLED [ ]	RDB[[ ]]	]] [ ]	%OFL HT	NXX [ ]	SIZE: [ ] [ ]
RDB NXXS % COUNT	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	DATA PEG %
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	TIME COUNT OFL HT
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	15 [ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	[ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	ACH OCCH ICCH %OCC
[ ] [ ] [ ] [ ]	FRWD(0) PART 0	](0)	[ ] [ ]	FRWD(0) PT 0	15 [ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	BKWD(0) OF 0	](0)	[ ] [ ]	BKWD(0) OF 0	[ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	RDB[[ ]]	]] [ ]	%OFL HT	NXX [ ]	%OUT %AFFECTED
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	%NSD EIA 'TO' 'FR'
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	15 [ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	FRWD (0) PART 0	](0)	[ ] [ ]	[ ] [ ] [ ]	[ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	BKWD (0) OF 0	](0)	[ ] [ ]	[ ] [ ] [ ]	[ ] [ ] [ ] [ ]
[ ] [ ] [ ] [ ]	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	TRANSFER TO GO TO
5-MIN	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	NXX TRND(0) ORD NXX(0)
NEW(0)0	[ ]	](0)	[ ] [ ]	[ ] [ ] [ ]	TSG DETL(0) RDB (0)
N+2(0)0	FRWD(0) PART 0	](0)	[ ] [ ]	FRWD(0) PT 0	
ALL(0)0	BKWD(0) OF 0	](0)	[ ] [ ]	BKWD(0) OF 0	
	UPDATE(0) STORE(0)	](0)	[ ] [ ]	RETRIEVE(0)	DIRECTORY[0] P[[ ]]

Note: This form has not been finalized.

Fig. 5.8—Routing Analysis Display (CC-8) (5.37)

```

-----
|CC9   100% FAILURE CODES INVENTORY          DATA TIME 10:20          SENT AT 10:23:50|
|
|   3-DIGIT NPA CODES                          6-DIGIT NPA-NXX CODES          CUTOFF
|   IMA          INA                            IMA          INA          IMA>[   ]90|
|CB NPA COUNT  NPA COUNT  CB NPA-NXX COUNT  NPA-NXX COUNT  INA          INA>[   ]5|
|   505    150   915    200  *(+)212 333  500  ( )212 370  300
| * 602     50   806    158  ( )212 625  478  ( )201 690   85
|                                     ( )203 522  421  ( )914 266   79  TRANSFER
|                                     ( )203 723  399  ( )607 843   60  NXX LIST FOR
|                                     ( )203 921  376  ( )516 238   10  DSG NPA TO
|                                     ( )516 223  330  ( )                                     3-D TREND(+)|
|                                     ( )516 829  307  ( )                                     ROUTING( )|
|                                     ( )516 726  295  ( )
|                                     ( )607 533  240  ( )
|                                     ( )607 534  163  ( )
|                                     ( )607 458  102  ( )
|                                     ( )                                     GO TO
|                                     ( )                                     3-DIGIT INV( )|
|                                     ( )                                     6-DIGIT INV( )|
|                                     ( )                                     CODE MNTR( )|
|                                     ( )                                     GEN CNTRL( )|
|
|FRWD( ) PART 1  FRWD( ) PART 1
|BKWD( ) OF 1    BKWD( ) OF 1
|PART[ ]        PART[ ]
|
|                                     RESTART( )  DIRECTORY[ ] P[ ]
|
-----

```

Fig. 5.9—100 Percent Failure Codes Inventory Display (CC-9) (5.45)

CC10 SPECIAL CODES INVENTORY										DATA TIME [ ] [ ]		SENT AT [ ]		
3-DIGIT CODES					6-DIGIT CODES									
BY %IMA					BY %IMA					BY %INA				
MAN. SPEC(0)	0	NPA	%IMA	MA	NPA	%INA	NA	NPA-NXX	%IMA	MA	NPA-NXX	%INA	NA	
EXCLUDED(0)	0	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
HTR CTRL(0)	0	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
5-MIN		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
NEW(0)	0	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
N+2(0)	0	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
ALL(0)	0	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
TRANSFER TO		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
ROUTING(0)		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
NXX TREND(0)		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
WITH ALL NXX		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
IN DSG NPA		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
GO TO		[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	(0)	[ ]	[ ]	[ ]	[ ]	[ ]	(0)
NPA/REGN(0)			FRWD(0)		PART 0					FRWD(0)		PART 0		
ORDRD NPA(0)			BKWD(0)		OF 0					BKWD(0)		OF 0		
ORDRD NXX(0)			UPDATE(0)		STORE(0)			RETRIEVE(0)		DIRECTORY[0]		P[[ ]]		

Note: This form has not been finalized.

Fig. 5.10—Special Codes Inventory Display (CC-10) (5.51)

CC11 COMPLETION CODE MONITOR			DATA TIME 13:15			SENT AT 13:17:43			
NPA	NXX		MA	IMA	%IMA	NA	INA	%INA	
[ 312 ]	- [ ]	NEW	5665	57	1	NEW	5608	2075	37
		2ND	5410	75	1	2ND	5335	1775	33
		3RD	6214	248	4	3RD	5966	2575	43
		15-MIN	17289	380	2	15-MIN	16909	6425	38
[ 201 ]	- [ 267 ]	NEW	55	1	1	NEW	54	12	22
		2ND	32	1	3	2ND	31	5	16
		3RD	46	1	2	3RD	45	11	24
		15-MIN	133	3	2	15-MIN	130	28	21
[ 212 ]	- [ 393 ]	NEW	56	2	3	NEW	54	49	90
		2ND	50	2	4	2ND	48	29	60
		3RD	49	0	0	3RD	49	17	34
		15-MIN	155	4	2	15-MIN	151	95	62
[ 607 ]	- [ 277 ]	NEW	44	24	54	NEW	20	11	55
		2ND	62	15	24	2ND	47	25	53
		3RD	39	4	10	3RD	35	13	37
		15-MIN	147	43	29	15-MIN	104	49	47
RESTART ( )    DIRECTORY[ ]    P[ ]									

Fig. 5.11—Completion Code Monitor Display (CC-11) (5.11)

```

TG1 NETWORKS NC SERIES 1 DATA TIME SENT AT 12:02:19
SPRINGFLD 1 MILWAUKEE 2 WHITE PLNS 3 SAN BERNO 4 WASHINGTON 5
SPRINGFIELD| MILWAUKEE | WHITE PLAIN| SAN BERNDNO| WASHINGTON
* PEORIA | WEST BEND| NYC | RIVERSIDE | BELTSVILLE
* ROCK IS | * WAUKESHA | ALBANY | MAGNOLIA | BETHESDA
BLOOM | APPLETON | * BINGHAMTN| ORANGE | * ALEXANDRIA
CHAMPAIGN | * GREEN BAY| * BUFFALO | * ONTARIO | FAIRFAX
DECATUR | OSHKOSH | BOSTON | CORONA | FLS CHRCH
DANVILLE | FONDDULAC | LAWRENCE | FONTANA | MT VERNON

TRANSFER NETWORK ANALYSIS (+)
INDEX [ 4 ] TO NETWORK TREND ( )
RESTART ( ) DIRECTORY[ ] P[ ]

```

Fig. 6.1—Network NC Series 1 Display (TG-1) (6.02, 6.02)

```

-----
| TG3   STORED NETWORKS SERIES 1           DATA TIME 12:00           SENT AT 12:03:22 |
|
| MEASURE NETWORK-INDEX INDEX[ ] 5           INDEX[ ] 2           INDEX[ ] 3           |
| %OFL ( ) SPRINGFLD 1 WASHINGTON ( ) 7 MILWAUKEE ( ) 3 WHITE PLNS HT |
| ACH ( ) MILWAUKEE 2 BELTSVILLE (+) 6 WEST BEND ( ) 4 WHITE PLAIN ( ) 4 |
| CCH ( ) WHITE PLNS 3 BETHESDA ( ) 6 WAUKESHA ( ) 5 NYC ( ) 6 |
| %NSD ( ) SAN BERNO 4 ( ) 6 ( ) 5 ALBANY ( ) 5 |
| %OOS ( ) WASHINGTON 5 ALEXANDRIA ( ) 5 APPLETON ( ) 4 BINGHAMTN ( ) 4 |
| %OCC ( ) FAIRFAX ( ) 4 GREEN BAY ( ) 3 BUFFALO ( ) 5 |
| HT ( ) S FLS CHRCH ( ) 6 ( ) 3 ( ) 5 |
| OCCH ( ) MT VERNON ( ) 5 OSHKOSH ( ) 4 BOSTON ( ) 4 |
| ICCH ( ) ( ) ( ) FONDDULAC ( ) 5 LAWRENCE ( ) 4 |
| %RRT ( ) ( ) ( ) ( ) ( ) |
| ( ) ( ) ( ) ( ) ( ) |
| 15 MIN ( ) ( ) ( ) ( ) ( ) |
| NEW ( ) ( ) ( ) ( ) ( ) |
| N+2 ( ) ( ) ( ) ( ) ( ) |
| N23 ( ) FPWD ( ) PART 1 ( ) ( ) ( ) ( ) |
| ALL ( ) S BKWD ( ) OF 1 ( ) ( ) ( ) ( ) |
|
| TRANSFER NETWORK ANAL ( ) TRANSFER TSG DETAIL (+) OUT TSG CONTROL ( ) |
| INDEX [ ] TO NETWORK TREND ( ) DSG TSG TO TSG TREND ( ) IN TSG CONTROL ( ) |
| RESTART ( ) DIRECTORY[ ] P[ ] |
-----

```

Fig. 6.2—Stored Networks Series 1 Display (TG-3) (6.07, 6.12)







```

-----
|TG8      TSG DETAIL                                DATA TIME 12:00          SENT AT 12:03:01|
| BTFN TOWN ST BL FBS NBS                          AUTOMATIC CONTROLS
|[ [ 0123 WHPL NY 02 4AT 4AT 2M STUDY CLASS 1      ] OPTION COUNT LEVEL
| 5 MIN                                             DOC CTO          0
| NEW ( ) DOMAIN 1 SIZE 64                          STR CTO          3 SRL1 OFF
| N+2 ( ) SCREEN 3 IDLE 3                          MANUAL CONTROLS
| ALL ( ) INSEP 23 OOS 3                            COUNT TRAF CODE %
| 15 MIN                                           SKIP OFF         3          50
| NEW ( ) S HOLD TIME 6.1 %OCC 87                  CTO ON           2 ALT UNS 50
| N+2 ( )                                           FROM RRF         3 D&A UNS 50
| N23 ( ) ACH 6 %OFL 20 %EIA                       VIA 0072 NBWK NJ NB 01T 01T
| ALL ( ) OCCH 5 %NSD 0 OUT 4                       DOC SEND MC
| ICCH 4 %RRT 25 IN 0                               AUTO 0
|                                                    MAN 0
|
|-----COUNTS-----
| ATTEMPTS 90 OFL 18 EIA                            TRANSFER TSG TO
| OUTSEIZE 72 NSD 0 OUT 3                            OUT TSG CONTROL ( )
| INSEIZE 63 RRT 18 IN 0                             IN TSG CONTROL ( )
|                                                    TSG TREND (+)
|
| RESTART ( ) DIRECTORY[ ] P[ ]
-----

```

Fig. 6.6—TSG Detail Display (TG-8) (6.27)



```

-----
|TG10  RDB PERFORMANCE SUMMARY          DATA TIME 12:00          SENT AT 12:02:19|
|
|NPA[   ]
|NXX[   ]          MAN  AUTO OCR INHIBIT NOW  HTR  %          OUT  %  HOLD  %
|          OFF          STATUS OFL  SIZE  ACH  CCH  OCC  TIME  EIA
|DOMAIN[ ]          0231 WAYN PA LA 41T 41T ( )          0  62  5  5  33  2.4  0
|SCREEN[ ]          * 0187 PITB PA DG 42T 42T ( )          16 65  8  7  47  4.6  0
|          0176 NRWY IL NO 41T 41T ( )          10 58 10  9  41  3.3  0
|15 MIN          ( )
|NEW( )S          ( )
|N+2( )          ( )
|N23( )          ( )
|ALL( )          ( )
|          ( )
|RDB INDEX          ( )
|[   ]0023          ( )
|          ( )
|5 MIN DATA          ( )
|PER          ( )
|MA
|%IMA          IN CHAIN ( )  OUT CHAIN RDB  TRANSFER  OUT CONTROL( )
|%INA          OUT CHAIN ( )S  5 MIN COUNT  7  DSG TSG TO  TSG DETAIL( )
|          TSG TREND( )
|          RESTART( )  DIRECTORY[ ]  P[ ]
-----

```

Fig. 6.8—Routing Data Block Display (TG-10) (6.35)

```

-----
| PA11  MANUAL REROUTE INVENTORY          DATA TIME 12:00          SENT AT 12:18:45 |
|-----|
| DONOR TSGS   3   RRF  CONTROL          VIA TSGS   3           OUT  EFF  RRT |
|              COUNT  %                   %OFL CCH SIZE COUNT  %OCC  HT |
| MIAM FL TL 02T(+) 13 25 H           EUCL WI 01 41T( ) 0   5   20   13   70  6.3 |
| FTLD FL MA XBT( ) 16 50 H U        EUCL WI 01 41T( ) 0   5   17   17   63  8.0 |
| ORLD FL MA 01T( ) 10 25 H          MDSN WI 01 01T( ) 0   6   18    0   50  6.7 |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
|              ( )                   ( ) |
| 15 MIN |
| NEW( )   FRWD( )  PART 1 |
| 2ND( )S  BKWD( )  OF 1 |
| 3RD( ) |
| 4TH( ) |
|              RESTART( )  STORE( )  RETRIEVE( )  DIRECTORY[ ] P[ ] |
-----

```

Note: All backgrounds have been processed.

Fig. 7.1—Manual Reroute Inventory Display (PA-11) (7.06)

```

-----
| PA12  HTR CONTROL LIST INVENTORY          DATA TIME 07:55          SENT AT 07:58:21 |
|
|              AUTO HTR CODES
| ALL CODES ( )      HOME-NPA      FOREIGN      FOREIGN
| AUTO HTR ( ) S    NXX STATUS    NPA NXX STATUS    NPA STATUS
| NON AUTO ( )      227 A  E      212 389 A M E      215 A
|                   234 A M E      212 412 A              305 A
|                   266 A  E      212 415 A  E          312 A
|
|   NUMBER OF
|   HTR CODES      360 A              212 633 A
|   TOTAL 56      463 A  E          516 348 A
| AUTO HTR 36      464 A              516 483 A
| NON AUTO 20      465 A              516 491 A
|                   468 A              516 523 A
|                   589 A M E          516 633 A
|                   635 A              516 711 A
|                   723 A              516 852 A  E
|                   759 A              516 902 A M E
|                   777 A M E          914 233 A
|                   790 A              914 313 A
|                   811 A              914 523 A
|
| FRWD ( )
| BKWD ( )      PART 1              PART 1              PART 1
| PART[ ]      OF 2              OF 2              OF 1
|
| RESTART ( )    STORE ( )    RETRIEVE ( )    DIRECTORY[ ] P[ ]
|
-----

```

Fig. 7.2—HTR Control List Inventory Display (PA-12) (7.11)





```

-----
| PA15  DOC RECEIVED INVENTORY                DATA TIME 12:00                SENT AT 12:10:39 |
|-----|-----|-----|-----|-----|-----|-----|-----|
|          OPTION  MC  OVER-          DOC CONTROL COUNTS
|          NOW    RIDE          4TH     3RD     2ND     NEW
|-----|-----|-----|-----|-----|-----|-----|
|          SKIP    3          WHPL NY 02 4AT( )  425     450     400     498
| 5-MIN( )  CANCEL  3          NWRK NJ MA 4AT( )  100     200     300     442
| 15-MIN( )S SKIP    3          NBWK NJ NB 01T( )  310     295     300     333
|          CANCEL  2          *    ASPK NJ AP 02T( )  410     425     400     375
|          CANCEL  2          PEOR IL PB 01T( )  180     200     251     272
|          SKIP    2          LGBR NJ LB 001( )  350     320     300     260
|          SKIP    2          *    SPFD IL SD 01T( )   20       70     100     125
|          CANCEL  1          BLTN IL BL 01T( )  300     400     450     425
|          SKIP    1          RCIS IL RI 01T( )  100     195     212     203
|          SKIP    1          CHMP IL CD 01T( )   20       40      80     145
|          SKIP    1          DAVL IL DA 01T( )   70       90     100     135
|          CANCEL  1          *    DCTR IL DC 01T( )    0        30      40      81
| TRANSFER
| DSG TSG TO
| TSG CONTROL( )
| TSG TREND ( )
| TSG DETAIL ( )
|          FRWD( ) PART 1
|          BKWD( ) OF 1
|          PART[ ]
|          RESTART( )  DIRECTORY[ ]  P[ ]
|-----|-----|-----|-----|-----|-----|-----|

```

Fig. 7.5—DOC Received Inventory Display (PA-15) (7.23)

PA16 AUTO OCR INVENTORY					DATA TIME 12:05					SENT AT 12:09:15					
AUTO AOCR COUNTS					INDEX 123					15-MIN DATA TIME 12:00					
INDEX	INH	3RD	2ND	NEW	INDEX	SIZE	%OFL	OCCH	%RRT	%OCC	HT	OCR	IDLE	AUTO	MANUAL
123 ( )	*	90	102	126	EUCL WI 01 41T(+)	20	15	8	30	83	6.1	INH	NOW	DOCR STR	CTO SKIP
96 ( )		80	70	60	EUCL WI 02 01T( )	17	1	6	25	70	7.3	A	0	*	*
24 ( )		71	69	50	MDSN WI 01 01T( )	18	0	5	19	63	5.1	M	2	*	*
32 ( )		56	59	40	( )										
17 ( )		40	50	20	( )										
103 ( )		39	20	10	( )										
46 ( )		35	30	10	( )										
72 ( )	*	20	0	0	( )										
30 ( )	*	105	50	0	( )										
19 ( )		0	3	0	( )										
( )					EUCL WI 01 41T -M										
( )					EUCL WI 02 01T MM										
( )					MDSN WI 01 01T -M										
( )															
( )															
FRWD ( )	PART 1														
BKWD ( )	OF 1														
PART[ ]		TRANSFER DSG TSG TO TSG CONTROL(+)	TSG DETAIL( )	TSG TREND( )											
		RESTART( )	DIRECTORY[ ]	P[ ]											

Fig. 7.6—AUTO OCR Inventory Display (PA-16) (7.27)



2 OUTGOING TRUNK CONTROL					TFNO CITY ST BL FSB NSB ID	XXXXXXXXXXXXXXXXXX
XX:XX:XX					( ) XX	X X
SKIP( ) CANC-TO( ) CANC-FROM( )					<input type="checkbox"/> ALT( ) DAR( ) <input type="checkbox"/> HTR( ) H&U( )	X (MESSAGES) X
OFF( ) 25%( ) 50%( ) 75%( ) 87%( ) 100%( )					<input type="checkbox"/> EA1( ) EA2( ) NCA	X X
REROUTE TO					TFNO CITY ST BL FSB NSB ID	DOC LEVEL RCVD
( )					( ) XX	MC1 MC2 MC3
OFF( ) 25%( ) 50%( ) 75%( ) 87%( ) 100%( )					<input type="checkbox"/> HTR( ) H&U( )	
STUDY CLASS OFF( ) 1( ) 2( ) 3( ) 4( )						NO. ACTIVE XXX
INHIBIT AUTO OCR( ) AUTO( )						
DOC/STR	MC1	MC2	SRL1	SRL2	DOC/STR OPTION SKIP( ) CANCEL( )	
	%	%	%	%		
HTR-ALT	100	100	100	100	INHIBIT RECEIVED DOC( ) AUTO( )	DOC LEVEL RCVD
HTR-DIR	50	100	0	75	TEST MF&DP DOC MC3( )	MC1 MC2 MC3
UNS-ALT	( )	( )	0	100	SET SRL1 (0-15) ( ) STR HIGH	
UNS-DIR	0	( )	0	( )	SET SRL2 (0-15) ( ) STR LOW	
EXECUTE( )					UPDATE( )	STORE( )
					RETRIEVE( )	DIRECTORY( )
						P( )

Note: This form has not been finalized.

Fig. 8.2—Outgoing Trunk Control Display (CN-2) (8.10)

3 INCOMING TRUNK CONTROL XX:XX:XX	TFNO CITY ST BL FSB NSB ID ( ) XX	XXXXXXXXXXXXXXXXXX X X X (MESSAGES X X X XXXXXXXXXXXXXXXXXX
SEND DOC MC1( ) MC2( ) AUTO( )		
INHIBIT AUTO DOC MC1 & MC2( ) AUTO( )		DOC LEVEL RCVD MC1 MC2 MC3
EQUIP FOR DOC( ) NOT EQUIPPED ( )		DOC LEVEL SENT MC1 MC2 MC3
		RECEIVED DOC INHIBITED  ALL OUTGOING AUTO DOC INHIBITED

EXECUTE( )      UPDATE( )      STORE( )      RETRIEVE( )      DIRECTORY( )      P( )

Note: This form has not been finalized.

Fig. 8.3—Incoming Trunk Control Display (CN-3) (8.14)

```

4 GENERAL CONTROL CHANGE | NPA CODES FOR 6-DIGIT HTR RESOLUTION |XXXXXXXXXXXXXXXXXXXX
   XX:XX:XX              | ( ) ( ) ( ) ( ) ( ) ( ) |X                      X
-----|-----|X (MESSAGES) X
INHIBIT ALL OUTGOING AUTO DOC ( ) AUTO( ) |XXXXXXXXXXXXXXXXXXXX
-----|-----|
INHIBIT ALL INTERNAL HTR CONTROL( ) AUTO( )
-----|-----|
MANUAL CONTROLS OFF:      CODE BLOCK ( )      ACTIVE XXX
                          REROUTE ( )      ACTIVE XXX
                          SKIP ( )        ACTIVE XXX
                          CANCEL TO ( )    ACTIVE XXX
                          CANCEL FROM ( )  ACTIVE XXX
-----|-----|
SET HTR PARAMETERS:      (AC=ATTEMPT COUNT      FC=FAILURE PERCENTAGE COUNT)
                          PARAMETER      FNPA  HNXX  FNXX      PARAMETER      VALUE
                          AC (1-9999)    ( ) ( ) ( )      DELTA AC (0.1-1.0)( )
                          FC (1-100)    ( ) ( ) ( )      DELTA FC (0.1-1.0)( )
-----|-----|
LAMP CHECK( )
EXECUTE( )      UPDATE( )      STORE( )      RETRIEVE( )      DIRECTORY( )      P( )

```

Note: This form has not been finalized.

Fig. 8.4—General Control Change Display (CN-4) (8.16)

5 SELECTIVE CODE REROUTE XX:XX:XX	REROUTE SUBGROUP	ISC( )	NPA( )	NXX( )	XXXXXXXXXXXXXXXXXX
			NPA( )	NXX( )	X X
			NPA( )	NXX( )	X (MESSAGES) X
TFNO CITY ST BL FSB NSB	ID		NPA( )	NXX( )	X X
( )	XX		NPA( )	NXX( )	XXXXXXXXXXXXXXXXXX

IN-CHAIN ROUTING DATA BLOCK	HTR CONTROL			SKIP HTR		REROUTE HTR		
	ON	INHIBIT	AUTO	ON	OFF	ON	OFF	READ
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )
XXXX XXXX XX XX XXX XXX XX	( )	( )	( )	( )	( )	( )	( )	( )

EXECUTE( )      UPDATE( )      STORE( )      RETRIEVE( )      DIRECTORY( )      P( )

Note: This form has not been finalized.

Fig. 8.5—Selective Code Reroute Display (CN-5) (8.19)



19 TEST CALL DETAIL 08:47:00

NEXT-PAGE( ) BACK-PAGE( )

NO.		SEIZE TIME	ADDR TIME	RESP TIME	CALL TIME	NO.		SEIZE TIME	ADDR TIME	RESP TIME	CALL TIME
1	MF-MF	3.7	0.6	0.4	5.8	25	MF-MF	2.1	0.4	0.2	6.2
2	MF-DP	2.8	0.4	0.2	7.2	27	MF-MF	2.2	0.2	0.1	5.2
3	MF-MF	2.2	0.5	0.2	5.1	29	MF-MF	1.1	0.3	0.2	5.4
5	MF-MF	2.1	0.4	0.1	4.4	31	MF-MF	2.1	0.4	0.3	5.8
7	MF-MF	1.7	0.6	0.1	5.4	4	CC-MF	0.4	0.1	0.2	3.7
8	MF-CC	1.7	0.4	0.2	5.3	10	CC-DP	0.3	0.1	0.1	5.9
9	MF-MF	1.8	0.5	0.1	5.4	14	CC-CC	0.3	0.2	0.1	4.6
11	MF-MF	1.2	0.7	0.2	4.1	20	CC-MF	0.3	0.1	0.4	4.3
13	MF-MF	1.1	0.3	0.1	4.5	26	CC-DP	0.3	0.4	0.1	5.5
15	MF-MF	0.8	0.2	0.2	4.4	30	CC-CC	0.3	0.7	0.4	7.9
17	MF-MF	4.4	0.4	0.3	7.6	6	DP-CC	0.8	0.3	0.1	12.1
18	MF-DP	3.6	0.2	0.4	7.8	12	DP-MF	0.5	0.2	0.1	11.8
19	MF-MF	3.2	0.3	0.3	6.5	16	DP-DP	0.7	0.1	0.2	21.8
21	MF-MF	0.2	0.1	0.6	4.8	22	DP-CC	0.8	0.3	0.7	11.7
23	MF-MF	5.2	0.4	0.4	8.8	28	DP-MF	4.8	0.1	0.1	12.4
24	MF-CC	4.3	0.6	0.4	8.6	32	DP-DP	0.8	0.4	0.1	10.8

TEST CALL TRENDS( )

MACHINE-SUMMARY( ) UPDATE( ) STORE( ) RETRIEVE( ) DIRECTORY( ) P(

Note: This form has not been finalized.

Fig. 9.7—Test Call Detail Display (MA-19) (9.12)

CN11 EXCEPTION PANEL 30 SECOND THRESHOLDS				
TEST CALLS				
SEIZE TIME				
1	2		3	4
SECONDS	CALLS		SECONDS	CALLS
[ ]	[ ]	MF	[ ]	[ ] ADDRESS TIME
[ ]	[ ]	DP		5
[ ]	[ ]	CCIS	[ ]	INCOMPLETES
UPDATE ( )      STORE ( )      RETRIEVE ( )      DIRECTORY      P				

Note: This form has not been finalized.

Fig. 10.1—Thirty Seconds Threshold Display (CN-11) (10.01, 10.05)

CN12 EXCEPTION PANEL 5 MINUTE THRESHOLDS

TRUNK SUBGROUP PERFORMANCE

1	OFL	2		3	ACH	4		5	CCH	6		7	MSD	8		9	OOS	10	
[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]
[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]
[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]
[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]	[	]

HARD TO REACH LISTS

11	CONTROL	12	CHANGES		
[	]	AUTO	[	]	INTERNAL ADD
			[	]	INTERNAL DELETE
		13			
[	]	LIST OVERFLOW			

UPDATE ( )      STORE ( )      RETRIEVE ( )      DIRECTORY      P

Note: This form has not been finalized.

Fig. 10.2—Five Minute Threshold Display (CN-12) (10.01, 10.06)

CN13 EXCEPTION PANEL 15 MINUTE THRESHOLDS

1 IMA 2  
LOW HIGH  
[ ] [ ]

CAPACITY 3  
OOS  
MF TRMTR [ ]  
MF INC [ ]

UPDATE ( ) STORE ( ) RETRIEVE ( ) DIRECTORY P

Note: This form has not been finalized.

Fig. 10.3—Fifteen Minute Threshold Display (CN-13) (10.01, 10.07)

TABLE A

## DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

This table provides definitions for 65 types of ineffective machine attempts and for three types of equipment failure conditions that do not result in call failures.

## I. Equipment Failures Not Resulting in Call Failures

- AIF**      *ANI Office Failure* — On a CAMA ANI call, the identification digits received from the connecting office indicate that no ANI information will be forthcoming. The call is completed after engaging a CAMA operator for calling party number identification.
- ANF**      *Automatic Number Failure* — On a CAMA ANI (automatic number identification) call there is an error in the calling number digits as received from the ANI equipment (after the proper identification digit has been received). This includes PST, PDT and all types of PER, as defined in this table. Calls encountering an ANF are normally completed after engaging a CAMA operator to complete calling number identification. This condition also includes calls on ANI trunks when no identification digit is received, since this is most likely due to congestion in the local office.
- CDT**      *CAMA Disconnect Timeout* — When the operator is no longer required on a CAMA call, the No. 4 ESS will send a disconnect signal to the operator position circuit, should the circuit fail to respond by going off-hook on the keying trunk within 5 seconds, this constitutes a CAMA disconnect timeout (no call failure occurs).

## II. Sixty-five Categories of IMAs Resulting in Call Failure

- AOB**      *Automatic Out-of-Chain Blocked* — An AOC call is sent to final handling that has been blocked by a network management automatic out-of-chain control or by an NC condition on the trunk that has been used route the call out-of-chain.
- ATO**      *Address Complete Timeout* — A call is sent to final handling because an address complete signal has not been received from the succeeding office.
- CBB**      *Code Block Control* — A call is sent to final handling that has been blocked by a network management code block control.
- CFB**      *Cancel From Control* — A call is sent to final handling that has been blocked by a network management cancel from control.
- CFD**      *Call Fail Detection* — A failure is scored when a confusion signal, release guard message, or reset signal is received for a CCIS call that is sent to final handling.
- CGF**      *Carrier Group Failure* — An incoming seizure was processed as an origination and was later determined to be an off-hook due to a carrier group failure.
- CKF**      *Continuity Check Failure* — A call is sent to final handling as a result of failure of a continuity test of the CCIS trunk made prior to voice path cut-through.
- CPE**      *CAMA Position Error* — Any error committed by a CAMA operator that results in the call being aborted, such as double keying extra digit, key timeout, etc.

TABLE A (Cont)

## DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

- CQA** *CCIS Origination CR Queue Abandon* — The initial address message and other identifying information for an abandoned CCIS call that has been abandoned are removed from the CCIS origination call register queue.
- CQO** *CCIS Origination CR Queue Overflow* — An attempt fails to place the initial address message and other identifying information for a CCIS call in an entry on the CCIS origination call register queue fails because no free entry is available.
- CST** *CAMA Seizure Time-Out* — When the CAMA operator position circuit automatically recognizes a seizure, the circuit will return an on-hook on the keying trunk; if the keying trunk fails to go on-hook within 5 seconds of the time the seizure was sent, this constitutes a CAMA seizure time-out.
- CTB** *Cancel To Control* — A call that has been blocked by a network management cancel to control is sent to final handling.
- CTO** *Continuity Timeout* — A CCIS failure is scored when a continuity test OK (CTO) is not received before the end of the timeout interval.
- CTR** *CAMA Position Report* — A trouble condition is reported by the operator such as poor transmission which results in a predetermined 7-digit trouble code being keyed rather than a calling party number and the call is aborted.
- DED** *Incoming DP Early Digit* — A call is sent to final handling after the reception of a digit buffer report from the signal processor indicating a DP change of state before the system is ready to receive digits.
- DQA** *DP CR Queue Abandon* — The trunk register of a trunk associated with an abandoned DP call is unlinked from the DP call register queue.
- DQO** *DP CR Queue Overflow* — An attempt fails to link the trunk register of a trunk associated with a DP call with an entry on the DP call register queue fails because there is no free entry on the queue.
- FSA (4)** *False Start Abandon* — A bid for service is received on an incoming trunk but no digits are received, and the call is abandoned prior to permanent signal timeout. Counts for this IMA category are scored against the following subcategories:
- |       |                               |
|-------|-------------------------------|
| FSA-1 | Dial Pulse Operator Trunk     |
| FSA-2 | Dial Pulse Equipment          |
| FSA-3 | Multifrequency Operator Trunk |
| FSA-4 | Multifrequency Equipment      |
- GLR** *Final Trial Glare* — A call is sent to final handling when:
- (1) A glare condition is encountered on an outgoing trunk and the No. 4 ESS backs down
  - (2) A directed scan of the outgoing trunk reveals that it is off hook, no seizure has been sent and the No. 4 ESS rehunts, or
  - (3) The TSN of the trunk to be seized is off hook after disk search.

TABLE A (Cont)

## DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

HQO	<i>High Priority Disk Queue Full</i> — A call is sent to final handling when an attempt to place a disk request in an entry on a high priority queue fails because no free entry is available.
IAD	<i>Incomplete Address</i> — A failure is scored when an initial address message (IMA) is received with insufficient data to route the call (CCIS).
IKF	<i>Integrity Check Failure</i> — A failure of the trunk E&M lead integrity check which is made on delay dial-start dial trunks. This check consists of verifying that a delay dial signal (off-hook) has been received within the transmitter timeout interval after a connect signal has been sent.
IWF	<i>Incoming DP Worklist Full</i> — A call is sent to final handling after the reception of a digit buffer incoming DP worklist full report from the signal processor (less some abandons).
IWS	<i>INWATS Out-of-Band Screening Failure</i> — A check of an INWATS call has indicated that the source rate band exceeds the maximum rate band allowed to the customer.
MAB	<i>Miscellaneous Abandon</i> — A bid for service is abandoned some time prior to completion of out-pulsing other than in the categories of FSA, PDA and abandons from queues, also some abandons due to DP worklist full conditions.
MCA	<i>Misrouted CAMA</i> — A call is sent to final handling because a return is made from the local call intercept translation that the call should have been completed locally.
MQA	<i>MF Origination Queue Abandon</i> — The trunk register of a trunk with an MF origination is unlinked from the MF origination queue after the origination is abandoned.
NCI	<i>No Circuit Intertoll</i> — A call is sent to final handling when the processor cannot locate an idle outgoing intertoll trunk.
NCT	<i>No Circuit Toll</i> — A call is sent to final handling when the processor cannot locate an idle outgoing toll trunk.
NSD	<i>No Start Dial</i> — The delay dial signal (off-hook) from the office ahead persists beyond the transmitter timeout interval on MF or delay dial (DD) trunks. Also included in this category are IMA which result from failing a check made on wink start (WS) trunks. If the first part of the wink (on-hook to off-hook) is not received within the transmitter timeout interval, or if the second part of the wink (off-hook to on-hook) is not received within a specified interval of receipt of the first part of the wink, a transmitter timeout (NSD condition) occurs.
OPA	<i>CAMA Operator Position Abandon During Seizure</i> — An operator unplugs from the position after it has been seized but prior to the completion of the order tones.
OPD	<i>CAMA Position Disconnect</i> — An operator depresses the position disconnect key or unplugs from the position in the face of a seizure after the reception of order tones.
OQA	<i>CAMA Operator Queue Abandon</i> — The call register of a call that has been abandoned is unlinked from the CAMA operator queue.
OQO	<i>CAMA Operator Queue Overflow</i> — An attempt to link a call register on the CAMA operator queue fails because the queue is full.

TABLE A (Cont)

## DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

- OWF *DP Outpulsing Worklist Full* — A call is sent to final handling because the signal processor DP outpulsing worklist is determined to be full.
- PDA (4) *Partial Dial Abandon* — A bid for service is received on an incoming trunk and at least one digit but less than the expected number of digits is received; however, disconnect occurs. Counts for this IMA category are scored against the following subcategories:
- |       |                               |
|-------|-------------------------------|
| PDA-1 | Dial Pulse Operator Trunk     |
| PDA-2 | Dial Pulse Equipment          |
| PDA-3 | Multifrequency Operator Trunk |
| PDA-4 | Multifrequency Equipment      |
- PDT (4) *Partial Dial Timeout* — At least one digit but less than the expected number of digits is received prior to timeout (KP is received but not the required number of digits, including ST in the case of MF signaling). Counts for this IMA category are scored against the following subcategories:
- |       |                               |
|-------|-------------------------------|
| PDT-1 | Dial Pulse Operator Trunk     |
| PDT-2 | Dial Pulse Equipment          |
| PDT-3 | Multifrequency Operator Trunk |
| PDT-4 | Multifrequency Equipment      |
- PER (4) *Pulsing Error* — One or more of the received digits is in error as defined by one of the following conditions:
- Mutilated Digit (PMD)* — On MF pulsing calls, a single frequency or more than two frequencies are received in a digit pulse.
  - Misplaced Start (PMS)* — On MF pulsing calls, an ST signal is received in an improper position.
  - False Key Pulse (PFK)* — On MF pulsing calls, a second KP signal is received.
  - Extra Digit (PED)* — More digits are received than are expected.
  - Extra Pulse (PEP)* — On DP calls, an eleventh pulse is received for a single digit.
  - Pulsing Error Other (PEO)* — This includes such things as valid MF code which is not interpreted as a legitimate character, or any other error not covered by one of the above.
- Counts for this IMA category are scored against the following subcategories:
- |       |                               |
|-------|-------------------------------|
| PER-1 | Dial Pulse Operator Trunk     |
| PER-2 | Dial Pulse Equipment          |
| PER-3 | Multifrequency Operator Trunk |
| PER-4 | Multifrequency Equipment      |
- PHF *Final Trial Network Path Hunt Failure* — A call is sent to final handling because an attempt to seize an idle path through the network failed, because it appeared that no acceptable idle path was available.

TABLE A (Cont)

DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

- PST (4) *Permanent Signal Timeout* — A bid for service is received on an incoming trunk, but no digits are received within the permanent signal timeout interval (no KP is received in the case of MF signaling). Counts for this IMA category are scored against the following subcategories:
- |       |                               |
|-------|-------------------------------|
| PST-1 | Dial Pulse Operator Trunk     |
| PST-2 | Dial Pulse Equipment          |
| PST-3 | Multifrequency Operator Trunk |
| PST-4 | Multifrequency Equipment      |
- RQA *DP ANI MF Receiver Queue Abandon* — A call that has been abandoned is unlinked from the DP ANI MF receiver queue.
- SDB *Dynamic Overload Control Blocked* — A call is sent to final handling that has been blocked by a network management DOC control.
- SNF *Signal Network Failure* — A call is sent to final handling because of a failure to send an initial address message (outgoing trunk) or an address complete (incoming trunk) because of a CCIS signaling network failure and each time a message refusal signal is received for an outgoing CCIS call.
- SRB *Selective Trunk Reservation Blocked* — A call is sent to final handling that has been blocked by a network management STR control.
- TQA *MF Transmitter Queue Abandon* — The call register of a call that has been abandoned is unlinked from the MF transmitter queue.
- TQF *MF Transmitter Queue Entry Failure* — A call is sent to final handling because the number of entries on the MF transmitter queue plus the number of calls waiting to go on the MF transmitter queue is greater than the number of non-maintenance-busy MF transmitters plus the number of currently idle MF transmitters.
- UCA *Unauthorized CAMA* — A call is sent to final handling because a return is made from the local call intercept translation which indicates that the dialed number is unauthorized for CAMA (eg, operator codes).
- UXS *Unexpected Stop* — On MF or DP trunks, an unexpected stop dial signal is received. This category includes:
- (1) A stop dial which occurs during pulsing on an MF trunk
  - (2) A stop dial which occurs during pulsing on a DP trunk that does not have expect stop-go (XSG) class
  - (3) A second stop dial which occurs during pulsing on a DP trunk that does have XSG class
  - (4) A stop dial which occurs before outpulsing (the delay dial condition) on an immediate dial (ID) E&M signaling trunk
  - (5) On DP, XSG trunks, a stop dial which occurs at an invalid time.

TABLE A (Cont)

DEFINITIONS FOR INEFFECTIVE MACHINE ATTEMPTS

- VCA *Vacant Code* — A call is sent to final handling because a return from translations is interpreted to be a vacant code, ie, unassigned routing digits have been received for the call.
- XST *Expected Stop Timeout* — On a DP trunk with expect stop-to (XSG) class, an expected stop dial signal is received during outpulsing which persists beyond the transmitter timeout interval.

TABLE B  
EIA CATEGORIES

AIF*	ANI Office Failure
ANF*	Automatic Number Failure
<u>CDT*</u>	CAMA Disconnect Timeout
3	
ATO	Address Complete Timeout (CCIS)
CFD	Call Failure Detection (CCIS)
CGF	Carrier Group Failure
CKF	Continuity Check Failure (CCIS)
CPE	CAMA Position Error
CST	CAMA Position Sequence Timeout
CTO	Continuity Timeout (CCIS)
CTR	CAMA Position Report
FSA (4)	False Start Abandon
GLR	Glare
IAD	Incomplete Address (CCIS)
IKF	Integrity Check Failure
MAB	Miscellaneous Abandon
NSD	No Start Dial
PDA (4)	Partial Dial Abandon
PDT (4)	Partial Dial Timeout
PER (4)	Pulsing Error
PST (4)	Permanent Signal Timeout
SNF	Signaling Network Failure (CCIS)
UXS	Unexpected Stop
<u>XST</u>	Expected Stop Timeout
36	

\*Does not result in call failures.

TABLE C

IMA NOT INCLUDED  
IN EIA COUNTS

AOB	Automatic Out-of-Chain Blocked
CBB	Code Block Control
CFB	Cancel From Control
CQA	CCIS Origination CR Queue Abandon
CQO	CCIS Origination CR Queue Overflow
CTB	Cancel To Control
DED	Incoming DP Early Digit
DQA	DP CR Queue Abandon
DQO	DP CR Queue Overflow
HQO	High Priority Disk Queue Overflow
IWF	Incoming DP Worklist Full
IWS	INWATS Band Check Failure
MCA	Misrouted CAMA
MQA	MF Origination Queue Abandon
NCI	No Circuit Intertoll
NCT	No Circuit Toll
OPA	CAMA Operator Position Abandon During Seizure
OPD	CAMA Position Disconnect
OQA	CAMA Operator Queue Abandon
OQO	CAMA Operator Queue Overflow
OWF	DP Outpulsing Worklist Full
PHF	Network Path Hunt Final Trial Failure*
RQA	DP ANI MF Receiver Queue Abandon
SDB	Dynamic Overload Control Blocked
SRB	Selective Trunk Reservation Blocked
TQA	MF Transmitter Queue Abandon
TQF	MF Transmitter Queue Entry Failure
UCA	Unauthorized CAMA
<u>VCA</u>	Vacant Code

\*May be second-trial failure.

TABLE D

IMA CATEGORIES

<u>FAILURE</u>		<u>BLOCKED</u>	
<u>INCOMING</u>	<u>OUTGOING</u>	<u>INTERNAL</u>	<u>EXTERNAL</u>
(VAC/IWK)	(Out Fail)	(Int Q)	(NC)
IWS	ATO	CQA	AOB
VCA	CFD	CQO	GLR
	CKF	DED	NCI
(PSTO/FSA)	SNF	DQA	NCT
CGF	IKF	DQO	
FSA (4)	UXS	HQO	(Timeouts)
PST (4)		IWF	NSD
		MAB	XST
(Incoming Non-CAMA)		MQA	
CTO		OWF	(Control)
IAD		PHF	CBB
PDA (4)		TQA	CFB
PDT (4)		TQF	CTB
PER (4)			SDB
			SRB
(Incoming CAMA)			
CPE			
CST			
CTR			
OPA			
OPD			
MCA			
UCA			

TABLE E

## ABBREVIATIONS AND ACRONYMS

ABBREVIATION	TITLE
ACH	Attempts Per Circuit Per Hour
AIF	ANI Office Failure
ALT	Alternate
ANF	Automatic Number Failure
ANI	Automatic Number/Identification
AOB	Automatic Out of Chain Blocked
ATO	Address Complete Timeout
CAMA	Centralized Automatic Message Accounting
CBB	Code Blocked Control
CCH	Connections Per Circuit Per Hour
CCIS	Common Channel Interoffice Signaling
CCS	Hundred Called Seconds
CDT	CAMA Disconnect Timeout
CFB	Cancel From a Trunk Subgroup
CFD	Call Fail Detection
CGF	Carrier Group Failure
CIN	Circuit Identification Number
CKF	Continuity Check Failure (CCIS)
CLLI	Common Language Location Identification
CN	Control Input
CPE	CAMA Position Error
CQA	CCIS Origination CR Queue Abandon
CQO	CCIS Origination CR Queue Overflow
CST	CAMA Seizure Time Out
CTB	Cancel to Control
CTO	Continuity Timeout
CTR	CAMA Position Report
DAR	Direct and Alternate Route
DED	Incoming DP Early Digit
DESEP	Destination Separations
DOC	Dynamic Overload Control
DP	Dial Pulse

TABLE E (Cont)

## ABBREVIATIONS AND ACRONYMS

ABBREVIATION	TITLE
DQA	DP CR Queue Abandon
DQO	DP CR Queue Overflow
DSG	Designate
EA	Emergency Announcement
EIA	Equipment Ineffective Attempt
ESS	Electronic Switching System
FSA	False Start Abandon
GLR	Glare
HQO	High Priority Disk Queue Full
HT	Holding Time
HTR	Hard to Reach
IAD	Incomplete Address (CCIS)
ICCH	Incoming Connections Per Circuit Per Hour
IKF	Integrity Check Failure
IMA	Ineffective Machine Attempt
INA	Ineffective Network Attempt
INSEP	Incoming Separations
IWF	Incoming Worklist Full
IWS	INWATS Out of Band Screening Failure
MA	Machine Administrator
MAB	Miscellaneous Abandon
MCA	Misrouted CAMA
MF	Multifrequency
MFR	Multifrequency Receiver
MQA	MF Origination Queue Abandon
NC	No Circuit Available
NCA	No Circuit Announcement
NCI	No Circuit Intertoll
NCT	No Circuit Toll
NM	Network Manager
NPA	Numbering Plan Area
NSD	No Start Dial
NXX	Central Offic Code

TABLE E (Cont)

## ABBREVIATIONS AND ACRONYMS

ABBREVIATION	TITLE
OCC	Occupancy
OCCH	Outgoing Connection Per Circuit Per Hour
OCR	Out of Chain Route
ODA	Office Data Assembler
OFL	Overflow
OOS	Out of Service
OPA	CAMA Operator Position Abandon During Seizure
OPD	CAMA Position Disconnect
OQA	CAMA Operator Queue Abandon
OQO	CAMA Operator Queue Overflow
OVF	Overflow
OWF	DP Outpulsing Worklist Full
PC	Peg Count
PDA	Partial Dial Abandon
PDT	Partial Dial Timeout
PER	Pulsing Error
PHF	Final Trial Network Path Hunt Failure
PST	Permanent Signal Time Out
PSTO	Permanent Signal Time Out
RDB	Routing Data Block
ROA	Reorder Announcement
RQA	DP ANI MF Receiver Queue Abandon
RRT	Reroute To
SDB	Dynamic Overload Control Blocked
SNF	Signal Network Failure
SRB	Selective Trunk Reservation Blocked
STR	Selective Trunk Reservation
TCA	Toll Center Area
THLD	Threshold
TSG	Trunk Subgroup
TQA	MF Transmitter Queue Abandon
TQF	MF Transmitter Queue Entry Failure

TABLE E (Cont)

ABBREVIATIONS AND ACRONYMS

ABBREVIATION	TITLE
U	Usage
UCA	Unauthorized CAMA
UXS	Unexpected Stop
VCA	Vacant Code Announcement
WCC	Wrong Calling Code
XST	Expect Stop Time Out