ANALYZING AUDIT OUTPUT MESSAGES

2-WIRE NO. 1 ELECTRONIC SWITCHING SYSTEM

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1. GENERAL

1.01 An SA03 output message is printed when an audit or system program finds a trouble in call store memory. This section gives guidelines for analyzing SA03 messages and procedures for finding explanations of the messages in program listings (PRs). Also included is a brief description of individual audits and explanations of error numbers that are associated with more than one audit. Although this section includes some specific information and examples, the general concepts of analyzing audit output messages apply to all generics.

> ***Note:*** This section replaces Section 231-112-303, Issue 3, which contained audit output message explanations for CTX-5, Issue 7, CTX-6, Issue 7, and CTX-7 through 1E4. Explanations for 1E5 and later generics are to be documented in PRs and are not added in this section. See paragraph 1.03.

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

1.03 The previous audit section (231-112-303) attempted to give explanations for all SA03 ERROR messages. It is intended that SA03 explanations be documented in the associated program listings (PRs) instead of in the BSP; consequently, the explanations are being removed from the BSP as it is determined that the PR explanations exist. Explanations for newer (1E5 and later) SA03 messages are being included in PRs routinely and, therefore, do not appear in this section.

1.04 An active knowledge of Section 231-103-101 (call processing description) will aid in the recognition and analysis of audit messages. Familiarization with call processing techniques will facilitate the identification of message sequences and their meaning.

1.05 Abbreviations used in this section are explained in Part 9. Abbreviations commonly used in audit program listings also are included.

2. INTRODUCTION TO AUDITS

A. General Introduction

Analogy

2.01 An analogy exists between a public accountant examining financial statements in a ledger and No. 1 ESS audit programs operating on call store memory. Both perform auditing functions. Both are interested in detecting and correcting errors.

Purposes of Audits

2.02 The purposes of the audit programs may be summarized as follows:

(a) ***Protection of Call Store Memory:*** The basic purpose of audits is to provide software protection against errors in the No. 1 ESS call store memory or, in other words, to detect and, when possible, correct errors in call store memory and initiate printed records of the errors.

(b) ***Initialization During Emergency Action:*** In emergency action phases 6 and 7, all audits are run in sequence. The sequencing is called "stitching" the audits together. During the stitching mode, audits attempt to zero the call store memory, tear down all calls, and rewrite the call store memory to an error-free state. After the last audit (audit 68) is run, control is returned to the main program for resumption of call processing. The same operation is used when a No. 1 ESS first starts operating or restarts.

(c) ***Use in Office Growth:*** Audits are used for rewriting portions of call store memory when equipment is added in a No. 1 ESS. For example, if a trunk link network is added to an office, audits will be run to rewrite the trunk group number headcell to indicate the new status of the trunk group.

(d) ***Debugging and Maintenance:*** Except on interrupt level and during phases, audits print a message for each error detected. These messages are valuable for finding program bugs after an office is cut over and for maintaining a No. 1 ESS.

Why Errors Occur

2.03 The No. 1 ESS depends on two memories for call processing. The program store contains generic program, parameters, and translations which are not changed during normal call processing and are not susceptible to data mutilation. The call store, on the other hand, is used to store information associated with indivdual calls such as line bits, T1 and T2 trunk supervisory bits, and junctor scan bits. The call store information must change continuously during normal call processing; consequently, it is susceptible to errors and data mutilation.

2.04 Error causes may be classified as follows:

(a) It is possible for a program which operates properly in a design environment to be used under rare combinations of field conditions which cause errors. Finding and correcting such program bugs before the program is delivered to the field can be most difficult.

(b) Translations and recent changes may be changed frequently, involve manual inputs, and cause errors.

(c) Hardware failures in the No. 1 ESS operating office may cause repeated errors until diagnosed and corrected.

Disposition of Errors

2.05 When audit programs detect errors, they initiate the following actions as necessary:

(a) ***Idle the Memory Blocks Involved:*** The first and most logical action is for the audit to idle the memory blocks involved with the error. For example, if the senior call register audit finds an erroneous register, it will put the register on the idle list so it can be seized by another call.

(b) ***Request Diagnosis on Hardware:*** Audits can request diagnostic programs to localize a fault to a small number of plug-in circuit packs in a system.

(c) ***Request Audit of Related Memory:*** An error may frequently be accompanied by a second error of a related type. Since each audit has a very specialized function, it may detect one error but not be able to detect the related error. Audit-to-audit triggering involves one audit requesting another audit to follow up on the possibility of a related error.

(d) ***Record Errors:*** Each time an audit detects an error, one of a group of print routines is called to print an SA03 message which records the error. The same print routines also may be called by nonaudit routines. If the audit merely corrected the error without a record,

the audit would mask the error and make debugging the No. 1 ESS program more difficult.

B. Audit Messages

2.06 Five messages are associated with the audit programs. They are the SA-AUDIT input message and the SA01, SA02, SA03, and SA04 output messages. All five are briefly summarized herein. See IM-1A001 for details.

SA-AUDIT Message

2.07 The SA-AUDIT message requests the system to perform the specified audit and identify by output message the number of the audit program that was executed and the number of discrepancies that were found and corrected. If the audit detects and corrects a memory error, the system may respond with one or two of the SA01, SA02, or SA03 messages. If more than one audit is requested and no errors are found, the last unacknowledged audit requested by this message will respond with an SA01 message. To request an audit, type:

SA-AUDIT-aa bbbbbb.

aa = Decimal number (00 to 68) which specifies the particular audit program to be executed. See Part 6 for a list of numbers and names of audits which can be requested.

bbbbbb = Octal number that specifies which parts of an audit are to be done. The system converts the octal number to binary, performs the parts where bit positions contain ones, and ignores the bit positions that contain zeros. For example, specifying 000017 for the line bit audit would perform the audit on LLNs 0 to 3. To do all of the LLNs, bbbbbb would equal 777777. When variable information is not needed, bbbbbb should be typed as 777777.

SA01 Message

2.08 The SA01 message shows that the specified audit has been completed or aborted as specified in the variables. See IM-1A001 for details.

SA01 aaaa ƀƀƀbb ćććććcc

aaaa = SUCC if audit program was completed successfully.

= ABTD if audit program was aborted.

= REQD if a TTY request for audit 28 was denied.

ƀƀƀbb = Audit number. See IM-1A001.

ćććććcc = Number of errors detected by the audit. Member number if a REQD.

SA03 ERROR Message

2.09 The SA03 message indicates that a trouble in call store memory has been found by either an audit program or a system nonaudit program. The format of the SA03 message is as follows:

SA03 ERROR aa bb
cccccccc cccccccc cccccccc cccccccc
cccccccc cccccccc cccccccc cccccccc

aa = 0 if the error was found by a program other than an audit program.

= 1 to 68 (decimal) to identify the audit program that was running when the error was found.

bb = A decimal number that identifies an error detected by an audit.

cccccccc = An octal number that gives the contents of the associated central control (CC) register. Leading zeros are printed. The message shows the

registers in the following order.

SA03 ERROR aa bb

B	F	J	K
L	X	Y	Z

Note: The variable aa (from 1 to 68) is called the audit number and the variable bb is called the error number.

See IM-1A001 for details.

2.10 When an audit program finds a bad register, it idles the register and requests an SA03 message. The SA03 message identifies the idled register and is followed by an SA02 message which gives the contents of the register as follows:

SA02 REG
aaaaaaaa ... ...

SA04 Message

2.11 Audit 64, the cutover audit, maintains cutoff contacts of all lines in the proper state at office cutover. The audit may be run in a routine mode by the maintenance control program or by the SA-AUDIT message. It may also be run in a demand mode on a high priority basis by ESS-CUT messages. The SA04 message indicates that audit 64 has terminated execution, successfully or not. In routine mode the message occurs only if an abnormal situation is encountered. In demand mode, it occurs unconditionally. The format follows:

SA04 aaaá b
cćć
...
...

aaaá = SUCC if demand mode of cutover audit terminates successfully.

= REQ if demand mode of cutover audit aborted.

= ERR if routine mode of cutover audit terminates successfully (ie, completed a thousands group), but POB failures occurred.

= NORM if routine mode of cutover audit was aborted.

b = Number of POBs in which failures occurred.

cćć = Number group(s) being audited by POBs in which failures occurred.

See IM-1A001 for details.

C. Audit Structure and Administration

2.12 Each audit program has a specialized function which requires only a short holding time. For example, if one type of call store memory is suspected of being in error, an audit will be called to check only that type of memory.

2.13 Almost all audits are controlled by the maintenance control program (MAC). The MAC program is one of the maintenance programs along with fault recognition programs, diagnostic programs, exercise programs, and miscellaneous programs. The purpose of the MAC program is to control and administer various deferrable maintenance programs such as audits. The bulk of both maintenance programs and call processing programs is run in the base level main program (L level). The MAC program is entered from the main program at class E. Audit priority normally is lower than fault recognition or diagnostics priority but may be varied during emergency action.

Initiating Audits

2.14 A system request for an audit sets a flag in either a high-priority or low-priority flag block (M4MAHP or M4MALP). Each block has 69 bit positions corresponding to audit numbers 0 through 68. The same bit positions in each word specify the same audit but at a different priority. All M4MAHP flags have higher priority than any M4MALP flag. In each word, a lower numbered audit has priority over a higher numbered audit. There is also a super-high audit request block, M4PPHA. Bits in the M4PPHA block are set only by Pident MIRV at the beginning of every emergency action phase and by pident SADT upon receipt of a TTY request for an audit. In a particular phase, MIRV requests the appropriate audits 68 through 50 in M4 MALP and 49 through 0 in M4PPHA. The audits requested in M4PPHA will be run in strict numerical sequence.

2.15 The MAC program checks the M4PPHA, M4MAHP, and M4MALP words for flags. If a flag exists, MAC zeros the flag and assigns the MAC scratch pad to the corresponding audit. The audit number corresponds to a program store word in vector table SATV. The 21 right-half bits give the starting address of the audit program. The audit assignment may be delayed if the MAC scratch pad is in use or a higher priority program must be answered.

Scheduling Audits

2.16 Audits may be requested in the following ways:

(a) Audits can be requested routinely by the MAC program which usually runs in base level, class E. Three routines in pident SADT can routinely schedule audits to run once a day, once an hour, or allow MAC to use up to three randomly selected audits as time fillers when no other maintenance work has been requested.

(b) Audits may be requested at a TTY by the SA-AUDIT message.

(c) Audits may be requested by the emergency action control program to run in the stitching mode during a phase. In phases 6 and 7, all of call store memory is initialized. In phases 4 and 5, all of call store memory is initialized except for some stable calls associated with the AMA registers, hotel/motel registers, and the simulated facilities registers. The calls will be saved but will be free since the AMA registers will be torn down. In phase 1 the call store constants are initialized.

(d) Audits can be requested under error conditions as follows:

(1) Audits can be requested in an interrupt level by the maintenance recovery program (IREC) to audit critical call store memory and restore call processing as soon as possible.

(2) An audit that detects an error may request another audit to check for an associated error. For example, if audit 43 (call register audit) finds a bad register, it will request audit 50 (line bit audit) to try and detect line bit errors.

(3) Audits may be requested by program error legs, the restart program, and the routine SAPROB upon detection of selected problems.

Segmenting Audits

2.17 Since audits are controlled by MAC, they normally run in base level class E in 10 to 15 millisecond segments, although segments of 100 to 500 milliseconds can occur.

2.18 The normal audit segment for running audits is 10 to 15 milliseconds at a time. The 10 millisecond minimum allows for detecting errors in a reasonable time and the 15 millisecond maximum does not impair the call processing function unreasonably. Audit programs segment whenever they can to prevent holding the MAC scratch pad unnecessarily and increasing audit cycle time. Long cycle times mean that error states persist longer, error rates increase because more errors accumulate and customers who encounter errors are denied service for a longer time.

2.19 Base level audits frequently check the sign bit of the call store word AEXJ for a negative bit which indicates that the segment should end. At the end of the segment the routine stores the contents of the CC registers, saves the return address (J register) of the audit so that the audit can be continued after a real time break, and transfers control back to the main program.

2.20 Some audits cannot tolerate the real time break because the data on which they operate may change during the break. Examples are the line bit audit, senior registers idle link list audit, and path memory audit. Such audits are run in interject in "long audit segments" of 100 to 500 milliseconds.

Terminating Audits

2.21 When audits in the nonstitching mode are completed, they normally transfer to the routine which releases the MAC scratch pad, calls for an SA01 message if needed, and returns to the main program. In stitching mode, MAC would start another audit.

2.22 Some audits use SACGOF to segment. These audits may abort if they find that the get-out-of-MAC flag (SGOR) is set. The bit causes

the audit to transfer to routine SABORT and MACS 24 for termination.

D. Techniques Used by Audits

2.23 Audit programs use different techniques for detecting errors. There is no one general algorithm for auditing data in No. 1 ESS. Each class of data is examined in its own environment and an audit mechanism is developed to fit the particular situation. A frequently used principle is that of redundancy. Just as the No. 1 ESS has redundant hardware, it also has redundant software data which allows cross checking.

2.24 Six of the audit techniques are described below.

(a) ***Blind Overwriting:*** In memory initialization and regeneration, which are used extensively in emergency action phases, audit programs blindly overwrite the temporary memory with correct information such as constants and program store backing data.

(b) ***Point-to-Point Back Check:*** This is a redundancy check which verifies that the circular linkage of temporarily related memory blocks is intact. For example, a PMT or PML word should point back to a client register or trunk-to-trunk memory (TTM) block for path memory information. Redundant information in the client register on TTM block can be checked by appropriate conversions to verify that it points back to the PMT or PML word. The process of verification can be started anywhere in the circular chain. Audits 24 and 26 check point-to-point back linkage from PMT and PML words respectively to call registers. Audit 43, the senior call register audit, starts at the call register and verifies that the call register address is in the associated PMT or PML word. Audit 16 makes a point-to-point back check from a busy TTM block to two PMT words. Each busy TTM block should contain information that converts to two PMT word addresses. Both of these PMT words should contain either the TTM address or a call register address. In the latter case, the call register should indicate that the TTM is its displaced path memory annex (PMAD).

(c) ***Image Table Match Check:*** This is a type of redundancy check in which audits predict the status of equipment based on other data, record the predicted data in a scratch image table, and match the predicted status with the actual status. For example, audit 50, the line bit audit, must guarantee that line bits are in a valid busy-idle state. The audit assumes that line bits for subscriber's lines should be marked busy only if the lines are either marked busy in associated call paths or are on nonidle lists. Examples of nonidle areas where lines can be found are the high-and-wet list, permanent signal queue, blocked dial tone queue, CDPR queue, line service request hopper, disconnect register, and dial tone speed test. Since a line can be in so many areas, it would be very time consuming to search all areas for one line at a time. Instead, as the same areas are examined, an image table is formed in scratch for many lines simultaneously. The basic procedure is that audit 50 examines all PML words associated with the line network to be audited. As busy lines are found, they are marked busy in the image table. The audit then examines the nonidle areas. After all areas have been examined, the image table bits are matched with their corresponding actual line bits. When a mismatch occurs, the normal disposition is correction of the line bit. The image table match check technique is used by audits 50, 54, 60, 61, 62, and 63.

(d) ***Consistency Check:*** This is a redundancy check based on the fact that the identification number for a particular equipment should be the same when derived by two different methods. For example, audit 34 audits the linked lists for hunting trunk groups. It checks the idle linked list for each hunting trunk group and examines the trunk group head cells. For each trunk on the idle link list, a TNN to TGN translation is made and the resulting TGN should agree with the TGN obtained from the associated head cell. A second example is audit 59 which matches the TNN under test with the TNN returned by the trunk scanner number translation.

(e) ***Range Check:*** Equipment sizes and quantities for an office are defined in program store parameters. Address range checks can be made where the numerical designations of equipment or memory are known to fall within defined ranges. For example, audits 24 and 59 can determine if a given TTM address is bounded by the addresses of the first and last TTM. Audit 43 can check if senior registers on the

idle linked list are within the address range of this type of register.

(f) ***Timing to Find Limbo State:*** It is possible for some call-control facilities to get hung up in a call for too long of a time (ie, limbo state) so that they are not available for further call processing. Timing is used to find limbo states. Audits can examine a facility and, if the facility is found to be in use, set a time-out bit. After a timing period equal to the maximum holding time of the facility, the audit should be able to recheck the facility and find the time-out bit zeroed. If not, the facility is assumed to be lost in a limbo state and can be idled. For example, an outpulsing register should not be held in one call for longer than five seconds. If audit 43 finds an outpulsing register busy, it will mark the time-out bit for that register. Five minutes later, audit 43 requests audit 44 to examine the same register. If audit 44 finds the time-out bit is still set, meaning that the register has been busy for five minutes when the maximum holding time is five seconds, the outpulsing register is assumed to be hung up in a call and is restored to an idle link list.

E. Examples of Audit Support Routines

2.25 When an error has been detected, audit and operational programs may call on support routines to correct the error and/or print SA02 and SA03 output messages on the maintenance TTY. Examples of several support routines follow:

(a) Routine NMERC prints the SA03 error message and provides the audit error count (N6ERCT) to MACS24, which prints the SA01 message. No corrective action is taken. If a program wants to request an audit printout, it will transfer to a print routine such a NMERC, NMERC1, ... NMERC6. Line 12 in Fig. 7 shows a transfer to NMERG2. To determine the audit number, the print routine checks to see which audit was running at the time of the print call. If no audit was running, the aa variable in the SA03 message is printed as 0 to show a nonaudit program. The error number, bb, would be 1 for NMERC1, 2 for NMERC 2, ... 6 for NMERC6. For NMERC, the error number is given in the printout of the B register.

(b) Routine SARGDP prints an SA02 REG output message which displays the octal contents of a bad memory register or annex. The SA02 message is preceded by an SA03 output message which identifies the memory being printed. No corrective action is taken.

(c) SADMPT initiates the idling of a trunk found in an invalid state. The corrective action taken depends on the specific client program.

(d) SADMPJ initiates the idling of a junctor found in an invalid state.

(e) SARALF initiates the idling or marking of the audit code on a register found in trouble.

(f) YRUNEX is called when an invalid entry in a PT table has been reached. It immediately transfers to SAUNEX in PIDENT SARG and executes about the same as SARGDP.

F. Examples of Audit Use in a Typical Call

2.26 Figure 1 shows the hardware configuration of the switching network for an originating, outgoing, interoffice call that is in the outpulsing state. The originating customer line, which is identified by an LEN, is connected through a line-to-trunk path to a digit receiver. A multifrequency transmitter has been successfully hunted and connected to the outgoing trunk, and a talking path has been reserved through the switching network to the originating LEN.

2.27 Figure 2 shows Figure 1 with the software configuration added. Each LEN has a busy/idle (B/I) line bit in the line supervisory table in call store memory that supervises for originations (ie, on-hook to off-hook changes). The ABCJ line bits in the network map indicate the B/I status of the A, B, C, and J links in the line link network (LLN). A path memory line (PML) word is assigned for every junctor terminal appearance on a line link network and identifies the single path between an LEN and the junctor selected for a particular call. Each junctor, which is identified by a junctor network number (JNN), also is supervised by a J B/I bit in the network map. The ABC trunk bits indicate the status of the C, B, and A links in the trunk link network (TLN). Each trunk circuit, which is represented by a trunk network number (TNN), is terminated on the trunk switching frame and is supervised by T1 and T2 bits. The T1 bit records the last scan and the T2 bit indicates

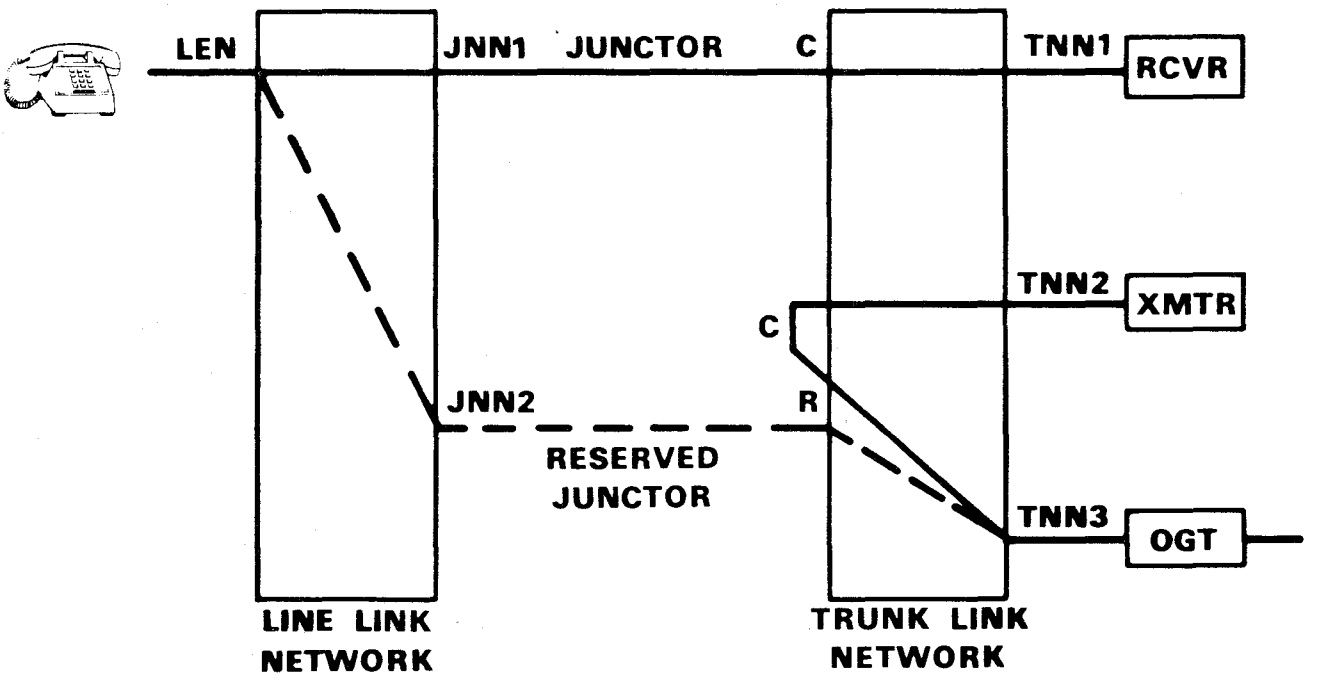


Fig. 1—Hardware Configuration of Outgoing Call in Outpulsing State

whether the system should accept or ignore the present scanner reading. The T2 bit prevents one change from being detected more than once. For each trunk or service circuit, there is a path memory trunk (PMT) word which relates the call store address of the word with the associated TNN. There is point-to-point back linkage between the PMT words and the annex register through the outpulsing register. Since the configuration is in the outpulsing state, there must be an MF outpulsing senior register and an MF outpulsing junior register. An AMA register is used to record billing information.

2.28 In the outpulsing state, the memory associated with the call includes network map bits, PML and PMT words, bits for line, junctor, and trunk supervision, an MF outpulsing senior and junior register, a path memory annex (PMA), and an AMA register. The following paragraphs describe how each piece of the software facility is protected by an individual audit and at which stage of the call each audit operates.

Line Bit Audit (50)

2.29 A line bit is associated with each LEN to detect originations. The line bits are in the line supervisory tables in call store memory. The purpose of the line bit audit, audit 50, is to guarantee that lines are in a valid busy-idle state so that they do not lose supervision. Audit 50 operates out of MAC in the senior call register cycle. It may be requested by TTY or called at low priority after audit 43. The image-matching technique is used. The audit assumes that the customers' lines should be marked busy only if the lines are either marked busy in associated call paths or are on non-idle lists. Examples of non-idle areas are the high-and-wet list, permanent signal queue, blocked dial tone queue, CDPR queue, line service request hopper, disconnect register, and the dial tone speed test. The audit initializes all bits in the image table to idle, searches the PML words and non-idle lists for busy LENs, and marks a busy bit in the image table corresponding to each busy LEN. The image table is matched with the line bits in the line supervisory table. If a

mismatch occurs between the image table and the actual line bit, the line bit is corrected. Figure 3 shows a simplified flow for one pass of audit 50.

Network Map Audits (60, 61, 62, and 63)

2.30 The four network map audits, 60 through 63, keep the B/I bits in the network map correct as follows:

(a) Audit 60—B, C, J link B/I bits in trunk network map

(b) Audit 61—A link B/I bits in trunk network map

(c) Audit 62—B, C, J link B/I bits in line network map

(d) Audit 63—A link B/I bits in line network map.

The map audits are based on the premise that the associated network links are marked busy only if the PML and PMT words indicate that there is an active call using the links. A pseudo-image table (STAB) with all links initialized to busy is built in a large base-level scratch pad. The PML and PMT words are searched for links that are used in the path as well as for links that are removed for maintenance purposes. If found, the links are marked idle in the pseudo-image table. Finally, the complement of the pseudo-image table is matched with the actual link bits in the network map. Any bit mismatch will be corrected in the network map and an error message will be printed.

Busy PML Word Audit (26)

2.31 Audit 26 checks busy PML words. For each busy PML word containing a code indicating that the word has path memory information displaced to a client register, the audit checks the validity of the line network tag (LNT) in the displaced PML word, verifies that the client register has a nonzero RI, PT, and PMFI, and verifies that the JNN under test is contained in the path memory pointed to by the PML word. (Only line-to-line calls have a CRA in PML words.) If the point-to-point back check fails, the JNN in error is idled by the routine SADMPJ.

Line-to-Trunk Path Memory Limbo State Audits (46, 48)

2.32 Audit 46 guards against the limbo state on line-to-trunk (L-T) paths. The limbo state is defined as follows:

(a) A PMT word points to an idle or unassigned junctor.

(b) A PMT word points to a junctor in a junctor subgroup that does not connect to the TLN associated with the PMT word.

(c) A PML word is busy with no PMT word pointing to it.

2.33 Audit 46 performs its function as follows:

(1) The audit builds an image table showing all assigned L-T junctors from a particular TLN in an idle condition. All others are shown busy.

(2) The JNN in each busy PMT or associated CRA is used to mark the image busy if the associated PML word is busy. If the image bit is already busy or the PML word is not busy, the PMT (TNN) is given to the SADMPT routine.

(3) When all PMT words for a particular TLN have been examined, the PML words for all unmarked image bits are checked for the idle code. If not present, the idle code is forced in the PML.

2.34 Audit 48 guards against PML words containing an invalid LNT (LEN minus LLN).

Junctor Scan Bit Audit (52)

2.35 Junctor scan bits supervise for disconnect on line-to-line junctor circuits. For junctors with PML words that are idle or are in a path not displaced to a client register, audit 52 checks that junctor scan bits are in a valid state. If the PML word is marked idle, has a junctor out-of-service (JOS) code in it, or has a junctor maintenance (JMLA) code in it, the audit should find the junctor scan bit set to ignore. If the PML word indicates busy, the junctor scan bit should be found set to accept. If the PML word indicates busy and the junctor scan bit is found set to ignore, the audit will recheck four times at 2-second intervals for a

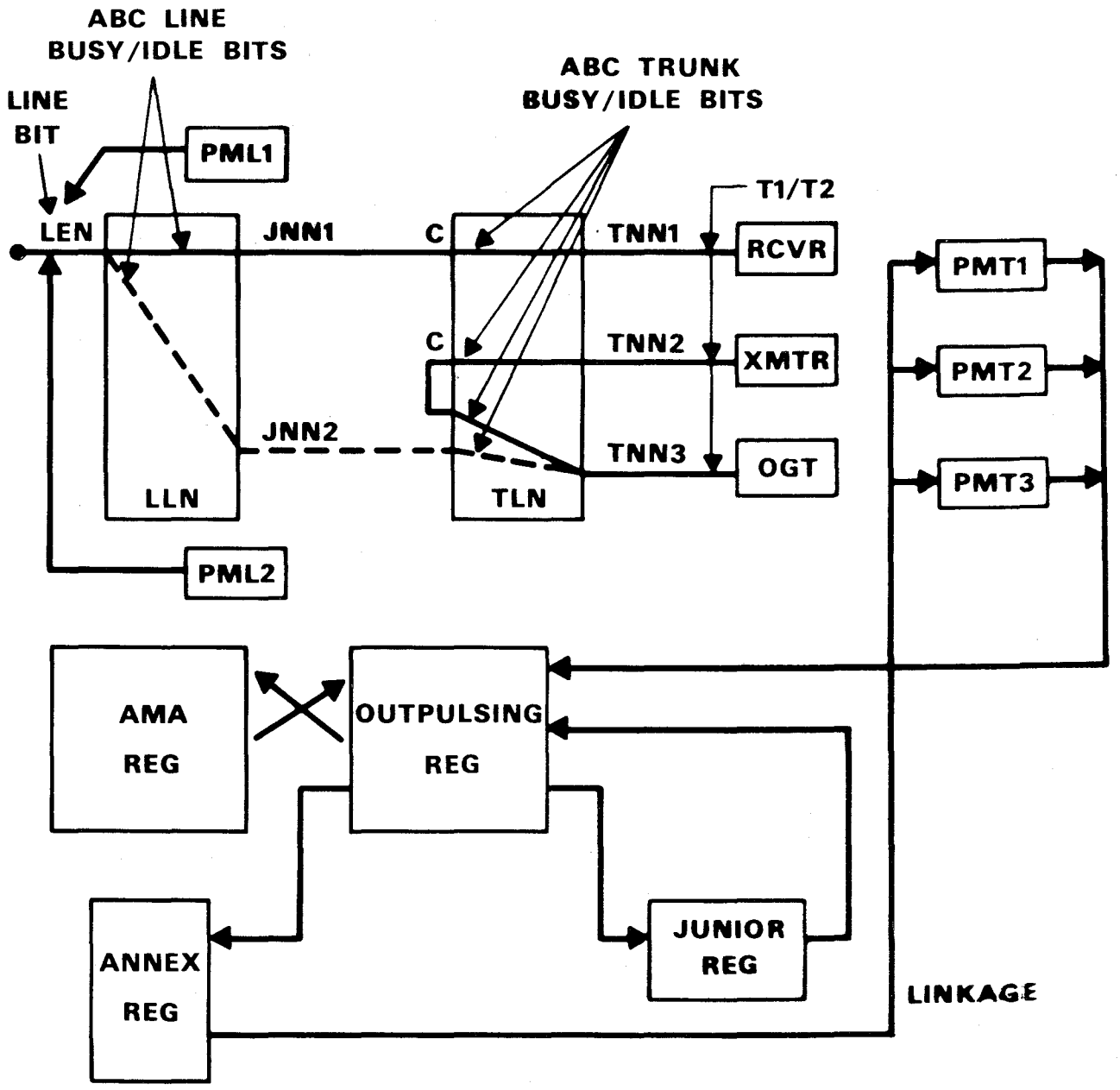


Fig. 2—Hardware and Software Configuration of Outgoing Call in Outpulsing State

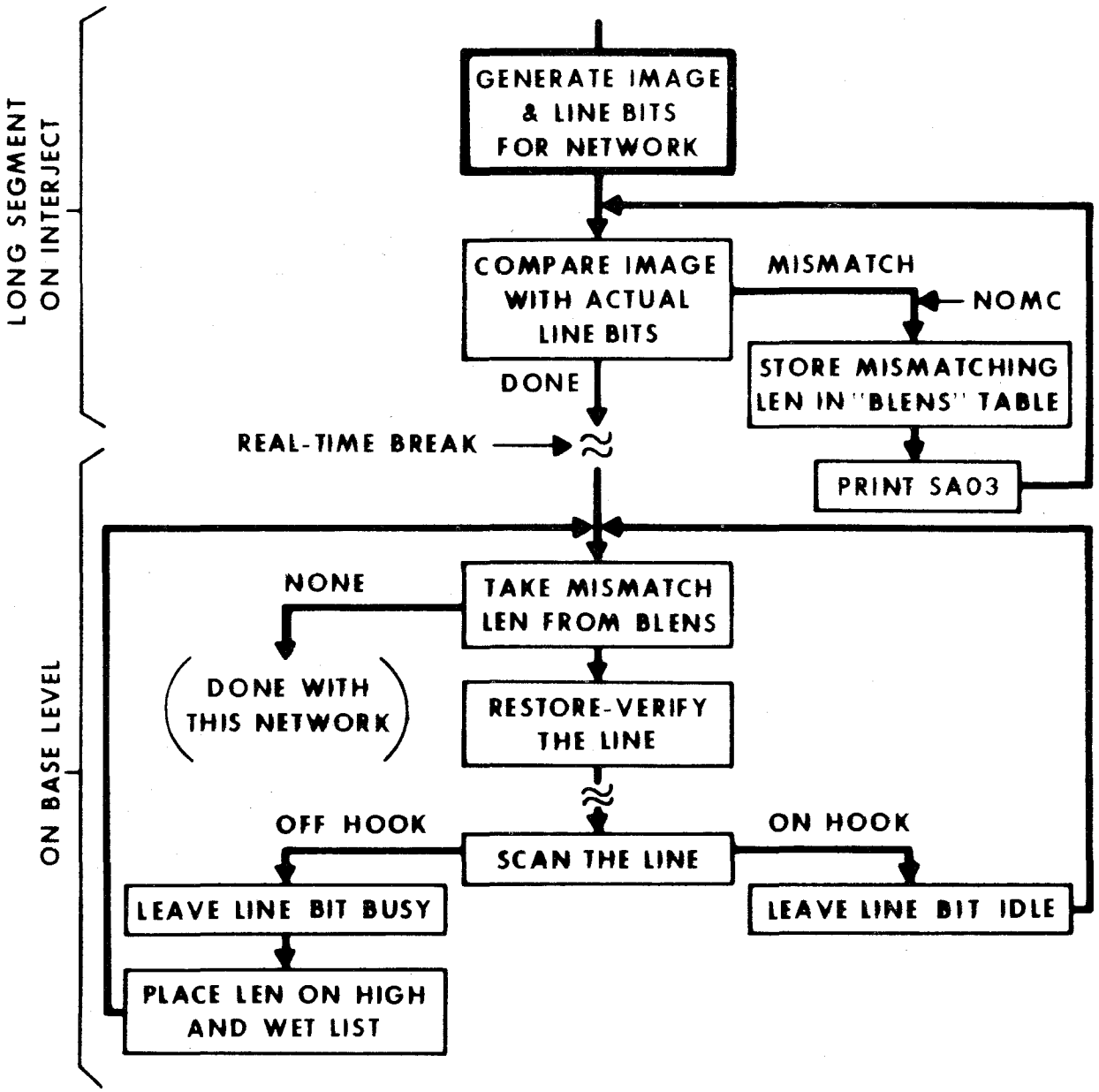


Fig. 3—Simplified Flow of One Pass of Audit 50

change of state of the PML word or junctor scan bit that indicates a possible disconnect report in progress. After eight seconds, if no change of state is detected, the JNN in error is idled by the SADMPJ routine so that the junctor scan bit is set to accept.

Busy PMT Word Audit (24)

2.36 Audit 24 checks busy PMT words which have path memory information displaced to a TTM or a client register. It verifies that the client register has a nonzero RI, PT, and PFMI and that the TNN under test is contained in the path memory pointed to by the PMT word. If the point-to-point back check fails, the TNN in error is idled by the SADMPT routine. Audit 24, which checks PMT words, is a counterpart for Audit 26 which checks PML words.

Steady State T2 Bit Audit (59)

2.37 Audit 59 verifies the four states of the trunk T2 bits. Each universal trunk is supervised by two ferrods, one for supervising the local customer through the switching network and the other for supervising the distant office. Each ferrod, or universal scan point, has a T1 and T2 bit in a T2-T1 bit table. The T1 bit indicates whether a scan point was off-hook (0) or on-hook (1) at the last look. The T1 bits are compared with the present scan bits and a state change is accepted if the associated T2 bit is in the accept state (1) but not if it is in the ignore state (0). The purpose of the T2 bit is to mask out unwanted detections of state changes (PD-1A200, PD-1A101). Audit 59 verifies that the PMT word of a given trunk indicates either idle, a line-to-trunk path without a client register, a T-T path displaced to TTM, or a high-and-wet state. A macro-generated program store table is used to derive the predicted T2 bits which are compared with the actual T2 bits. If a mismatch occurs between the predicted and actual state, the PMT word and T2 bit are examined for change of state at 2-second intervals for 8 seconds. Finally, the PMT word is zeroed and an additional 2-second interval occurs to allow checking for a nonzero PMT word. If a mismatch still occurs, the TNN in error is given to SADMPT to idle the trunk.

Trunk Idle Link List and Traffic Usage Count Audit (34)

2.38 Audit 34 serves two purposes as follows:

(a) Audit 34 verifies that the idle link list of a one-way outgoing trunk group and service circuit is intact. It searches through the idle link list for the hunting trunk group and verifies that all members have the correct trunk group number. Finally, all idle trunks on the list are marked with the MTS bit set to one for audit 36 usage.

(b) Audit 34 audits the traffic up-down count for all trunk groups except one-way incoming trunks. It uses an algorithm to collect an idle trunk count for each trunk group. The sum of the idle trunk count and the maintenance usage count is subtracted from the total number of equipped trunks to obtain an audit-predicted traffic-usage count which is compared with the actual up-down counter stored in the TGN head cell. Mismatches trigger corrective action.

Nontraffic Busy PMT Word Audit (36)

2.39 Audit 36 checks all outgoing trunks that have a nontraffic busy code in the PMT word. In other words, any TNN that is not involved in a network path is tested to assure that it is properly linked on its respective list.

2.40 Idle link lists of trunks are administered by using the PMT words as forward pointers. The headcell for each trunk group will contain the TNN of the most idle and least idle trunk for that group. The individual PMT word will contain the TNN of the next idle trunk.

2.41 Audit 36 searches through the PMT words by network to verify proper linkage. If PMT word bits 18 through 22 equal octal 26 and bit 17 (MTS bit) equals 1, the trunk is in the idle link list, has been verified previously by audit 34, and is in the correct state. The MTS bit is reset at this time to preclude losing the trunk for extended periods of time. If the MTS bit is not set and the trunk is not a 2-way, nonhunting type or some other special case of intraoffice trunk, it is possible that the trunk may have been idled since audit 34; therefore, routine NMTRST in PIDENT TNLS is entered to verify the correct trunk state. If the trunk state is not correct, the trunk will be idled

by routine SADMPT. The same treatment described above for PMT words containing code 26 is also applied for trunks with PMT words having the trunk maintenance list (TML) code (octal 34) and the trunk out-of-service (TOS) code (octal 36).

Rebuild TTM Idle Link List Audit (16)

2.42 Audit 16 rebuilds the TTM idle linked list and performs a point-to-point back check for every busy TTM.

(a) Audit 16 links all idle TTMs together and places the first TTM in the headcell. A running count of busy TTMs is kept and compared against the traffic usage count in B6TRAF48. If an error is found, a message is printed.

(b) Audit 16 looks for busy TTMs and expects to convert data in each into the address of two PMT words which should point either back to the TTM or to a call register address. In the latter case, the call register address should indicate that TTM is its displaced path memory annex (PMAD). If this point-to-point back check fails, TNN1, TNN2, or TTM is idled depending on the individual failure condition. If the linkage is through the call register address, routine SARALF is called in to idle the register.

Senior Call Register Audit (43, 44, 45)

2.43 Audits 43, 44, and 45 work together to verify that each senior call register is in a valid state.

2.44 For idle registers, the audits verify that the idle link list is correct and that all idle registers are on the idle link list. The link list check verifies that the list ends properly and that the number of registers on the list does not exceed the total number in the office.

2.45 For busy registers, the audits check the register linkage, path memory information, and supervision. Tests are made to determine that no more than 7 registers are on a link list, that one is designated the master register, and that the master register points correctly to any linked registers. Path memory is checked by comparing path memory information in the register with that in the associated PML and PMT words. Supervisory checks assure that registers are not held long after the originating and terminating parties have disconnected.

2.46 To guard against registers being held after disconnect, the senior call registers are divided into three types and audited for expected holding times and supervisory requirements. Type 1 registers should not be busy in a call for more than five minutes. Type 2 registers can be in a call for extended periods but cannot have supervision off for longer than one minute. Type 3 registers can be in a call and have repeated supervision off for extended periods.

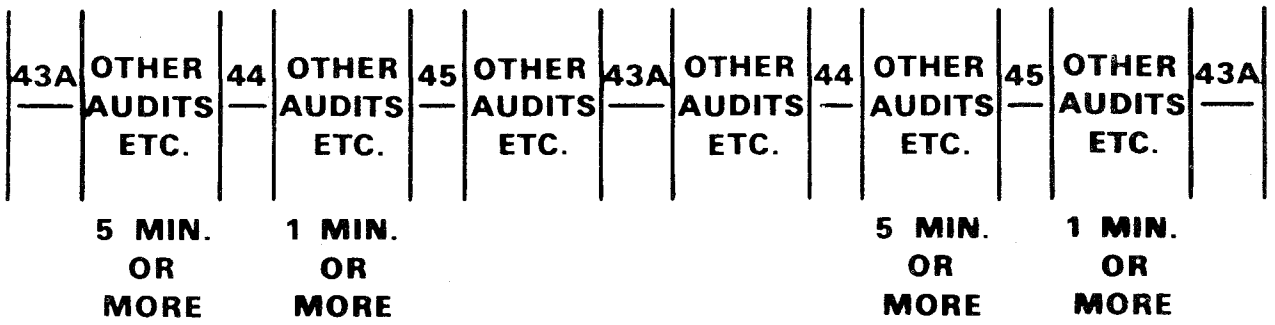
2.47 Examples of type 1 registers are outpulsing, originating, disconnect, and flash timing registers. Examples of type 2 registers are AMA, permanent signal, and hotel-motel registers. Examples of type 3 registers are operator, coin charge, and conference registers.

2.48 Audits 43, 44, and 45 are run in sequence with a five-minute interval between audits 43 and 44 and a one-minute interval between audits 44 and 45 (Fig. 4).

2.49 Audit 43 marks a bit in each busy senior register. In normal call processing, the bit is reset by release register routines. Audit 44 is requested at least five minutes after the completion of audit 43. If audit 44 finds a busy type 1 register with the bit set by audit 43, indicating that the register has been held for more than five minutes, the register will be placed in a limbo state (RI=0, PT=octal 377) and audits 40, 41, 42, and 43 will be requested. Audits 40 and 41 will remove the register from any queues or timing lists. Audit 42 will idle any associated junior registers. When audit 43 runs again, the limbo register will be idled with no additional printout. Audit 44 also marks a second bit in type 2 registers. Audit 45 is requested at least one minute after the completion of audit 44. If audit 45 finds a type 2 register with the second bit still set, indicating that supervision has been off for more than one minute, the register will be idled. Audit 45 requests audit 43 so that the sequence will be repeated.

In-Phase Trunk Restoral and Call State Reduction Audit (5P)

2.50 In emergency action phases 4 and 5, all of call store memory is initialized except for some calls that are saved by audit 5P. Audit 5P



AUDIT 43B IS RUN WHEN AUDIT 43 IS REQUESTED BY ANYONE OTHER THAN AUDIT 45. AUDIT 43B DOES NOT USE TO, TOA, BITS.

Fig. 4—Gross Structure of Register Audit Cycle

may save calls in a stable talking state if associated with an AMA, hotel/motel, simulated facilities, trunk preemption control, or a transfer call register. Audit 5P rebuilds the idle link list for the one-way outgoing trunk group, service circuit trunk group, and trunk-to-trunk memory. It also idles all trunks that do not have a PMT code indicating a high-and-wet state or trunk out-of-service state.

Path Memory Annexes Audit (20)

2.51 Audit 20 verifies that the idle link list of path memory annexes is intact by using the linked list testing routine IDLINK in PIDENT SARG. The tests made by IDLINK include the following:

(a) The total number of annexes on the list should not exceed the total number allowed on the list by program store backup information.

(b) The addresses of the annexes on the list should be within the range of memory which is used for path memory annexes.

(c) The list must terminate at the annex which is pointed to by the second word of the head cell, and the proper end code must be specified in the annex.

If the list is in error, audit 22 will be requested to rebuild the list.

Path Memory Annexes Audit (22)

2.52 Audit 22 attempts to recover path memory annexes which have been lost from their idle link lists. Program store information is used to locate every annex in the system. Basically, as each annex is located, it is checked to determine if it is on an idle link list or busy in a call; otherwise, it is considered lost. Specifically, three checks are made for the following purposes:

(a) To determine if the annex is idle and on the idle link list

(b) To determine if a junctor or trunk is involved whose PML or PMT word points to a CRA which is linked to the annex

(c) To determine if the annex is linked to an active CRA (with PT $\neq 0$, RI $\neq 0$, and no audit code marked) but path memory information has not yet been placed in the annex, and if the active CRA should link back to the annex.

If an annex fails all three checks, it is idled and an error message is printed.

Examples of Other Audits

2.53 Additional examples of audits are as follows:

(a) Audit 42 checks the junior call registers.

(b) Audit 41 verifies the variable length queue and timing list.

(c) Audit 38 checks the centrex registers and other centrex memory.

(d) Audit 40 audits the hoppers and fixed length queues.

(e) PIDENT SALT (audit 4) audits the translation and recent change area of call store.

(f) PIDENT SADA (audits 0, 1, 3) regenerates miscellaneous constant information for call store during emergency action phases and audit cycles.

(g) Pident POMC (Audit 11) audits peripheral order buffers (POBs). It runs as an audit during an EA phase 4 or higher phase. At all other times it runs from a main program entry.

(h) PIDENT SASL (audits 23, 57) audits the service link network.

2.54 This part has briefly described selected audits for the purpose of showing the general operation of audits in a typical call. For a complete list of audits with detailed descriptions, see PD-1A012.

3. PROCEDURE FOR LOCATING EXPLANATIONS OF SA03 MESSAGES

3.01 An explanation for each SA03 audit-error number is given in an associated program listing (PR). For instructions on locating the explanation in the PR, refer to the application notes in PK-1A002 for the applicable generic. Useful TTY input messages, which are referenced in PK-1A002, are explained in IM-1A001.

3.02 The procedures in this part are given to introduce the general concept of locating PR audit explanations for:

(a) Generics with feature loading (1E3 and later)

(1) Explanations in core programs (paragraph 3.04)

(2) Explanations in feature package programs (paragraph 3.06)

(a) PKG-ATR method

(b) PKG-LIST and PG-1 methods

(b) Generics before feature loading (Prior to 1E3) (paragraph 3.10).

3.03 A generic with feature loading includes core programs which are common to all offices, some feature packages which are common to all offices, and some feature packages which are office options. Early generics did not have feature packages. The procedures for finding audit explanations for core programs and early generic programs are similar. The procedure for feature package programs is slightly different.

> ***Note:*** The addresses in the following examples do not apply to a specific generic or office. Each feature loaded office can have a different address map. The addresses in the examples are simply representative addresses to aid in understanding of the procedures. Do not try to use the example addresses with an actual office or generic. They will not work. The relationship of the example addresses is shown in Fig. 5.

Procedure for Locating Audit Explanations in Core Programs

3.04 The following procedure is used to locate audit explanations in core programs of feature loaded generics.

(1) Note the contents of the J register in the SA03 message. This normally is the absolute PS address where the error was detected. Notice that the address is in the core range and not in a feature package.

> ***Note:*** Particularly in older audits, the absolute address may be in another register such as the B, L, or Z instead of the J register.

(2) Locate the absolute PS address noted in (1) in the address map for pident CORE in

PK-1A002. Note the associated pident name, PR number, and start address.

(3) Subtract the pident start address from the absolute PS address to obtain the pident relocatable address of the detected error.

(4) In the PR noted in (2), locate the pident relocatable address determined in (3). The explanation of the SA03 audit number should be given inside a block of asterisks next to the pident relocatable address.

Example of Locating an Audit Explanation in a Core Program

Note: Do not try to use the addresses in the following example with an actual office or generic. See note in paragraph 3.03.

3.05 The following example shows how to locate an explanation of an SA03 message in a core program. Assume the following SA03 output message:

SA03 ERROR xx xx

xxxxxxxx xxxxxxxx 01501276 xxxxxxxx

xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx

(1) The absolute PS address (shown in the J register for this example) is 1501276.

(2) The core address map (Fig. 6) shows the absolute PS address to be associated with start address 1500575, pident SAMP, and PR-1A012.

(3) Subtract the start address of pident SAMP (1500575) from the absolute PS address (1501276). The result (501) is the pident relocatable address plus one of the detected error.

(4) In pident SAMP of PR-1A012 (Fig. 7), the SA03 message explanation is next to the relocatable address 500. Pident SAMP, the network and map audit, has found a busy/idle bit in error.

Note: The "plus one" difference in 500 and 501 is a result of the address, index, and action sequence in the CC. It may be ignored in this procedure since audit explanations are normally several lines long and would be located with either number.

Procedure for Locating Audit Explanations in Feature Package Programs (Using PKG-ATR Message)

3.06 The following procedure is used for locating audit explanation in feature package programs.

(1) Note the contents of the J register in the SA03 message. This is normally the absolute PS address where the error was detected. Notice that the address is in the feature package range and not in core.

Note 1: If core is wrongly assumed, the response to the PKG-ATR message in (2) will be NG.

Note 2: Particularly in older audits, the absolute address may be in another register such as the B, L, or Z instead of the J register.

(2) Type the following message to convert the absolute PS address to the package relocatable address plus one of the detected error:

PKG-ATR-aaaaaaa.

aaaaaaa = 7-digit octal absolute PS address.

The system should respond with an FP02 output message which gives the package relocatable address as follows:

FP02 aaaaaR = bbbbbbb ccc ddd*ddd*

aaaaa = Octal relocatable address (package)

bbbbbbb = Octal absolute PS address

ccc = Decimal feature package number

ddd*ddd* = Feature package name.

Notice the package relocatable address (aaaaa) and the feature package name (ddd*ddd*).

(3) Find the package relocatable address (aaaaa) in the address map of the package (ddd*ddd*) in PK-1A002. Notice the package start address, pident name, and PR number.

(4) Subtract the pident start address obtained in (3) from the package relocatable addres obtained in (2) to obtain the pident relocatable address plus one.

(5) In the PR noted in (3), locate the pident relocatable address obtained in (4). The explanation of the SA03 audit number should be give inside a block of asterisks next to the pident relocatable address.

Example of Locating an Audit Explanation in a Feature Package Program (Using PKG-ATR Message)

Note: Do not try to use the addresses in the following example with an actual office or generic. See note in paragraph 3.03.

3.07 The following example shows how to locate an explanation of an SA03 message in a feature package program. Assume the following SA03 message:

SA03 ERROR xx xx

xxxxxxxx xxxxxxxx 02012137 xxxxxxxx

xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx

(1) The absolute PS address (shown in the J register for this example) is 02012137.

(2) To convert the absolute PS address to the package relocatable address, type:

PKG-ATR-2012137.

Response is:

FP02 52137R = 2012137 29 SP

(3) In the PK-1A002 address map for package SP (Fig. 8), note that the package relocatable address (52137R) is in pident SALK in PR-1A012. Pident SALK is shown to start at package relocatable 50405R.

(4) Subtract the pident start address (50405R) from the package relocatable address (52137R) to obtain the pident relocatable address plus one (1532R).

(5) In pident SALK of PR-1A012 (Fig. 9), the SA03 message explanation is next to the pident relocatable address (1531R).

Note: The AA strip of pident SALK starts at 50405R in the SP package. There is also an MF strip of SALK in the TOLL package (Fig. 10).

Example of Locating an Audit Explanation in a Feature Package Program (PKG-LIST and PG-1 Method)

Note: Do not try to use the addresses in the following example with an actual office or generic. See note in paragraph 3.03.

3.08 It is possible to locate an audit explanation in a feature package program without using the PKG-ATR message. One method involves using the PKG-LIST input message to list all package names and start addresses. The other involves going to parameter guide PG-1 to find where the packages are located. Using PG-1 would aid in finding an audit explanation if the machine were unable to answer the PKG-ATR or PKG-LIST messages.

3.09 Assume that an SA03 message contains the absolute PS address 2012137.

(1) Select one of the following:

(a) Type

PKG-LIST-.

Response is:

FP01 aaaaaaa-bbbbbbb

ccc*éé*é ddd eeeeeee ffffff

. . . .

. . . .

SP 29 1740000 066700

Notice that the absolute PS address 2012137 is in the SP package which starts at 1740000 (for this example) and has a size of 066700.

(b) Go to parameter guide PG-1, Div. 5, Sec. 2, Program Store Symbolic Addresses and

Attributes (Fig. 11). Symbol P9FPHT (feature package head table) gives a value of 1100615. Find this value in the hard copy office parameter records. This address contains a pointer to the address where the feature package table begins in parameters. The table should show that the absolute PS address 2012137 is in the SP package which starts at 1740000 (for this example).

(2) Subtract the package start address (1740000) from the absolute PS address (2012137) to determine the package relocatable address plus one (52137R).

Note: The remainder of the procedure is the same as for the PKG-ATR method.

(3) In the PK-1A002 address map for package SP, locate the package relocatable address (52137R) (Fig. 8). Note that the address is in pident SALK in PR-1A012. Pident SALK is shown to start at package relocatable 50405R.

(4) Subtract the package start address (50405R) from the package relocatable address (52137R) to obtain the pident relocatable address plus one (1532R).

(5) In pident SALK of PR-1A012 (Fig. 9), the SA03 message explanation is next to the pident relocatable address (1531R).

Procedure for Locating Audit Explanations for Generics Prior to 1E3

3.10 The following procedure is used to locate audit explanations in CTX-8, Issue 1, and earlier generics. These generics do not have feature loading.

(1) Note the contents of the J register in the SA03 message. This is normally the absolute PS address where the error was detected.

Note: Particularly in older audits, the absolute PS address may be in another register such as the B, L, or Z instead of the J register.

(2) Find the absolute PS address noted in (1) in the generic program address map (PK-1A002-xx). Note the pident name in which the absolute PS address occurs, the PR number, and the pident start address.

(3) Subtract the pident start address from the absolute PS address to obtain the pident relocatable address plus one of the detected error.

(4) In the PR noted in (2), locate the pident relocatable address determined in (3). The explanation of the SA03 audit number should be given inside a block of asterisks next to the pident relocatable address.

Example of Locating an Audit Explanation for Generics Prior to 1E3

3.11 The address maps for generics without feature loading are very similar to the CORE address maps in feature loaded generics. Consequently, the core program example (paragraph 3.05) can be used for generics without feature loading if the word core is ignored.

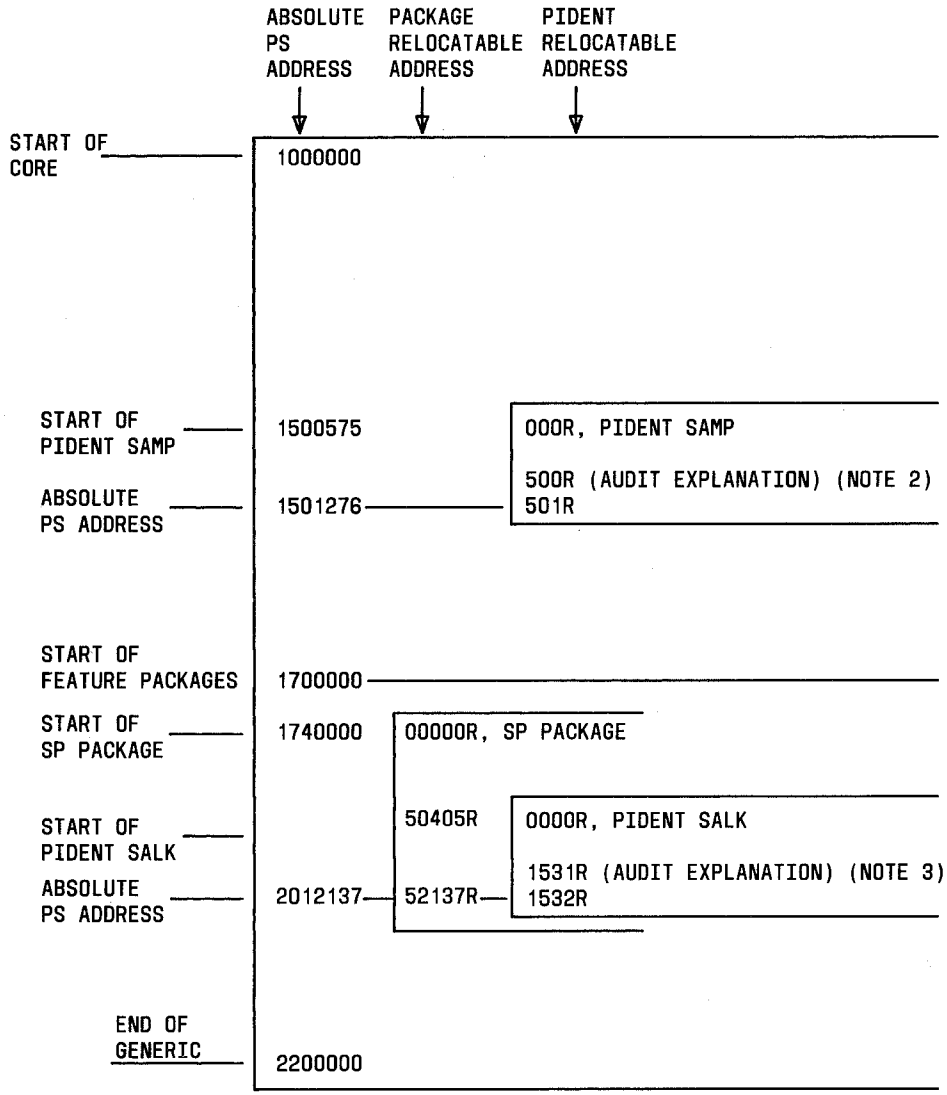
4. GUIDELINES FOR ANALYZING AUDIT PRINTOUTS

4.01 This part gives some guidelines for analyzing audit printouts. Audit analysis is complex and may be done in more than one way. A particular procedure may be useful in one analysis but not in another. The procedures and techniques in this part have been included as an introduction to audit analysis because of their general usefulness. A knowledge of call processing (Section 231-103-101) is necessary for audit analysis.

Note: In an office operating normally, most SA03 printouts report that audit programs have found and corrected invalid call store data. Even though corrective action by the office often is not required, all SA03 printouts should be examined.

A. General Procedures for Analyzing Audit Printouts

4.02 Audit output messages are analyzed to understand the causes of the audit printouts and to determine if corrective action is necessary. Typically, an audit finds something wrong with a call in process, considers the call irrecoverable, and dumps the registers to show the state of the call at the time it was found by the audit.



NOTE 1: SINCE EACH OFFICE MAP MAY DIFFER, THE ADDRESSES IN THIS EXAMPLE ARE REPRESENTATIVE BUT DO NOT APPLY TO A SPECIFIC GENERIC OR OFFICE. DO NOT EXPECT THESE ADDRESSES TO WORK IN AN OFFICE.

NOTE 2: TO LOCATE THE AUDIT EXPLANATION FOR ABSOLUTE PS ADDRESS 1501276 (CORE):

(1) DETERMINE FROM CORE ADDRESS MAP (PK-1A002) THAT 1501276 IS ASSOCIATED WITH START ADDRESS 1500575, PIDENT SAMP, AND PR-1A012.

(2) SUBTRACT PIDENT SAMP START (1500575) FROM ABSOLUTE PS ADDRESS (1501276) TO OBTAIN PIDENT RELOCATABLE ADDRESS PLUS ONE (501) OF AUDIT EXPLANATION.

(3) AUDIT EXPLANATION IS IN PR-1A012, PIDENT SAMP, PIDENT RELOCATABLE LINE 500R.

NOTE 3: TO LOCATE AUDIT EXPLANATION FOR ABSOLUTE PS ADDRESS 2012137 (FEATURE PACKAGE):

(1) TYPE PKG-ATR-2012137. FP02 RESPONSE GIVES PACKAGE NAME (SP) AND PACKAGE RELOCATABLE ADDRESS (52137R).

(2) THE PK-1A002 ADDRESS MAP FOR SP SHOWS THAT 52137R IS ASSOCIATED WITH PIDENT SALK (PR-1A012) WHICH STARTS AT PACKAGE RELOCATABLE 50405R.

(3) SUBTRACT THE PIDENT START ADDRESS (50405R) FROM THE PACKAGE RELOCATABLE ADDRESS (52137R) TO OBTAIN THE PIDENT RELOCATABLE ADDRESS PLUS ONE (1532R).

(4) AUDIT EXPLANATION IS IN PR-1A012, PIDENT SALK, AT PIDENT RELOCATABLE LINE 1531.

Fig. 5—Hypothetical Addresses for Use in Audit Explanation Examples

ADDRESS MAP

START	END	PIDENT,IS.	STRIP	ORIGIN	PR
1467436	1470337	RAMP019 ,2	AA	1467436	1A172
1470340	1471237	COCN019 ,3	AA	1470340	1A140
1471240	1472136	TTOA020 ,3	AA	1471240	1A111
1472137	1473031	SALT019 ,3	AA	1472137	1A012
1473032	1473647	TTOB020 ,3	AA	1473032	1A111
1473656	1473717	TTOB020 ,3	AA	1473032	1A111
1473720	1474454	ISXS020 ,3	AA	1473720	1A132
1474456	1474521	ISXS020 ,3	AA	1473720	1A132
1474530	1474573	ISXS020 ,3	AA	1473720	1A132
1474574	1475076	TTDG020 ,1	AA	1474574	1A029
1475101	1475432	TTDG020 ,1	AA	1474574	1A029
1475435	1475446	TTDG020 ,1	AA	1474574	1A029
1475447	1476315	SAHD020 ,3	AA	1475447	1A012
1476316	1477162	NETG019 ,1	AA	1476316	1A113
1477163	1477767	VFHC019 ,2	AA	1477163	1A090
1477770	1500014	TSPS019 ,3	AA	1477770	1A150
1500015	1500020	TERA020 ,3	JG	1500015	1A046
1500021	1500574	TSPS019 ,3	AA	1477770	1A150
1500575	1501361	SAMP020 ,1	AA	1500575	1A012
1501362	1502140	CPDG020 ,1	AA	1501362	1A023
1502141	1502715	TTOE020 ,3	AA	1502141	1A111
1502716	1503453	OFNT020 ,1	AA	1502716	1A148
1503455	1503463	OFNT020 ,1	AA	1502716	1A148
1503464	1503466	ADCI019 ,4	AA	1503464	1A116
1503472	1503532	ADCI019 ,4	AA	1503464	1A116
1503533	1503540	TRBT020 ,4	BG	1503533	1A120
1503541	1504226	ADCI019 ,4	AA	1503464	1A116
1504227	1504767	TVBD019 ,4	AA	1504227	1A120
1504770	1505522	SCCP019 ,1	AA	1504770	1A070
1505523	1506253	POMC020 ,3	AA	1505523	1A012
1506254	1506772	TTOH020 ,3	AA	1506254	1A111
1506773	1507510	YFTO020 ,4	AA	1506773	1A126
1507511	1510210	TTPP019 ,3	AA	1507511	1A111
1510211	1510664	LLOD020 ,3	AA	1510211	1A075
1510665	1511326	MFPR019 ,1	AA	1510665	1A136
1511327	1511756	ADDA020 ,4	AA	1511327	1A161
1511757	1512402	YMRG020 ,2	AA	1511757	1A126
1512403	1513017	CXSF019 ,4	AA	1512403	1A169
1513020	1513433	DOCE019 ,1	AA	1513020	1A014
1513434	1514041	DATN019 ,3	AA	1513434	1A110
1514042	1514062	RVRT019 ,3	AA	1514042	1A142
1514065	1514337	RVRT019 ,3	AA	1514042	1A142
1514340	1514415	PCDT019 ,1	AA	1514340	1A112
1514416	1514423	CAMA019 ,3	CO	1514416	1A069
1514424	1514443	RVRT019 ,3	AA	1514042	1A142
1514444	1515044	SAQU020 ,4	AA	1514444	1A012
1515045	1515445	DTST020 ,3	AA	1515045	1A074

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Fig. 6—Address Map (CORE)

```
7.1   MATCH THE RECONSTRUCTED MAP WITH THE REAL MAP                    13:52:51    8/25/75

:     ERROR CORRECTION ROUTINES                                                SAMP020   29   11

                  0000470                576.      1 MAT4   EQU     *                 #AN ERROR HAS BEEN DETECTED
  000470            07322 07777776       577.      2          MJ      -1,Z              #CORRECT BI BITS COMPLEMENTED
  000471            05202 07777776       578.      3          MB      -1,X
  000472            15120 27777776       579.      4          JM      -1,X,ELC          #CORRECT THE MAP
  000473            00102 00015347       580.      5          BM      N4NS1             #SAVE FOR ERROR PRINT
  000474            00642 17777700       581.      6          PWK     MASK(N4JBIB)      #MASK BITS IN ERROR
  000475            04720 00000000       582.      7          WL      0,K
  000476            03074 00000502L      583.      8          TRLZ    CHK_PRT,J,PL      #TRSF IF BUSY IN ERROR. PROBABLY CALLS
                                                                                         DROPPED BY ANOTHER AUDIT

  000477            00320 00016042       585.     11          ML      NET               #NETWORK NUMBER
  000500            10010 00000007X      586.     12          T       NMERG2,,J

                                         588.     14 ##########################################################################
                                         589.     15 #*       AUDIT  60,61,62 OR 63 FOUND AN ERROR IN THE BUSY IDLE BITS.
                                         590.     16 #*              AT LEAST 1 OF THE BITS WAS MARKED IDLE IN ERROR. THIS
                                         591.     17 #*              ERROR SHOULD NOT HAVE BEEN CAUSED BY ANOTHER AUDIT
                                         592.     18 #*              AND IS MORE SERIOUS THEN BUSY IN ERROR AS IT CAN RESULT
                                         593.     19 #*              IN FALSE CUT-OFF'S
                                         594.     20 #*
                                         595.     21 #*              B = CORRECT CONTENTS OF BI WORD
                                         596.     22 #*              K = BAD BIT INDICATORS
                                         597.     23 #*              L = NETWORK,E(22)=1 FOR LLN
                                         598.     24 #*              X = ADDRESS+1 OF BI WORD IN TROUBLE
                                         599.     25 ##########################################################################

  000501            00010 00000464L      601.     27          T       MAT5



                  0000502                603.     31 CHK_PRT EQU     *
  000502            00210 00016021       604.     32          MC      NPRT
  000503            00034 00000507L      605.     33          TCLZ    MKPRNT            #TRSF IF ERRORS ARE TO BE PRINTED
                                         606.     34          MCBAM   N6ERCT            #INCREMENT ERROR COUNT
  000504            00212 00016274        -001-   35          MCII    N6ERCT
  000505            21102 00000000        -001-   36          BM      0,BA
  000506            00010 00000464L      607.     37          T       MAT5

                  0000507                609.     39 MKPRNT EQU     *
  000507            00320 00016042       610.     40          ML      NET               #NETWORK FOR ERROR PRINT
  000510            10010 00000010X      611.     41          T       NMERG1,,J

                                         613.     43 ##########################################################################
                                         614.     44 #*       AUDIT  60,61,62 OR 63 FOUND AN ERROR IN THE BUSY IDLE BITS.
                                         615.     45 #*
                                         616.     46 #*              B = CORRECT CONTENTS OF BI WORD
                                         617.     47 #*              K = BAD BIT INDICATORS
                                         618.     48 #*              L = NETWORK,E(22)=1 FOR LLN
                                         619.     49 #*              X = ADDRESS+1 OF BI WORD IN TROUBLE
                                         620.     50 ##########################################################################

NETWORK AND MAP AUDIT                                                                  PR-1A012

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Fig. 7—Audit Explanation in Pident SAMP

ADDRESS MAP

START	END	PIDENT,IS.	STRIP	ORIGIN	PR
2R	12232R	SPDC020 ,3	AA	2R	1A025
12233R	24336R	SPDD020 ,3	AA	12233R	1A025
24337R	31754R	SPFC020 ,3	AA	24337R	1A024
31755R	36335R	SPFD020 ,3	AA	31755R	1A024
36336R	42072R	SPFS020 ,3	AA	36336R	1A024
42073R	45455R	SPDS020 ,1	AA	42073R	1A025
45456R	50326R	SPMP020 ,3	AA	45456R	1A200
50343R	50404R	SPMP020 ,3	AA	45456R	1A200
50405R	52610R	SALK020 ,3	AA	50405R	1A012
52611R	54701R	SAFA020 ,3	AA	52611R	1A012
54702R	56654R	SPLT020 ,3	AA	54702R	1A200
56655R	60502R	SASP020 ,3	AA	56655R	1A012
60503R	62017R	SPQR020 ,3	AA	60503R	1A200
62020R	63203R	SPSX020 ,3	AA	62020R	1A200
63204R	64203R	SPTR020 ,3	AA	63204R	1A200
64204R	64715R	SARC020 ,3	AA	64204R	1A012
64722R	64740R	SARC020 ,3	AA	64204R	1A012
64742R	64750R	SARC020 ,3	AA	64204R	1A012
64754R	64766R	SARC020 ,3	AA	64204R	1A012
64773R	65002R	SARC020 ,3	AA	64204R	1A012
65006R	65011R	SARC020 ,3	AA	64204R	1A012
65015R	65043R	SARC020 ,3	AA	64204R	1A012
65044R	65620R	SPCX020 ,3	AA	65044R	1A200
65621R	66341R	SPRP020 ,3	AA	65621R	1A200
66342R	66515R	SPIT020 ,3	AA	66342R	1A200
66516R	66527R	SPCX020 ,3	HA	66516R	1A200
66530R	66531R	SPMP020 ,3	IA	66530R	1A200
66532R	66535R	SPMP020 ,3	FQ	66532R	1A200
66536R	66541R	SPFC020 ,3	AB	66536R	1A024
66542R	66544R	SPLT020 ,3	HA	66542R	1A200
66545R	66550R	SPFC020 ,3	AC	66545R	1A024
66551R	66560R	SPFC020 ,3	AD	66551R	1A024
66561R	66605R	SPMP020 ,3	JK	66561R	1A200
66606R	66610R	SPLT020 ,3	FA	66606R	1A200
66611R	66613R	SPMP020 ,3	HA	66611R	1A200
66614R	66620R	SPSX020 ,3	DF	66614R	1A200
66621R	66624R	SPMP020 ,3	BA	66621R	1A200
66625R	66630R	SPMP020 ,3	BB	66625R	1A200
66632R	66636R	SPMP020 ,3	HB	66632R	1A200
66644R	66647R	SPLT020 ,3	CD	66644R	1A200
66650R	66654R	SPLT020 ,3	CE	66650R	1A200
66655R	66661R	SPSX020 ,3	DG	66655R	1A200
66662R	66667R	SPLT020 ,3	CB	66662R	1A200

NUMBER OF WORDS LOADED = 66622 (OCTAL) OR 28050 (DECIMAL)

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SP

Fig. 8—Address Map for SP Package

```
BUSY LIST AUDIT-MULTI-BIT OR FLASH SCAN J.R.                    18:16:29     11/16/76

                                                                SALK020   31    11

 001522          00222 00015662    1589.    1         MF      T33
 001523          06311 00077777    1590.    2         MX      MASK(FMRLK),Y,PS
 001524          02534 00000000    1591.    3         AYR     ,F                  #F=COMPUTED DUMMY JR ADRS
 001525          15524 20000000    1592.    4         SFR     ,X,PL               #COMPARE COMPUTED WITH ACTUAL
 001526          10031 20001530L   1593.    5         TCAU    EBLKNG,,J
               0001527             1594.    6 NOTE 32 EQU     *
 001527          00010 00001233L   1595.    7         T       SEG3                #

 001530          03710 00000000    1597.   10 EBLKNG  WX      0,J
 001531          10010 00000044X   1598.   11         T       NMERC2,,J

                                   1600.   14 #*************************************************************************

                                   1602.   16 #*      ERROR DESCRIPTION
                                   1603.   17 #*
                                   1604.   18 #*      AUDIT FOUND INCORRECT POINTER IN LAST MBIT OR
                                   1605.   19 #*
                                   1606.   20 #*      REGISTER CONTENTS     .
                                   1607.   21 #*
                                   1608.   22 #*      F        CORRECT POINTER TO DUMMY JR
                                   1609.   23 #*      K        CONTENTS OF DUMMY JR
                                   1610.   24 #*      X        ADDRESS OF TEST WHICH TRANSFERRED TO EBLKNG
                                   1611.   25 #*      Y        ADDRESS OF LAST JR
                                   1612.   26 #*      Z        JR TYPE
                                   1613.   27 #*
                                   1614.   28 #*      TYPE CODES
                                   1615.   29 #*      3        MULTIBIT
                                   1616.   30 #*      ALL OTHERS INVALID
                                   1617.   31 #*
                                   1618.   32 #*************************************************************************
                                   1619.   33 #*

               001532              1621.   36 NOTE 31 EQU     *
 001532          26603 00077777    1622.   37         MB      MASK(FMRLK),Y,S
 001533          06110 20000000    1623.   38         FM      0,Y,EL
 001534          05010 00000000    1624.   39         T       0,X                          PR-1A012

SIGNAL PROCESSOR JUNIOR LINKED LISTS                                SALK020   ISSUE 3    PAGE 51
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Fig. 9—Audit Explanation in Pident SALK

PIDENT MAP

	PIDENT	IS.	CO.	PR	DATE	TIME	STRIP	START	END	PACKAGE	SIZE	DEC. SIZE	MOD.
0							GI	10310R	10330R	IRES	21	17	
							GJ	5763R	6114R	ACD2	132	90	
							GK	6173R	6245R	ACD2	53	43	
							GL	6506R	6511R	ACD2	4	4	
							GM	6325R	6345R	ACD2	21	17	
0							GN	10440R	10442R	IRES	3	3	
0							GC	10427R	10431R	IRES	3	3	
0							MG	677R	753R	ACDT	55	45	
0							MG	756R	1147R	ACDT	172	122	
0							MM	1367R	2121R	ACD2	533	347	
0							MM	2123R	2464R	ACD2	342	226	
0							MM	2466R	2476R	ACD2	11	9	
0							MM	2501R	2571R	ACD2	71	57	
0	SACT019	3	31	1A058	11/16/76	19:45:44	AA	1154604	1155771	CORE	1166	630	6
0	SACX020	3	31	1A012	11/16/76	18:02:46	AA	14355R	17007R	FCTX	2433	1307	
0							JA	5220R	5221R	PNID	2	2	
0							MG	3331R	3757R	PNID	427	279	
0	SADA020	4	31	1A012	11/16/76	18:05:57	AA	1455505	1456045	CORE	341	225	22
0							AA	1456074	1456564	CORE	471	313	22
0							CC	1525562	1525564	CORE	3	3	25
0							HL	14122R	14133R	HL4W	12	10	
0							JA	1525664	1525673	CORE	10	8	25
0							LM	1525131	1525134	CORE	4	4	25
0							MG	606R	613R	DRPC	6	6	
0							OB	5005R	5013R	BQTL	7	7	
0	SADT019	4	31	1A012	11/17/76	16:07:26	AA	1257131	1262300	CORE	3150	1640	12
0							AA	1262304	1266031	CORE	3526	1878	13
0							CB	1524677	1524711	CORE	13	11	25
0							CC	1524712	1524732	CORE	21	17	25
0							MG	4564R	4655R	PNID	72	58	
0	SAFA020	3	31	1A012	11/16/76	18:07:25	AA	52611R	54701R	SP	2071	1081	
0							MF	757R	1011R	TOLL	33	27	
0	SAHO020	3	31	1A012	11/16/76	18:08:07	AA	1475447	1476315	CORE	647	423	23
0							HA	1525312	1525316	CORE	5	5	25
0	SAIO020	1	31	1A195	11/16/76	18:11:10	AA	11324R	12223R	DLIO	700	448	
0							BB	12760R	12763R	DLIO	4	4	
0							BC	12646R	12650R	DLIO	3	3	
0	SALK020	3	31	1A012	11/16/76	18:16:29	AA	50405R	52610R	SP	2204	1156	
0							MF	513R	702R	TOLL	170	120	
0	SALT019	3	30	1A012	07/22/76	07:15:17	AA	1472137	1473031	CORE	673	443	23
0							DB	2773R	3056R	MISI	64	52	
0	SAMP020	-2	29	1A012	08/25/75	13:52:51	AA	1500575	1501361	CORE	565	373	24
0	SAQU020	4	30	1A012	08/11/76	14:30:10	AA	1514444	1515044	CORE	401	257	24
0							OB	2554R	3214R	BQTL	441	289	
0							OM	2742R	2761R	BTRK	20	16	
0	SARC020	3	31	1A012	11/16/76	18:19:34	AA	64204R	64715R	SP	512	330	
0							AA	64722R	64740R	SP	17	15	

Fig. 10—Pident Map

PROGRAM STORE SYMBOLIC ADDRESSES AND ATTRIBUTES

SYMBOL	VALUE	QUAN	SIZE	CFADSNO
PQDCRN	1020137	1	1	1,2
PQHARN	1020140	1	1	1,2
PQHNON	1020141	1	1	1,2
PQHNRN	1020142	1	1	1,2
PQHPBN	1020143	1	1	1,2
PQHPBQ	1020144	1	1	1,2
PQHTMP	1020145	1	1	1,2
PQIDWL	1020146	1	1	1,2
PQNONN	1020123	1	1	1,2
PQNCRN	1020147	1	1	1,2
P1OFFN	1105603	1	1	1,2
P1TIMO	1105604	1	1	1,2
P4LTBO	1104164	1	6	1,2
P4PSHW	1104164			1,2
P6TBLE	1101212	1	33	1,2
P6TBL1	1105534	1	6	1,2
P6TBL2	1105542	1	6	1,2
P6TBL3	1105550	1	6	1,2
P9FPHT	1100615	1	1	1,2
QEBLID	1020150	1	1	1,2
QEPOBA	1020151	1	1	1,2
QTABLE	1020152	1	1	M1,2
Q4TTTC	1100010	1	1	1,2
Q6INIT	1100107	1	1	1,2
Q6JPCB	1100121	1	1	1,2
Q6PBHC	1100117	1	1	1,2
Q6POPH	1100120	1	1	1,2
RCVLBR	1020154	1	1	1,2
RCVLDB	1020053	1	1	2
RCVRPR	1020155	1	1	1,2
RCV2BA	1020022	1	1	2
RECORD	1020153	1	1	1,2
RETURN	1020156	1	1	1,2
R0RRPW	1104146	1	1	1
R2PDSMSB	1105630	1	1	1,2
R2QUST	1103611	1	1	1,2
R2WOFKL	1105631	1	1	1,2
R5XPAD	1105633	1	1	1,2
R6HJAP	1104700	1	4	1
R6SCIN	1100114	1	1	1
R7CPAD	1105645	1	1	1,2

Fig. 11—Program Store Symbolic Addresses and Attributes (PG-1)

4.03 The following general procedures are useful in analyzing any audit printout or string of audit printouts:

(1) ***Audit Type:*** Correlate audits by type. For example, all audit 59 printouts should be looked at as an entity.

(2) ***Common Areas:*** Determine which areas associated with the audit are common. Is the failure always against the same TNN, same trunk group, same signal distribution equipment, trunks with the same trunk class code (TCC), lines of the same MLHG, etc.

(3) ***Repeated Printout:*** Observe whether the audit repeats regularly or is a transient failure. A repeated printout (ie, same audit number and same identification number) can determine audit findings in one of several ways.

(a) A repeating printout within a group of printouts from the same audit usually indicates that repetitions of an error occurred during a single audit.

(b) Another type of repeated printout is one in which an audit continuously finds an error concerning a register, queue, T2 bits, or other data. In the case of a register, the data in the register should be examined for significant information or patterns. Usually, there is some data [such as trunk network numbers (TNNs) in same trunk group] that relates to all the printouts. The data that is common to all printouts usually indicates the trouble area.

(4) ***Sequences:*** Observe whether the audit always repeats in the same sequence of printouts. Sequences of messages usually indicate a pattern of the system operations that are causing the printouts. The following are examples of sequences but are not the only sequences that can occur.

(a) A sequence that is started by an SA03 ERROR 0 bb usually indicates that a call processing program noted an error in a call or an unexpected result, and the call processing program requested the audit to idle the call. Several audits would follow to release any trunks, junctors, lines, and software associated with the call.

(b) Another sequence is started by an audit finding an error in a link audit. This audit usually is followed by printouts describing the list and its members in error.

(c) An example of a single audit printout is audit 50 repeating with the same line equipment number (LEN), including possible trouble with the indicated line.

(5) ***Related Messages:*** Examine any surrounding printouts such as carrier group alarms, translation error printouts, interrupts, or service order activity.

(6) ***Related Data:*** If no conclusive data are obtained from the previous methods, the data in the audit messages should be compared to data in other messages. When comparing data of registers, the message manual should be referenced extensively to assure that the data is the same. It may be necessary to obtain data over a long period of time (weeks) to determine the actual problem.

(7) ***Call Registers:*** Audit printouts frequently contain data from call registers. To verify that this data is correct, it is sometimes necessary to consult the call register layouts. Layout information may be found in the following sources:

(a) Program Flowcharts: Information notes in Part B of PFs show layouts in graphic form, but the PFs are not being kept up to date.

(b) Pidents: Call registers may be defined (not necessarily completely) in as associated pident or pidents. Table A in this section lists the major pident for each senior register. Information is not presented graphically. The true contents of registers defined in pidents are often mysteries, particularly for older registers. Pidents are located in PRs as indexed in the pident map (PK-1A002).

(c) Compool (PK-1A003): Starting with 1E5, some call registers are defined on Compool. At the time of this publication, only the queuing register, trunk preemption control register and the three AMA registers were known to be on Compool. Others are being added.

TABLE A

CALL REGISTER

REGISTER IDENTIFICATION (Binary*)	(Decimal)	(Octal)	CALL REGISTER OR MEMORY BLOCK	PF	MAJOR PIDENT
000001	01	01	General Purpose Queueing Register		QTAL
000010	02	02	AMA 13-Word Register		AMAC
000011	03	03	Fast Answer Senior Register		FANS
000100	04	04	Hotel/Motel Call Register	1A162	HMTL
000110	06	06	Disconnect Register	1A134	DISC
000111	07	07	Customer Facility Group (CFG) Register		
001000	08	10	Incoming Revertive Register		ICRV
001000	08	10	Incoming Call Register		ICAL
001001	09	11	Mobile Radio-Location Data Register		LOCO
001010	10	12	MF Outpulsing Control Register		MFTL
001010	10	12	Dial Pulse Outpulsing Register	1A137	DPOP
001010	10	12	Revertive Transmission Senior Register		OGRV
001010	10	12	PCI Transmission Senior Register		OPCI
001010	10	12	Touch Tone Outpulsing Control Register		TOPL
001011	11	13	Mobile Maintenance Register		
001100	12	14	Operator Function Register		OFTG, OFNT, OFTG
001100	12	14	Operator Register	1A146	OFTR, OFNT
001101	13	15	Mobile Originating Register		MDCA, MOGT
001110	14	16	Originating Register	1A131	ORDL, SRTT
001111	15	17	Cathode Ray Tube Register		CRTC
010000	16	20	Permanent Signal Register	1A143	PSPD
010001	17	21	CCIS Incoming Register		CICP, CIPC, CIRA, CIRN, CIRT

*Bits 16 through 21 of state word in call register

TABLE A (Contd)

CALL REGISTER

REGISTER IDENTIFICATION (Binary*)	(Decimal)	(Octal)	CALL REGISTER OR MEMORY BLOCK	PF	MAJOR PIDENT
010010	18	22	Regular Ringing Register	1A133	RING
010011	19	23	DAL Ringing Register		RRSP
010100	20	24	Special Ringing Register	1A133	RRSP
010101	21	25	E911 Register		ESCA
010110	22	26	Coin Charge Register	1A140	COIN
010111	23	27	TAMA Special Service Register (18-Word)		AMAC
011000	24	30	Temporary Transfer Register	1A160	TXFR
011010	26	32	6-Port Conference Register		ADUP
011010	26	32	3-Port Conference Loop Register		ADUP
011110	30	36	Flash Timing Register	1A130	DCNT
100000	32	40	Local Test Desk Register	1A042	LTDK
100010	34	42	Trunk and Line Test Panel (TLTP) Register (MCC Register)	1A040	TLTP
100100	36	44	Trunk Maintenance Register	1A045	TNKC
100110	38	46	DDD Service Observing Register	1A078	DDDO
100110	38	46	Incoming Trunk Service Observing Register		9GITSO
101000	40	50	Incoming SXS Register	1A132	ICAL
101010	42	52	AMA 9-Word Register		AMAC
101100	44	54	Automatic Line Insulation Test (ALIT) Register	1A041	ALIT
101110	46	56	Auxiliary Program Register		
110000	48	60	Reverting Call Register	1A142	
110010	50	62	Incoming Trunk Test Termination Register		ITTT
110010	50	62	Incoming Trunk Test Termination Register Used for Through Balance Testing		ITTT
110010	50	62	Incoming Trunk Test Register used for ROTL		ITTR
110100	52	64	Simulated Facilities Register	1A169	CXSF
110110	54	66	Trunk Preemption Register (TPC)	1A012	CXTP

*Bits 16 through 21 of state word in call register

TABLE A (Contd)

CALL REGISTER

REGISTER IDENTIFICATION (Binary*)	(Decimal)	(Octal)	CALL REGISTER OR MEMORY BLOCK	PF	MAJOR PIDENT
111000	56	70	AIOD Register	1A088	AIOD
111010	58	72	Centrex Loop Register	1A163	ADUP
111010	58	72	Centrex Console Register		CXKY
111100	60	74	CAMA ANI and ONI Port 0 Register		CAMA
111110	62	76	CAMA ONI Port 1 Register		CAMA
			(The following are junior registers)		
			Line ferrod disconnect SP junior register		
			Multiple bit SP junior register		
			Flash scan and timing SP junior register		
			Timed scan SP junior register (TSJR)		
			Start pulsing signal detection scanning SP junior register		
			Dial pulse SP junior register		
			Trunk dial pulse SP junior register		
			Combination reception SP junior register		
			Multifrequency SP junior register		
			Revertive reception SP junior register		
			Revertive receiving SP junior register		
			Revertive transmission SP junior register		
			Multifrequency transmission memory SP junior register		
			PCI memory transmission SP junior register		
			Dial pulse transmission SP junior register		
			SXS pulse counting SP junior register		
			SXS hit timing SP junior register		
			Fast answer SP junior register. Pident-FANS		
			Coin control CC-SP junior register (CNK)		
			Line ferrod scan CC junior register		
			Multiple bit scan CC junior register		
			Revertive pulse junior register (CC)		
			Timed scan CC junior register		
			Start pulsing signal detection scanning CC junior register		

*Bits 16 through 21 of state word in call register

TABLE A (Contd)

CALL REGISTER

REGISTER IDENTIFICATION (Binary*)	(Decimal)	(Octal)	CALL REGISTER OR MEMORY BLOCK	PF	MAJOR PIDENT
			SXS pulse counting CC junior register Touch tone junior register Dial pulse junior register (CC) Multifrequency junior register (CC) Revertive transmission CC junior register Dial pulse transmission CC junior register PCI transmission CC junior register Fast answer CC junior register MF transmission CC junior register		

*Bits 16 through 21 of state word in call register

Note: Any register layout is always in either compool or a major pident. The layout is shown in the same way in either case.

(d) Pident Engineer: The accuracy and completeness of each pident is the responsibility of an associated programmer and supervisor.

(8) ***First Audit First:*** Generally, analyze the first audit printout in a string first, particularly when the first audit message is an SA03 ERROR 0 xx message.

(9) ***Audit Message Printout Priority:*** Occasionally, during severe system problems, many audits are not printed because higher priority messages have filled the TTY print buffer. When this occurs, the SA03 messages that are printed may contain only a portion of the audit message errors. These messages can be used in conjunction with the maintenance printouts for indications of problems. The priority level at which audit messages are printed is controlled by keys 16 and 15 on Buffer Bus 17 if the block key is depressed. Table B shows the action taken for the various states of keys 16 and 15.

B. Audit Stimulus

Importance of Stimulus

4.04 The point of the following discussion is simply that the analyzer, while analyzing audit printouts, must keep in mind the stimulus that caused the audit. The same string of audit printouts can have different meanings at different times.

4.05 For many audits there are specific actions that are needed to correct the problem. For example, assume that a translation item is specified incorrectly or garbaged. The cure generally is straightforward. The bad translation is corrected by recent change messages.

4.06 Audit printouts can be forced by recovery programs. For example, an out-of-range D or E level interrupt always goes to ECRESM, which leads to the dumping of the CRA in Y4CRA via an SA03 0 40 printout. The CRA, TNNs, JNNs, etc, associated with the CRA will be restored and printed by subsequent audits. The audits can be used as an aid in identifying the cause of the out-of-range interrupt.

If an inrange interrupt occurs and the recovery programs are unable to unwind the interrupted

TABLE B

16	15	RESULTS
0	0	Print SA01 and SA03 messages at low priority
0	1	Inhibit printing SA01 and SA03 messages
1	0	Print SA01 and SA03 messages at high priority
1	1	Print SA01 message at high priority, inhibit printing SA03 messages

instructions, a transfer to ECRESM is made. In turn, the CRA in Y4CRA is dumped, which the audit printouts mentioned in the previous paragraph. The audit printouts in this case probably would be ignored since the root problem is hardware in nature.

Example of String of Audit Printouts

4.07 The following messages are given as an example of what could occur when a CRA is dumped and there is an associated path, or paths. The path, or paths, must be restored to the system.

(1) The initial audit message (eg, SA03 0 40, SA03 0 43, etc, that dumped the CRA).

(2) An SA03 24 30 message for each TNN associated with the CRA.

(3) An SA03 26 20 message if a line-to-line junctor is involved.

(4) An SA03 43 44 message for the CRA plus an SA02 REG which prints the contents of the register.

(5) An SA03 46 1 for each line-to-trunk junctor involved in the path.

(6) An SA03 50 1 for each LEN involved in the path.

(7) Four SA01 SUCC messages at the same time for audits 60, 61, 62, and 63. The printing of audit error messages for audits 60 through 63 is inhibited when the system creates errors by dumping junctors or trunks.

4.08 Depending on circumstances, audit 43 could run first and dump the trunks and junctors by SA03 43 30 and 43 20 messages respectively. In this case, the string of audit messages could be as follows:

(1) SA03 0 48 (transfers to YRUNEX and puts audit code in state word).

(2) SA03 43 44 (occurs when audit code is found in state word).

(3) SA03 43 30s (dumping the TNN).

(4) SA03 43 20s (dumping the JNNs).

(5) SA02 REG (Giving the contents of the CRA being dumped). Notice that the register is dumped twice when the stimulus is YRUNEX. This is done for two reasons. First, the register might change and/or be idled before audit 43 could print the contents. Second, if the register were already idle, the audit code would not be placed into the state word; hence, no subsequent printouts would occur.

(6) SA03 50 1s (restoring the associated lines).

(7) SA01 SUCC messages (showing that audits 60 through 63 have completed successfully).

Note: For a more detailed discussion of path memory, see the B section of PF1A121-02 and the B section of PK1A121-01. The C through F sections of PK1A121-01 also are available.

C. Rules for Analyzing SA03 Printouts

4.09 Use the following rules when analyzing SA03 printouts:

(a) Consider the context in which the audit message was printed. For example, were there other messages, SA03 or otherwise, that precipitated the audit printout?

(b) Read the PR comments at the location where the message was printed.

(c) If there are no comments at the location pointed to by the J register, see if some other register contains a relevant program store address. The program store address might not be in the register having zeros in bits 22 through 20. For example, the L register on POB timeouts contains the client's success address in bits 19 through 0 while bit 20 is always a one.

(d) Consider every audit printout as an indication of an abnormal condition. There is absolutely no audit printout that occurs because of a normal condition. Every audit printout indicates that:

(1) A program or its associated data are garbaged to some extent and should be examined in more than a cursory manner ***or***

(2) An audit program has an internal bug.

D. Specific Techniques

Peripheral Order Buffers

4.10 When a peripheral order buffer (POB) is printed as a result of an F-level interrupt, it is possible to identify the LENs and/or TNNs contained in the POB's network orders by using the office PDS listing and the B section of PF1A121-01, which shows derivation of POB orders for network frames. See Fig. 12 for the contents of a typical POB.

Finding a Full TDN in Path Memory Messages

4.11 There are messages that print path memory in its raw state (eg, MN02) without follow-up messages that give the complete LEN/TNN. For trunk-to-trunk paths where the second word is a TNT (TNN without TLN), the full TNN can be found by the following procedure:

(1) Get the TLN from word 0. (See B sheets in PF-1A121-01 for TTM layout.)

(2) Get the JSG from word 0.

(3) Type VFY-JNN-37 T (TLN)00(JSG).

(4) Take the TLN from the output message and concatenate it with the TNT from word 1.

E. Examples of Audit Analysis

4.12 The following paragraphs give examples of audit printout analyses using the procedures described previously in this Part. For each example, the associated audit TTY printout is given in a figure. Notes that describe the steps of the analysis are given either on the figure (if brief enough) or in the following paragraphs.

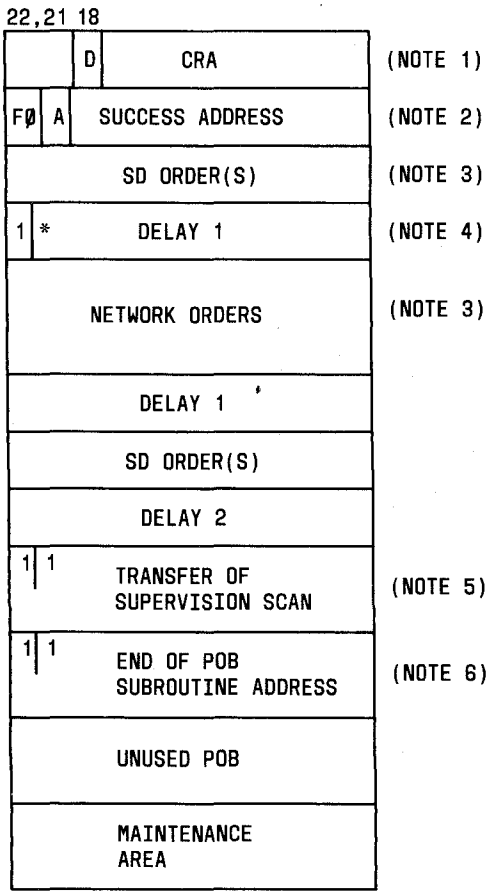
4.13 ***Example 1:*** A diagram of the hardware and software associated with this example is in Fig. 13. The audit TTY printout is in Fig. 14. The notes in Fig. 14 are explained as follows:

Note 1: Keep the surrounding messages in mind so that the audit messages are analyzed in the context of the system condition.

Note 2: Locate the explanation of the first audit message. An SA03 ERROR 0 bb gives a good indication of the cause of the trouble. In this case, the 0 40 indicates that the restart program IREC (PD-1A011) could not pass control to the base level program. The reason for this failure to pass control is shown by the interrupt preceding the SA03 ERROR Ø 40. The interrupt was caused by power being removed from the active SP while the standby SP was in trouble. (Effective with CTX-7, Issue 9, and CTX-8, Issue 4, the MA14 message is replaced by the CC INT message.)

Note 3: List the audit types in the remaining messages (43, 22, 42, 50) and find the explanation for each audit either in the PR (Part 3) or Part 7 and 8.

(a) ***Audit 43*** indicates that junctors, trunks, and a master register were being idled.



NOTES:

1. D=0, IF BITS 17 THROUGH 0 CONTAIN A CRA. IF D=1, SEE LAYOUT OF Q7DTYP IN PK-1A003.

2. SEE LAYOUT Q7SA IN PK-1A003.

3. SP AND NETWORK ORDERS ARE ALWAYS LOADED IN COUPLETS. THE FIRST WORD IS THE AEA AND THE SECOND WORD IS DATA. THE FRAME CAN BE DERIVED FROM THE AEA BY USING THE PDA LISTING. THE DATA FOR SDS IS SIMPLY THE POINT IN BITS 9 THROUGH 0. A ONE IN BIT 10 MEANS RELEASE. THE DATA FOR NETWORK FRAMES CAN BE BROKEN DOWN THROUGH PK-1A121-01.

4. DELAY 1 IN SP = Ø(20000000). DELAY 1 IN CC = E(22,21) + (PROGRAM STORE ADDRESS IN BITS 19 THROUGH 0).

5. TRANSFER OF SUPERVISION FALLS IN THE GENERAL CATEGORY OF POB SUBROUTINES. EXCEPT FOR THE DELAY 1 IN SP, POB SUBROUTINES CAN BE ANY NUMBER OF WORDS LONG. FOR SP, ADD Ø(500000) TO BITS 14 THROUGH 0. FOR CC, USE BITS 19 THROUGH 0 DIRECTLY. FIND THE RESULTANT PUBLIC ADDRESS IN THE MAP TO FIND THE PROGRAM THAT CONTAINS THE SUBROUTINE. THE PROGRAM CONTAINS A DESCRIPTION OF THE SUBROUTINE AND ITS DATA REQUIREMENTS.

6. TE END OF A POB SUBROUTINE IS A ONE-WORD SUBROUTINE ADDRESS WHICH MUST ALWAYS BE PRESENT IN AN ACTIVE POB. THE BEGINNING OF PIDENT POMC HAS SOME INTERESTING PICTURES CONCERNING POB LINKAGES. THIS NOTE WAS INCLUDED SINCE PERIPHERAL PROBLEMS AND AUDITS ARE OFTEN ASSOCIATED.

Fig. 12—Contents of a Typical POB

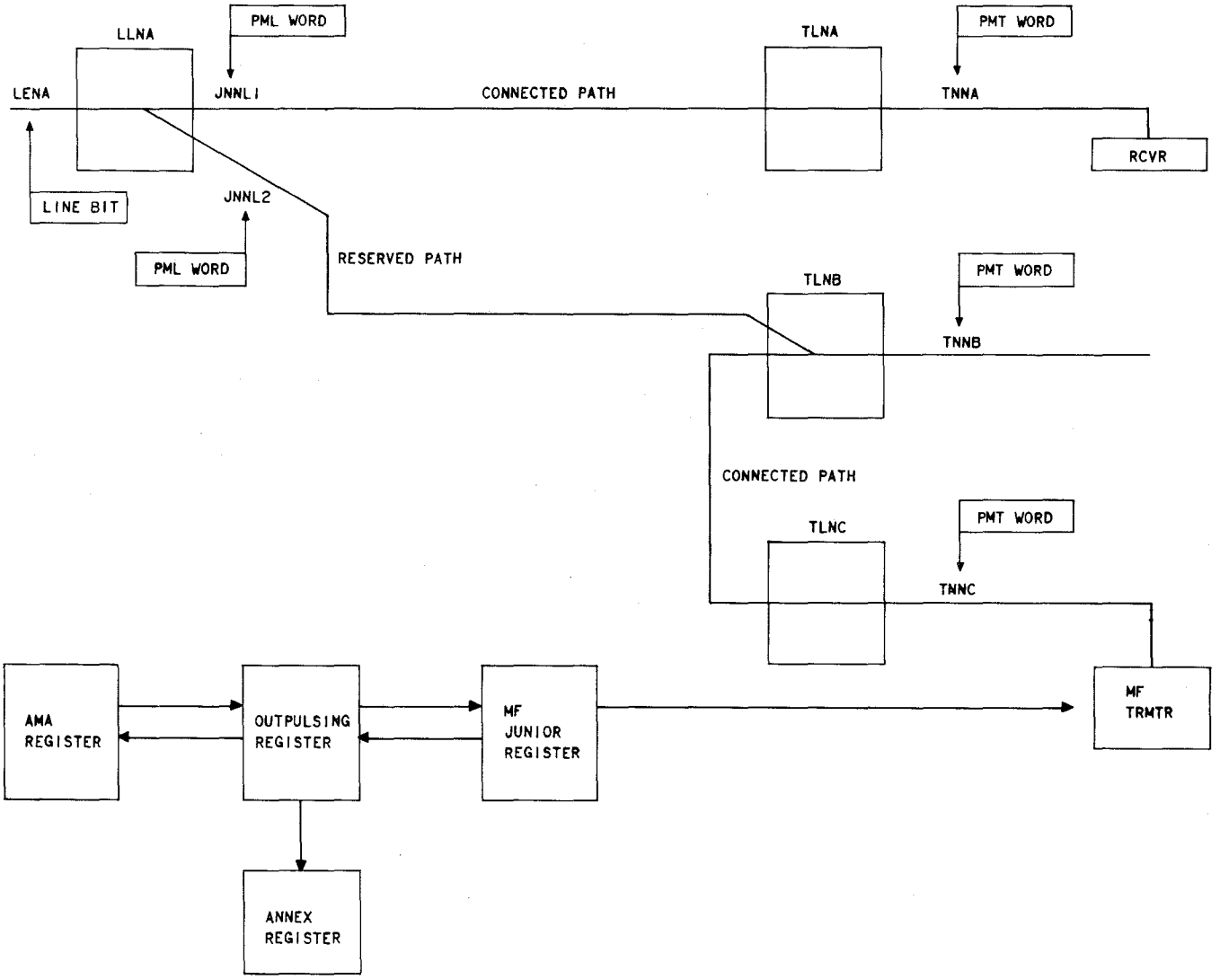


Fig. 13—Hardware and Software Configuration With Analyzed SA03 Printout

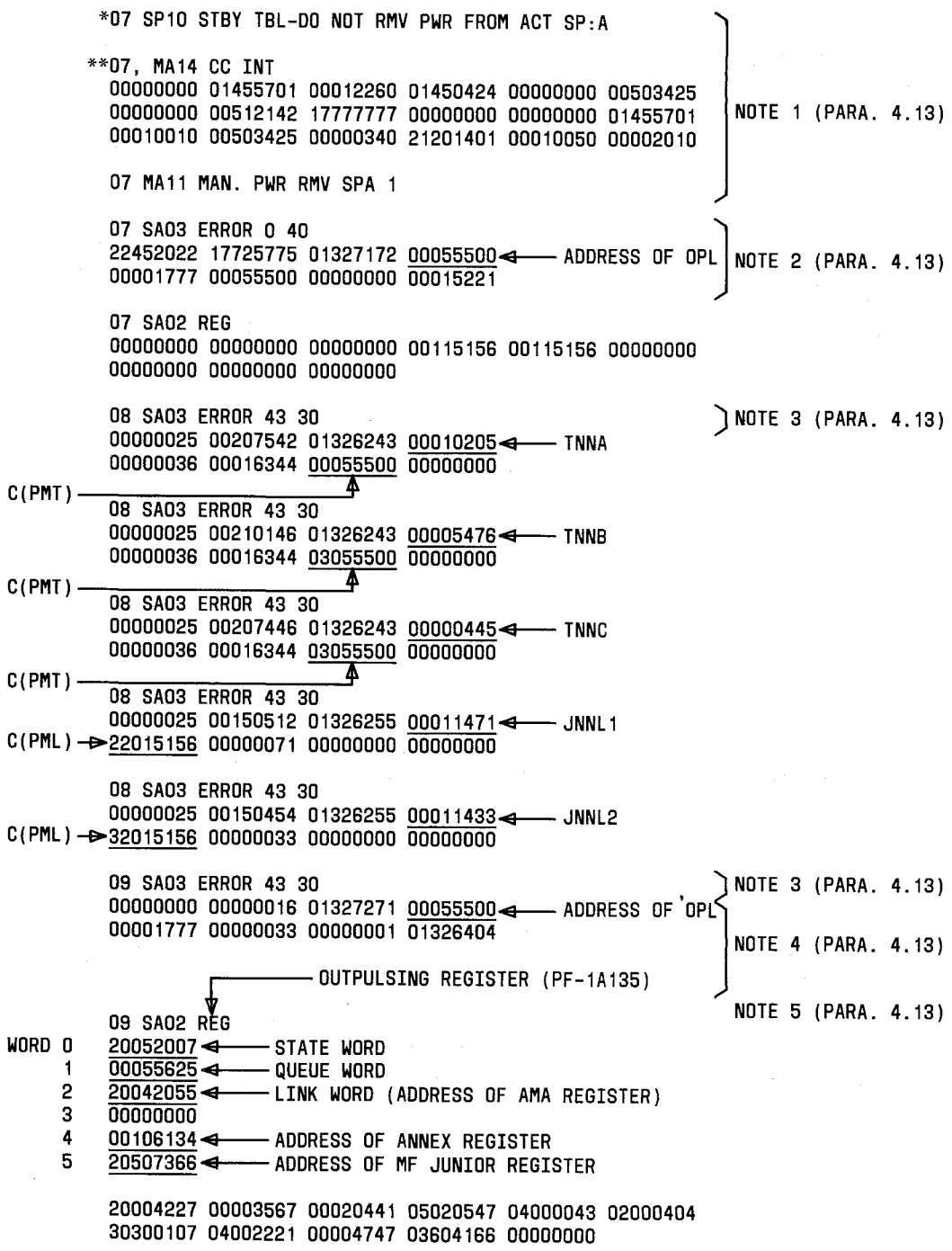


Fig. 14—Example of Audit Message Analysis (Sheet 1)

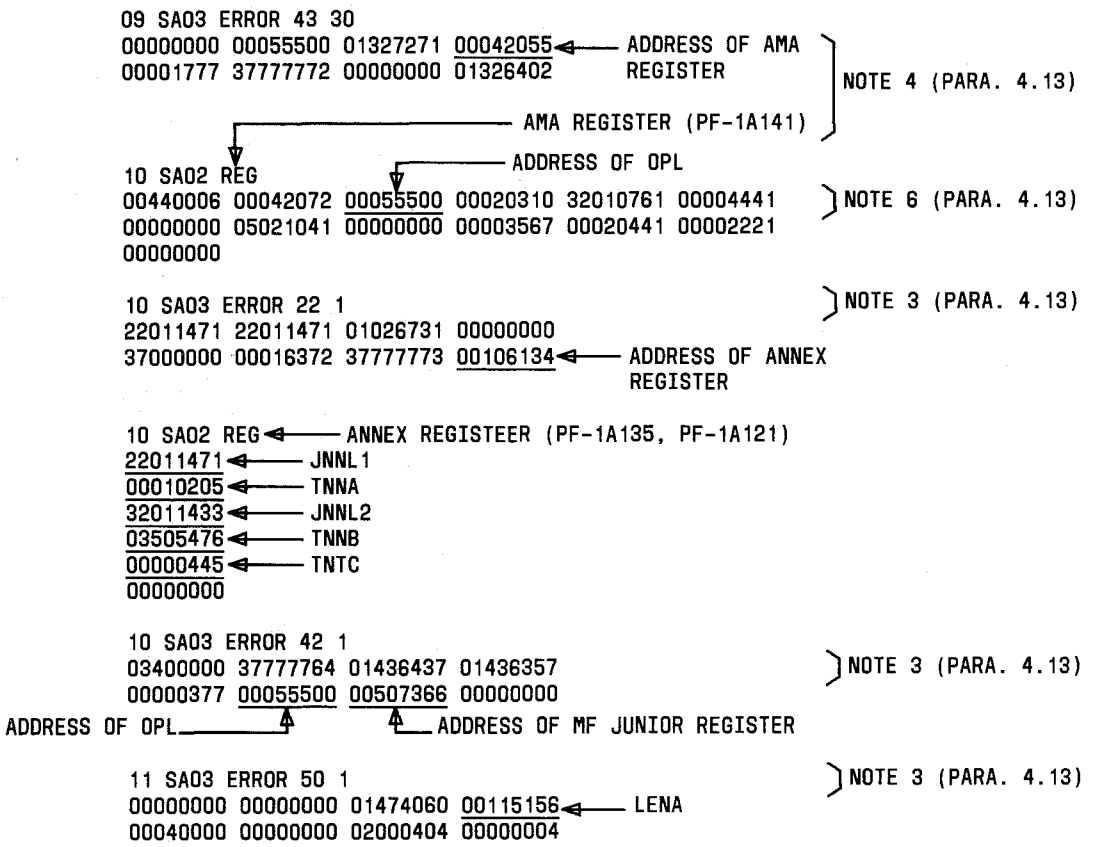


Fig. 14—Example of Audit Message Analysis (Sheet 2)

The repetition of this audit indicates that more than one junctor and trunk was being idled.

(b) ***Audit 22*** indicates that a path memory annex (PMA) was found to be lost and was idled by the audit.

(c) ***Audit 42*** indicates a multifrequency junior register was in an invalid state.

(d) ***Audit 50*** indicates a line in an invalid state. It has been called at low priority after audit 43 to restore the line bits to a valid state.

Note 4: Using the output message manual, the analysis of the SA02 messages following the audit 43 message indicates that one register is an outpulsing register and the other is an automatic message accounting (AMA) register. The data in the registers may be analyzed to correlate the messages.

Note 5: The SA02 message following the first 43 40 messages may be related to the audit 22 and audit 42 printouts. Word 4 of the SA02 contains the same data as the Z register in the audit 22 message, and word 5 of the SA02 contains the same data as the Y register in the audit 42 message. The audit 42 printout may be further related to the outpulsing register as its X register points to the outpulsing register.

Note 6: The AMA register is associated with the outpulsing register in that word 2 of the outpulsing register points to the AMA register, and word 2 of the AMA register points back to the outpulsing register. The PMA can be related to the audit 43 printout because it contains the path which audit 43 idled. Audit 50 printout can be related to either of the 43 20 printouts. From these relationships and outpulsing call data from Section 231-103-101, the indication is that a call was idled during outpulsing.

4.14 In summary, the early messages show that the standby SP was in trouble and that maintenance messages occurred. Control could not be passed back to the base level program. The SA03 ERROR 0 40 message shows that the SAHELP routine requested audit 43, a high priority call register audit. Several junctors and trunks were idled by audit 43. Audit 22 idled a path memory annex. Audit 42 found the MF junior register in error. Audit 50 restored the line bits. It appears that power was removed from the active SP while the standby SP was in trouble.

4.15 Additional examples will be included as they are supplied.

5. SA03 MESSAGES THAT REQUIRE PROMPT ATTENTION

5.01 The SA03 messages in Table C require prompt corrective action by maintenance personnel. They indicate that call store memory errors have been found which could not be corrected by the system.

5.02 Audit printouts in which aa=0 and bb=01 are provided to detect system software problems. If a printout of this type persists, it should be reported to Western Electric PECC and Bell Telephone Laboratories by the normal OTR procedures.

5.03 If an audit printout comes after a phase and bb=97, 98, or 99, the printout should be included with the normal OTR that is used to report the occurrence of any phase. These printouts are very valuable.

5.04 Most SA03 messages report that either a program error has been corrected or that invalid call store data has been found and corrected. Although corrective action by the office often is not required, all SA03 messages should be examined. If the No. 1 ESS is experiencing trouble, as indicated by TTY printouts, alarms, MCC lamps, etc, audit printouts may provide information to help isolate the trouble. Any audit that is repeating while the system is experiencing trouble should be thoroughly investigated.

TABLE C

AUDIT PRINTOUTS REQUIRING PROMPT INVESTIGATION

AUDIT AND ERROR NUMBERS aa	bb	PR-1A012 PIDENT	EXPLANATION
4	4	RCUP	A multiline hunt group has more than the maximum number of 127 hunt lists. This could have caused mutilated RC data. The RC area should be checked for invalid data.
4	7	SALT	Insufficient space for 2-way trunk activity words. This could be caused by invalid data or by recently added 2-way trunks; 2-way trunks must be deleted to correct this problem.

6. LIST OF INDIVIDUAL AUDITS

6.01 A list of SA03 audit numbers (aa) is as follows:

AUDIT	DESCRIPTION	ENTRY	PIDENT
0	Nonaudit program		
1	Initialize network CS tables in an EA phase 2 or greater	SAECIN	SADA TNMC
2	Regenerate PS diagnostic programs in CS	PFIPCI	PFØR
3	Regenerated constant and TTY memory audit	SACØNS	SADA
4	Audit of the recent change area and the trunk group head cells	SATRHC	RCUP SALT
5	Audit of the network memory head cells and other constants	SANR1	NEGN SADT
6	Audit of the junctor group hunting lists and other constants	NECJGA	NEGN NETG NMFA
7	Line supervisory scan row audit	SARØWL	SASU

AUDIT	DESCRIPTION	ENTRY	PIDENT
8	Trunk supervisory scan row audit	SARØWT	SASU
9	Miscellaneous supervisory scan row audit	SARØWM	SASU
10	Junctor supervisory scan row audit	SARØWJ	SASU
11	POB audit	SAPOB	POMC
12	Check of the non-idle trunk linked lists	SATLLA	POMC SADT
13	Audit the signal processor program	SASP	SASP
14	Audit of the two junctor linked lists	JLLA	SADT
15	Not used		
16	Audit the trunk-to-trunk memory registers	SATTM	SADT
17	Not used		
18	Ring trip scan table audit	SURTN1	SURT
19	Receiver scan memory audit	RSINIJ	SACV SARC
20	Check of the idle linked lists of path memory annexes	PPMA1	SADT
21	Not used		
22	Recovery of any lost path memory annexes	SADPMA	SADT
23	Service link network	SASLNK	SASL
24	Check of the point-to-point-back linkage from path memory for trunks (PMT) word to CRs	TGA3	SADT
25	Not used		
26	Check of the point-to-point-back linkage from path memory for line junctor (PML) words to CRs	JGA3	SADT
27	Not used		
28	Initialization of the trunk and line test panel	SATLTP	TLTP
29	Not used		
30	Call Map audits	SAROT7	SADT
31	Not used		
32	Network management code blocking and trunk group control	NMAUD1	NMGT
33	Not used		
34	Check of the trunk idle linked lists	SATG2A	SADT
35	Not used		
36	Check of the PMT words with idle codes and invalid code to see if the codes are correct	TG2B	SADT
37	Not used		
38	Centrex audit	SACXR	SACX
39	ACD audit	SAMBA	SACD
40	Audit of the hoppers and fixed length queues	SAHFLQ	SAHØ
41	Audit of the variable length queues and timing lists	SAQUE	SAQU

AUDIT	DESCRIPTION	ENTRY	PIDENT
42	Audit of the junior registers	SALINK	SALK SANK
43	Phase 2 of the call register audit	SACALL	SARG
44	Phase 2 of the call register audit	SACAL2	SARG
45	Phase 3 of the call register audit	SACAL3	SARG
46	Check of the PMT words with the PML words	TGA1	SADT
47	Not used		
48	Check of the PML words with translation data	JGA1	SADT
49	Not used		
50	Audit of the line bits and the no-test vertical busy-idle bits	NMAUDT	NMDT
51	Not used		
52	Check of the junctor scan bits with the PML words	JGA2	SADT
53	Not used		
54	Check validity of TGN maintenance usage counts	TNMUAD	TNLS
55	Not used		
56	Ringing and tone plant relay initialization	MCKICK	TOMK
57	Audit of S link busy-idle bits for SLN	SASLMP	SASL
58	Put the non-trunk T2 bits in a fail-safe state	SAT2NT	MCMP
59	Check of the trunk T2 bits for trunks not linked to a call register	TGA4	SADT
60	Audit of the C and J busy-idle bits in the trunk network map	MAPBT	SAMP SADT
61	Audit of the A and B link busy-idle bits in the trunk network map	MAPAT	SAMP SADT
62	Audit of the B, C, and J busy-idle bits in the line network map	MAPBL	SAMP SADT
63	Audit of the A link busy-idle bits in the line network map	MAPAL	SAMP SADT
64	Cutover audit	SAROUT	SACT
65	Initialize all junctor scan bits to ignore	SAJUNK	SADA
66	Not used		
67	Change audit priority to normal	MACP18	MACR
68	Change from stitching mode to normal mode of operation	EAAUDT	MIRV

7. EXPLANATION OF SA03 MESSAGES NOT INCLUDED IN PROGRAM LISTINGS

Note: It is intended that SA03 explanations be documented in the associated program listings (PRs) instead of in the BSP; consequently, the explanations are being removed from the BSP as it is determined that the PR explanations exist.

7.01 This part explains the specific combinations of the audit number (aa), the audit error number (bb), and the central control (CC) register (cccccccc) printouts. Each output message is indexed by the audit number and the error number (for example, 46 20). Since audit error number 20 and higher apply to more than one audit number, they may be explained in 8.01 which should be referred to as required.

7.02 Audit 0 specifies that an error was detected by a program other than an audit program or the PØB audit which is run out of the main program. Each combination of audit number and audit error number is followed by a general description of the error and meaningful register contents.

7.03 In many cases, a register may be followed by NØTE1, 2, 3, etc. These are symbolic addresses (in the associated PIDENT) used to distinguish between the specific types of errors that result in the printout of the same SA03 audit output message. This register contains the absolute PS address where the error was found. The origin of the PIDENT in which it is located should be subtracted from the register content. The resulting relocatable address is equal to a symbolic address (NØTE1, 2, 3, etc), in this PIDENT. Each NØTE is followed by a specific description of the error and meaningful register contents.

7.04 The following is an example of the format used in this section to present the audit number, the audit error number, the associated output message, and the register meaning.

aa bb: General error description

Register meaning:

B — Common register meaning (applies to both NØTE1 and NØTE2 under J register)

J — Return (failure) address in PIDENT XXXX for SA03 print routine

NØTE1—Specific error description

F — Register meaning (for NØTE1 only)

X — Register meaning (for NØTE1 only)

NØTE2—Specific error description

X — Register meaning (for NØTE2 only)

Z — Common register meaning

The specific combinations of audit numbers and audit error numbers are as follows.

AUDIT 0

0 0: This output message indicates an error detected by a program other than an audit program. The F or J register printout specifies the program address that detected the error.

F — Client failure address

PIDENT ISXS—Invalid reorder connection. Reorder not connected to step-by-step (SXS) incoming trunk.

(a) If the J return address is in PIDENT CRFI or CRFS, an invalid condition was found. Examine the contents of the J register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(b) If the J return address is in PIDENT CTRF, an invalid condition was found. Examine the contents of the J register and determine the address at which the error was detected. The explanation of the error is given next to that address.

Register meaning:

J — Return address in PIDENT CTRF for SA03 print routine

(c) If the J register return address is in PIDENT NSUP (Case I), an address of enable address (AEA) has been obtained for an invalid unit type (non-SD, non-SC, or non-network). If the J register return address is in PIDENT NSUP (Case II), the master scanner number (MSN) obtained from the auxiliary block for the unit being examined could not be found in the table of network (NET) and signal distributor (SD) MSN; thus, no T1 and T2 bits could be found:

Register meaning:

F — (Case II) address of TT1 block of four words; C(F) + 3 = address of MSN_{FO}

K — (Case I) unit type; (Case II) last MSN in MSN table

L — (Case II) MSN mask (frame and row)

X — (Case I) member number

(Case II) unit type plus member number

Z — (Case II) address of last entry in MSN table

(d) If the J register return address is in PIDENT RCUP, an error has been detected.

Register meaning:

J — Return address in PIDENT RCUP for SA03 print routine

NØTE2: The length of an auxiliary block was probably mutilated; the length is negative, greater than 2047, or two auxiliary blocks overlap.

F — Address in recent change (RC) area of auxiliary block word number

X — Start address of mutilated block

Y — Tag of temporary auxiliary address which points to block.

NØTE4: An out-of-range RC register tag was found while counting modules to be card written following an RC—CMØDS message.

Registers same as NØTE2

NØTE5: Auxiliary block or subtranslator initialization block with invalid starting address has been found in the auxiliary RC area.

B — Address of primary entry which points to block

F — Address in auxiliary area of start

X — Same as F register

NØTE6: Subtranslator initialization block has been found in auxiliary RC. The length exceeds the maximum allowed of 2048. Card modification will not write such a subtranslator.

B — Length of subtranslator

K — End address of subtranslator

X — Auxiliary RC address of initialization block

NØTE8: Invalid pseudo-auxiliary block was found in RC auxiliary area. This should be corrected before card writing.

F — Primary address pointing to block

K — Length of block

X-1—Temporary auxiliary address

NØTE9: Invalid subtranslator initialization block has been found in auxiliary RC. The permanent auxiliary address is unequal to the subtranslator address. Card modification will not write such a block.

B — Permanent auxiliary address

LEN IS NOT IN SIMFAC
(K-REG IS D.N.)

F — Address of primary entry

K — Subtranslator address

X-3—Temporary auxiliary address

NØTE10: Subtranslator or auxiliary block with invalid end address has been found.

B — Address of primary entry which points to block

X — Auxiliary address of start of block

(e) If the J register return address is in PIDENT TNLS, a head cell counter for one of the trunk linked lists was negative; therefore, audit 34 is requested.

(f) If the J register return address is in PIDENT YRGD, no trunks or no more trunks on guard timing have been found or the counter of number of trunks on guard timing was found negative or zero.

Register meaning:

B — Negative or zero

F — Address of PMT

J — Return address for SA03 print routine

K — Garbage or TNN

Y — Contents of PMT word (counter and TNN)

0 1: If the J return address is in subroutine T2_ERR in PIDENT YAHA, a supervisory error has occurred. Refer to the relocatable address of the error within PIDENT YAHA for a description of the error. A record of audit 01 printouts should be kept and sent on a periodic basis to Western Electric PECC and Bell Telephone Laboratories via normal OTR procedures.

Register meaning:

B — Client program address

J — Return address in subroutine T2_ERR in PIDENT YAHA for SA03 print routine

0 3: Invalid information has been detected while auditing sets of 5-word blocks of call store which contain all of the information used in previous requests to take links out of service.

Register meaning:

F — Starting address of the faulty 5-word block

J — Return address in PIDENT NMFA for SA03 print routine

K — Frame type (3-2) and link type (1-0)

E(17) → E(0)—Bad busy-idle word call store (CS) address

K — Pseudo CS address

E(18)—Mask is bad

K — Pseudo mask

E(19) → E(17)—Bad associated B-link CS address

K — Pseudo B-link CS address

L — E(20)—E(17)—Invalid frame-link combination

Y — Starting address of the 5-word pseudo block in which the information recalculated for matching is stored

Z — Loop counter of the number of cells still to be audited

0 4: (a) If the J return address is in PIDENT MILH, an error has been found.

Register meaning:

B — Not applicable

F — A.UTYP 55 aux block possibly containing bad ASPN

J — RA in pident MILH

K — Possibly bad ASPN

L — Number of words in ASP TRANSLATØR. This is possible source of error print. Check for error in maximum size of parameters in left half of M5INTZ.

X — Address of QTL CS Head Cell that is being worked on by PIDENT MILH

Y — Address of subtranslator for ASPN

Z — Original Client's return addresss

(b) If the J return address is in sub-routine CTML in PIDENT TNLS, one port of a multiport trunk has the same list code and another port is on the TML. Refer to the relocatable address of the error within PIDENT TNLS for a description of the error.

Register meaning:

B — Client program address

J — Return address in PIDENT TNLS for SA03 print routine

(c) If the J return address is in sub-routine CRAZY in PIDENT TNLS, a multiport trunk with inconsistent TDA data has been detected. Refer to the relocatable address of the error within PIDENT TNLS for a description of the error.

Register meaning:

B — Client program address

J — Return address in PIDENT TNLS for SA03 print routine

(d) An error has been found while auditing the permanent signal and high-and-wet list (PSHWL).

Register meaning:

J — Return address in PIDENT PSPD for SA03 print routine

NOTE1—The load pointer (P4HPTR or P4LPTR) of the HWL contains an address above the maximum range.

F — Start address of the HWL high priority list (HPL) or low priority list (LPL)

K — HPL (or LPL) out-of-range loading address

NØTE3: The load pointer (P4HPTR or P4LPTR) of the HWL contains an address below the minimum range.

F — HPL or (LPL) start address

K — HPL (or LPL) load pointer that is out-of-range

NØTE4: An entry was found in the idle blocks of the HWL.

F — (HWL address of error entry) + 1

K — Dummy slot address of HPL (or LPL)

X — Number of HPL (or LPL) entries audited

Y — Error entry

0 5: Same as audit output message SA03 6 5.

0 6: Same as audit output message SA03 6 6.

0 7: Irregularities have been detected while auditing one of the LEN list's (RC or LLR) printing status indicators or load pointers.

Register meaning:

J — Return address in PIDENT NMFL for SA03 print routine

NOTE1: A printing status indicator error was detected. PRTI = 1, and AUDFLG = 0, indicating that there had been no TTY segment return for the particular message for at least 5 minutes. The printing status

of the list was questionable, so all printing indicators for the list in question have been returned to the non-printing state.

Register meaning:

k — List parameter word (DUMPI)

Z — Address of list

NOTE2: A load pointer range error was detected. The pointer has been zeroed, and control has been returned to the client.

F — DSAVE for TTY message segment. (See layouts for DSAVE1 and DSAVE 2.)

K — List size

X — Maximum allowable list size

Y — LEN which could not be added to list

Z — List address

NOTE3: A load pointer range error was detected. The pointer has been zeroed, and control has been returned to the client.

K — Maximum allowable list size

X — List size

Y — DSAVE for TTY message segment. (See layouts for DSAVE1 and DSAVE2.)

Z — List address

0 9: The call trace bit audit found an error. Either the trace bit is not set on a correct DN or the count of DNs on the list is wrong.

0 15: All digits were collected on a bylink incoming trunk. If the PMT word does not contain the idle code, the PMT will be blind idled.

Register meaning:

B — TNN

F — Line side T2

J — Return address in PIDENT ICAL

K — Line side T1

L — Step-by-step state word

X — Contents of PMT word

Y — Trunk side T2

Z — Trunk side T1

0 25: This message is not an audit error. An error was detected in the form of the junctor maintenance list. A follow-up audit (number 41) was requested.

0 30: (See 8.01, page 128, bb = 30.) This message is not an audit error and is printed for two different types of errors.

(a) If the J register printout is an address in PIDENT ICAL, a customer has finished dialing on an SXS trunk but the trunk state word is not idle. The path memory is in an incorrect state. This printout is accompanied by an SA03 0 15.

(b) If the J register printout is an address in PIDENT SADT, a disconnect report occurred for a trunk that was linked to a call register with the audit code (RI = 0 and PT = 7) in its state word. This audit code was put into the CR by audit routine SAHEP1 or SARALF, which found something wrong with the call register.

(c) If the J register printout is an address in PIDENT TRCE, information in the PMT word was found not to agree with the actual state of the corresponding trunk.

0 31: (See 8.01, page 128, bb = 31.) Same as SA03 0 30.

0 33: (See SA03 3 33.)

0 36: (See 8.01, page 128, bb = 36.)

0 39: This message is printed out subsequent to a 0 48 message. If a timing list was being served at that time, the timing list is zeroed (made idle). The Z register contains the headcell address for the list being served.

0 40: (a) (See 8.01, page 128, bb = 40.) If the J return address is in sub-routine NMALLR in PIDENT NMFL, the ringing program has attempted to load the LEN given in the K register in the LLR list when it is already in the list. Investigate conflicting use of queue word of ringing register.

(b) (See 8.01, page 128, bb = 40.) If the J register return address is in PIDENT SARG, the system is being directed to go to a reference point (ECRSUM) following a maintenance interrupt or a Phase 1. A subroutine attempts to restore-verify the lines of the register in the call-in-progress register Y4CRA. This message is followed by an SA02 REG message. Starting in word 3, with logical 0 as an end code, are the lines to be restored.

Register meaning:

X — Contents of Y4CRA

(c) (See 8.01, page 128, bb = 40.) If the J register return address is in PIDENT TLTP (trace and hold key request), path memory has been transferred to a register associated with PIDENT TLTP. SARALF was called to clear the old CR address.

Register meaning:

J — Return address for SA03 print routine

(d) (See 8.01, page 128, bb = 40.) If the J register return address is in PIDENT YMRG, the message indicates one of the three following conditions. Either (1) all local test desk registers were busy when PIDENT LTDK entered with an incoming call from the local test desk.

Register meaning:

J — Return address for SA03 print routine

or, (2) during timing of active ringing registers, which are on call with ringing connected, the ringing program has found a register that contains an invalid call type.

Register meaning:

J — Return address for SA03 print routine

X — Ringing register address

Y — Ø(140000)

Z — C(3,X) ringing register control word

or, (3) path memory has been transferred to a register associated with PIDENT TLTP. Refer to the description for the J register return address occurring in PIDENT TLTP in audit 0, error 40.

0 41: (a) (SP only) If the J register return address is in PIDENT SAFA, the trunk scan junior register (TSJR) or SXS hit timing junior register (HTJR) idle head cell was either 0 or out of range.

Register meaning:

B — End of list code

F — Contents of idle head cell

J — Return address for SA03 print routine

X — Register type: 7 = TSJR, S = SXHT

(b) If the J register return address is in PIDENT TYMI, an error has been found by the TTY audit.

Register meaning:

J — Return address for SA03 print routine (NØTE1-6)

NØTE1 (SP only): Active maintenance TTY, not local or remote maintenance TTY.

K — Member number of TTY considered to be the active maintenance TTY

NØTE2 (SP only): SP and CC TTY masks do not agree. The SP mask will be set to agree with the CC mask.

K — SP mask (incorrect)

NØTE3: TTY state words are incorrect. The TTYs whose state words are incorrect will be idled.

K — Mask for the TTYs whose state words are correct.

NØTE4 (SP only): The TTY peripheral order buffer (PØB) and/or its associated memory have been found to be incorrect and have been reinitialized.

NØTE5 (CC only): The counter which controls the rate at which characters are sent to the TTYs has been found to be in an invalid state and has been reinitialized.

NØTE6 (CC only): The TTY transient counter is invalid. It has been initialized.

K — Incorrect value of TRMC

NØTE7: A TTY has been found with an out-of-range pointer into the output message buffer area (ØMBA) or teletypewriter work register (TWR). The TTY has been idled to prevent the use of this out-of-range pointer.

F — Member number of the TTY with the invalid pointer

K — Pointer

(c) (SP only) If the J register return address is in other than PIDENT SAFA or TYMI, a looping TNN link list has been encountered.

Register meaning:

J — Client return address for SA03 print routine

K — Address of head cell for the network and frame for one of the TNNs in the loop

Y — Address of the path memory for trunks (PMT) word for the TNN

0 42: (a) (See 8.01, page 128, bb = 42.) If the Z client register address is in PIDENT CØIN, a call register audit subroutine has been called to mark a CØIN register in trouble.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — Coin charge register address

Z — Client return address (NOTE1-3)

NØTE1: An attempt to seize a PM9 annex register has failed.

NØTE2: An attempt to seize a multibit scan register has failed.

NØTE3: An originating register cannot be found on the link list of a coin charge register associated with an outpulsed coin zone call.

F — Ø(3400000)

(b) (See 8.01, page 128, bb = 42.) If the Z client register is in PIDENT CTOP, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(c) (See 8.01, page 128, bb = 42.) If the Z client register address is in PIDENT DPØP, a dial pulse (DP) junior register was not available when an attempt was made to seize one.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — DP outpulsing senior register

(d) (See 8.01, page 128, bb = 42.) If the Z client register is in PIDENT IRAC, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(e) (See 8.01, page 128, bb = 42.) If the Z client register address is in PIDENT MFTL, the number of multifrequency junior registers (MFJRs) does not equal the number of MF XMTRs or there is no MFJR.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

(f) (See 8.01, page 128, bb = 42.) If the Z client register address is in PIDENT ØGTC, the route index does not indicate an outpulsing register.

J — Return address in PIDENT SARG for SA03 print routine

Register meaning:

(g) (See 8.01, page 128, bb = 42.) If the Z client register address is in PIDENT PSPD, this message indicates that TLMSD (a routine in TLTP) had been called by PSPD to start scan of PERMANENT SIGNAL RELEASE key. TLTP has failed to seize a multibit scan register.

F — Member number of panel or Ø(37000) (if multibit scan (MBS) register could not be seized)

J — Return address in PIDENT SARG for SA03 print routine

X — P4MCR

0 43: (a) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ADBN, see NØTES 57-60, 62, 71, 78-81 under 0 43 (b).

(b) (See 8.01, page 128, b = 43.) If the Z client register is in PIDENT ADDA, ADBN, ADCI, ADDX, ADIN, ADLR, ADPB, ADPT, ADUP, or ADUX, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given either next to that address in the PR or in the NOTES in this Section.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client return address (NØTE1-118)

NØTE1-6: Open/close cut-through implementation routine generated an invalid index into CSTI table.

NØTE7: Invalid macro call, for example, IMPLEM called with parameter IMPL1 = CICØ, or either IMPØNE macro or the IMPDIS macro called with parameter IMPL = CICØ.

NØTE8-22: Transferred to undefined implementation routine from routine SZPB, probably because item CSXN in conference or loop register was incorrectly initialized.

NØTE23: Register requesting a dialing connection and an invalid state word. Should have been a loop subregister 2 (Centrex attendant) or a conference subregister.

NØTE25: Attempt to set up talking connection to conference or loop port and found invalid item CFST, CFSZ in conference/loop register, or invalid value in PS table CTYB, item IX21.

NØTE26-28: Wild transfer to slot left for unused value of index from table TMQB.

NØTE29-34: Wild transfer or ANPQS routine, entered whenever conference or loop register goes on PØB queue, found unexpected PMFI.

NØTE35-39: Wild transfer or invalid value of item UP1I in table CSHB.

NØTE40: Wild transfer to temporarily undefined routine. (See NØTE35-39.)

NØTE41: Entered UP131 or UP132 following successfuly execution of PØB to place Centrex attendant trunk in dialing state. PØB was loaded in routine IAP2, IAPR2, IASS2, IASSR2, IASD2, IASDR2, IADS2, IADSR2, IADD2, or IADDR2. Attempt was made to establish connection to TOUCH-TONE® receiver from associated loop port in same PØB, but change in network (CIN) failed; therefore, while attendant trunk relay action PØB was being executed (LP2 CRA in PØB), LP1 or LP7 was placed on TOUCH-TONE queue. UP131/2 is entered whether the CIN failed or not and must, therefore, always check whether LP1/7 has caught up with LP2. In the present case, LP1/7 has not caught up with LP2 (State word mismatch, go to UP1FF) but is on neither the TT queue nor the PØB queue; therefore, LP1/7 is considered invalid. If there had been a delayed action request on the attendant trunk, it would have been acted on since it might have brought the attendant trunk to a state compatible with the loop circuit.

NØTE43: Wild transfer or invalid value of index UP21 in table CSHB.

NØTE45: MVPM [common routine to move line-to-line (LL), line-to-trunk (LT), or trunk-to-trunk (TT) path memory] found X negative (set at MVAA) indicating memory is not to be moved to linked register but should be moved to trunk-to-trunk memory (TTM) in routine MVTTM. MVPM should not have been entered.

NØTE46: Attendant recall or add-on/transfer to attendant. Found MVCD = 0 invalid for CSXN of register in Y register.

X — Address of loop source register LP7

Y — Address of conference register holding PMA for connected path from port to audible (reserved path to loop port)

NØTE47: Attempt to call undefined CIN.

NØTE48: Presently unused merge program index.

NØTE49: Disconnect/abandon report analysis routine. Unused value of TSJR action index in table PTDB.

NØTE50: Received time-out while PØB active, invalid. Simultaneous timing and PØB active, not presently done.

NØTE53: Flash has been detected at Centrex attendant loop port. The 2-bit flash control item from PTDB left-half table is in K register, in position of TYP1 of TYP7, placed there by the ANPTS routine. If K = 2, presently unused value for Centrex.

L — Contains M.TYP7 or M.TYP1

NØTE54: Flash has been detected on 2-way call held in conference register and connected through conference circuit because of drop-back failure. F register positive from orient routine means 6-port conference circuit which is not yet used.

NØTE56: Routine ANTMQ yielded zero queue return index, which is invalid.

NØTE57: Port-to-port connection is to be abandoned, and the linkage between conference subregisters must be checked. (One conference register is for each conference circuit and one subregister for each port of each circuit; connection is only between ports of different circuits, and the

linkage is only between subregisters of different registers.)

Y — Address of register on which abandon attempt initiated; this is not master register (MR). One other conference subregister is expected to be linked to this one; it was expected to be MR, but either there was no other conference subregister or the other one was not MR.

NØTE58: Answer on CF7 or LP7 register; ANZAA routine found TYP7 = 0 indicating CF7/LP7 idle, which is not true. ANZAA routine transferred indirectly on a -1 in J register.

NØTE59: Invalid data detected in K register. The K register should have contained E(6), E(8), E(10), E(12), E(14), or E(16) as output of FICW4.

NØTE60-61: Answer report received on CF7 or LP7 register; routine is transferred indirectly on contents of J register less 1.

NØTE62: Answer report received on loop destination port with no attendant present; hence, source port at least should be nonidle. Routine ANZAA found TYP = 0 indicating LP7 (source) idle, hence invalid.

NØTE63: LEN translation on line that flashed for add-on/transfer indicated unassigned LEN or master control center (MCC) line, which should not have flash privilege.

NØTE64: LEN translation on line connected to line that flashed indicated unassigned LEN or MCC line.

NØTE65: Translation routine TRTNGN on interoffice trunk, operator, etc, to be connected to conference port, indicated unassigned TNN.

NØTE66: See NØTE59.

NØTE67: TRGNAA routine indicated that trunk group number (TGN) given as output of TRTNGN (called under routine TRKTR) was unassigned.

NØTE68-91: Common routine to find conference or loop register linked to the register given in X register. No linked conference register except the present one was found.

NØTE92: Unexpected PT report or line group identity (LGI) is unexpectedly 0.

NØTE93-96: If address is between NØTE93 and NØTE94 or NØTE95 and NØTE96, an unused PT slot is indicated.

NØTE102-107: Invalid index into table ABPT. A conference subregister other than conference controlling subregister (nondrop-back-failure situation) is to be abandoned. RPCAB routine goes to ABPT+(4 times LGI-1)+N, where LGI indicates which subregister is involved; N is a 2-bit item chosen from table CTYB on basis of CFST, CFSZ, and LGI.

NØTE108-109: Wild transfer.

NØTE110-113: A conference subregister other than the controlling subregister (nondrop-back-failure situation) or a loop subregister other than the source subregister (not held by the attendant and not drop-back-failure situation) has been through disconnect processing. ELR30 routine transfers to IDPT+(4 times LGI) where LGI indicates which subregister is involved.

K — Control item read from LTYB chosen according to LALC, TYPL, and LGI. This control item was found to have an invalid value.

NØTE115-118: Invalid index into routine CFTB, HFTB, HF1TB, or HF2TB. (See routine ECINF, EHF,

EHF0, EHF1, or EHF2.) Index was read from table CSHB/CFHB.

NOTE119-122: An attempt to use the source billing of attendant handled calls (SBAC) feature to replace the attendants billing DN with the source party billing DN has found that the source party has invalid translation data. The invalid conditions are described as:

(1) The source party is a CTX line that has invalid translation data as found by the LEN originating and AMA translation route.

(2) The source party is a CTX tie trunk and its TNN is found to be unassigned.

(3) The source party is a CTX tie trunk and its TGN is found to be unassigned.

(4) The source party is a CTX tie trunk and its TGN has no auxiliary block.

(c) (See 8.01, page 128 , bb = 43.) If the Z client register address is in PIDENT AMAC, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(d) (See 8.01, page 128 , bb = 43.) If the Z client register is in PIDENT ATTT, ATTN or APCI, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(e) (See 8.01, page 128 , bb = 43.) If the Z client register address is in PIDENT CAMA, an error has been detected in a CAMA call that has caused the call to be terminated. This message should be preceded by a CA02 message describing the problem. If the printing of the CA02 message has been turned off, it may be turned on using the CAMA-PRINT-message. If no CA02 message is received, refer to the address-1 in the Z register in PIDENT CAMA to find a transfer to CA02-aaa-bbb. Refer to CA02-aaa-bbb in the symbol reference table of PIDENT CAMA to find the description of the error. If the above method yields a transfer to SUB-AVAIL-OFF rather than to CA02-aaa-bbb, then more CR1 registers were found on the idle and occupied (available) operator list than the total number of CR1 registers in the office. If neither of the above messages apply, then the CA02 error message print routines have encountered an internal error.

(f) (See 8.01, page 128 , bb = 43.) If the Z client register is in PIDENT CCAD, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(g) (See 8.01, page 128 , bb = 43.) If the Z client register is in PIDENT CFLIP, an attempt was made to deactivate a line that was marked "call forwarding." The error found indicates that a recent change entry was looked for and not found.

(h) (See 8.01, page 128 , = 43.) If the Z client register address is in PIDENT CØCN, the CRA in coin control junior register is not equal to the CRA that was stored in the PØB.

(i) (See 8.01, page 128 , bb = 43.) If the Z client register is in PIDENT COIN, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(j) (See 8.01, page 128 , bb = 43.) If the Z client register is in PIDENT CTOP, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(k) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXBV, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client address

NØTE1: Trunk being tested was found to be busy after subroutine NETRCT indicated it was idle.

X — Originating register address

NØTE2: Trunk being tested was found to be one-way incoming which is invalid.

X — Originating register address

NØTE3: During the busy verify testing of a line, the path memory was found to be trunk to trunk which is impossible.

F — CRA

K — RI or CR

X — LP7 register address

(l) (See 8.01, page 128, bb = 43.) If the Z client address is in PIDENT CXIC and error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine.

NØTE1: Translation routine TRSFAB, which was called with an assigned SFG, has returned to the client program at the "unassigned SFG return."

NØTE4-5: Illegal subtypes from CTX prefix and extension translation received from a CTX type incoming trunk.

(m) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXKY, an error which involved a console register was found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client address

NØTE1: An attendant control register does not point back to a console register.

X — Address of LP2 attendant control register

NØTE2: The input console group number was found to be out of range while attempting to seize an idle console register.

NØTE3-5: A valid console register address could not be obtained from console group number.

K — Pointer to console register address

(n) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXLØ, a common block pointer did not contain a common block address while testing status of a particular console group.

(o) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXOR, an error has been found.

Register meaning:

NØTE9: Illegal entry into CXIX store digit table DCTT.

NØTE11: During busy-verify testing, the DTYPE was found invalid after it was previously checked as valid.

F — DTYPE (22-20)

Y — LP1 address

NØTE12: During busy-verify testing, the subtype for a DTYPE = 5 request was found to be invalid after it was previously checked as valid.

F — Subtype (4-0)

Y — LPI address

NØTE16: The maximum number of account number digits to be saved and outputted on AMA records by the CDAR feature has been exceeded. This is due to the final data word to auxiliary block for the CDAR access code having more than eight bits set in the DTS items. Check all CDAR final data word auxiliary blocks for error.

NØTE17: The number of digits collected for a CTX trunk group access code has somehow exceeded five.

NØTE18: Translation routing TRSFAB returned at the unassigned SFG return when it was called with an assigned SFG.

NOTE19: An invalid feature loading condition was found.

(p) (See 8.01, page 128 , bb = 43.) If the Z client register address is in PIDENT CXSF, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1—Invalid report code

F — Code

NØTE2: Failure return from PIDENT YAHA when attempting to seize an SF register and none is available.

F — SFGN

X — CR to which SF register would have been linked.

(q) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXTA, an error has occurred.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — Address of originating register

Z — Client failure address

NØTE1: Unassigned TTN (of a supposed incoming trunk) is connected to the code-calling circuit. The call has been taken down.

NØTE2: Illegal index from N4XPAL table derived for incoming trunk connected to code-calling circuit.

K — Illegal index

NØTE3: Pickup group number exceeded the range of the pickup group table (Z3PUGT).

K — Pickup group number

NØTE4: The head cell (Z3PUGT) for the pickup queue equals zero indicating no call pickup capability. Subroutine PUREM1 should not have been called.

B — Content of pickup group head cell

NØTE5-6: Went to take a ringing register off the pickup queue after determining it was on the queue, or the register on the pickup queue was not a ringing register.

X — Address of head cell

K — Address of first ringing register on queue.

NØTE7: Pick up group number is out of range.

K — Pug number

Z — LEN

NØTE8: The particular pick up queue to which the ringing register is linked has a zero headcell entry.

K — 2 times Pug number

Z — LEN

(r) (See 8.01, page 128, bb = 43.) If the Z register client address is in PIDENT CXTP, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1: Attempt to update register to indicate network connection type fails due to complex PMFI.

K — PMFI (displaced)

X — CRA

NØTE2: Supposed preempt scan point was not found to be a trunk scan point.

X — TPC register address

NØTE3: Same as NØTE1

NØTE4: Invalid attempt to seize a TPC register or an attempt was made to seize a TPC register which was not idle. If an attempt was made to seize a nonidle TPC register, an SA03 0 44 will also occur.

X — CRA of call which is attempting to seize a TPC register

NØTE5-6: Bad LEN translation on pseudo-LEN while attempting to find the centrex number (CTXN) for a given TGN.

(s) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT CXIX, an invalid condition has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1: Entry was made to PIDENT CXIX with a configuration state transition number (CSXN) which resulted in an invalid zero implementation index. If L = Ø(77), the CC registers contain data set up by routine EHS acting on the CSXN at its entry.

F — Bit 22 is the PØB bit (1 = keep, 0 = idle). Bits 0-1 are the success index used to control exit from routine EHS.

K — UPII, the index into UP1TB (right adjusted from bits 16-11 of the right-half data)

L — If unequal to Ø(77), only X register is valid

X — CRA

NØTE2: An implementation request has been made on a register that is currently active. At present, this is not a valid entry since extraneous reports are not possible.

F — (21) PØB active bit

K — CSXN from CRA

X — CRA

NØTE3: An attempt is being made to initiate implementation with a CSXN, which does not indicate a valid initial state.

K — Right-half data read from IMPTB table

X — CRA

NØTE4: An invalid entry was reached in UP1TB table or an attempt was made to go through UP2TB.

X — CRA

NØTE5: A hardware failure index (HEI) of 2 is not used and indicates an error condition.

K — HFI = 2

X — CRA

NØTE6: A HFI of 3 or a failure index (FI) of 3 was encountered. These values are invalid in this program.

F — 3 then FI = 3

K — 3 then HFI = 3

K — CSXN then FI = 3

X — CRA

NØTE7: A failure word index (FADD) of zero is invalid.

K — 0

Z — CRA

NØTE8: Register which should be linked to a conference loop (CF/LP) register was not linked to any register.

B — State word of CRA

X — CRA

NØTE9: A search was made of the CRA link list for a CF/LP register and none was found.

F — Last CRA on list

X — CRA

NØTE10: The originating register (ØR) was not found properly linked on the call register link list.

Y — CRA of input register

X — Linked CRA, should be an ØR

(t) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT DCNT, an invalid condition has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1-2: Invalid return for a prefix and extension translation for a foreign exchange (FX) line

NØTE3-4: Invalid TNN from trunk group number to TNN translation when putting up busy tone to an incoming trunk

NØTE5: Invalid state for a tandem trunk which is being put up to busy tone

NØTE6-8: Invalid transfer to PIDENT DCNT

NØTE11: Incoming trunk is one of the following: Centrex (Tie, FX, CO, CCSA), AIOD, AUTOVON, CAMA, DDD Access, Secondary Intertoll, Intertoll, or Tandem. F5TGTYP is used as an index to table TTYP (routine CXTT in PIDENT DCNT). Values 0-5, 11, 12 are invalid.

F — Address of second word of TGN auxiliary block

K — F5TGTYP

Y — Third word of TGN auxiliary block

NØTE12: Invalid transfer to an optional PIDENT that was not loaded.

(u) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT DRØP, a bad dial pulse junior register was found and removed from the active list.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — DP outpulsing senior register

Y — Hopper entry to be unloaded

(v) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ECMP, bad linkage was found in the one-second timing list (for PD, PS, RØH, and ØPR timing).

Register meaning:

X — Head cell contents

Z — Head cell address

(w) (See 8.01, page 128, bb = 43.) If the Z register client address is in PIDENT HMCØ, an error has occurred.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

NØTE1: A line with a terminating major class of CTX attendant has the CSDA bit set in the LENCL3. This is invalid.

X — CRA

NØTE2: The CSDA bit is set in the LENCL3, but not the DNCL2. Invalid translations.

X — CRA

NØTE3: The CSL bit is set on a line which is not in a multiline group.

X — CRA

NØTE4: A 90A CPS display station line has an invalid DN at this point in the call. The DN was used earlier in the call successfully. Probable wild write.

X — CRA

NØTE6: A 90A CPS display station trunk group is unassigned.

X — CRA

NØTE7: The output from TRGNAA indicates that a 90A CPS display station trunk group does not have an auxiliary block. This is invalid.

K — K output from TRGNAA

X — CRA

NØTE8: The requested 90A display station trunk does not exist. The display stations LEN terminal number is larger than the number of trunks. The LEN terminal number equals the trunk member number.

L — Terminal number

Y — Number of trunks

NØTE9: A trunk group used for display consoles has an invalid expanded trunk class code transmitter type. The only valid type is MF.

K — Transmitter type (bits 8-10)

X — CRA

NOTE10: An invalid code was found in an outpulsing register used by the 90A CPS display station.

X — CRA

NØTE11: Error return from FMEM, invalid TDA.

F — Multiline common block address

X — CRA

NØTE12: Error return from HMMU, a line without the CSDA feature was found in a multiline group which was only supposed to have CSDA lines.

X — CRA

NØTE13: See NØTE 10.

NØTE14: Error return from FMEM, probable wild write. DN was tested in DISMU and passed.

X — CRA

NØTE15: Check hunt lists associated with MLG for more than 2 unassigned LENS inside a group of assigned LENS. This is invalid with the call store message units feature.

Y — MLG number

NØTE16: See NØTE14.

NØTE17-18: See NØTE15.

NØTE19: See NØTE12.

NØTE20-21: 90A CPS display station has invalid translation.

F — Multiline common block address

X — CRA

NØTE22: A data group number (DAG) is larger than the H8DAG table allows. Translation data assembly (TDA) or RC error.

F — Length of H8DAG table

K — 2 times DAG number

NØTE24: TDA specified an initial charge of 11 message units for hotel-motel type call. This is invalid.

X — CRA

NØTE25: Translations specifies an overtime charge of 11 message units for a hotel/motel type call. This is invalid.

X — CRA

(x) (See 8.01, page 128, bb = 43.) If the Z register client address is in PIDENT HMTL, an error has occurred associated with a hotel-motel line. LEN of the HMTL line will follow in an audit 50 printout.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE6—An HMTL line is restricted by TDA to specify more than 10 operations of its message register.

NØTE7-8: Internal error encountered converting initial or overtime minutes to 6-second timing counts.

NØTE9: Return from LEN translation (TRENAA) indicates that line is unassigned.

NØTE10: Return from LEN translation indicates MCC line.

NØTE11: Return from LEN translation indicates line in plug-up list.

NØTE12: Return from LEN translation indicates no sleeve lead.

NØTE13: CSMU (CS message units) bits is set in HMTL register but HOMO package is not loaded in this office.

Y — LEN

(y) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ICAL, an error has occurred.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1-2: A screening LEN for a CAMA incoming trunk was found unassigned; an MCC line, plugged up or service observed when an LEN translation was performed. A dump of the IR or ISR should follow. The TNN of the incoming trunk should be in word 4. Determine TGN of incoming trunk and check for an assigned screening LEN.

X — IR or ISR address

NØTE3: A CAMA call has been encountered with no CR0 register. This indicates a program error.

NØTE4-5: An invalid translation has occurred. The centrex digit interpreter table has data type 5 (special services) with an invalid subtype.

(z) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ICRV, an invalid entry has been reached in table ICPSPD. This table is indexed by the Pulsing Incoming (PINC) item which is used to identify the type of pulsing.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

K — Type of pulsing

1—MF
2—DP
3—RP
4—PCI
5—TT

X — Incoming register address

(aa) (See 8.01, page 128, bb = 43.) If the Z client register is in PIDENT IRAC, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(ab) (See 8.01, page 128, bb = 43.) If the Z client register is in PIDENT ISIG, an invalid condition was found. Examine the contents of the Z register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(ac) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ISXS, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

L — Address of SXJR register

X — Incoming SXS register address

Z — Client failure address

NØTE1: An MSN-TNN translation was performed. The MSN was a nontrunk point instead of the expected bylink trunk point.

K — Unit type, member number, and nontrunk program index (NTPI) for the MSN

NØTE2: The TGN that was derived from the TNN of an incoming bylink trunk is unassigned.

K — 0

(ad) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT LTDK, zero (0) was used to index the LTDK state table. State zero (0) is invalid in this program.

Register meaning:

B — Content of client register state word

J — Return address in PIDENT SARG for SA03 print routine

X — Client register address

(ae) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT NCIN or NTWK, a call that has encountered an invalid condition when attempting to link share has been aborted. The hunt was blocked indicating no idle links of the type being shared. This condition can only occur if an LSF or TSF has been removed from service with the FAB-MB-message while calls were in progress in that frame.

Register meaning:

B — State word of CR

F — C(N4SR2) the sub-CIN return address

J — Return address in PIDENT SARG for SA03 print routine

K — NTWK—c(N4CLRA) the CIN return address

K — NCIN—c(N4CR2) the CIN return address

L — Address of routine giving invalid link status

X — CRA

Y — c(N4PR2) the pseudo CIN return address

(af) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT NMFL, an error (for example, invalid return from a translation subroutine due to unassigned TNN, etc), was detected during program execution and a client register was associated with the PØB. This message is preceded by an MN02 message as described for aaa = ERR in the related output message manual.

(ag) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT NSLN, the receiver type associated with an input TNN is invalid for the service link network (SLN). The TNN should appear in a subsequent message.

(ah) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ØFGT, a customer has dialed a directory number which is being routed to a trunk group. The route index has option 0 and the DN translator has program index = 0. This trunk group cannot be used for option 0, PI = 0. The originating register will be printed by audit 43 and will contain the DN dialed.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

K — CPI of trunk

X — CRA

Y — Major class of line (5-0)

Z — PØBAA

(ai) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ØFTR, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

Z — Client failure address

NØTE1: The station with temporary transfer active has been found to be unassigned.

X — Incoming register address

NØTE2: An operator register in the 100 ms timing list has been found to be linked to itself.

K — IS30, RT15, SR01, CF30, IS41, or DC77 in PIDENT ØFTR

X — Operator register address

NØTE3-8: Bad linkage of operator registers on 100 ms timing list.

X — Operator register address

(aj) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT ØRDL, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — Originating register address

Z — Client failure address

NØTE1: Error involves an invalid AMA report via PT = 2 or 3.

F — Invalid report code

NØTE2-4: Register state word contains audit code RI = 0.

B — State word

NØTE6-8: Illegal entry into store digit table, DCT.

NOTE9: Invalid entry in work table.

NOTE10: Transfer to a feature package entry when package is not loaded.

NOTE11: RI slot unexpectedly zero.

NOTE12: Invalid entry in time-out table.

NØTE13: Illegal entry into client transfer table TB in ØRDL.

NØTE14-15: Illegal entry into WKTAB table in ØRDL.

(ak) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT RAMP, the 100 msec timing control word indicates that there are no recorded announcement machines involved with 100 msec timing at the J-return for completing 100 msec timing. If a POB is unavailable for some relay action for a recorded announcement machine, 100 msec timing is begun before another POB seizure is attempted.

(al) (See 8.01, page 128, bb = 43.) If the Z client register address is PIDENT RING, an error has been found.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — Ringing register address

Z — Client failure address

NØTE6: Queue administration program had found ringing and audible circuits and a PØB available. The ringing register was removed from ringing and audible circuit queue. PIDENT RING has been unable to hunt the PØB to reattempt ringing connection on an intraoffice call.

NØTE7: PIDENT RING was unable to find an idle audible circuit.

NØTE8: PIDENT RING was unable to find an idle ringing circuit.

NØTE9: Same as NØTE6 except that this is an interoffice call.

NØTE10: Ringing register is master and an invalid report has been received via PT table.

(am) (See 8.01, page 128 bb = 43.) If the Z client register address is in PIDENT SACX, a common block pointer did not contain a common block address while testing the status of a particular console group.

(an) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT TAND, the program encountered an invalid F5TGTYP (trunk type) shown in the K register. The TNN of the incoming trunk (ICT) is shown in subsequent audit messages. Verify the TGN translations for the ICT to see if F5TGTYP is translated properly.

(ao) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT TNLS, an invalid condition was found.

Examine the contents of the Z register and determine the address in which the error was detected. The explanation of the error is given next to that address.

(ap) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT TXFR, this message indicates an invalid return from the translation program, a program error in PIDENT TXFR, or a TDA error. An SA02 REG output message may print with additional information such as directory number or LEN.

(aq) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT YFTØ, the TNN of a service circuit that was to be connected to an incoming trunk is unassigned.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — Address of trunk to trunk memory, bits 18 and 20 = 1

(ar) (See 8.01, page 128, bb = 43.) If the Z client register address is in PIDENT YTTØ, the TNN of a service circuit that was to be connected to a line is unassigned.

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

X — TNN of the service circuit and bit 18 = 1

Y — Address of master register

0 44: (a) (See 8.01, page 128, bb = 44.) If the J return address is in PIDENT ADDA, ADBN, ADCI, ADDX, ADIN, ADLR, ADPB, ADPT, ADUP, or ADUX, an invalid condition was found. Examine the contents of the J register and determine the address at which the error was detected. The explanation of the error is given either next to that address in the PR or in the NOTES in this Section.

Register meaning:

J — Return address for SA03 print routine

NØTE99: A request to seize an outgoing register or an incoming register could not be completed by PIDENT YAHA. Since these registers are engineered on a one-to-one basis with equipment, this problem should not be encountered.

NØTE100: Centrex attendant pressed START key to request a TOUCH-TONE receiver. Request was aborted due to data conflict within loop register because either CSKNØ conflicted with TYP7 and/or TYP1 or TNN of source port 0 was lost as indicated by LP7, PMFI = 0.

NØTE101: Error return from TAREMV. Loop register attempted to remove itself from trunk answering queue when it was not on the queue.

(b) (CTX only) (See 8.01, page 128, bb = 44.) If the J register return address is in PIDENT CNLP, this message indicates that the lamp control program was entered with incorrect data. Check the J register for the error code indicating the error type.

Register meaning:

F — If error code is 1 or 2, address of code word is in the lamp block.

J — Error code (22-21), return address (20-0). If error code is 0, incorrect leg index; if error code is 1, unassigned data link frame number; if error code is 2, bad code in word 2 of lamp block.

K — If error code is 0, illegal leg index (should be 1, 2, 6, or 7). If error code is 1 or 2, client return address.

X — If error code is 0, address of register state word; if error code is 1 or 2, frame number.

Y — If error code is 1 or 2, lamp order that was to be sent.

Z — If error code is 1 or 2, code [should be Ø(00715600)].

(c) (See 8.01, page 128 , bb = 44.) If the J return address is in PIDENT CTOP, an invalid condition was found. Examine the contents of the J register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(d) If the J register return address is PIDENT CXKY, an invalid condition has occurred.

Register meaning:

J — Return address in PIDENT CXKY (NØTE6, 8-10, UNDEFINED) for SA03 print routine.

NØTE6: Hardware failure in attendant loop

K — Failing console number

X — Failing register address

Y — Failing TNN

NØTE8: A call is in an illegal key state. A key report has been received while in this state causing the entire call to be abandoned, the loop to be idled, and the console to be restored.

NØTE9: A split error has been detected. Split and lamp bits have been zeroed.

NØTE10: An invalid condition has been detected.

K — Failure address in PIDENT CXKY (NØTE11-20, 23-29)

NØTE11: The control program has detected a supervision change on a loop. An illegal entry in the table of supervision reports has been reached.

NØTE12: A bad recall index was encountered. Present loop identification indicator has been zeroed.

NØTE13: An error has been found in which the console register associated with a given attendant loop register does not point back to it.

NØTE14: A valid CR address could not be obtained from the console group number.

NØTE15: A call processing key was received. The loop register assigned to the call that is currently being processed could not be located.

NØTE16-19: The present loop register address is invalid.

NØTE20 (first eleven instructions only): Invalid entry was reached in the update routine that sets the proper control bits in the loop register to perform the required implementation routine.

NØTE23: An attendant was trying to originate a 6-port conference call by operating an idle conference key. The present loop indicator in the console register is nonzero, but the corresponding link word in the console register does not contain a loop register address.

K — PLØP

Z — CR address

NØTE24: An attendant has operated a nonidle conference key. The present loop indicator in the console register is nonzero, but the corresponding link word in the console register does not contain a loop register address.

K — PLØP

Z — Console register address

NØTE25-29: The loop register has been found to have an RI, PT = 0,7

in at least one of its state words or a PT = 0 in LP7. Audit 38 has been flagged and the PLØP set to zero.

Z — LP2 state word address

Z — Console register address

ADDRESS UNDEFINED—See K = NØTE21, 22, and ADDRESS UNDEFINED

K — Failure address in PIDENT CXKY

NØTE21: While working on trunk busy lamp data, the common block address obtained from a CTXN was found to be out of range.

Y — Trunk busy lamp number (bits 22-16)

NØTE22: A console register address could not be found for a trunk busy lamp.

ADDRESS UNDEFINED—Illegal entry has been reached in either the lamp table for 2B-type consoles equipped with the auxiliary trunk busy lamp memory or in the table for 2B-type consoles not equipped with an auxiliary memory.

(e) (See 8.01, page 128 , bb = 44.) If the J register return address is in PIDENT CXTA, this message indicates that a register other than a loop register was found on the trunk answer request queue.

Register meaning:

J — Return address for SA03 print routine

K — Address of second word of trunk answer head cell

X — Address of ringing register

Y — Address of loop register to be removed from the list.

(f) If the J return address is in PIDENT CXTP, an attempt was made to seize a nonidle TPC register.

Register meaning:

K — TPC register state word

X — TPC register address

(g) (See 8.01, page 128 , b = 44.) If the J return address is in PIDENT DCNT, an attempt to seize a register has failed.

Register meaning:

J — Return address for SA03 print routine

NØTE9: Entry at DCPRLS (standard line origination). Attempt to seize originating register failed.

X — Head cell for originating registers (Y4HØR)

Y — LEN

NØTE10: Entry at DCINTK (standard incoming trunk seizure). Attempt to seize incoming register failed.

K — TNN of incoming trunk

X — Head cell for incoming register (Y4HIR)

Z — TSN or MSN

(h) (See 8.01, page 128 , bb = 44.) J return address is in PIDENT ECMP.

Register meaning:

K — 0 (Unassigned)—Error occurred while deriving the TNN or TGN associated with a particular MSN for a trunk side SXS incoming trunk. The MSN input was invalid or out of range for office.

Y — Trunk side T2MSN for an SXS incoming trunk.

K — Not equal to 0 (garbage—no SXS word exists)—Error occurred while trying to find the SXS word associated with a particular MSN for a trunk side SXS incoming trunk. No SXS word exists because the input MSN was invalid or out of range for the office.

Y — MSN of trunk side SXS trunk (possibly invalid MSN)

X — Incoming SXS senior register address

Z — SXS junior register address

Note: If the above description does not apply, an invalid condition exists in routine CXTCWI in PIDENT CXKY in which a queue usage count was found to be zero.

(i) (See 8.01, page 128, bb = 44.) If the J return address is in PIDENT HMCO, an error has been found.

Register meaning:

J — Return address for SA03 print routine.

NØTE23: The call store message unit data had an invalid check bit pattern. The word was zeroed and the correct check bit set. The hotel/motel is receiving invalid charging data.

F — Terminal number

K — DAG number

X — CRA that found the error

Y — Address of the data in error

Z — Data in error

(j) (See 8.01, page 128, bb = 44.) If the J return address is in PIDENT IRAC, an invalid condition was found. Examine the contents of the J register and determine the address at which the error was detected. The explanation of the error is given next to that address.

(k) (See 8.01, page 128, bb = 44.) If the J return address is in PIDENT ØRDL, a register is linked to the ØR after a hardware failure report has been passed around the link list.

Register meaning:

J — Return address for SA03 print routine

K — Linked register address

X — Outgoing register

(l) (SP only, see 8.01, page 128, bb = 44.) If the J register return address is in PIDENT SAFA, a linked list of junior registers has exceeded maximum length, an out-of-range link was discovered, or an invalid enable was found.

Register meaning:

X — Register type code

0 — MFØ

1 — PCIØ

2 — TDPØ

3 — SSDT

4 — MBS

5 — FST

6 — LFD

7 — TSJR

8 — SXHT

9 — SXJR

10-13 — Unassigned

14 — Centrex I/Ø

15 — Ring trip

Z — Zero if maximum number of registers exceeded

(m) (See 8.01, page 128 , bb = 44.) If the J register return address is in PIDENT SARG, see SA03 0 40, PIDENT SARG. This message applies only to conference or CTX loop registers.

(n) (See 8.01, page 128 , bb = 44.) If the J return address is in PIDENT TRBL, incorrect data has been found in LEN or DN translations.

Z — Client return address

(o) (See 8.01, page 128 , bb = 44.) If the J register return address is in PIDENT TRBT, an error has been found associated with a TNN or TGN.

Register meaning:

J — Return address for SA03 print routine

NØTE1: Unassigned TNN

F — Address of PTW

NØTE2-3: TGN out of range

B — Address of MLH group head cells

K — Address of TGN head cell in CS

X — CRA

Y — PMT address

Z — Masked TNN

(p) (See 8.01, page 128 , bb = 44.) If the J register return address is in PIDENT YAHA, an invalid or non-SXS trunk scanner number was processed as an SXS trunk scanner number. YAHA calls SAHELP when an SXS trunk state word cannot be found. If an invalid or a non-SXS trunk scanner number was not being processed, a bad linkage has been detected upon unloading PSPD's timing queues.

Register meaning:

K — Calculated SXS trunk word address

Z — YAHA client return address

0 45: Following a maintenance interrupt, the system is being directed to the reference point (ECRSUM). The contents of the call-in-progress register (S6SNAP+5) may be determined by the following:

20	29	18	CONTENTS
D	D	0	CRA
0	1	1	JNN
0	0	1	TNN
1	0	1	TTM
1	1	1	LEN

Register meaning:

J — Return address in PIDENT SARG for SA03 print routine

K — Contents of S6SNAP+5

X — Contents of S6SNAP+5

0 46: (a) An error has been found associated with a PØB.

Register meaning:

J — Return address in PIDENT PØMC for SA03 print routine

K — Address of state word for timed out PØB

X — CR address

Y — Negative PØB count is equal to—(number of PØBs in office—PØH1 for timed out PØB)

Z — Client success address

0 47: (a) If Y = Ø(177) or Ø(40177), there is an error in the transition requested. To find the CSTI, check the change in circuit CIC call in the client, usually the CSTI will be given symbolically. To find the CPI, dump

the CIC head table and find the contents of the F register in it. The number of words from the top of the head table to the matching word is the CPI. For additional information, see the CIC programs PF-1A123.

Register meaning:

J — Client return address

Z — PØBA

(b) If the Y ≠ either Ø(177) or Ø(40177), check the L register.

Register meaning:

J — Client return address

L — Ø(17); the MSN is bad

— Ø(74000); a CIC for the SLN expects to be handling an audible circuit.

— Other; SNN or TNN is unassigned

K — TDN or 0

0 48: (a) If the L register client address is in PIDENT ATTT, an error has been found that indicates that a disconnect report for a trunk not associated with a ROTL has been received.

Register meaning:

B — State word of register

L — Client failure address

X — CRA

(b) This message is printed out by the subroutine YRUNEX. It usually signifies an invalid PT return. An SA02 REG will follow.

Register meaning:

B — State word of the call register (address in X) prior to insertion of the audit code

F — (See client)

J — Pointer in SARG

K — (See client)

L — Client error pointer

X — Call register address

Y — (See client)

Note: E4RETN will be checked to determine whether the report was an invalid timing report. If so, the head cell for the timing list will be idled and an SA03 0 39 will be printed.

0 60: Translations for the input JNN shows a NO-TEST-TNN. This is not allowed by CIN 11A. The NO-TEST-TNN in the auxiliary block must be replaced by the correct LEN. The PIDENTS that use CIN11A are not able to handle a trunk-to-trunk connection here. The LLN or TLN and the JSF in the L register can be used to determine the auxiliary block that needs to be changed.

Register meaning:

B — Client address (CIN refund)

F — PMAN

K — TNN1 or PRI1

L — JNN = 1(22)—(21-14) LLN(13-10) JSF(9-8) Grid(7-6) Switch(5-3) Level(2-0) or O(22-(21-15) TLN(14-11) JSF(10-8) Grid(7-6) SW(5-3) LV(2-0)

X — CRAN

Y — NO-TEST-TNN (from translations)

Z — POBA

0 70: (See 8.01, page 128 , bb = 70.)

0 71: If the J return address is in PIDENT DLLD, MSDU, or PRDU, an invalid condition was found. Examine the contents of the J register and determine the address at

which the error was detected. The explanation of the error is given next to that address.

AUDIT 3

3 0: If the J register return address is in PIDENT NSUP (Case I), an address of enable address (AEA) has been obtained for an invalid unit type (non-SD, non-SC, or non-network). If the J register return address is in PIDENT NSUP (Case II), the master scanner number (MSN) obtained from the auxiliary block for the unit being examined could not be found in the table of NET and SD MSN; thus, no T1 and T2 bits could be found.

Register meaning:

F — (Case II) address of TT1 block of four words; C(F) + 3 = address of MSN_{FO}

K — (Case I) unit type; (Case II) last MSN in MSN table

L — (Case II) MSN mask (frame and row)

X — (Case I) member number (Case II) unit type + member number

Z — (Case II) address of last entry in MSN table

3 1: A pointer used by PIDENT PSTP was found to be out of range.

Register meaning:

J — Return address in PIDENT SADA for SA03 print routine

Z — Failure address in PIDENT SADA

NØTE1: Activity bits head cell pointer is below minimum range.

B — Out-of-range head cell address

K — Beginning address of activity bits head cells

NØTE2: Activity bits head cell pointer is above maximum range.

B — End address of activity bits head cells +1

K — Out-of-range head cell address

NØTE3: PSPD bits pointer is below minimum range.

B — Out-of-range address of PSPD bits

K — Beginning address of PSPD bits

Other than NØTE1-3: PSPD bits pointer is above maximum range.

B — Out-of-range address or PSPD bits

K — End address of PSPD bits +1

3 6: An error has been found in the screen words, 04USCN or 04PSCN, used by PIDENT ØRDL during checking of the calling line identification (CLID) list; in the pointer to the list; or an entry in the list itself.

Register meaning:

J — Return address in PIDENT CLID for SA03 print routine

NØTE1: The pointer 04CLND has been found to be out-of-range. The list has been emptied.

B — Incorrect pointer

K — Start address of list

NØTE2: The screen word 04USCN or 04PSCN used by PIDENT ØRDL during checking of the list has been found to be inconsistent with the CLID list. The list has been emptied and the contents printed by the TTY.

B — Incorrect value of 04USCN or 04PSCN

X — Correct value of 04USCN

Z — Correct value of 04PSCN

3 33: A compare of parameter data and translation data of enables for network or signal distribution or scanners has been made and a mismatch has been found.

Register meaning:

B — Bad enable

J — Return address for SA03 print routine in PIDENT NSUP

K — Base enable and translator

Y — Union of CO and CI (bad enable data)

Z — AEA

3 41: An error has been found by the TTY audit.

Register meaning:

J — Return address in PIDENT TYMI for SA03 print routine (NØTE1-6)

NØTE1 (SP only): Active maintenance TTY, not local or remote maintenance TTY.

K — Member number of TTY considered to be the active maintenance TTY

NØTE2 (SP only): SP and CC TTY masks do not agree. The SP mask will be set to agree with the CC mask.

K — SP mask (incorrect)

NØTE3: TTY state words are incorrect. The TTYs whose state words are incorrect will be idled.

K — Mask for the TTYs whose state words are correct.

NØTE4 (SP only): The TTY PØB and/or its associated memory have been found to be incorrect and have been reinitialized.

NØTE5 (CC only): The counter that controls the rate at which characters are sent to the TTYs has been found to be in an invalid state and has been reinitialized.

NØTE6 (CC only): The TTY transient counter is invalid. It has been initialized.

K — Incorrect value of TRMC

NØTE7: A TTY has been found with an out-of-range pointer into the output message buffer area (ØMBA) or TWR. The TTY has been idled to prevent the use of this out-of-range pointer.

F — Member number of the TTY with the invalid pointer

K — Pointer

AUDIT 4

4 0: Incorrect data was found in translation pointer block F4HHTC. The errors will be corrected.

Register meaning:

B — Incorrect data

F — Failure address in PIDENT SALT (NØTE11-18)

NØTE11: Incorrect start address is for trunk group head cells.

NØTE12: Incorrect start address for PBX hunting group head cells.

NØTE13: Incorrect start address for RC area.

NØTE14: Incorrect end address for primary RC area.

NØTE15: Incorrect start address for auxiliary area.

NØTE16: Incorrect value of master hunt displacement.

NØTE17: Incorrect end address of PBX activity block.

NØTE18: Incorrect start address of 2-way trunks activity block.

J — Return address for SA03 print routine in PIDENT SALT

K — Correct data

Y — Address (in F4HHTC) of incorrect data

4 1: An error was found in the CS translation RC area. The errors are corrected at NØTE6-10.

Register meaning:

J — Return address for SA03 print routine in PIDENT SALT

SARCNG—An out-of-range recent change pointer was found.

K — Out-of-range pointer

NØTE6: End of auxiliary RC area was incorrect. It has been made equal to PBX activity block end.

B — End of PBX act blocks or end of primary RC area

K — Stored end of auxiliary RC area

X — Correct activity block address

NØTE7: Incorrect start address for shifted primary area.

B — Incorrect start address for shifted primary area

K — Complement of correct address for shifted primary area

NØTE8: Incorrect end code for primary RC area.

B — Correct end code for primary RC area

K — Address of end code for primary RC area

X — Incorrect end code for primary RC area

NØTE9: First word of RC area as nonzero.

K — Address of first word of RC area

X — Bits 0 through 11 of first word of RC area

NØTE10: Error found in trunk group 0 head cell; the head cell should have the RC indicator (RCI) bit equal to 1 and should have zeros elsewhere.

B — Correct contents of trunk group 0 head cell

K — Trunk group 0 head cell address plus 1

X — Incorrect contents of trunk group 0 head cell

4 2: Incorrect indicator bits were found in word 0 of a trunk group head cell. The bits have been corrected.

Register meaning:

B — Incorrect head cell word except for unassigned group

J — Return address for SA03 print routine in PIDENT SALT

K — Incorrect trunk group head cell bit configuration

L — Failure address in PIDENT SALT (NØTE3-5)

NØTE3: Error found in outgoing or miscellaneous trunk group head cell.

K — Bits 20 and 21 should be 0.

NØTE4: Error found in one-way incoming trunk group head cell.

K — Bit 21 should be 1; all other bits should be 0.

NØTE5: Error found in unassigned trunk group head cell.

K — All bits except 22 should be 0.

X — Head cell address

Z — Trunk group number

4 3: (a) The address of multiline hunt activity block, which is stored in the respective call store head cell, has been updated to correspond to the latest data in the hunting list head table.

Register meaning:

B — 0

F — Address of the last row of the next activity block or the address of the start hunt pointer

J — Return address for SA03 print routine in PIDENT TRML

K — Updated address of activity block

X — Multiline hunt group (MHG) number

Y — Address of the multiline hunt group call store head cell

Z — Number of multiline hunting groups audited thus far—to 25

(b) If the J register is equal to SAPDGA -1 in PIDENT TRML the audit has found that the value of the MHG set card, as specified in the left half of the parameter location F4NMHG, is greater than the subtranslator length for the multiline hunt groups as specified in translations at C(F3HHTP) + F8MNTHL + 11. The smaller of the above two valves will be used by the audit. This is a severe situation that should be corrected immediately.

Register meaning:

B — Length of MLH subtranslator

J — SAPDAG-1

K — Value of MHG set card

X — Address of master head table

(c) If J return address is in PIDENT SALT, the audit found that the number of 2-way trunks as indicated by the auxiliary block length exceeds the maximum value of 512.

Register meaning:

B — TGN

X — Headcell address

F — Auxiliary block address

4 4: A multiline hunt group that has more than the maximum number of 127 hunt lists has been found.

Register meaning:

B — Word number plus number of hunt lists (left to right) found in first word of hunt list head table.

X — Multiline hunt group number in which invalid hunt list head table has been found.

Correction: Correct invalid hunt list head table so that hunt list contains no more than 127 hunt lists. Since this error is often caused by mutilation of the first word of a hunt list head table, caution should be exercised in checking that the invalid number of hunt lists has not caused the audit of multiline activity bits to write into any portion of the active auxiliary RC area.

4 5: This message indicates that audit 4 found a 2-way trunk group head cell which either had the wrong code in bits 21 through 20 (should be 01) or did not point to the next valid activity block address or both. A correct activity block is generated.

Register meaning:

B — Bad head cell contents

F — Auxiliary block address

J — Return address for SA03 print routine in PIDENT SALT

K — Maximum end of activity block

X — Head cell address

Y — Number of trunks in group (9 through 0)

Z — TGN

4 6: This message indicates that audit 4 found bad data in 2-way trunk activity bit row. A correct activity block is generated.

Register meaning:

B — TGN

F — Stored activity bit row

J — Return address from SA03 print routine in PIDENT SALT

K — Difference between stored and generated row

X — Auxiliary address of next TNN

4 7: (a) This message indicates that audit 4 has detected that insufficient space exists for 2-way trunk activity words. The space available is specified by the contents of the left half of PS word D4PLLN-1. This is a catastrophic error which the audit cannot correct. Immediately delete any trunk groups having codes indicating 2-way trunk groups including 2-way operator trunk groups. Use RC procedures described in Section 231-118-303.

Register meaning:

B — Contents of program store address (F4HHTC)—start of TGN head cells

F — Activity word not fitting in

J — Return address for SA03 print routine in PIDENT SALT

K — Address for this activity word

X — TGN head cell address [TGN (octal) = (X-B)/4]

Y — Address of next row of generated activity bits

Z — Maximum translation address

(b) If the J register is equal to PDAOK-1 in PIDENT SALT, the audit has found that the value of the NTG set card, as specified in the left half of the parameter location F4NTGN, is greater than the subtranslator length for trunk group headcells as specified in translations at C(F3HHTP) + F8MHTL+8. The smaller of the above two values will be used in the audit. This is a severe situation that should be corrected immediately.

Register meaning:

B — Length of TGN subtranslator

J — PDAOK-1 in PIDENT SALT

K — Value of NTG set card

X — Address of master head table

4 8: This message indicates that an incorrect code was found in pseudo LEN bit (18) of word 0 of a trunk group head cell. The bit has been corrected.

Register meaning:

F — Auxiliary block address

J — Routine address for SA03 print routine in PIDENT SALT

K — If equal to 0, pseudo LEN bit marked equal to 0. LEN bit corrected to a 1.

— If not 0, pseudo LEN bit marked to a 1. LEN bit corrected to a 0.

X — Head cell address

Y — Class code (17 through 10) and number of trunks (9 through 0)

Z — TGN

4 9: (CTX only)—An incorrect code was found in either bit 17 of word 0 or bit 9 of word 1 of a trunk group head cell. The bit code has been corrected. This bit indicates whether a trunk busy lamp is associated with the trunk group.

Register meaning:

F — Auxiliary block address or data

J — Return address for SA03 print routine in PIDENT SALT (NØTE1-2)

NØTE1: Bit 17 is in error.

NØTE2: Bit 9 is in error (2-way trunk group).

K — If equal to 0, bit 9 or 17 marked 0 is corrected to a 1. If not 0, bit 9 or 17 marked 1 is corrected to 0.

L — Group class code

X — Head cell address

Y — Class code (17-10) and number of trunks (9-0)

Z — TGN

4 10: (CTX only)—The 2-way idle trunk in trunk group head cell was found to be unequal to the 2-way idle trunk count generated by audit 4. The count in the trunk group head cell has been corrected to equal that kept by audit 4.

Register meaning:

F — 2-way idle trunk count kept by audit 4

J — Return address for SA03 print routine in PIDENT SALT

K — 2-way idle trunk count from head cell

X — Head cell address

Y — E(20) + start address of current temporary activity block

4 11: An error has been found in the CS copy of the peripheral translator head table.

Register meaning:

J — Failure address in PIDENT RCUP

NØTE1: An error has been found in the CS copy of the peripheral translator head table. CS is corrected.

B — Erroneous data in CS

K — Correct data from PS

Y — CS address in error +1

NØTE2: The CS table exceeds the length of the PS peripheral translator head table. Nonzero data has been found in the remainder of the CS table. It has been zeroed.

Y — CS address in error + 1

Z — Erroneous data in CS

NØTE3—An error has been found in the value of an RC bit in the peripheral head table. Error has been corrected.

B — Erroneous data

X — Address of CS word containing incorrect bit 22

NØTE4: An error has been found in the value of a RC bit in the peripheral head table. The bit was set to zero for an active TNN RC. Bit has been corrected.

X — Address of CS word containing incorrect RC bit 22.

4 12: The RC area is completely inactive because pointers to the RC area are being adjusted by audit 4. This option was originally requested through an A-level interrupt with

request keys A and 3 set, and can be released with an A-level interrupt with request keys A and 4 set. Since pointers are reset by audit 4, three SA03 audit 4 messages should be expected when RC area is reactivated.

Register meaning:

J — Return address for SA03 print routine in PIDENT SALT

K — Location of deactivated RC (DRC) option indicator

X — DRC option indicator. It should equal Ø(313131) because the DRC option should be in effect for a message to be given. Zeroing this indicator will release the option, and this can be done using interrupt request keys A and 4.

4 13: An error was found in the trunk group headcell. Either the M1WAY bit for one-way trunks or the M2WAY bit for 2-way trunks was erroneous. The return address in SALT explains the exact problem.

Register meaning:

F — TG auxiliary address or garbage

J — Address where audit called

K — DLG number or garbage

X — Trunk group HC address

Z — TGN

4 14: The length of the call store centrex headtable, which is specified by parameter set card CTG, is of insufficient length. It must be at least as large as the program store centrex headtable which is specified on the translation form (1500A).

Register meaning:

F — Difference between the lengths of the PS CTX headtable and CS CTX headtable

J — Return address for SA03 print routine in PIDENT RCUP

K — PS CTX headtable address

X — CS CTX headtable address

Y — Length of PS headtable

4 15: (Centrex 7 and earlier generics)—Translations error has been found. If E(22) is marked in F, then the DAG is out of range. If E(22) is not marked in F, then the CS data accumulation audit should not have been called out of the MLH audit. Either the CSMU bit is incorrect (bit 22 of word 15 of the common block) or the SDA bit is incorrect (bit 11 of word 11 in common block).

Register meaning:

F — Bit 22 (CSMU bit)

J — Return address in HMCO

K — DAG number

X — MLH common block address

Y — MLH number

If E(22) = 1 in F then

Z — Max length of DAG CS block, ***otherwise***

Z — Garbage

4 15: (Centrex 8 and later generics)—TDA or recent change error. The multiline group common block has a DAG number that is too large.

Register meaning:

J — Return address in PIDENT IRBA for SA03 print routine

K — DAG word (+15) in multiline common block

X — Multiline common block address

Y — Multiline group number

4 16: (Centrex 7 and earlier generics)—There has been a mismatch of the address pointers in the H8DAG block. The new address of DAG N+1 was calculated using the length + address of DAG N. This mismatch is unexpected since the RC indicator-state word does not indicate an RC in progress for this DAG. This error may indicate that the CS message unit data is incorrect.

Register meaning:

J — Return address in HMCO

K — New address pointer for data for DAG (I+1)

Y — Address in DAG headtable for DAG (I)

Z — RC indicator state word

4 16: (Centrex 8 and later generics)—There has been a mismatch of the address pointers in the H8DAG head cells. The address of DAG (N+1) was calculated using the length plus the address of DAG (N). This mismatch is unexpected! The recent change indicator-state word does not indicate an RC in progress for this DAG.

Register meaning:

B — Old address (unmasked) of data for DAG (N+1)

F — Contents of H8RCSTATE (Recent change DAG indicator state word)

J — Address in PIDENT IRBA for SA03 print routine

K — New address of data for DAG (N+1). Data at the old location is lost

L — Mask to be used on B to determine old address

Y — Address of head cell for DAG (N+1)

4 17: (Centrex 7 and earlier generics)—There is a mismatch of the start addresses for DAG N+1 and the parameter pointer H8MRCC. This indicates erroneous information in the H8DAG block. The addresses in H8MRCC has been copied into the address slot for DAG1 in the H8DAG block.

Register meaning:

F — New start address

J — Return address in HMCO

K — Old start address that has been updated

Y — DAG address for First DAG group

4 17: (Centrex 8 and later generics)—There is a recent change with an invalid DAG number.

Register meaning:

K — Invalid DAG number

Z — RC state word

4 18: (Centrex 7 and earlier generics)—DAG head cell data was in error. The head cell has been updated from the multiline common block. This is unexpected and probably indicates a wild write into the DAG head cell.

Register meaning:

B — Old data

J — Return address in HMCO

K — Common block address

X — New data

Y — Multiline group number

Z — Head cell address

4 18: (Centrex 8 and later generics)—This is the first of two messages indicating DAG head cell data mismatch. Also see the 4 23 printout following this printout.

Register meaning:

B — Old data for head cell word zero

F — New number of splits (22-18) and new number of reporting groups (17-13)

J — Return address in PIDENT IRBA for SA03 print routine

K — Common block address

L — Old number of splits (22-18) and old number of reporting groups (17-13)

X — New data for head cell word zero

Y — Multiline group number

Z — Head cell address

4 19: (Centrex 7 and earlier generics)—A DAG head cell pointer was pointing outside the H8MRCC parameter area

Register meaning:

J — Return address in HMCO

K — Out of range address

Y — Address of DAG that had out of range address

4 19: (Centrex 8 and later generics)—The H8RCSTATE audit-recent change control word was found in error. More than one client's bit was set at the same time. This error may have destroyed call store data tables for all DAG, CTRF, and NUTS customers in the office.

Register meaning:

F — H8RCSTATE word. (Bit 22 = DAG; bit 21 = CTRF; bit 20 = NUTS) Only one of these bits should ever be set at the same time.

Z — Location where error was found

4 20: A pointer mismatch occurred in the DAG data table (H8MRCC). This may cause incorrect routing of ACD hunt type calls, and it may cause incorrect customer traffic data for splits and reporting groups. It may also cause individual peg counts to be incorrect.

Register meaning:

B — Last pointer found in error

F — correct pointer value for last pointer found in error.

J — Return address in PIDENT IRBA for SA03 print routine

K — Address of data for next DAG

L — Number of pointers in error

X — First pointer found in error

Y — Head cell address

Z — Correct value for first pointer

NOTE: DAG number = (Y-(H8DAG))/SDAG

4.23 This printout follows audit 4.18 with additional data for DAG headcell data mismatch. The headcell has been updated from the multiline group command block.

Register meaning:

F — Old data for headcell word 3

J — Return address in PIDENT IRBA

K — New data for headcell word 3

Y — Multiline group number

Z — Headcell address

AUDIT 5

5 4: See SA03 0 4.

5 50: through 52. (See 8.01, page 128 , bb = the audit error number of this message.)

AUDIT 6

6 0: This message indicates that an error was found by the network growth audit (NETGRØ).

Register meaning:

J — Return address for SA03 print routine in PIDENT NETG (NØTE1-3)

NØTE1: N4LNØS contains nonzero bits in bit positions higher than the last equipped LLN in the office. Zero the high order bits.

F — LLN number

K — Offending high order bits

Y — Address of N4LNØS

NØTE2: The bits of an LSBØS word corresponding to a nonexistent LSB are set to nonzero. Zero the offending bits.

F — LLN number

K — Masked LSBØ word

Y — Address of LSBØ word

NØTE3: N4TNØS contains nonzero bits in bit positions higher than the last equipped TLN in the office. Zero the high order bits.

F — TLN number

K — Offending high order bits

Y — Address of N4TNØS

6 1: PS backup information disagreed with a junctor subgroup (JSG) linked list and was used to reconstruct this list. The error causing this message may occur with a change of JSG assignment.

Register meaning:

J — Return address in PIDENT NEGN for SA03 print routine

X — Address at which old (incorrect) JSG number is stored

Z — Correct JSG number of newly formed JSG linked list

6 2: This message indicates that the JSG number stored in the head cell is not on the newly formed JSG linked list (error in the head cell) and is replaced by a JSG that is on this list.

Register meaning:

J — Return address in PIDENT NEGN for SA03 print routine

X — Head cell address at which error was found

Y — E(22) (error in head cell)

Z — New (correct) JSG number is now at head cell address in X register

6 3: This message indicates that the JSG number (in head cell) representing the other end of the junctor did not match the new JSG number. The old number is replaced by the new one.

Register meaning:

J — Return address in PIDENT NEGN for SA03 print routine

X — Head cell address at which error was found

Z — New JSG number now at that address

6 4: This message indicates that an unassigned JSG was found. The action taken is to link it to itself.

Register meaning:

F — Address at which JSG is linked to itself

J — Return address in PIDENT NEGN for SA03 print routine

K — The unassigned JSG number

6 5: This message is printed out if the audit finds a real error or if a network frame has been restored to service via the TTY message FAB-RESTØRE-after having been previously removed from service via the TTY message FAB-MB-.

Register meaning:

J — Return address in PIDENT NETG for SA03 print routine (NØTE6-14)

NØTE6: N4FLAG is unequal to zero or Ø(1357642). Zero N4FLAG and proceed to check SBØS tables.

K — Contents of N4FLAG

Y — Address of N4FLAG

NØTE7: N4FLAG is 0; therefore, N4LNØS should be 0 but is not: Zero N4LNØS.

K — Contents of N4LNØS

Y — Address of N4LNØS

NØTE8: N4FLAG is 0; therefore, N4TNØS should be 0 but is not. Zero N4TNØS.

K — Contents of N4TNØS

Y — Address of N4TNØS

NØTE9: The LLN bit in N4LNØS is 0, but the corresponding LSBØ word is nonzero. Zero LBSØ word.

K — Contents of LSBØ word

Y — Address of LSBØ word

NØTE10: N4FLAG is correctly set to Ø (1357642), but N4LNØS equals N4TNØS equals 0. Zero N4FLAG.

K — Contents of N4FLAG

Y — Address of LSBØ word

NØTE11: The TLN bit in N4TNØS is 0, but the corresponding TSBØ word is nonzero. Zero TSBØ word.

NØTE12: The bits of the TSBØS word corresponding to a nonexistent frame are set to nonzero. Zero TSBØS word.

X — TLN (6-3), TSF (2-0)

Y — Address of TSBØS word

NØTE13: An LSBØ word is set to nonzero, but the high order indicator bits are not correctly set. Zero the entire word.

F — LLN number

K — Contents of LSBØ word

Y — Address of LSBØ word

NØTE14: A TSBØ word is set to nonzero, but the high order indicator bits are not correctly set. Zero entire word.

F — TLN number

K — Contents of TSBØ word

Y — Address of TSBØ word

K — Old contents of word being zeored.

Y — Address of word being zeroed

6 6: The network growth audit (NETGRØ) has found that either a TLN or an LLN bit equals 1 with no trunk switch block (TSB) or line switch block (LSB) out of service in that network. The audit sets that bit to 0. This message always occurs when a network frame has been restored to service by the TTY message FAB-RESTORE-, having previously been removed from service by the TTY message FAB-MB-, in which case, it does not indicate a system trouble. Check J register to determine whether error is in a TLN or an LLN bit.

Register meaning:

J — Return address in PIDENT NETG for SA03 print routine (NØTE4-5)

NØTE4: Error in LLN bit

F — LLN number

Y — Address of word being changed (N4LNØS)

NØTE5: Error in TLN bit

F — TLN number

Y — Address of word being changed (N4TNØS)

AUDIT 7

7 41: (SP only): An error was found while auditing a line supervisory scan table.

Register meaning:

F — Row increment (1, 2, or 4)

J — Return address for SA03 print routine in PIDENT SASU (NØTE12-15)

NØTE12: The SP stop-scan bit in a supervisory scan table was found to be a 1 and was corrected to a 0.

K — Table address having error

Z — Invalid data—C(K). Bit 22 was corrected to equal 0.

NØTE13: Nonzero data was found in bits 16-21 of a supervisory scan table word (L, J, or T1 bit row). The bits were zeroed.

K — Table address having error

Z — Invalid data—C(K). Corrected by zeroing bits 16-21

NØTE14: Nonzero data was found in bits 16 through 21 of a T2 supervisory scan table word. The bits were zeroed.

K — Table address +1

Z — Invalid data—C(K-1). Corrected by zeroing bits 16-21.

NØTE15: The SP stop scan bit in a supervisory scan table was found to be a 0 and was corrected to a 1.

K — Table address having error

Z — Invalid data—C(K). Bit 22 was corrected to a 1.

X — Points to address of parameter data for current frame +1

Y — Table address which should have bit 22 equal to 1. If Y register is negative, this indicates that it is last 50-millisecond scan row.

7 41: (CC only)—A mismatch has occurred in the line scanner row address update program (SARØWL).

Register meaning:

J — Return address for SA03 print routine in PIDENT SASU (NØTE1-4)

NØTE1: The supervisory line scanner frame index was found to be out of range for office. The index has been zeroed. (This office has line link networks.)

K — Line scanner index

X — Address of line scanner index

Y — Contents of Parameter N3NLLN (+0 if no LLN)

Z — Complement of line scanner index (Note 20 only)

NØTE2: Error found in complete scan.

(Registers same as NØTE4.)

NØTE3: Error found in half scan.

(Registers same as NØTE4.)

NØTE4: Error found in even scan.

F — Bits 21-16 are equal to uncorrected row.

K — Bits 21-16 are equal to corrected row.

X — Address of associated AEA +2

Y — Address of corrected row +1

Z — Contents of S2NLFR + number of line frames completed.

NOTE20: This is an office without LLNs in which the supervisory line scanner index did not contain minus zero. It has been connected and is now minus zero.

(Registers same as NOTE1.)

NOTE21: This is an office with LLNs, but the supervisory line scanner index was negative. It has been corrected by setting it to plus zero.

(Registers same as NOTE1.)

AUDIT 8

8 41: (SP only): Error found in trunk scanner supervisory table; see 7 41: (SP only) for description of the register contents.

8 41: (CC only): This message indicates that a mismatch has occurred in the trunk scanner row address update program (SARØWT).

Register meaning:

F — Uncorrected row

J — Return address for SA03 print routine in PIDENT SASU

NØTE12—Error found while auditing partial scan.

NØTE13—Error found while auditing full scan.

NØTE14: Error found while auditing even scan.

K — Correct row

X — Address of associated AEA +2

Y — Address of corrected row +1 or -3

Z — Contents of S2NUTF + number of frames completed

AUDIT 9

9 41: (SP only): Error found in master scanner supervisory table; see 7 41: (SP only) for description of register contents.

9 41: (CC only): (a) If bit 22 of the X register is 0, this message indicates that a mismatch has occurred in the master scanner row address update program (SARØWM). If the bit 22 of the X register is a 1, see (b).

Register meaning:

F — Uncorrected row

J — Return address for SA03 print routine in PIDENT SASU (NØTE8-9)

NØTE8: Error was found while auditing partial equipped scanner.

NØTE9: Error was found while auditing fully equipped scanner.

K — Correct row

X — Address of associated AEA +2

Y — Address of corrected row +1 or -3

Z — Two times the number of rows left to check

(b) If bit 22 of the X register is a 1, an error was found in the next row portion of a T1 bit step-by-step row. The correct value was inserted.

Register meaning:

F — Uncorrected row

K — Correct row

X — SXS row index (number rows remaining to be corrected)

Z — Segment index (SEG0 is -10; SEG1 is -5; and SEG2 is -0.)

AUDIT 10

10 41: (SP only): Error detected in junctor scanner supervisory table; see 7 41; (SP only) for description of register contents.

10 41: (CC only): This message indicates that a mismatch has occurred in the junctor scanner row address update program (SARØWJ).

Register meaning:

F — Bits 21-16 = uncorrected row

J — Return address for SA03 print routine

J — Return address for SA03 print routine in PIDENT SASU

NØTE10: Error found while auditing full scan.

NØTE11: Error found while auditing even scan.

K — Bits 21-16 = correct row

X — Address of associated AEA +2

Y — Address of corrected row +1

Z — Contents of S2NJF + number of frames completed

AUDIT 12

12 70: (See 8.01, page 128, bb = 70.)

AUDIT 13

13 1: An error has been detected in the SP program.

Register meaning (for most errors):

B — Correct value of SPCS

J — Return address for SA03 print call

K — Incorrect value found in SPCS

X — PS address of primary backup if J points to SASP

Y — SPCS address of error

Z — PS address of primary backup if J points to Pident SPLT

Note: In all cases it is advisable to go to the pident (via the J register value) and determine the exact meaning of all registers and the cause of the error print. The above breakdown of register meanings is generally correct but exceptions do occur.

AUDIT 14

14 50 through 56: Audit 14 (JLLA) goes through the routines of audit 5 before auditing the two junctor linked lists. If an error is found by one of those routines, this message is printed out. (See 8.01, page XXX, where bb equals the audit error number of this message.)

AUDIT 16

16 1: Audit 16 (SATTM) idled a trunk-to-trunk memory (TTM) block that was marked busy but was not properly linked to either of the two path memory for trunks (PMT) words indicated by its contents. If the problem is a mutilated TTM, the registers F, K, L, X, and Y will not have the indicated meanings.

Register meaning:

B — TNN1

F — TNN2

J — Return address for SA03 print routine in PIDENT SADT

L — Word 0 of the TTM

X — Word 1 of the TTM

Y — Address of TTM

16 30: (See 8.01, page 128, bb = 30.) Audit 16 (SATTM) found this trunk linked to a TTM block that was not properly linked to another trunk. After a noncall register timing interval, the audit will idle this TTM and print an SA03 16 01 message. If this trunk was linked to the TTM through a CR, that CR is idled and an SA03 16 40 message accompanies this message.

16 36: (See 8.01, page 128, bb = 36.)

16 40: (See 8.01, page 128, bb = 40.) This message should accompany an SA03 16 30 message and the comment for same explains this one (namely, a call register was involved in the linkage and is being idled).

Register meaning:

J — Return address for SA03 print routine in PIDENT SADT

X — CR address

AUDIT 18

18 41: (CC only): This message indicates that audit number 18 (SURTN1) has found an error while checking the ring tip table.

Register meaning:

J — Return address in PIDENT SURT for SA03 print routine (NØTE1-2)

NØTE1: The CS counter (5 times the number of ring-trip scanner rows) disagrees with the PS backup. PS backup data replaces data in CS table.

F — Contents of CS counter

K — Contents of PS backup

NØTE2: The generated address of T2 bits disagrees with the address of the (CS) table. The generated address replaces address in the table.

F — Address of T2 bits stored in CS table

K — Generated address of T2 bits

X — 1 + CS address in error

Y — 1 + address of PS backup

AUDIT 19

19 41: (SP only): An error has been found while checking receiver scan enables or SXS data tables.

Register meaning:

J — Return address in PIDENT SARC for SA03 print routine (NØTE1-13).

NØTE1, 2, 3, 4, or 5: The derived EMSN does not equal the EMSN it replaces (disregarding bits 0-10 and 14).

F — Master scanner number

K — New derived EMSN

X — Row number

Y — Difference between new and old EMSN (ignore bits 10 and 14)

Z — Address (IFSM ACT BITS = EMSN +1)

NØTE6: Central pulse distributor (CPD) from auxiliary with 0 in future bit 14 does not match CPD from revertive reception junior register in bits 8-22.

F — CPD from auxiliary

K — Address of CPD from junior register

X — Row number

Z — Column count

NØTE7: EMSN derived from revertive transmission TG scan IFSM does not match EMSN stored in trunk guard scan.

K — New EMSN derived

X — Row number

Y — Difference between new and old EMSN (ignore bits 10 and 14)

NØTE8: CPD (C relay) from auxiliary does not match CPD from revertive transmission junior register.

F — Difference between new and old CPD addresses

K — (JR HT + row) +(COL time 4) +3 minus SPCS address

X — Row number

Y — New CPD from auxiliary (translation)

Z — Column number

NØTE9: CPD (D relay) does not match CPD from revertive transmission junior register.

F — Difference between new and old CPD addresses

K — CPD (D relay) derived

X — Row number

Y — CPD (D relay) SPCS address

Z — Column number

NØTE10: The address of the state word table in a SXS row data block was found to be incorrect. The error has been corrected.

F — (2 times row number) +1

K — Address of SXS state word

X — Address of SXS data row block

Y — Address in master scanner data table

Z — Master scanner frame number

NØTE11: An error was found in an SXS row data block scan code. This code has been replaced with the derived scan code.

F — (2 times row number) +1

K — Derived scan code

X — Address of SXS data row block

Y — Address in master scanner data table

Z — Master scanner frame number

NØTE12: Error was found in AEA table. Derived AEA replaces value in table.

K — Derived AEA

X — AEA table index

Z — AEA in table

NØTE13: Error was found in the second word (containing the address of first trunk side row T2 bits) of an SXS row data block. The error has been corrected.

F — (2 times row number) +1

K — (2 times first trunk side row number) +1

X — Address of SXS row data block

NØTE14: Reference row value found incorrect in memory.

F — Type of receiver (see bits 22-20 in following tabulation) and address of receiver activity bits

	BITS		
	22	21	20
DP CODE	0	0	0
TT CODE	0	1	0
MF CODE	1	0	0
TDP CODE	0	0	1
REV CODE	0	1	1

K — Correct reference row value in bits 22-17

X — Reference row value right adjusted

Y — T2 bit address for reference row

Z — 0

NOTE15: If K = 0, activity bit(s) were found set to a 1 for an unassigned position on a receiver row, or the senior register does not point back to the junior register.

F — Address of activity bits

K — 0 or senior register address

L — if K is not equal to 0, L = the state word of the senior register

X — Reference row number

Y — Receive code

0 - DP

1 - TDP

2 - TT

3 - RP

4 - MF

Z — Column position. For TT, position of signal present ferrod

NOTE16: Error was found in the fourth word of the SXS row data block. This word contains the SXS initial report indicators. The error has been corrected.

Register meaning:

F — Contents of the initial report word in which the error was found

K — Corrected initial report word

X — 17 (the last column of the row audited)

Y — Address of the 4-word SXS data block

Z — MSN for the last column of the row in which the error was found

19 41: (CC only): A bad enable has been found.

Register meaning:

F — Bad enable

J — Return address in PIDENT SACV for SA03 print routine (NØTE1-2)

NØTE1: A junior register for a TOUCH-TONE or MF receiver contains a bad enable for the frequency leads in its third word.

Y — First word of junior register

Z — Column in master scanner of receiver

NØTE2: A bad enable for a receiver row has been found.

Y — Address of master scanner number in 1 PAR

NOTE3: Error was found in the 17th word of the SXS state table.

This word contains the SXS initial report indicators. The error has been corrected.

Register meaning:

F — Contents of the initial report word in which the error was found

K — Corrected initial report word

X — 17 (the last column of the row audited)

Y — Address of the SXS state table

Z — MSN for the last column of the row in which the error was found

K — Correct enable

X — Receiver row number

AUDIT 20

20 1: This message indicates that audit 20 (PPMA1) found something wrong with the form of the idle linked lists of the path memory annexes (PMA). The head cell has been zeroed and audit 22 (SADPMA) has been requested.

Register meaning:

F — 0; head cell was bad ***or***

— Address of register found in SA02 print

K — Out of range address on link ***or***

— Contents of second word of head cell

If K = F, link was looped.

L — PS address where error detected +1, ***or***

— 1; list too long

X — Address of first register of the type being audited.

Z — Address of idle link list head cell +1

AUDIT 22

22 1: This message indicates that audit 22 (SADPMA) found that a PMA or AMA annex was lost from the idle linked list. The PMA or AMA annex was placed on the idle list. An SA02 print of the contents of this annex should follow this message.

Register meaning:

J — Return address in PIDENT SADT for SA03 print routine

Y — The type of annex in trouble is one of the following:

37777772 means ANX
37777773 means CNK
37777774 means PM5
37777775 means PM6
37777776 means PM9
37777777 means PM10
00000001 means AMA annex

Z — Address of the lost PMA or annex

AUDIT 23

23 01: A busy service (link) network number SNN had its activity bit marked idle. The bit has been corrected to busy.

Register meaning:

B — Input SNN

F — Corrected activity bit

J — Return address in PIDENT SASL for SA03 print routine

K — Address -1 activity bit

Z — SNN in error

23 31: (See 8.01, page 128, bb = 31.) This message is printed out after service (link)

network number SNN has been placed on the trunk maintenance list addendum TMLA; or if the trunk is unassigned, the PMT word has been set to the invalid code.

Register meaning:

J — Client return address

K — SNN (not multipled)

— E(22) + SNN implies multipled SNN

— E(22) + E(21) + SNN implies state not checked

L — Original contents of PMT word

23 44: (See 8.01, page 128 , bb = 40.) An error has been found associated with a PMT word or related CR. This message is followed by SA03 23 31.

Register meaning:

J — Return address in PIDENT SASL for SA03 print routine

X — CR address

Y — Failure address in PIDENT SASL

NØTE1: A CR is marked with the audit code, RI, PT = 0, 7.

NØTE2: A CR contains the idle code, PT = 0.

NØTE4: A CR contains an illegal PMFI.

NØTE5: The four PMT words associated with a multipled SNN are not equivalent.

F — 20 + address of PMT word being processed

K — Content of PMT word

NØTE8: The SNN derived from the PMT word address does not match the SNN derived from the CR address in the PMT word.

NØTE9: For a multipled SNN, the call registers do not point back to the PMT words.

NØTE10: For a multipled SNN, the call register associated with at least one PMT word other than the first PMT word points back to a PMT word.

K — SNN derived from CRA in a PMT word.

23 70: (See 8.01, page 128 , bb = 70)

AUDIT 24

24 30: (See 8.01, page 128 , bb = 30.) This message indicates that this trunk points to a client register, but the client register indicates that the pointer is not correct.

24 31: (See 8.01, page 128 , bb = 31.) See 24 30.

24 36: (See 8.01, page 128 , bb = 36.)

24 50 through 56: Audit 24 (TGA3) goes through the routines in audit 5 before checking point-to-point back linkage from PMT words to call registers. If an error is found by one of these routines, this message is printed out. (See 8.01, page 128, where bb equals the audit error number of this message.)

AUDIT 26

26 20: (See 8.01, page 128 , bb = 20.) This message indicates that the PML word of the junctor points to a client register, but the client register indicates that the pointer is not correct.

Register meaning:

B — Pointer in SADT to where error was detected

26 50 through 56: Audit 26 (JGA3) goes through the routines in audit 5 before checking point-to-point back linkage from PML words to call registers. If an error is found by one of those routines, this message is printed out. (See 8.01, page 128 , bb

equals the audit error number of this message.)

AUDIT 32

32 0: An error has been found in the count of active preprograms.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Difference between PPTRAF counter and audit counter

Z — Base address of PPTRAF block

32 1: The OLC bit of the trunk group head cell has been set in error

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 20000000

X — Address of OLC bit word

Z — Trunk group number

32 2: The OLC bit of the trunk group head cell has been reset in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 20000000

X — Address of OLC bit word

Y — TNP bit + word from TRGNAA (trunk group auxiliary block)

Z — Trunk group number

32 3: The network management pointer value from the trunk group head cell annex to the control word couplet is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Address of trunk group head cell annex pointer item word

L — 177

X — Address of the OLC bit word

Y — Possibly the preprogram translation auxiliary block address; otherwise, garbage

Z — Trunk group number.

32 4: The ignore status bit in PPTRAF is in error.

Register meaning:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliay block

Y — Address of PPTRAF block

Z — Preprogram number

32 5: The manual bit in the trunk group activity word is in error.

Register meaning:

If Z $\leq$ 63, register meanings are:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Address of PPTRAF block

Z — Preprogram number

If Z ≥ 63, register meanings are:

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Address of block in PPTRAF

Z — Address of control couplet

32 6: An error has been found in the trunk group control word.

Register meaning:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Address of PPTRAF block

Z — Preprogram number

Note: Registers B, F, and X could also be garbage rather than what is stated above.

32 7: An error has been found in the activity byte of the trunk group activity word.

Register meaning:

If K > 3, the register meanings are:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Address of PPTRAF block

Z — Preprogram number

If 0 ≤ K ≤ 3, register meanings are:

J — Return address in PIDENT NMGT for SA03 print routine

K — Priority of the preprogram

L — Mask of bad activity byte, ie, either 177, 37600, or 7740000

X — Address of preprogram translation auxiliary block

Y — Possibly MSN1 — otherwise garbage

Z — Preprogram number

32 8: The priority or activity byte for an automatic-activated preprogram is incorrectly zero.

Register meaning:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Address of PPTRAF block

Z — Preprogram number

32 9: The manual bit of the trunk group activity word or the PPC byte of the trunk group control word is incorrectly zero.

Register meaning:

If L = 177, then register meanings are:

J — Return address in PIDENT NMGT for SA03 print

K — The preprogram in the PPC byte of the trunk group control word

Y — Audit pointer to control couplet

Z — Address of the trunk group control word

If L = 20000, then the register meanings are:

F — Address of preprogram translation auxiliary block of preprogram which is supposed to be in control

J — Return address in PIDENT NMGT for SA03 print

X — Trunk group activity word

Y — Address of trunk group control word

Z — Address of trunk group control word

32 10: The pointer of this preprogram is not directed at this trunk group.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Trunk group control word

L — Trunk group activity word

X — Address of preprogram translation auxiliary block

Y — Audit pointer to control couplet

Z — Address of control couplet

32 12: The priority of a preprogram or the network management pointer from the translation auxiliary block is zero for an automatically controlled preprogram.

Register meaning:

B — Active bit + current 15-minute peg count

F — Ignore bit + previous 15-minute peg count

J — Return address in PIDENT NMGT for SA03 print routine

K — Priority of preprogram

L — 20000000

X — Address of preprogram translation auxiliary block

Y — Address of block in PPTRAF

Z — Preprogram number

32 13: An error has been found in the state of the out of service (O/S) bit.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Address of O/S bit word in PPTRAF

L — 20000000

Z — Preprogram number

32 15: An idle code blocking or calling line identification slot has been found to be nonzero.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Sum of all eight words in the slot

Z — Address of the code block slot

32 16: Digits 1, 2, and 3 are in error.

Register meaning:

If L = E(11)—E(1), register meanings are:

J — Return address in PIDENT NMGT for SA03 print

K — Digit word 1

Z — Address of the code block slot

If L = 7740000, register meanings are:

J — Return address in PIDENT NMGT for SA03 print routine

K — 0

Z — Code block slot pointer (8 x slot number)

32 17: Digits 4 through 10 are in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

Z — Address of the code block slot

32 18: NPA bit is not set and should be.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — 0 if D8, D9, D10 = x, garbage otherwise

L — 40000

Z — Address of code block slot

32 19: An error has been found in the percent.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 4000000

Z — Address of the code block slot

32 21: An error has been found in the digit masks.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — Mask of digit word 2

Z — Address of the code block slot

32 22: There is a digit mismatch on a link list.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

F — Address of next code block slot

L — 37777

Y — Next code block slot number

Z — Address of the code block slot

32 23: The audited slot was not found on the link list.

Register meaning:

F — Pointer to current rate center being used in audit

J — Return address in PIDENT NMGT for SA03 print routine

K — Address of the code block slot

L — 177

Y — Next code block slot number

Z — Address of the code block slot

32 24: The index returned from the rate center translator is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — Code block slot number

32 25: The back index in the code block slot is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Word 0 of the code block slot

L — 177

Y — Rate center counter

Z — Address of the code block slot

32 26: The forward index in the code block slot is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Forward index in the code block slot or garbage

L — 177

Y — Rate center counter

Z — Address of the code block slot

32 27: Active code block count is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Address of last code block slot

Z — Base address of code block slots

32 28: The real-time break indicator in the code block slot is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — N7NM12

L — 20000000

Z — Address of the code block slot

32 29: The disposition is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 30000000

Z — Address of the code block slot

32 32: The number of digits in a calling line identification slot is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

K — Difference from 10 of number of digits in slot

L — 1700000

Z — Address of the code block slot

32 33: The count of active calling line identification traces is in error.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

32 34: Percent is nonzero and should not be for calling line identification.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 16000000

Z — Address of the code block slot

32 35: Disposition is nonzero and it should not be for calling line identification.

Register meaning:

J — Return address in PIDENT NMGT for SA03 print routine

L — 30000000

Z — Address of the code block slot

32 40: A flexible control slot TGN was found in error.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine.

K — TGN

Y — Flexible control word or garbage

32 41: The flexible control slot pointer was found in error.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine

K — Slot number from trunk group head cell annex

Z — Flexible slot index that is being audited

32 42: There is a conflict between manual preprogram and manual flexible control data.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine

K — Preprogram activity couplet

Z — Flexible slot index

32 43: An error has been found in the item identifying the flexible control.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine

K — Control item

Y — Control word

Z — Flexible slot index

32 44: An error has been found in the PRE threshold for trunk reservation.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine

Y — Word containing the number of equipped trunks from the trunk group head cell (bits 19-10)

K — Same as the Y register (bits 20-11)

32 45: An error has been found in the DRE Threshold for trunk reservation

Register meaning:

J — Return address of PIDENT NMTG for SA03 print routine

Y — Control word

K — Number of equipped trunks (bits 9-0)

32 48: An error has been found and corrected in the lamp-associated count.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine.

K — Corrected count

Z — Flexible slot index

32 49: An error has been found and corrected in the non-lamp-associated count.

Register meaning:

J — Return address in PIDENT NMTG for SA03 print routine

K — Corrected count

Z — Flexible slot index

32 51: An error in the state of a dynamic overload control (DOC) loop circuit was found.

Register meaning:

J — Return address in PIDENT NMTD for SA03 print routine

X — Address of current flag word

Y — Index into current flag word

32 52: DOC signals are being sent but the machine conjestion active bit is not set.

Register meaning:

J — Return address in PIDENT NMTU for SA03 print routine

X — Address of DOC traffic block

Y — DOC signal threshold that has been passed

0—MC1 real time
1—MC1 MF
2—MC1 DP
3—MC1 RP
4—MC2 real time
5—MC2 MF
6—MC2 DP
7—MC2 RP

32 53: DOC signals are not being sent but the machine conjestion active bit is set.

Register meaning:

J — return address in PIDENT NMTD for SA03 print routine

X — Address of DOC traffic block

Y — DOC signal threshold that is in error (see audit 32 52)

32 54: The call store block 63 for EADAS is not the proper size.

Register meaning:

J — Return address in PIDENT NMEA for SA03 print routine

K — Length of block indicated in parameters

32 55: An error was found in the TGN (block 63).

Register meaning:

J — Return address in PIDENT NMEA for SA03 print routine

K — TGN

Y — 0 if TGN is unassigned

32 56: The 2-way trunk indicator is in error (block 63).

Register meaning:

F — Address of indicator being audited

J — Return address in PIDENT NMEA for SA03 print routine

K — Corrected indicator bit 22 = 1 if two-way or 0 if one-way

32 57: Highest number of slot used (block 63) is in error.

Register meaning:

F — Address of block being audited

J — Return address in PIDENT NMEA for SA03 print routine

X — Difference between corrected slot numbers and stored numbers

Z — Corrected slot numbers

32 58: The first word of a reroute control slot is zero, but either all other words are non-zero, the slot index is out of range, or the slot is not active.

Register meaning:

F — Address of slot index + 9

J — Return address in PIDENT NMRR for SA03 print routine

K — Address of slot index + 9

Z — Reroute slot index

32 59: A reroute control slot is active, but either the preprogram it is associated with is not active or not defined, or a preprogram is active without a reroute control slot. The slot is zeroed.

Register meaning:

F — Address of the first word of the reroute slot being audited

J — Return address in PIDENT NMRR for SA03 print routine

K — Equals zero if preprogram is undefined. Equals the preprogram number if the preprogram is active with a reroute control slot. Equals the reroute control slot number if the reroute slot is active and the preprogram is inactive.

Y — Preprogram number (left half) and reroute slot number (right half)

Z — Reroute slot index

32 60: An error was detected in word 0 of a reroute control slot and was corrected.

Register meaning:

F — Address reroute slot in error

J — Return address in PIDENT NMRR for SA03 print routine

K — Corrected data

Z — Slot index

32 61: An error was detected in word 1 of a reroute control slot and was corrected.

Register meaning:

F — Address where error was found

J — Return address in PIDENT NMRR for SA03 print routine

K — Corrected data

Z — Slot index

32 62: An error was detected in the TTG (to trunk group) information and was corrected.

Register meaning:

F — Address of word where error was detected

J — Return address in NMRR for SA03 print routine

K — Correct data if word 1 is being audited

Y — Correct data if word 0 is being audited

Z — Slot index

32 63: A word in an unused TTG position was found to be non-zero and was zeroed.

Register meaning:

F — Address of second word of the TTG block being audited

J — Return address in NMRR for SA03 print routine

K — Sum of bad data

Z — Slot index

32 70: TTG being counted does not match any TTG in control slots being counted. The counter was zeroed.

Register meaning:

F — Address of reroute control slot block

J — Return address in PIDENT NMRR for SA03 print routine

K — Trunk group being counted

32 73: A reroute control preprogram did not have the reroute bit set, or a non-reroute control preprogram has the reroute bits set.

Register meaning:

J — Return address in PIDENT NMRR for SA03 print routine

K — Address of preprogram auxiliary block

X — Address of preprogram auxiliary block

Z — Address of the preprogram control slot

32 74: A preprogram reroute control slot was found idle on an active preprogram and was initialized.

Register meaning:

F — Address of reroute control slot

J — Return address in PIDENT NMRR for SA03 print routine

X — Address of preprogram auxiliary block

Z — Address preprogram control word

32 78: The preprogram control word was found out of range and the slot index was zeroed. (See following audit 32 59 printout indicating if no slot is available.)

Register meaning:

J — Return address in PIDENT NMRR for SA03 print routine

Z — Address of preprogram control word

AUDIT 34

34 1: This message indicates that audit 34 (SATG2A) found something wrong with the form of a trunk-idle linked-list. The audit corrected the link list and requested audits 4 and 36.

Register meaning:

B — Address where error detected (See PR for explanation)

34 2: The up-down (usage) count for the TGN in the Y register was deemed bad and has been corrected unless the K register is negative, in which case, the count is not touched. If the K register is negative, the TDA for the TGN in the Y register specifies a number that is less than the actual number of trunks in the group.

Register meaning:

B — Bad up-down count (if K register is negative, garbage)

F — Total number of trunks per TDA

J — Return address in PIDENT SADT for SA03 print routine

K — Correct count for up-down count

L — Word 1 of TGN head cell MB count in bits 21-15

X — Count of idle trunks on the idle link list. TGN is 2-way if bit 10 = 0

Y — TGN under test: E(22) = 1 specifies RC active on the TGN

Z — TGN head cell address

AUDIT 36

36 30: (See 8.01, page 128, bb = 30.) Audit 36 (TG2B) found a trunk coded in its PMT word to be in one of the following states: invalid, idle, TML, TMLA, TØØS, THAW, GARD, or one of the trunk queue states. The code was found to be incorrect.

36 36: (See 8.01, page 128, bb = 36.)

36 40: (See 8.01, page 128, bb = 40.) This message accompanies an SA03 36 36 error message and occurs for the same reason.

36 50 through 56: (See 8.01, page 128, bb = 50-56.) Audit 36 (TG2B) goes through the routines of audit 5 before checking the PMT word with idle codes and the invalid code. If an error is found by one of those routines, this message is printed out.

36 70: (See 8.01, page 128, bb = 70)

AUDIT 38

38 0: Audit 38 has found an error.

Register meaning:

J — Return address in PIDENT SACX for SA03 print routine

NØTE—Z4INPR is set to a 1 when an L-level program is entered and zeroed when it gives up control. If Z4INPR is nonzero at this point, this indicates a failure by previous L-level program to zero a bit. This could be the result of an interrupt.

B — Nonzero value of Z4INPR

NØTE0—A nonzero value in Z4MAXS indicates a Centrex link list has been broken.

B — Nonzero value of Z4MAXS

38 1: An error has been found while auditing override bits, first scan row enable, information scan row enables, data link number, CPDN word, or maintenance bits.

Register meaning:

J — Return address in PIDENT SACX for SA03 print routine (NØTE1-6)

NØTE1 (CC only): Out-of-service bit disagrees with forced bits for given data link. Override bit should be set to a 1 for every data link in which the mismatch occurs. Printout occurs when override bits are not set properly and must be corrected.

B — Incorrect value of override bits

F — EICXDS + most significant bit of frame

K — Data in override bits to be set to a 1

X — Address of data link I/O block

NØTE1A (SP only): Override bit is 0 when the out-of-service bit is 0 and the forced bit is a 1. Override bit is corrected to a 1.

B — Word containing override bit for current link

F — Address of I/O block +7 +[8 times the data link number (DLN)]

K — 1 for all data links (in which out-of-service bit is 0) that have not been checked

X — Address of I/O block +7

NØTE1B (SP only): Override bit is a 1 when out-of-service bit (OS) is a

0 and forced bit (F) is a 0 or when out-of-service bit is a 1 and forced bit is a 0 or 1.

Override bit is corrected to a 0.

B — Word containing override bit for current link

F — Address of I/O block +7 +(8 times DLN)

K — 1 for all data links not yet checked where OS is a 0, F is a 0, or OS is a 1 and F is a 0 or 1.

X — Address of I/O block +7

NØTE2 (SP only): Address of enable address (AEA) for fast scan row was incorrect in I/O block. Replace data with AEA read from auxiliary block.

B — Incorrect AEA as it was in I/O block

F — AEA for fast scan row

K — Fast scan enable to be inserted in I/O block

X — I/O block address

Y — Auxiliary block address

Z — Link number

NØTE2A (CC only): Fast scan row is audited. Row read from Centrex data link auxiliary block for last scan points does not match row from I/O block. Insert the correct data from the auxiliary block into I/O block.

B — Incorrect row as it was in I/O block

F — AEA

K — Correct row inserted in I/O block

X — Address of I/O block

Z — DLN

NØTE2B (CC only): AEA for fast scan row is incorrect in I/O block. Replace it with address from the auxiliary block.

B — Incorrect AEA as it was in I/O block

F — Correct AEA to be inserted in I/O block

K — Correct AEA masked

X — Address of I/O block

Y — Address of auxiliary block

NØTE3A (CC only): Audit directed master scanner number. AEA of information scan point read from auxiliary block does not agree with that in the I/O block. Insert AEA from auxiliary block into I/O block.

B — AEA of information scan point from I/O block

K — AEA of information scan point from auxiliary block

X — I/O block address

Y — Auxiliary block address

Z — DLN (2-0)

NØTE3A (SP only): Enables for information scan rows, as given in I/O block, do not agree with auxiliary block. Correct I/O block with auxiliary block data.

F — I/O block address +4 +(8 times DLN)

K — (NØTE3A) Enable for information scan row 0 or (NØTE3B) Enable for information scan row 1

X — I/O block address

Y — Auxiliary block address

Z — DLN (2-0)

NØTE3B (CC only): Row given for information scan point in I/O block does not agree with that give in auxiliary block. Replace row with auxiliary block value.

B — Row from I/O block

K — Row from auxiliary block

X — I/O block address

Y — Auxiliary block address

Z — DLN (2-0)

NØTE3B (SP only): Same as NØTE3A (SP only).

NØTE4 (SP only): Data link number computed from C(TEMP1) is not identical with that in I/O block. Replace I/O block DLN.

F — I/O block address +4 +(8 times DLN).

K — E(8) + DLN (5-0)

X — I/O block address

Y — Auxiliary block address

Z — DLN

NØTE5: CPDN of auxiliary block is not identical with CPDN in I/O block. The I/O block is corrected with auxiliary block data.

B — Old CPDN from I/O block

F — (CC only) I/O block address + 3 + DLN (2-0) or (SP only) I/O block address +4 +(8 times DLN)

K — New CPDN from auxiliary block with bit 14 equal to bit 10

X — I/O block address

Y — Auxiliary block address

Z — DLN

NØTE6: Key scan bit indicates no key signals to be accepted over given data link. Either maintenance busy (MB) bit is not set or there is data in the lamp buffer words rather than a logical 0. Otherwise, key scan bit indicates link in service to accept key signals. If MB bit is 1, indicating maintenance busy or lamp buffer words are logical 0 rather than containing data [indicating link is out of service (OS)], there is possible trouble.

B — C(LMPBF0), C(LMPBF1), or word containing MB bit for data link in question

F — I/O+3+DLN (2-0)

K — Corresponding maintenance bits

X — I/O address

Y — Auxiliary block address

Z — DLN (2-0)

38 2: The J register contains the return address in PIDENT SACX for SA03 print routine.

Register meaning:

NØTE7: A mismatch occurred while comparing console register code of Ø(15) and data link number (DLN) from unit type number (UTYN) with same bits in word 0 of console register. Console register (CR) is updated.

B — DLN

F — 2(LSB) (console number) = slot (1,0)

K — DLN derived from UTYN +Ø15) times E(14) (CR code)

X — Auxiliary block address

Z — Address of CR

NØTE8: Pseudo route index (PRI) in CR does not agree with PRI in auxiliary block. Update CR with auxiliary block data.

B — PRI read from CR

K — PRI read from auxiliary block

X — Auxiliary block address

Y — Base address of 3-word auxiliary block associated with particular console

Z — Address of CR

NØTE9: MTDN of attendant circuit read from console register (CR) does not agree with that read from auxiliary block. Update the CR with auxiliary block data.

B — MTDN read from CR

K — MTDN read from auxiliary block

X — Auxiliary block address

Y — Base address of 3-word auxiliary block for particular console

Z — CR address

NØTE10: Common block address determined by indexing F4HHTP +15 with the CTXN is 0.

F — C(F4HHTP+15+CTXN)

K — F4HHTP+15+CTXN

X — Auxiliary block address

Y — Base address of 3-word auxiliary block for particular console

Z — CR address

NØTE11: CGN from Centrex common block and CTXN from auxiliary block do not agree with those stored in console register (CR). Update the CR.

B — CGN+CTXN read from CR

F — Common block address

K — CGN+CTXN (correct)

X — Auxiliary block address

Y — Base address of 3-word auxiliary block for particular console

Z — Address of CR

NØTE12: Link to loop 1, that is, the console slot and group select bits from console register (CR) do not agree with that just initialized in pseudo console register (PCR).

B — Data read from CR

K — Correct data read from PCR

X — Address of PCR just initialized

Y — Base address of 3-word auxiliary block for a particular console

Z — Address of CR

If F has E(21) set to a 1, mismatch also occurred on the common lamp words.

NØTE13: Lamp control word from CR does not agree with lamp control word from PCR.

Registers are same as NØTE2.

NØTE14: Primary console number (PCN) determined by reading out DLN from CR into bits (16-20) and putting console slot number into bits 14 and 15. This does not agree with PCN read from console group number (CGN) block. Update the CGN block.

B — Old information

K — Corrected information

X — Address of primary CR (PCR)

Y — Base address of CGN block

Z — Address of CR

NØTE15: A mismatch occurred while comparing previous value of busy-idle (BI) bits in CR with generated BI bits. Generated BI bits considered as correct value.

B — Incorrect data for BI bits

K — Correct data for BI bits

L — Mask for BI bits

X — Link to loop 5 as read from CR word 15, bits 0-17

Y — Number of loops processed

Z — Address of CR

NØTE16: Headset status (HDST) and position busy (PBSY) bits stored in word 17 of console register (CR) do not agree with same bits in word 0 of CR. Update position busy lamp in word 4 and state word with data from word 17.

B — Incorrect data in HDST+PBSY bits

K — Correct data in HDST+PBSY bits

L — Link to loop 5 as read from CR word 15, bits 0-17

Y — Number of loops processed

Z — Address of CR

NØTE17: Primary translation word given in F4OUT7 as a result of TRENAA translation does not agree with that stored in word 18 of console register (CR). Update CR.

B — Old primary translation word

K — New primary translation word

Z — Address of CR

NØTE18: The CR indicates lamp orders on queue; however, search of lamp order queue indicates this is false. Given lamp order queue word is zeroed.

Z — Address of CR, otherwise,

If Y, K = 6

Z — First lamp queue word

If Y, K = 9

Z — Second lamp queue word

If Y, K = 12

Z — Third lamp queue word (present only with trunk busy memory console)

NØTE19: Computed values of ENT and QFUL (from words 5, 6, and 7 of CGN block) do not agree with bits as set in word 0 of the CGN block. Update word 0 of the CGN block.

F — Counter for number of CGNs

K — Old state of bits

X — Corrected state of ENT and QFUL bits

Y — Address of CGN block

NØTE20: The size of a console group queue was found to be too large since the queue will be processed up to 2*MAXSZ=MAXQ.

K — Maximum allowed calls on the Console Group Queue

Y — Address of CGN block

NØTE21: Although the size of a console group queue was nonzero,

the head cell was empty. The queue count and head cell are zeroed.

NØTE22: A register on a queue is mutilated. The queue is terminated at the last known good register.

K — Register address

L — Failure address in PIDENT SACX (NØTE23-26)

NØTE23: A register's address is beyond the maximum loop register address.

NØTE24: A register's address is below the minimum loop register address.

NØTE25: A register has been found with an invalid RI, QI, or LI.

NØTE26: CGN does not agree with current queue number.

NØTE27: A queue has surpassed its maximum allowable length. It is terminated at its maximum allowable length.

NØTE28: The attendant conference bit in the CR does not agree with the value of the bit computed from the data link auxiliary block.

B — 1 or 0 in bit 22

— 0 console does not have attendant conference service, bit was invalidly set in console register

— 1 console has attendant conference service but bit was not set in console register.

X — Address auxiliary block

Y — Address of 3-word block/console in the auxiliary block

Z — Address of CR

NØTE29: The conference index is zero indicating that the conference facility is not in use. It is an error condition for the conference lamp item to be nonzero (nonzero implies the conference lamp is lit indicating a call in progress).

F — ADRS of lamp order in CR

K — Nonzero value of conference lamp item

L — Mask of conference lamp item

Y — Address of console group number block

Z — CR address

NØTE55: Centrex number read from auxiliary block exceeds highest CTXN assigned in parameters.

F — Console number

K — Common address

X — Data link auxiliary block address

Y — Base address of 3-word auxiliary block for particular console

Z — CR address

NØTE60: The number of equipped loops is greater than the maximum allowed which is six.

F — Common block address

K — Number of loops assigned

X — Auxiliary block address

Y — Base address of 3-word auxiliary block for particular console

Z — Address of CR

38 3: The Centrex number in the console group number block does not agree with the Centrex number in the console register.

The console group number (CGN) block is corrected with the console register data.

Register meaning:

K — Centrex number from CGN block

X — Centrex number from console register

Y — Address CGN block

Z — Address CR

38 5: Audit SACX has found an error.

Register meaning:

J — Return address in PIDENT SACX for SA03 print routine

NØTE17: TGN to trunk class code expansion for attendant trunk circuit returns indicating either no auxiliary block associated with the expansion or the trunk is unassigned.

B — E(21), no auxiliary block assigned

K — 0 if trunk is unassigned. If not equal to 0, primary translation word

X — Contents of word 15 of CR

Z — Address of CR

NØTE31: The simulated facilities group number (SFGN) read from the SFG register has exceeded the maximum SFGN assigned in parameters.

K — Out-of-range SFGN

X — Pointer to second word of first two-word head cell for SFGN

Z — Address of last word in SFG register containing invalid SFGN

38 6: Return from LEN translation (TRENAA) with information that line is unassigned, plugged up, being service observed, or master control center (MCC) line.

Register meaning:

J — Return address in PIDENT SACX for SA03 print routine

X — Contents of word 15 of CR

Z — Address of CR

38 10: The CTX audit has found that the data link type exceeds the maximum data link type. Audit will assume DLTYPE = 0 for BDLL words.

Register meaning:

F — Maximum data link type (MAXDLT)

K — Data link type

L — Data link group number

38 11: The CTX audit has found that the data link group (DLG) number exceeds the parameter size. It cannot build any more I/O structure (DLGB, LKPB, OTBF).

Register meaning:

B — Parameter size of the data link group block

K — Data link group number

38 12: The CTX audit has found that the link pointer block exceeds the parameter size.

Register meaning:

B — Parameter size of the link pointer block

K — Data link group number

X — Value of LKPBRG that exceeded link pointer block parameter size

38 13: The CTX audit has found that the output buffer exceeds the parameter size.

Register meaning:

B — Parameter size of the output buffer (Z30TBF)

K — Length of the output buffer (OTBFRG) that exceeded (Z30TBF)

X — Current data link group number (DLGNUM)

38 14: The CTX audit has found that the link pointer block address in the data link group block is incorrect.

Register meaning:

B — Incorrect link pointer block address

K — Correct link pointer block address

Y — Address in the data link group block where the error was found

38 15: The CTX audit has found that the block data link loading pointer was incorrect and corrected it.

Register meaning:

B — Corrected value of BDLL pointer

K — Incorrect value of BDLL pointer

Y — Address of the link pointer block pointer. Add 1 to Y to get the address of the BDLL pointer.

38 16: The CTX audit has found that the maintenance busy bit in the data link group block and the data link maintenance busy bit in the I/O block disagree. It is updated to the DL I/O BLK MB state.

Register meaning:

B — Incorrect maintenance busy bit in the DLG group

K — Data link maintenance busy bit in the I/O block

X — I/O block address

Y — Address of the MB bit and link block pointer

38 17: The I/O audit has found the load bits pointer in error and corrected it.

Register meaning:

B — Incorrect load bits pointer bits (17, 0)

K — Correct load bits pointer

X — I/O block address

Z — Address of the load bits pointer word in the link pointer block

38 18: The I/O audit has found the link number in the load bits pointer word in error and corrected it.

Register meaning:

B — Incorrect link number bits (21, 19)

K — Correct link number

Z — Address of the load bits pointer word in the link pointer block

38 19: The I/O audit has found that the sign bit of the load bits word = 1 when it should be zero. The sign bit was set to zero.

Register meaning:

B — Load bits word in error

Z — Address of the load bits pointer word in the link pointer block

38 20: The I/O audit found that the load bits pointer word was not zero when it should have been. The I/O audit zeroed the word.

Register meaning:

B — Load bits pointer word in error

Z — Address of the load bits pointer word in the link pointer block

38 21: The CTX audit found an error with the output buffer top pointer and corrected it.

Register meaning:

B — Correct buffer top pointer address (CC CS address range)

F — Address where buffer top pointer is stored

K — Incorrect buffer top pointer address (SP CS address range)

38 22: The CTX I/O buffer unit found the load pointer out of range. The load pointer was updated to the first zero location in the buffer or, if the buffer is full, to the same location as the unload pointer.

Register meaning:

K — Corrected load pointer

Y — Load pointer's out-of-range address

38 23: The I/O audit has found that the unload pointer was out of range and the buffer is zeroed.

Register meaning:

K — Corrected unload pointer

Y — Unload pointer's out-of-range address

38 24: The I/O audit has found a trapped data link order and zeroed it.

Register meaning:

B — Trapped data link order

J — Unload pointer (SP CS address)

K — Address of trapped data link order

38 25: The CTX data link I/O audit found the output buffer in error and zeroed the buffer.

Register meaning:

B — Unload pointer

X — Load pointer

Y — Contents where error occurred

38 26: The I/O audit found an erroneous data link order (DLO) and zeroed all DLOs between the error location and the load pointer.

Register meaning:

B — Erroneous data link order

J — Load pointer

K — Address of erroneous data link order

38 27: The data link I/O audit found the I/O block buffer 0 SP instruction to be incorrect and corrected it.

Register meaning:

B — Incorrect SP instruction

F — Address of I/O block buffer 0

K — Correct SP instruction MVMRP

38 28: The data link I/O audit found the I/O block buffer 1 SP instruction to be incorrect and corrected it.

Register meaning:

B — Incorrect SP instruction

F — Address of I/O block buffer 0 (Add 1 to get buffer 1)

K — Correct SP instruction (S7CXTM)

38 29: The data link I/O audit found the block data link loading buffer size to be incorrect.

Register meaning:

B — Incorrect buffer size

K — Correct buffer size

Z — First address of 5-word block per data link

38 30: The I/O audit found the top pointer in error and corrected it.

Register meaning:

B — Incorrect top pointer

K — Correct pointer

Z — Address of the link block top pointer

38 31: The I/O audit found the sign bit of the link block top pointer set to zero when it should have been 1. The audit set the bit to 1.

Register meaning:

Z — Address of the link block top pointer

38 32: The CTX I/O audit found that there is no I/O block associated with the data link number. The I/O structure is built but the load bits pointer and unload pointer cannot be assigned.

Register meaning:

K — Data link number

Y — Data link group block address

38 40: (See 8.01, page 128, bb = 40.) (CTX only)—An error has been found while auditing a loop register.

Register meaning:

J — Return address in PIDENT SACX for SA03 print routine

NØTE30: Conference call is being taken down for one of two reasons:

(a) PMFI or loop subregister 7 is invalid

K — Invalid PMFI

(b) State word of conference subregister 7 contains invalid data

Register meaning:

K — Invalid contents of state word

X — Address of loop subregister 2

Y — Loop number

Z — Address of CR

NØTE49: In general, the link word of the loop register is checked, the state words are audited, and the lamp word of the loop register is compared with that of the console register (CR). Specifically, an error print results as one of the following:

(1) If the loop register address is out of range

(2) If the link word of given loop register does not equal link determined by indexing CR with the number of the loop register being processed

(3) If the console slot number (bits 20-21) and link number (19-17) from CR+E(22) are not identical with data is scan word of loop register

(4) If the loop register lamp word disagrees with lamp control word from CR word 5

(5) If 4YILP+E(3) is not the RI found in loop register 2

(6) If 4YLIP+E(2) is not the RI found in loop register 1

(7) If the state word of loop register 7 contains neither an LGI of 6 nor an LGI of 7.

X — Address of loop register

Y — CW4 (last word of loop register)

Z — Address of CR

38 43: (See 8.01, page 128, bb = 43.) An error has been found associated with a console register (CR).

Register meaning:

B — State word of call register

J — Return address in PIDENT SARG for SA03 print routine

K — Failure address in PIDENT SACX (NØTE52-53)

NØTE52: An MB bit of a CR was not marked.

NØTE53: In attempting to remove a specific CR from the blind-idle list, the CR could not be found on the list.

X — CR

Z — Client (SACX) return address

AUDIT 39

39 1: The audit was attempting to audit the mask blocks for a particular ACD data group and found the DAG number or the pointers in H8DAG to be invalid.

Register meaning:

J — Return address in PIDENT SACD for SA03 print routine

K — DAG number

Z — Point of error

39 2: Routine audit found that the split mask block data for a particular hunt list was incorrect. Correct data was copied from PS backup. The correct result in the F and Y registers is 0 (177777).

Register meaning:

F — Result of 'adding' mask block rows

J — Return address in PIDENT SACD for SA03 print routine

K — DAG number with failure

X — Hunt list number (Row in mask block in error)

Y — Result of 'XORING' mask block rows

39 4: The ACD audit has detected either a bad load compensating package (LCP) number in the DAG headtable or bad translation data in the DAG translator, which indicates that the given LCP does not exist for this DAG.

Register meaning:

F — Split number

J — Return address in PIDENT SACD for SA03 print routine

K — DAG number

Y — LCP number

Z — Address of the point of error

39 5 and 39 6: The ACD audit, while performing its routine audit of the H8MRCC area, found an error in the split number (SA03 39 5) or the reporting group number (SA03 39 6). This error implies that the number of splits or number of reporting groups in the DAG headtable does not agree with the data in the DAG translator.

Register meaning:

F — Split or reporting group number in error

J — Return address in PIDENT SACD for SA03 print routine

K — DAG number

Y — LCP number or RGP number

Z — Address of the point of error

39 7: The ACD audit has determined that the QTL number in the split mask block is not correct. The correct queue number has been copied from the program store backup in the mask block translator.

Register meaning:

F — Split number

J — Return address in PIDENT SACD for SA03 print routine

K — DAG number

X — Address of CS split mask block

Y — QTL number in error from split mask block

Z — Correct QTL number

39 10: The position busy (aux work) update found an error and corrected it in the position busy accumulator.

Register meaning:

B — Old value of accumulator bits (22, 11)

F — New value of accumulator bits (22, 11)

J — Return addresss in PIDENT SACD for SA03 print routine

K — Split or reporting group (RG) number

X — Address of dummy call register

Z — Address of current mask block data

NOTE: The associated dummy call register dump contains the following information:

7, X = DAG number bits (5,0)

8, X = Address of 1st mask block pointer

9, X = Address of current mask block pointer

11, X = The number of splits or RGs

39 11: The position manned update found an error and corrected it in the positioned manned accumulator.

Register meaning:

B — Old value of accumulator bits (22, 11)

F — New value of accumulator bits (22, 11)

J — Return address in PIDENT SACD for SA03 print routine

K — Split or reporting group (RG) number

X — Address of dummy call register

Z — Address of current mask block data

NOTE: The associated dummy call register dump contains the following information:

7, X = DAG number bits (5, 0)

8, X = Address of 1st mask block pointer

9, X = Address of current mask block pointer

11, X = The number of splits or RGs

39 21: An error existed in a CTRF/NUTS CS head table.

Register meaning:

F — CTFG of bad pointer

J = Return address in PIDENT SACD for SA03 print routine

K — Old address from CS head table

X — 0 for CTRF, 1 for NUTS

Y — Head table word that is bad

Z — Correct pointer

39 22: An RC message has requested that the totaling and holding register block be expanded due to the addition of a CTRF or NUTS auxiliary block, but a translation

reveals that a CS pointer does not have a corresponding PS auxiliary block entry.

Register meaning:

F — 0 for CTRF RC; 1 for NUTS RC

J — Return address in PIDENT SACD for SA03 print routine

K — CTRF or NUTS number

X — H8RCSTATE word

AUDIT 40

Note: See PR for explanation.

AUDIT 41

41 1: An error has been detected in a variable length queue or timing list, but the subroutine SARALF did not print an error message (same as 41 40).

41 2: An error has been detected in a queuing for trunk and line head cells.

Register meaning:

F — Address of unit type auxiliary block containing information about queuing for trunk and line groups

J — Failure address in PIDENT SAQU (NØTE9-11,14) data in head cell disagrees with data in unit type auxiliary block

NØTE9: Maximum size of queue incorrect.

NØTE10: MTDN/CPDN for lamps incorrect or number of lamps incorrect

NØTE11: Base primary route index for delay announcement incorrect

NØTE12: First register on queue pointer in head cell=0; last register on queue pointer in head cell ≠ 0. Both pointers zeroed.

K — Correct data from unit type auxiliary block

Z — Address of queuing for trunk and line head cells

K = C (last register on queue pointer)

Y = A (first register on queue pointer)

NØTE14: Number of queue registers purchased by customer incorrect.

NØTE15: QTL group number in queue register is out-of-range.

F = maximum QTL group number

K = bad QTL group number

X = A (queue register) where bad QTL group number found.

41 3: An error has been detected in the length of the CAMA operator queue. The queue length has been updated to the correct value.

Register meaning:

F — Length of CAMA operator queue as maintained by PIDENT CAMA

J — Return address for SA03 print routine in PIDENT SAQU

K — Actual count of registers on the CAMA operator queue as determined by PIDENT SAQU

Z — Index indicating CAMA operator queue

41 4: An error was found with the pointer to the first non-priority call on a QTL queue. The address of the first non-priority call on queue will be kept in word 8 of the associated QTL CS head cell.

Register meaning:

B — Y

F — Contents of word 8 of QTL head cell

J — RA in Pident SAQU

K — Either zero or the address of the first non-priority queuing register on queue found by hunting through the link list.

L — Mask of ADDR of queuing register

X — Possible contents of state word of queuing register in error

Y — Contents of word 0 of specified QTL CS head cell at time of audit

Z — Addr of QTL CS head cell in which error was found

41 40: (See 8.01, page 128 , bb = 40.) An error has been detected in a variable length queue or timing list.

Register meaning:

J — Return address for SA03 print routine in PIDENT SAQU

K — Failure address (NØTE3-8)

NØTE3: Reverse link-point back error

X — Register in trouble

NØTE4: RI mismatch on queue or timing list

NØTE5: QI bit not a 1

NØTE6: Audit code (RI, PT = 0, 7) found in register

NØTE7: Idle register (PT = 0) on list

NØTE8: Queue or timing list has exceeded its maximum allowable length.

NØTE13: The on queue indicator for the call pickup queue is erroneously set to zero while the ringing register is still on the queue.

Y — Head cell address for the queue or list

Z — Index indicating type of queue or list is as follows: SAQU03, 09 (0-23); SAQU07 (0-22); SAQU10 (0-24); SAQU11 (0-25); SAQU12 (0-26); SAQU15 (0-29); SAQU16 (0-30)

0 — P4FR01	1 minute timing-ground start PBX
1 — P4PDT	Partial dial timing
2 — P4FR40	40-second timing
3 — P4FR60	60-second timing
4 — P4PST	Permanent signal timing
5 — Ø8CMST	100-millisecond timing
— TAHB	TA request list (SAQU03, 09, 10, 11, 12, 15, 16)
— Q4HCNZ	Coin zone
— Q4HCNL	Local coin
— Q4HAM	AMA (SAQU03, 07, 09, 10, 11, 12)
— Q4HCL1	Class of service tone 1
— Q4HCL2	Class of service tone 2
— Q4HRGT	Ringing Trunk Queue (SAQU10, 12, 16)

— Q4HAIL	AIØD low priority receiver (SAQU 11, 12, 15, 16)
— Q4HAIH	AIØD high priority receiver (SAQU 11, 12, 15, 16)
— Z3PUGT	Pickup (SAQU15, 16)
— Q4CØPQ	CAMA operator (SAQU15, 16)
— Q4HAM	AMA (SAQU15, 16)
— Q4CRØQ	CAMA (SAQU15, 16)
— QTLHC	Trunk and lines (SAQU15, 16)
— Q4HCNK	Coin control
— Q4HRRR	Register ringing
— Q4HRRS	Special ringing
— Q6PØBQ	PØB queue
— Q4HTTM	TOUCH-TONE path memory
— E4TM+10	Long job queue
— Y6ØTMS	General purpose timing 200 milliseconds one way
— Y6Ø1S	1 second one way
— Y6Ø6S	6 seconds one way
— Y6TTMS	200 milliseconds 2 way
— Y6T1S	1 second 2 way
— Y6T6S	6 seconds 2 way

41 44: (See 8.01, page 128 , bb = 44.) This message indicates that an error has been detected in the last register on the list.

Register meaning:

J — Return address for SA03 print routine in PIDENT SAQU (NØTE1-2)

NØTE1: The last register on the list disagrees with the head cell which points to it. List is destroyed.

F — Contents of CR queue word

X — Address of register containing the end code

NØTE2: Audit 41 found an error in the last register on the timing list. If X $\neq$ 0, a list end code (0) is at a location other than the head cell; if X $\neq$ 0, a head cell is 0 instead of pointing to itself.

NØTE12: Head cell pointer to first register on queue contains zero. Head cell pointer to last register on queue zeroed.

K — C(head cell pointer to last reg on queue)

Y — Head cell address for the queue or list

Z — Queue or list index. (Refer to 41 40.)

AUDIT 42

42 1: (CC only): An error was found in a junior register, and the linked senior register was idle or already marked with the idle code. This message is followed by an SA02 register message containing the junior register found in error.

Register meaning:

J — Return address in PIDENT SANK for SA03 print routine

K — Failure addresses in PIDENT SANK (NØTE13-23)

NØTE13: No match junior address and senior address

F — Contents of RI and PT bits

NOTE14: TLTP register busy bit 22 is not set

F — Contents of RI and PT bits

NOTE15: Invalid code (0.3 or 0.23 in TSJR)

F — Contents of RI and PT bits

NØTE16: Unassigned RI

NØTE17: Point-to point-back linkage failure

NØTE18: Point-to point-back linkage failure

NØTE19: Senior register is idle

NØTE20: SXS junior register is idle

NØTE21: Audit bit already marked in step-by-step junior register

NØTE22: TSJR CR address is out of range

NØTE23: Senior register is idle

NØTE28: An FAJR has been found with garbage in the client register address.

NØTE29: An FAJR has been found which links to a client with an idle PT.

NØTE30: An FAJR register has been found with a client which does not point back.

X — Senior register address

Y — Junior register address

Z — Register index. See NØTEA of PIDENT SANK. The relocatable address of NØTEA can be determined from the absolute address in the J register.

0 — Flash scan and timing register

1 — Multibit scan register

2 — Line ferrod register

3 — Multifrequency transmission register

4 — Dial pulse transmission register

5 — Panel call indicator transmission register

6 — Timed scan junior register

NØTEB: Index (-0 through -2) gives the octal subgroup number of the SXS junior register in trouble.

NØTEC: Index (-0 through -36) gives the octal subgroup number of the timed scan junior register in trouble.

NØTED: Task code of the bad FAJR.

42 1: (SP only): An active junior register has been found in an invalid state. This message indicates that the subroutine SARALF did not print out an SA03 42 40 error message.

Register meaning:

B — Contents of link word

J — Return address in PIDENT SALK for SA03 print routine

K — Failure address (NØTE4-27)

NØTE4: The link to client in some junior register contained in out of CS range address.

NØTE5: An active TSJR or HTJR was found with a hit timing in hopper or a repeat disconnect timing code for two successive looks by SALK.

NØTE6: An active TSJR or HTJR was found with a release task code for two successive looks by SALK. This probably means the register was not on an active or idle list.

NØTE7: An MF, a panel call, or a trunk dial pulse junior register was found with an incorrect subroutine address in word 0.

NØTE8: An MF junior register which should have pointed to itself was found with an out range of CS address in word 0.

NØTE9: A trunk dial pulse junior register was found with garbage in word 4. This word should contain a CAT instruction in the upper bits and S4GATC in the lower bits.

NØTE10-11: A trunk dial pulse junior register was found with garbage in word 0. This word should have a 1 in bit 18 and an address between S4GDA4 and S4GDA4+6 in the lower bits.

NØTE12: A line ferrod junior register has been found with an invalid task code.

NØTE13: A line ferrod junior register has been found with a release code with a client register still linked.

NØTE14: A TSJR or an HTJR has been found with garbage in the client register address.

NØTE15: A junior register has been found which links to a client with the idle PT.

NØTE16-17: A junior register has been found with a client which does not point back to it.

NØTE18: An active junior register has been found with an invalid link-to back-to situation between it and its client.

NØTE19: An active multibit or flash scan and timing junior register has been found with an invalid task code.

NØTE20: An active multibit or flash scan and timing junior register has been found with garbage in the upper bits of word 1. This word should contain an SLTJ order in the upper bits.

NØTE21: An active flash scan and timing register has been found with an invalid address in the lower bits of word 1.

NØTE22: An active flash scan and timing junior register has been found with an invalid hopper code in the upper bits of the client register address word.

NØTE23: An active multibit junior register has been found with an invalid address in the lower bits of word 1.

NØTE24: An active multibit junior register has been found with an invalid hopper code in the upper bits of the client register address word.

NØTE25: An active multibit junior register has been found with an invalid client register address.

NØTE26: An active multibit junior register has been found with a client register that does not link back.

NØTE27: An active multibit or flash scan and timing junior register has been found with an invalid link between it and a client register.

NØTE57: Same as NØTE7.

NØTE72: A fast answer junior register is hung on an active link list with some code other than the release code.

NØTE74: A fast answer junior register is hung on an active link list with the release code.

NØTE75: A fast answer junior register is marked busy but is not on an active link list.

X — Senior register address

Y — Junior register address

Z — Type of junior register is one of the following:

0 — Multifrequency

1 — Panel call

2 — Trunk dial pulse

3 — Multibit

4 — Flash scan timing

5 — Line ferrod

6 — Timed scan

7 — SXS hit timing

8-12 — SXS dial pulse

13 — Fast answer junior register

42 2: (CC only): While checking the active lists of MF, DP, or PCI junior registers, the linked list was found to be in error or an idle register was found in the active linked list. The link word of the previous register is zeroed, or if the whole list is bad, the head cell is zeroed.

Register meaning:

J — Return address for SA03 print routine in PIDENT SANK

K — Last register checked or upper bits (18-22) of link word of previous register

Y — Head cell address or previous register address

Z — Junior register type is one of the following:

3 — MFJ

4 — DPJ

5 — PCIJ

42 2: (SP only): An error has been found while auditing the junior register link lists.

Register meaning:

J — Return address in PIDENT SALK for SA03 print routine (NØTE28-31, 34-35)

NØTE28: More than one idle register has been found on a busy list, or no end of list code was found on a busy list.

Y — Head cell address

Z — Junior register type

NØTE29: An error has been found in busy junior register linkage.

K — Correct pointer

X — Difference between correct and incorrect pointer

Y — Address of junior register containing incorrect pointer

Z — Type of junior register. (Refer to SA03 42 01 SP only.)

NØTE30: An incorrect link address has been found in the end of block dummy junior register.

K — Correct pointer

X — Difference between correct and incorrect pointers

Y — Junior register address

Z — Junior register type. (Refer to SA03 42 01 SP only.)

NØTE31: An incorrect pointer was found in last multibit or flash scan junior register.

F — Correct pointer to dummy junior register

K — Contents of dummy junior register

X — Failure address in PIDENT SALK (NØTE32-33)

NØTE32: An error has been found at the end of flash scan list.

Y — Address of last flash scan register

NØTE33: An error has been found at the end of the multibit list.

Y — Address of last multibit register

Y — Address of last junior register

Z — Junior register type

NØTE34: Incorrect information has been found in dummy junior register.

F — Dummy junior register address

K — Contents of dummy junior register

X — Correct contents of dummy junior register

Y — Last junior register address

Z — Junior register type is one of the following:

3 — Multibit

4 — Flash scan

NØTE35: Invalid information was found in a busy line ferrod junior register. The register linkage was terminated at the previous good link.

42 3: (CC only): An error was found while auditing TSJRs or FAJRs.

Register meaning:

J — Return address in PIDENT SANK for SA03 print routine

K — Failure address in PIDENT SANK (NØTE1-11)

NØTE1: An idle TSJR was found on busy list.

F — Task code

X — Address of head cell or link word

Y — Counter

NØTE2: TSJR address is out of minimum range.

Registers are same as NØTE1.

NØTE4: Maximum number of TSJRs were exceeded while checking busy link list.

F — Maximum number of TSJRs allowed on list

X — Address of head cell or link word

Y — Counter

NØTE5: Dummy task code is in other than the dummy TSJR.

Registers are same as NØTE1.

NØTE6: Invalid task code is in one of the dummy TSJRs.

Registers are same as NØTE1.

NØTE7: Same as NØTE5.

NØTE8: Same as NØTE6.

NØTE9: Same as NØTE4.

NØTE10: Hit timing address is not valid.

Y — Hit timing address

NØTE11: More than two TSJRs are one idle list while being rebuilt.

X — Contents of link word

Y — Address of link word

NØTE31: An FAJR which is marked idle is on an active list.

F — Task code

X — Address of head cell or link work or preceding junior register

NØTE32, 33: A FAJR address is out of range.

F — Task word

X — Address of head cell or link word of preceding junior register

NØTE34: Maximum number of FAJRs were exceeded while checking the busy link lists

X — address of head cell or link word of preceding junior register

NØTE35: Dummy task code is in other than the dummy FAJR.

F — Task code

X — Address of head cell or link word of preceding junior register

42 3: (SP only)—An error has been detected on a TSJR or FAJR busy link list.

Register meaning:

J — Return address in PIDENT SALK for SA03 print routine (NØTE36-38)

NØTE36-37: TSJR busy list audit has ground incorrect dummy junior register code.

F — Busy list which was terminated incorrectly

K — Word 1 of offending junior register

X — Backward link

Y — Present link

Z — Forward link

NØTE38: An error has been detected on a TSJR busy link list or in the TSJR head cell block. All lists have been wiped out and TSJRs idled.

Z — Failure address (Refer to NØTE39-45)

NØTE39: A TSJR head cell contained an out-of-range CS address.

Y — Out-of-range address from head cell

NØTE40: One of the head cell pointers in the TSJR head cell table was incorrect.

NØTE41: A TSJR on an active list contained a zeroed busy-idle list (indicates the register is idle).

Y — Junior register address

NØTE42: A TSJR link word contained an out-of-range CS address.

Y — Junior register address

NØTE43: The audit has found that a TSJR active link list has exceeded its maximum allowable length.

Y — Address of first junior register to exceed maximum count

NØTE44: A register (other than the end of list dummy, S4DEL0) with

the end of list dummy code was found on a TSJR active list.

F — 2N where N is the list number

Y — Address of offending register

NØTE45: A register (other than the end of list dummy, S4DEL0) with the end of last list code was found on a TSJR active list.

NØTE76: The contents of a FAJR active link list headcell is out of range.

X — Address of FAJR headcell

Y — Out of range address from contents of the head cell

Z — Maximum SP call store address

NØTE77: A FAJR which is marked idle is on an active link list.

K — Task code in the bad junior register

Y — Address of the link word of the junior register

Z — Contents of the link word

NØTE78: The link to the next FAJR is out of range.

K — Task code in the bad junior register

Y — Address of the FAJR containing the bad link

Z — Contents of the link word (low order 15 bits in the out of range link)

NØTE79: There appears to be more junior registers on the active link list than are FAJRs in the office. The list probably is looped.

Y — Address of last register audited

Z — Contents of the link word of the last register audited

NØTE80: A FAJR other than the regular end of list dummy register contains the regular end of list task code.

Y — Address of FAJR which contains the dummy register task code

Z — Contents of the link word

42 4: (CC only): A TSJR has been in one state too long and is probably not linked to one of the busy lists. It is returned to the idle list.

Register meaning:

J — Return address in PIDENT SANK for SA03 print routine

(a) If J points to Note F:

K — Task code

Y — TSJR address (word 1)

(b) If J points to Note G:

K — Failure address

NØTE25: An FAJR is marked busy but is not on an active list.

F — Audit bits

X — Address of senior register

Y — Address of junior register

Z — Task code in bad junior register

NØTE26: A FAJR is on an active list but is hung because the task code has not been updated.

F — Audit bits

X — Address of senior register

Y — Address of junior register

Z — Task code in bad junior register

NØTE27: An FAJR is hung either because the task code has not been updated or the junior register is not on an active list.

F — Audit bits

X — Address of senior register

Y — Address of junior register

Z — Task code in the bad junior register

42 4: (SP only): An error has been found in a SXS dial pulse (DP) receiving junior register.

Register meaning:

J — Return address in PIDENT SALK for SA03 print routine (NØTE46-49 and 56-59)

NØTE46: An error has been found in the constant word of an SXS DP junior register.

B — Contents of word 2

K — Proper contents of word 2

Y — Address of junior register in which error was found

Z — Register type

NØTE47: A 5-word SXS DP dummy (used by AIT and PSPD) has been found with an improper link in word 0. (This is the link used by PSPD.) In this case, the link should have been +0.

Y — Address of SXS dummy in which trouble was found

NØTE49: The SXS DP junior register active link list was found to be in trouble. The list has been wiped out and all SXS DP junior registers idled.

Z — Failure address (NØTE50-55)

NØTE50: The SXS DP junior register active head cell contained zero.

NØTE51: The SXS DP junior register active head cell contained an out-of-range address.

NØTE52: An SXS DP junior register on the active list contained a zeroed real register bit (indicates an end of block dummy).

K — Scanner match bit and task code

Y — Junior register address

NØTE53: An SXS DP junior register contained an out-of-range link.

Y — Junior register address

NØTE54: The SXS DP junior register active link list has exceeded its maximum allowable length.

Y — Address of first register causing the count to be exceeded

NØTE55: A register (other than the end of list dummy code, S4DEL0) which contained the end of list dummy code was found on the SXS active list.

Y — Address of offending register

NØTE56: A SXS junior register has been found which appeared on neither the active nor the idle list.

Y — Address of junior register

K — Contents of last word of junior register

Z — SXS segment number (0,1,2,3 or 4)

NØTE58: The linkage in word 0 (PSPD link word) of an SXS end of block dummy 1 (or 3) did not point properly to the first register in block 2 (or 4).

K — Address to which word 0 of dummy should link

Y — Address of word 1 of dummy

Z — Block number of offending dummy (1 or 3)

NØTE59: Word 1 of an SXS end of block dummy contained incorrect information. This dummy does not link to a growth and, therefore, should have ones in bits 15 and 16 and zeros elsewhere.

K — Contents of word 1 of dummy

Y — Dummy register address

NØTE70: A SXS dial pulse junior register was found in an invalid state or contained invalid information. All registers found in trouble are initialized with the release code.

B — ESN of trunk

F — Link word of SXJR (14-0) SXS state code at time of error (21-18)

21-18 = 0 means junior register was found in inactive state for two passes of the audit

21-18 = 5, 6, 7, 13, 14 are invalid codes

21-18 = 2, 4, 8, 9, 10, 11, 12, 15 represent the failure of SXJR to point back to itself or failure of SXJR to point to a senior register which points back to the SXJR

K — Address of senior register or garbage

L — SR/JR address left adjusted 5 bits

X — Audit control bits (22-15) and T2 address of trunk (14-0)

Y — Address of SXJR link word

Z — Contents of 3, K, or SXJR segment being processed

NØTE71: A SXS dial pulse junior register was found with the release code in its link word for two passes of the audit. The junior register was assumed to be lost from the active list and its fifth word was zeroed so that it will be picked up by the audit on its next run. Register meaning is the same as for NØTE70.

42 5: (SP only): An error has been found in a SXS hit timing junior register (HTJR).

Register meaning:

J — Return address in PIDENT SALK for SA03 print routine (NØTE60-62)

NØTE60: SXS hit timing busy list audit has found an incorrect end of active list dummy code. Specifically, the end of list register had an end of last list code, which has been corrected.

Y — Address of CS word which was in in HTJR active list and contained the end of list code

NØTE61: SXS hit timing busy list audit has found an incorrect end of active list dummy code. Specifically, the end of last list register had the end of list code, which has been corrected.

Y — Address of CS word that was in an HTJR active list and contained the end of last list code

NØTE62: The SXS hit timing audit has found an active list in trouble or an error in the head cell table.

Z — Failure address (Refer to NØTE63-69.)

NØTE63: An HTJR active head cell contained an out-of-range CS address.

K — Head cell address

Y — Head cell contents

NØTE64: A head cell pointer in the HTJR head cell table was found in error.

K — Head cell address

NØTE65: A register was found on an HTJR active list with a zeroed busy idle bit (indicating an idle register).

K — Scanner match bit and task code

Y — Junior register address

NØTE66: The link word (word 1) of a register on an HTJR active list was found with an out-of-range address.

Y — Address of offending register

NØTE67: An HTJR active list has exceeded its maximum allowable length.

Y — Address of first register which caused the register count to be exceeded

NØTE68: A register (other than the end of list register, S4DEL0) was found on an HTJR active list with the end of list dummy code.

Y — Address of offending register

NØTE69: A register (other than the end of list register, S4DEL0) was found on an HTJR active list with the end of last list code.

Y — Address of offending register

42 40: (CC only) (See 8.01, page 128, bb = 40.) An error was found in a junior register.

Register meaning:

J — Return address in PIDENT SANK for SA03 print routine

NØTEA-C: The senior register linked to a junior register has been marked with the audit code of RI = 0, PT = 7. See description at 42 01 (CC version) for register meaning.

NØTED: An error has been found in the TSJR link list (PASS 3). All TSJRs are being idled. This particular TSJR had a client register linked to it.

K — Task code

X — CRA

Y — TSJR link word address

42 40: (SP only) (See 8.01, page 128, bb = 40.) A junior register associated with a senior register has been found in an invalid state.

Register meaning:

J — Return address in PIDENT SALK for SA03 print routine (NØTE1-3)

NØTE1: Audit 42 has emptied all TSJR or HTJR active lists and has restored all TSJRs or HTJRs to the idle list. A senior register that was linked to one of the junior registers being idled has been marked with the audit code.

K — Bits 22-18 = scanner match bit and task code of junior register

X — Bits 17-0 = senior register address from junior register

Y — Address of word 1 of junior register

Z — Junior register type is one of the following:

6 = TSJR

7 = HTJR

NØTE2: Audit 42 has emptied the step-by-step junior register (SXJR) active list and has restored all SXJRs to the idle list. This message indicates that a senior register, which was linked to one of the junior registers being idled, has been marked with an audit code.

X — Senior register address in junior register

Y — Address of word 1 of junior register

NØTE3: Same as SA03 42 01 (SP only).

NØTE81: Audit 42 has emptied the fast answer junior register (FAJR) active list and restored all FAJRs to the idle list. This message indicates that a senior register, which was linked to one of the junior registers being idled, has been marked with an audit code.

X — Senior register address in junior register

Y — Address of word 1 of junior register

AUDITS 43, 44, AND 45

43 1: This message indicates that the audit found an unsound idle link list. The exact error can be determined from the contents of the CC registers.

Register meaning:

F — 0 head cell was bad ***or***

— Address of register found in SA02 print routine

K — Out of range address on link ***or***

— Contents of second word of head cell

— If K = F, link was looped

L — PS address where error detected +1 or -1, list is too long

X — Address of first register of the type being audited

Z — Address of idle link list head cell +1

43 3, 44 3, and 45 3: These messages indicate that the audit has found a CR on a queue or a timing list and has pulled the register off the list.

Register meaning:

F — Q type (used to index DATS table)

X — Register on queue

Y — Contents of register queue word

Z — Contents of backward link word (if any)

43 4, 44 4, and 45 4: These messages indicate that, while attempting to remove a register from a link list or a queue in which it was found, an error was detected in the list. The list head cell was zeroed.

Register meaning:

F — Q type (indexes DATS table)

J — Return address in PIDENT SARG for SA03 print routine

L — Failure address in PIDENT SARG (NØTE1-9)

NØTE1: Register in forward link failed to point back.

K — Contents of scan word of register in forward link

Y — Register in forward link

Z — Register in backward link

NØTE2: Register in backward link failed to point back.

K — Contents of queue word of register in backward link

Y — Register in forward link or 0 end code

Z — Register in backward link

NØTE3: Same as NØTE1.

NØTE4: Head cell failed to point back to first register.

K — Contents (first register on list) of head cell

NØTE5: Same as NØTE1.

NØTE6: Same as NØTE2.

NØTE7: The list or queue has exceeded its maximum allowable length.

B — Maximum number of registers allowed on queue or list

K — Number of registers processed thus far on list or queue

NØTE8 or NØTE9: Out-of-range CS address.

K — K code of CS

Y — Register in forward link

X — Address of register to be removed

43 5: The J register contains the return address in PIDENT SACX for SA03 print routine.

Register meaning:

J — Return address in PIDENT SACX

NØTE32: The AUTØVØN trunk group number (ATGN) assigned in translations has exceeded the maximum assigned in parameters.

K — TGN for invalid ATGN

X — Invalidly assigned ATGN

X + Y — Highest ATG assigned in parameters

NØTE33: Trunk group number (TGN) for ATG has no associated auxiliary block.

K — 0, TGN is unassigned

K — TNP(22), 1(21), Table number (20-18), Class Code (17-10), number of equipped trunks (9-0). TGN is assigned without auxiliary block

X — ATGN

Z — TGN

NØTE34: The maximum member number assigned in translations exceeds that assigned in parameters for the ATG.

B + Y — Maximum member number assigned in parameters

F — Address of auxiliary associated with TGN

K — Assigned TNN

X — ATGN

Y — Member number illegally assigned

Z — TGN of assigned trunk

NØTE35: LT bit (indicates P-bit row associated with last equipped AUTØVØN trunk in group) set in row with no validly assigned trunks. Bit should be zero.

F — Address of auxiliary block associated with TGN

K — Address of row in P-bit block

X — ATGN

Y — Member number

Z — TGN

NØTE36: LT bit is not set for P-bit row associated with highest assigned member number for this ATG.

F — Address auxiliary block associated with TGN

K — Assigned TNN

X — ATGN

Y — Address of row in P-bit block

Z — TGN

NØTE37: There is no PMT word associated with assigned TNN.

K — TNN

X — Member number (MMBR) -1 if this is the trunk associated with the greatest assigned member for this group; otherwise:

X — MMBR

Y — Address of row in P-bit block

Z — TGN

NØTE38: There is no TPC register associated with equipped TNN.

K — TNN

X — 0

Y — Address of row in P-bit block

Z — TGN

NØTE41A-41C: Data in TPC register disagrees with that in image register. Correct using image register data. A 43 40 error print should follow.

J — Return address in PIDENT SACX

K — Correct data

X — Address of TPC register

Y — TNN

Z — M4GS + 10 = 11, MMBR, and/or ATG are incorrect.

Z — M4GS + 10 = 12, TNN is incorrect

Z — M4GS + 10 = 13, PAUX is incorrect

NØTE46: LT bit is invalidly set in P-bit row; that is, the LT bit is set in a row that is not associated with the last equipped trunk in the group.

K — Member number of trunk

Y — Address in P-bit block where LT bit invalidly set

43, 20, 44 20, and 45 20: (See 8.01, page 128 , bb = 20.) The junctors associated with a CR in trouble are being idled. The CR is identified in succeeding error printouts.

43 30, 44 30, and 45 30: (See 8.01, page 128 , bb = 30.) These messages indicate that the audit is idling the trunks associated with a CR found in trouble. The CR is identified in succeeding error printouts.

43 31, 44 31, and 45 31: (See 8.01, page 128 , bb = 31.)

43 36, 44 36, and 45 36: (See 8.01, page 128 , bb = 36.)

43 40: (See 8.01, page 128 , bb = 40.) PIDENT SACX has found an error.

Register meaning:

J — Return address in PIDENT SACX

NØTE39—AUTØVØN trunk was not traffic busy; however, nonzero PT in associated trunk preemption control register implied register was busy.

K — TNN

X — Address of TPC register

Y — ATGN

Z — TGN

NØTE40: Address of TPC register in PMT word of AUTØVØN trunk disagrees with that derived using the TNN of the AUTØVØN trunk.

F — Address of PMT word

K — Address of TPC register read from PMT word

X — Address of TPC register derived using TNN

Y — TNN

Z — TGN

NØTE42: PT in TPC register is out of range, less than zero.

K — Incorrect PT

X — Address of TPC register

Y — TNN

NØTE43: PT in TPC register is out of range; greater than maximum.

K — Incorrect PT

X — Address of TPC register

Y — TNN

NØTE44: More than one path indicator in the TPC register was set.

X — Address of TPC register

Y — TNN

Z — State of path indicators

TN(20) = 1 Indicates tone connection

LC(19) = 1 Indicates line type call

TC(18) = 1 Indicates trunk type call

AC(17) = 1 Indicates attendant or conference call

NØTE45: TPC register invalidly linked, take down call.

Y — TPC register address

Y — TNN

Z — Address of linked register where K = invalid RI ***or***

Z — 0, LI bit set but no linked register found

NØTE47: TPC register not maintained through 4.

Y — Address of TPC register

Y — TNN

NØTE51: P bit was set for trunk indicating it was preemptible, but maintenance register was associated with the trunk. This is an invalid state.

K — Member number -1

X — Maintenance register address

Y — TNN

Z — TGN

NØTE54: A call involving a TPC register is being taken down because the data in the TPC register has been found to be in error. This message

is preceded by a SA03 43 5 message that indicates the specific error.

X — Address of TPC register in error

Y — TNN

43 40, 44 40, and 45 40: (See 8.01, page 128, bb = 40.) If the J register address is in PIDENT SARG, a trunk maintenance register was in a PØB queue state for more than 6 minutes. Register was idled and trunk maintenance MP flag set.

43 44, 44 44, and 45 44: (See 8.01, page 128, bb = 44.) These messages indicate that an error has been detected by the CR audit and the audit has been requested again.

Register meaning:

J — Failure address in PIDENT SARG

NØTE16—An internal error was detected and corrected.

K — Register address

Z — Failure address in PIDENT SARG (NØTE11-27)

NØTE11: DDD register was altered by another audit (SARALF).

F — Start of audit address

NØTE12: No register in linked list was master.

F — Register in forward link

X — Runaway counter for linked registers

Y — Zero (no master register found) or nonzero (master register found)

NØTE13: DDD register was found to be busy.

NØTE14: Register had audit code marked (RI, PT = 0,7) but was not master or DDD register and was not master or improperly linked nonmaster register.

NØTE15: DDD register was altered by another audit (SARALF).

X — PT value

Y — Register address

NØTE18: A type three register was found to be in a nonsteady state too long.

NØTE19: A type one register has been busy in excess of 5 minutes.

NØTE20: A type two register has been in a nonsteady state in excess of one minute.

NØTE21: AMA register in nonsteady state in excess of one minute and no major trouble exists with AMA recorders.

NØTE22: A type two register is in a steady state condition, but the supervision check has failed.

NØTE23: A type three register is in a steady state condition, but the supervision check has failed and the TOA bit has not been reset.

NØTE26: The supervision checking routine found a register with the illegal PMFI of zero.

NØTE27: A register was found to be bad due to improper linkage or the RIPT = 0,7. This also could be used to restore a DDD service observing basic register if the supplementary register was found bad.

Note: E(22) + address—A register was found to have bad path memory.

AUDIT 46

46 1: The PML in X was erroneously marked non-idle, and the JNN bits in K were bad and had no PMT pointer.

Register meaning:

k — The bad JNN bits (0-13)

X — Bad PML contents

Y — The TLN currently being audited

46 20: (See 8.01, page 128, bb = 20.) This message indicates that audit 46 (TGA1) found that a line-junctor-busy-idle bit was set to busy, but no PMT word specified that it should be busy. Therefore, the PML word associated with this junctor was idled and the line bit audit was called. (This protects a customer from losing supervision by having only a half path up to a wired junctor.)

46 30: (See 8.01, page 128, bb = 30.) This message indicates that a TNN was in a line-to-trunk path and is being idled because of one of the following:

(a) The PMT word pointed to an idle JNN. C(X) = C(PML)

(b) The junctor terminal involved in the path corresponding to the TNN was found connected to another line-to-trunk junctor.

(c) The PMT or PMTD word contained an out-of-range JNNL.

46 36: (See 8.01, page 128, bb = 36.)

46 40: (See 8.01, page 128, bb = 40.) The CR address in the X register was linked to a line-to-trunk path. This message should accompany an SA03 46 30 message and the comment for same explains this one.

Register meaning:

J — Return address in PIDENT SADT for SA03 print routine

X — Call CR address

46 50 through 56: Audit 46 (TGAL) goes through the routines in audit 5 before proceeding to check the PMT words with the line-junctor-busy-idle bits. If an error is found by one of these routines, this message is printed out. (See 8.01, page 128, where bb equals the audit error number of this message.)

AUDIT 48

48 4: This message can appear once per audit cycle and it will always follow a 48 5 message. This message is always associated with the first 48 5 message. The K, L, X, Y, and Z registers contain the output of the trace block. See PF-1A086 B-Sheets for layout and method of interpretation. If there is a CRA associated with the path, it will be printed in an SA02 REG message that will follow.

48 5: This message indicates that a PML word was found which contains invalid control bit information. The bits were corrected.

Register meaning:

B — Content of the PML prior to correction

K — The correct control bits

L — Mash of the control bits checked

Y — The LEN

48 20 (See 8.01, page 128, bb = 20.) This audit indicates that a PML word was found with invalid contents. The B register contains the address where the error was found.

48 50 through 56: Audit 48 (JGA1) goes through the routines in audit 5 before checking the PML words with the line-junctor-busy-idle bits. If an error is found by one of these routines, this message is printed out. (See 8.01, page 128, where bb equals the audit number of this message.)

AUDIT 50

50 1: This message indicates that audit 50 (the line bit audit) found a line bit in the wrong state. The line ferrod is restored. If the

line is then found on-hook, the line bit is marked idle. If the line bit is found off-hook, it is placed on the high-and-wet list.

Register meaning:

F — Contains a 0 if the audit determines that the bit should be idle, or contains other than a 0 if a path exists for this LEN

J — Return address for SA03 print routine in PIDENT NMDT

K — LEN

L — Mask of line's bit position

Y — Contents of F4ØUT1 after a TRENDC translation. If MAJ (5-0) = TWP, this expression is DØMCL; otherwise, it is LENC1. TWP is normally 06 or 07.

Z — Indicates the state of the line

Z = J -7 = NØTE1—Line in plug-up list

Z = Ø(1235670)—Service observed line

Z = Ø(400)—Unassigned line

Z = Ø(200000)—Unassigned line or line is inactive in this office but active in old office (not yet cut over)

Note: If a repeated printout comes out with the F register not zero and with the same line in the K register, set the line bit to busy and trace the line with the appropriate TTY messages. If a bad PML word is found, zero it. Use a line-verify message to get the directory number corresponding to this LEN: then, use NET-LINE to trace the path.

50 2: A line was traced because the line bit audit expected it to be busy but found it marked idle. See PF1A086 information note 302 for layout of output of trace.

K — Contents of N4TRAC+0

L — Contents of N4TRAC+1

X — Contents of N4TRAC+2

Y — Contents of N4TRAC+3

Z — Contents of N4TRAC+4

53 4: This message indicates that audit 50 found an LEN on a list with its line bit marked idle. See 50 5 for register meaning. The 0 line bit was corrected.

50 5: This message indicates that audit 50 (the line bit audit) found an LEN with a wrong home-mate bit. The LEN was zeroed.

Register meaning:

B — Bits 22 through 18 contain the following codes indicating what type of list the LEN was in:

00 — Blocked dial tone queue

04 — Dial tone queue

10 — TOUCH-TONE queue

14 — Line service request hopper

20 — Sixth word of a disconnect register with PT = octal 22 or 23

30 — High-and-wet list code

34 — MCCQ

F — List where LEN was found

K — Invalid LEN

50 20: (See 8.01, page 128, bb = 20.) A line was traced because the line bit audit said it should be busy but found it marked idle. The line bit has been marked busy.

50 40: (See 8.01, page 128, bb = 40.) The call register address in X register was linked to an idle line.

Register meaning:

K — Busy bad line

X — Call register address

AUDIT 52

52 20: (See 8.01, page 128, bb = 20.) This message indicates that audit 52 (JGA2) found that the J-scan-bit of the junctor was in an invalid state. The J register indicates whether the error occurred in the ignore or accept state.

52 50 through 56: Audit 52 (JGA2) goes through the routines in audit 5 before checking the junctor scan bits with the PML words. If an error is found by one of these routines, this message is printed out. (See 8.01, page 128, bb equals the audit error number of this message.)

AUDIT 57

57 1: An error has been found in the S-link busy idle bits.

Register meaning:

B — Correct content

K — Bad bit indicators

X — Address of busy idle word

AUDIT 58

58 1: The active channel number in CSRAF call store is pointing to a channel whose variable message record active (VMRA) code is invalid. Further explanation of this error could be found in PIDENT CRFI, which is pointed to by the client return address in the J register.

Register meaning:

F — Unit type 23 member number

J — Client return address

K — Channel half-word with the VMRA in bits 2-0

X — Address of CSRAF call store

58 5: An invalid state or channel number was found in the CSRAF call store. Explanation of this message can be found in PIDENT CRFI, which is pointed to by the client return address in the J register.

Register meaning:

F — Unit type 23 member number

J — Client return address

K — Active channel number

X — Address of CSRAF call store

Y — State word

AUDIT 59

59 3: This message indicates that audit 59 found an error which could have been either in the translation module or in the RC area.

Note: If this output message is repeated with the same TNN in the K register printout, there is an error in translation which the audits cannot correct and the following action must be taken. Using verify message(s), determine what the error is in translation data and correct this error by making the appropriate RC.

Register meaning:

B — Failure pointer in the audit.

J — Return address in PIDENT SADT for SA03 print routine

59 5: The TNN to scanner number translation for the TNN in the K register does not contain the input TNN. This is a serious problem and must be corrected at once.

59 30: (See 8.01, page 128, bb = 30.) Audit 59 (TGA4) found a trunk with its T1 and/or T2 bit(s), inconsistent with the code in its PMT word. After appropriate timing the trunk is being dumped. The B register contains the address where the error was detected. This address will give the

register meanings for the remaining CC registers.

AUDIT 60

60 1: Audit 60 (MAPBT) found an error in the C, or J busy-idle bits of the trunk network map. The error was corrected.

Register meaning:

B — Correct contents of busy-idle word

K — Bad bit indicators (each bit equal to 1 was bad)

L — Network number

X — Address +1 of busy-idle word that was in trouble

60 2: The audit found an error in the busy idle bits with at least one bit marked idle in error. This error should not normally occur and can result in the network being switched with current flowing. See 60 1 for register meanings.

60 50 through 56: (See 8.01, page 128, bb = 50-56.) Each of the map audits numbered 60 through 63 performs the routines of audit 5 before auditing its portion of the network map busy-idle bits. If these routines find an error, they cause the printout of an SA03 error message with bb = 50 through 53.

AUDIT 61

61 1: Audit 61 (MAPAT) found an error in the AB link busy-idle bits of the trunk network map. The error was corrected.

61 2: (See AUDIT 60 2.)

61 50 through 56: (See AUDIT 60 50 through 56.)

AUDIT 62

62 1: Audit 62 (MAPBL) found an error in the B, C, or J busy-idle bits of the line network map. The error was corrected.

62 2: (See audit 60 2.)

62 50 through 56: (See audit 60 50 through 56.)

AUDIT 63

63 1: Audit 63 (MAPAL) found an error in the A link busy-idle bits of the line network map. The error was corrected. Registers are same as message 60 1.

63 2: (See audit 60 2.)

63 50 through 56: (See audit 60 50 through 56.)

8. EXPLANATION OF ERROR NUMBERS ASSOCIATED WITH MORE THAN ONE AUDIT NUMBER (ERROR 20 THROUGH 99)

8.01 Explanations of certain audit error number (bb) printouts that are associated with more than one audit number follow. The audit error numbers are listed in ascending numerical order.

ERROR 20

20: This message is printed out after the SADMPJ subroutine in SADT has processed this JNN. If the JNN is a line to trunk or unassigned junctor, the PML word is marked idle (octal 24000000) or invalid (octal 00000000), respectively. If the JNN is a line-to-line junctor, both ends of the junctor are put on the JML linked list; their J-BI-bits are marked busy; the J-scan-bits are set to ignore (1) and a flag is set for a junctor maintenance program to diagnose them. The SADMPJ subroutine also causes the SA03 print messages from audits 62 and 63 to be inhibited the next time these audits run. Therefore, audits 62 and 63 may find errors, but these audits do not cause the corresponding SA03 message printouts. Any such errors are also indicated in the SA01 summary message. The codes for the JML linked lists are:

2070 — Member of JML

2074 — Other end of junctor is on linked list

2170 — End member of JML (JNN = 0 is valid)

Register meaning:

K — JNN

L — Contents of PML word for this JNN

Y — (1) A negative number if this is a line-to-line junctor (both sides have been put on the JML); (2) 0 if this is a line-to-trunk junctor (has been marked idle); (3) E4 if this junctor is unassigned (has been marked invalid).

ERROR 30

30: This message is printed out after the SADMPT subroutine in SADT has placed a TNN on the TMLA or has set the PMT word to zero if the trunk is unassigned. If the trunk goes on the TMLA, a flag is set for trunk maintenance and the T2 and T1 bits of this trunk are set to ignore and one, respectively. Subsequently, the trunk is blind-idled and is diagnosed if there is room for it on the TML. The SADMPT subroutine also causes the SA03 print message from audits 60 and 61 to be inhibited the next time these audits run. Therefore, audits 60 and 61 may find errors, but these audits do not cause the corresponding SA03 message printouts. Any such errors are also indicated in the SA01 summary message.

Register meaning:

B — Possible additional information the client program prints. See the J register for client program address if applicable.

F — Contents of the SXS state word if the TNN in K is a SXS trunk; zero otherwise.

J — Return addres to client

K — TNN

L — Possible additional information the client program prints. See the J register for client program address if applicable

X — Clients X register content on entry

Y — Contents of the PMT word on entry

Z — Either client return address or code for trunk state

E(0) = 1 trunk on TØØS list

E(1) = 1 trunk on trunk guard timing list

E(2) = 1 trunk in high-and-wet state

E(3) = 1 trunk on TMLA

E(4) = 1 trunk on trunk TOUCH-TONE and dial pulse receiver queue

E(5) = 1 trunk on MF receiver queue

E(6) = 1 trunk on RP receiver queue

E(7) = 1 trunk on DP receiver queue

E(8) = 1 trunk on incoming SXS register queue

E(9) = 1 program did not find trunk on list, but it did not look all the way to the end of the list.

E(10) = 1 trunk on idle list

E(11) = 1 trunk on TMRL list

E(12) = 1 trunk make busy key is operated

E(13) = 1 trunk included in carrier group alarm

E(20) = 1 trunk memory and list differ

E(21) = 1 trunk not on a list

E(22) = 1/0 state of maintenance busy bit

ERROR 31

31: This message is printed out after the SADPT1 subroutine in SASL has placed a SNN on the TMLA or has set the PMT word to the invalid code if the trunk is unassigned. If the trunk goes on the TMLA, a flag is set for trunk maintenance and the T2 and T1 bits of this trunk are set to ignore and one, respectively. Subsequently, the trunk is blind-idled and is diagnosed if there is room for it on the TML.

This subroutine also causes the SA03 print message from audit 57 to be inhibited the next time this audit runs. Therefore, audit 57 may find errors, but this audit does not cause the corresponding SA03 message printouts. Any such errors are also indicated in the SA01 summary message.

Register meaning:

J — Client return address

K — SNN

L — Original contents of the PMT word

ERROR 36

36: An intraoffice trunk is being blind-idled, and this message indicates that the port other than the port found in trouble is being marked idle. If this trunk was linked to a CR, an SA03 aa 40 message also follows. In any event, an SA03 aa 30 message follows indicating why this trunk is being idled. (This message has the TNN and PMT word for the port found in trouble in K and L register, respectively.)

Register meaning:

B — Contents of PMT which is being marked idle

J — Return address for SA03 print routine

X — Address of word containing the contents of PMT for 2nd port

Z — TNN of port which was found in trouble. To get the TNN of the port being marked idle, use an EXCLUSIVE OR instruction with the TNN in Z register and a modifier of octal 100.

ERROR 40

40: This message is printed out by the call register subroutine SARALF. If the register does not have the audit codes (RI = 0, PT = 7) or the idle code (PT = 0) marked and the address of the register is in the variable area of the CS, it is assumed to be a good address and the audit code is placed in the register. The SAHELP routine is then called which requests a high-priority call register audit (number 43).

Register meaning:

B — State word of the call register (address in X) prior to insertion of audit code

F — (See client)

J — Client return address

K — (See client)

L — C(Z)

X — CR address

Y — (See client)

Z — (See client)

ERROR 42

42: This message is printed out by the CR subroutine SAHJNR. It is used by call programs to request audits of both junior registers and CRs. This routine enters a high-priority request for the junior register audit program (number 42) and then uses SAHEP1 to save the J register client address in Z and to request the CR audit program. It exists to RETURN in PIDENT

ECMP following the error message point call.

Register meaning:

B — State word of call register (address in register X) prior to insertion of the audit code)

F — (See client)

J — Return address in PIDENT SARG for SA03 print routine

K — (See client)

L — C(Z)

X — CR address

Y — (See client)

Z — Client address

ERROR 43

43: This message is printed out by the call register subroutine SAHEP1. It is used by call programs when an invalid program condition has been discovered. The contents of the J register on entrance are moved to the Z register (Z points to an invalid program point) and the J register is set to exit to RETURN (PIDENT ECMP) and then transfers to SARALF.

Register meaning:

B — State word of call register (address in X register) prior to insertion of audit code

F — (See client)

J — Return address in PIDENT SARG for SA03 print routine

K — (See client)

L — C(Z)

X — CR address

Y — (See client)

Z — Client address

ERROR 44

44: This message is printed out by the call register subroutine SAHELP. It enters a high-priority request (number 43) to have all CRs audited and transfers to the NMERC subroutine to increment the error counter and to print out an error message.

Register meaning:

J — Return address of client program

Note: See client for register meanings.

ERROR 50

50: This message indicates that PS backup information disagreed with the information in a network map head table.

Register meaning:

B — Correct information

K — Incorrect information

Y — Address of PS backup +1

Z — CS address +1 of data

ERROR 51

51: (a) (Non-Service Line Network) PS L,NET or JSH information disagreed with CS information. The CS information was corrected. This error usually occurs because of an RC or a change of JSG assignment in TDA.

Register meaning:

K — PS L,NET information

Z — Address +1 at which incorrect CS L,NET information was found and at which the information in the K register is now stored.

F — Address at which incorrect CS JSH information was found and at which the information in the K register is now stored.

(b) (Service Link Network) Receiver-ringing/audible mask in CS differs from mask table in PS.

Register meaning:

B — Incorrect mask from CS

F — CS address of mask

K — Correct mask

ERROR 52

52: These messages indicate that the relative slip (SREL) has been found wrong and corrected in the indicated CS location.

Register meaning:

K — Correct SREL

F — Address at which error was found and at which the correct SREL is now restored.

ERROR 55

55: An error has been detected by audit routine NRXPAL in regenerating the XPAL table.

Register meaning:

B — Corrected CS data

Z — Index +1 into CS table N9XPAL

Y — Index +1 into PS table N5XPAL

K — Mismatching bits in CS word

ERROR 56

56: An error has been detected by audit routine NRXPAL which checks the contents of the CS network tables AXES, JT, PALL, TVC1, TVC2, or VCT1.

Register meaning:

If B $\neq$ K

B — PS data

K — Mismatching bits in CS word

If B = K

B — PS data

L — Bad data

X — Failing CS address + 1

Z — Address of PS data + 1

ERROR 70

70: A routine has attempted to remove a trunk from a link list. The list was deemed bad. See B and J for program notes.

ERROR 97

97: An audit has exceeded the time alloted to it during an EA phase. Appropriate actions have been taken to continue recovery actions. This message should be referred to Western Electric PECC and Bell Telephone Laboratories via the normal OTR procedures.

Register meaning:

B — Garbage

F — Garbage

J — Pointer to address where a print call was made

K — Client program's next segment address

L — (See Client)

X — (See Client)

Y — (See Client)

Z — (See Client)

ERROR 98

98: An audit has transferred to ERRORSTOP during an EA phase. Appropriate actions have been taken to continue recovery actions. This message should be referred to Western Electric PECC and Bell Telephone Laboratories via the normal OTR procedures.

Register meaning:

B — Garbage

F — Garbage

J — Pointer to address where a print call was made

K — Client program's next segment address

L — (See Client)

X — (See Client)

Y — (See Client)

Z — (See Client)

ERROR 99

99: An audit has made an illegal transfer to RETURN during an EA phase. Appropriate actions have been taken to continue recovery actions. This message should be referred to Western Electric PECC and Bell Telephone Laboratories by the normal OTR procedures.

Register meaning:

B — Garbage

F — Garbage

J — Pointer to address where a print call was made

K — Client program's next segment address

L — (See Client)

X — (See Client)

Y — (See Client)

Z — (See Client)

9. ABBREVIATIONS

9.01 The following abbreviations are used in this section or in audit program listings.

ACD	Automatic call distribution
AEA	Address of enable address
AIOD	Automatic identified outward dialing
AIT	Abandon interdigital timeout
AMA	Automatic message accounting
ANI	Automatic number-identification
ANX	Outpulsing annex
ASP	Alternate service pool
ASPN	Alternate service pool number
ATGN	AUTOVON trunk group number
AUD	Audit
BDLL	Block data link loading
BI	Busy-idle
BLK	Block
CAMA	Centralized AMA
CAT	Centrex access treatment
CC	Central control
CDAR	Customer dialed account recording
CF/LP	Conference or loop register
CGA	Carrier group alarm
CGN	Console group number
CIC	Change in circuit
CIN	Change in network
CLID	Calling line identification
CNC	Coin charge register
CPD	Central pulse distributor
CPDN	Central pulse distributor number
CPI	Circuit program index

CR	Call register; also sometimes console register
CRA	Client return address, call register address, or client register address
CR0	CAMA ANI and ONI port 0 register
CS	Call store
CSDA	Call store data
CSMU	Call store message unit
CSRAF	Common systems recorded announcement frame
CSTN	Configuration state transition number
CSXN	Configuration state transition number
CTFG	Customer traffic group
CTRF	Selected traffic data to customer
CTXN	Centrex number
CZO	Coin zone operator
DAG	Data group number
DDD	Direct distance dialing
DEN	Data equipment number
DLG	Data link group
DLN	Data link number
DLO	Data link order
DOC	Dynamic overload control
DP	Dial pulse
DRC	Deactivated recent change
DRE	Directional reservation of equipment
DTYP	Data type
EA	Emergency action
EMSN	Expanded master scanner number
ESS	Electronic switching system
FAB	Network fabric
FADD	Failure word index
FAJR	Fast answer junior register
FI	Failure index
FST	Flash scan timing
FX	Foreign exchange
HDST	Headset status
HFI	Hardware failure index
HMO	Hotel/motel
HPL	High-and-wet high priority list
HTJR	Hit timing junior register
HWL	High-and-wet list
ICT	Incoming trunk
ID	Identification
I/O	Input/output
IR	Incoming register
ISR	Incoming senior register
JML	Junctor memory for lines
JNN	Junctor network number
JPOB	A POB used in conjunction with disconnect action for SXS trunks. A JPOB is seized, activated, and returned in the J-interrupt level.
JR	Junior register

JSF	Junctor switching frame
JSG	Junctor subgroup
JSH	Junctor switching half
LCP	Load compensating package
LEN	Line equipment number
LFD	Line ferrod
LGI	Line group identity
LI	Link word indicator
LL	Line-to-line
LLN	Line link number
LNP	Line network map
LLLR	Low line resistance failure
LNT	Line network tag
LPL	High-and-wet low priority list
LSB	Line switch block
LSF	Line switch frame
LT	Line-to-trunk
LTP	Line test panel
MB	Maintenance busy
MBS	Multibit scan
MC	Machine congestion
MCC	Master control center
MEMN	Member number
MF	Multifrequency
MFJR	Multifrequency junior register
MFO	Multifrequency outpulsing
MHG	Multiline hunt group
MLH	Multiline hunt
MMBR	Member number
MR	Master register
MS	Master scanner
MSEC	Millisecond
MSN	Master scanner number
MTDN	Miscellaneous trunk distributor number
NET	Network
NTPI	Nontrunk program index
NUTS	Non-usage trunk scan
OMBA	Output message buffer area
OMO	Overtime monitor operator
ONI	Operator number identification
OR	Originating register
OS	Out of service
OTR	Operational trouble report
PBX	Private branch exchange
PBSY	Position busy
PCI	Panel call indicator
PCN	Primary console number
PCR	Pseudo console register
PECC	Product engineering control center
PF	Program flowchart
PIDENT	Program identification
PINC	Pulsing incoming
PMA	Path memory annex

PMFI	Path memory format indicator
PML	Path memory for lines
PMT	Path memory for trunks
PMTD	Path memory for trunks displaced
POB	Peripheral order bus
POH	PØB headcell
PR	Program listing
PRE	Protectional reservation of equipment
PRI	Pseudo route index
PS	Program store
PSHWL	Permanent signal and high-and-wet list
PSPD	Permanent signal partial dial
PT	Program tag
QI	Queue indicator
QTL	Queueing for trunks and lines
RA	Return address
RC	Recent change, or ringing current failure
RC	Recent change
RCI	Recent change indicator
REV	Revertive
RG	Reporting group
RGP	Reporting group package
RI	Route index
RIPT	Register identification—program tag
ROTL	Remote office test line
RP	Revertive pulse
RV	Revertive
SBAC	Source billing of attendant handling calls
SC	Scanner
SD	Signal distributor
SF	Simulated facilities
SFG	Simulated facilities group
SFGN	Simulated facilities group number
SLN	Service line network
SNN	Service (link) network number
SP	Signal processor
SPI	Supervisory program index
SREL	Relative slip
SVC	Service
SXJR	Step-by-step junior register
SXS	Step-by-step
SXSJR	Step-by-step junior register
TAG	Program store address in RC area (See PD-1A083)
TAMA	Tandem AMA
TDA	Translation data assembly
TDP	Trunk dial pulse
TG	Trunk group
TGN	Trunk group number
TOA	Time-out active
TLN	Trunk link number
TLTP	Trunk and line test panel

TMB	Trunk make busy	TSN	Trunk scanner number
TML	Trunk maintenance list	TT	Trunk-to-trunk
TMLA	Trunk maintenance list addendum	TTG	To trunk group
TNN	Trunk network number	TTM	Trunk-to-trunk memory
TNP	Trunk nonprogram index	TTY	Teletypewriter
TNT	Trunk network tag	TWP	Two party
TOOS	Trunk out of service	TWR	TTY work register
TPC	Trunk preemption control	UTSN	Universal trunk signal distributor number
TSB	Trunk switch block	UTYN	Unit type number
TSF	Trunk switch frame		
TSJR	Trunk scan junior register	VMRA	Variable message record active