INTRODUCTION TO SOFTWARE DESCRIPTIONS

2-WIRE 1 AND 1A "ESS*" SWITCHES

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1. GENERAL

INTRODUCTION

1.01 This section provides an introduction to the 1 and 1A ESS switches software and the Software Descriptions which describe the functions of the software programs. It provides information that is common to both the 1 and 1A ESS switches and information that is peculiar to the 1A ESS switch only. Any information that is peculiar to a 1A ESS switch is noted as such. Information that is peculiar to the 1ESS switch is not given.

1.02 This section is reissued for the following reasons:

(a) To include a brief description of these sections in Table B:

- 231-045-440
- 231-045-445
- 231-045-455
- 231-045-460
- 231-045-490

(b) To delete from Table B sections 231-045-425 and 254-280-240

(c) To delete major portion of Part 5

(d) Figures 8, 9, and 10 removed

(e) Addition to old Fig. 11 now Fig. 8

(f) New pidents are added and others deleted from Table C

(g) Obsolete Table D completely revised

(h) To add information concerning the attached processor system using the AT&T 3B20D Model 2 computer

(i) To add information concerning the Carrier Interconnect.

Change arrows are used to denote significant changes.

1.03 Part 7 of this section provides a defined list of abbreviations and acronyms used in this section.

PURPOSE AND CONTENTS OF 1/1A ESS SWITCHES SOFTWARE SECTIONS

A. Section Numbering Plan

1.04 Software sections related to the 1/1A ESS switches are designated by the following number plan:

NUMBER	DESCRIPTION
254-280-XXX	1A processor programs/reference manuals common to 1A ESS switch and other systems (eg, 4ESS switch).
231-045-XXX	Software Descriptions which provide information that is common to both 1 and 1A ESS switches. Information that is peculiar to the 1A ESS switch only is also included when necessary. Information that is peculiar to 1ESS switch only is not included.
231-310-XXX	Software Descriptions applicable to 1A ESS switch only.

The last three digits in each series further designate the functional positions of the document within the overall 1/1A ESS switches software coverage. A complete listing of the documents relative to 1/1A ESS switches software is given in Part 6 of this section.

B. Program Coverage

1.05 Software Descriptions provide high-level descriptions of major software functions. Many of the documents encompass two or more separate programs when these programs together perform the major functions to be described. The purpose of each document is to provide:

(a) The purpose and structure of the program(s)

(b) Explanations of the primary functions at each appropriate level within the program structure

(c) Identification of interfacing programs and interprogram relationships.

C. Support Documentation

1.06 In addition to the above, each description identifies the pertinent program entry/exit points to enable the reader to easily access the program listing for all further level of detail required.

1.07 Support documents (sections) are provided to serve as reference manuals for all source languages used to develop these programs, description of the program listings, various library listings, and other reference manuals.

SCOPE OF SECTION

1.08 As a high-level introduction to 1/1A ESS switches software, this section provides a brief description of:

(a) The 1A processor central control with emphasis on execution circuitry and registers which are directly referenced in program instructions.

(b) The source programming languages, including the assembly process and program listings.

(c) The overall system program structure of the 1/1A ESS switches. Cross-reference lists of all programs covered in this series with the sections in which the programs are described are also provided.

ATTACHED PROCESSOR SYSTEM

1.09 ▶The attached processor system is used to replace the file store. The attached processor system consists of a 3B20D Model 2 computer using a 160 Megabyte disk system and an attached processor interface frame.

CARRIER INTERCONNECT

1.10 The Carrier Interconnect feature provides inter-LATA (local access and transport area) carriers and international carriers access to local exchanges via 1 and 1A switches. Basically, the Carrier Interconnect feature provides the data and program logic necessary to route calls to and receive calls from inter-LATA carriers. The LATA is a defined geographical area where equal access and of-

fices and/or access tandems can provide an inter-LATA carrier/international carrier access to the local exchange. Calls between LATAs are handled by an inter-LATA carrier. This feature is not provided for HILO networks.◀

2. INTRODUCTION TO PROGRAM CONTROL

GENERAL

2.01 Program control of the 1A ESS switch is performed by the 1A processor which is made up of four communities of external units and a central control unit (Fig. 1). Private-access buses connect each community with the central control.

2.02 Two of the communities provide the primary memory for the central control. The program store memory contains some fixed control data and the bulk of the program instructions executed by the central control. The call store memory contains fixed control data and record type data which may be interrogated and updated during program execution. The call store memory contains more fixed control data (eg, translation data) than program store memory. High speed storage is provided on disk in the file store or attached processor system. Additional bulk storage is provided by tape transports in the auxiliary data system.

2.03 The auxiliary unit community is made up of units which are capable of communicating with program store and call store communities via central control bus access circuitry. The units control access to bulk memory and data links. The peripheral unit community consists of the switching equipment and associated access control circuitry. It includes the TTY units, the Master Control Center (MCC), the processor peripheral interface (PPI), and various types of network, scanner, and signal distribution units.

MEMORY

2.04 The program store and call store memory are available in 65K word stores and 256K word stores. The following is a brief description of the 65K word stores. (A similar description for 256K stores is provided in section 254-201-015.) The program stores and call stores are physically identical memory stores. The capacity of each store unit is 65,536 twenty-six bit words (24 bits of data and 2 bits for parity). Each store unit consists of two modules. The access circuitries for program store and call store are basically identical with the exception of the size of the reply bus. The program store reply bus which concurrently accesses both modules of a program store unit on a read order returns 54 bits of information (48 data bits, 4 parity check bits, an all-seems-well bit,

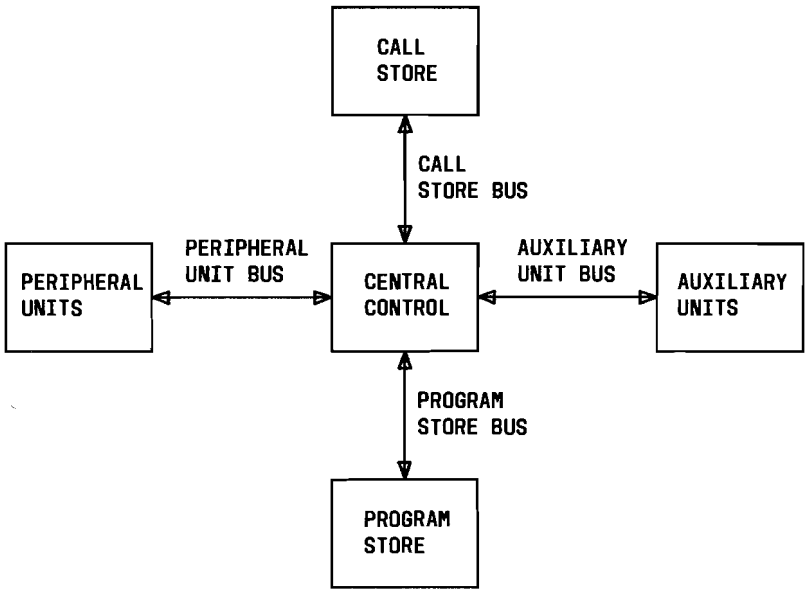


Fig. 1—Central Control With External Communities

and an all-seems-well failure bit). The call store reply bus which accesses one module of a call store unit on a read order returns 28 bits of information (24 data bits, 2 parity check bits, an all-seems-well bit, and an all-seems-well failure bit). The program stores are not duplicated, but are all backed up on disk in the file store or attached processor system. Besides the program store units required to store the generic program, two program store units are designated as spares. The call stores contain transient call-related data and semipermanent control data such as translations and data tables. The transient data is usually duplicated in another store. Translations and data tables are located in a protected area of the call store which requires a special instruction to overwrite. This data is not duplicated but is backed up on disk backup.

AUXILIARY STORAGE

2.05 Bulk storage for the 1A processor is provided on magnetic disk and tape units accessed by the auxiliary unit bus system. This bus system has two terminations:

(a) One at a disk backup or attached processor system.

(b) The other at a data unit selector which, in turn, interfaces with the tape transports.

2.06 The file stores or attached processor system is used primarily for storage of:

(a) Nonduplicated program and call store contents

(b) Infrequently used programs

(c) Data which is paged into program and call stores when required for execution.

The information stored on tape serves as a final backup for the 1A ESS switch. All the information that is necessary to resume normal call processing, after a severe interrupt, is stored on tape. This information includes translation data, parameter data, library programs, program store contents, and essential data in call stores.

BUS SYSTEMS

2.07 The four major bus systems of the 1A processor are shown in Fig. 1. Two-way communications between central control and all units are provided on two separate buses:

(a) A write bus to send data from central control to a unit

(b) A reply bus on which to receive data at central control.

In order to address any particular unit, all address buses include an enable code field designated as the K-code, which specifies the unit being addressed. The remaining bits on this bus then specify the location within the unit and the type of operation. For example, the call store address field includes:

(a) A 5-bit K-code which specifies one of the call store codes

(b) A 16-bit address which specifies one of 32,768 words in this store module. Each bus group includes control buses not shown in Fig. 1 for transfer of maintenance, control, and status information.

CENTRAL CONTROL

A. General

2.08 Each 1A ESS switch office has two central control frames. These are duplicates of each other and operate in step, one in the active mode and the other in the standby mode. When a mismatch of the data being processed is detected, the one containing the error condition can be repaired while the other central control continues to process all calls. The primary function of the central control equipment is to read the program instructions from memory, to decode them, and to execute them.

B. Instruction Execution

2.09 An outline of the basic components of the central control involved in the execution of program instructions is shown in Fig. 2. Instructions are read from order memory (order and program instructions are used interchangeably) which is normally in the program store (although the central control is capable of reading orders from the call store). The

central control continues to read instructions until a transfer in control is encountered, in which case reading continues with the destination address of the transfer. The instructions are either 1-word or 2-word instructions.

2.10 The decode, control, and address formation circuitry decodes the binary information in the order word and controls the execution accordingly. Various fields of information (groups of bits) are sent to appropriate circuitry within the central control. A more detailed diagram of this circuitry is in Fig. 3.

C. Data and Address Generation

2.11 The execution of most 1A ESS switch orders requires the generation of a data word or a memory address. Several factors influence this address or data generation. In general, a data field in the order is added to the contents of an index register in the index adder circuitry. The results replace the contents of the data address register (DAR) (see Fig. 3). If this result is to be used as data, it is sent directly to the operation circuitry. If the result is used as an address, it is interpreted by the memory address decoder which determines the memory community to be addressed.

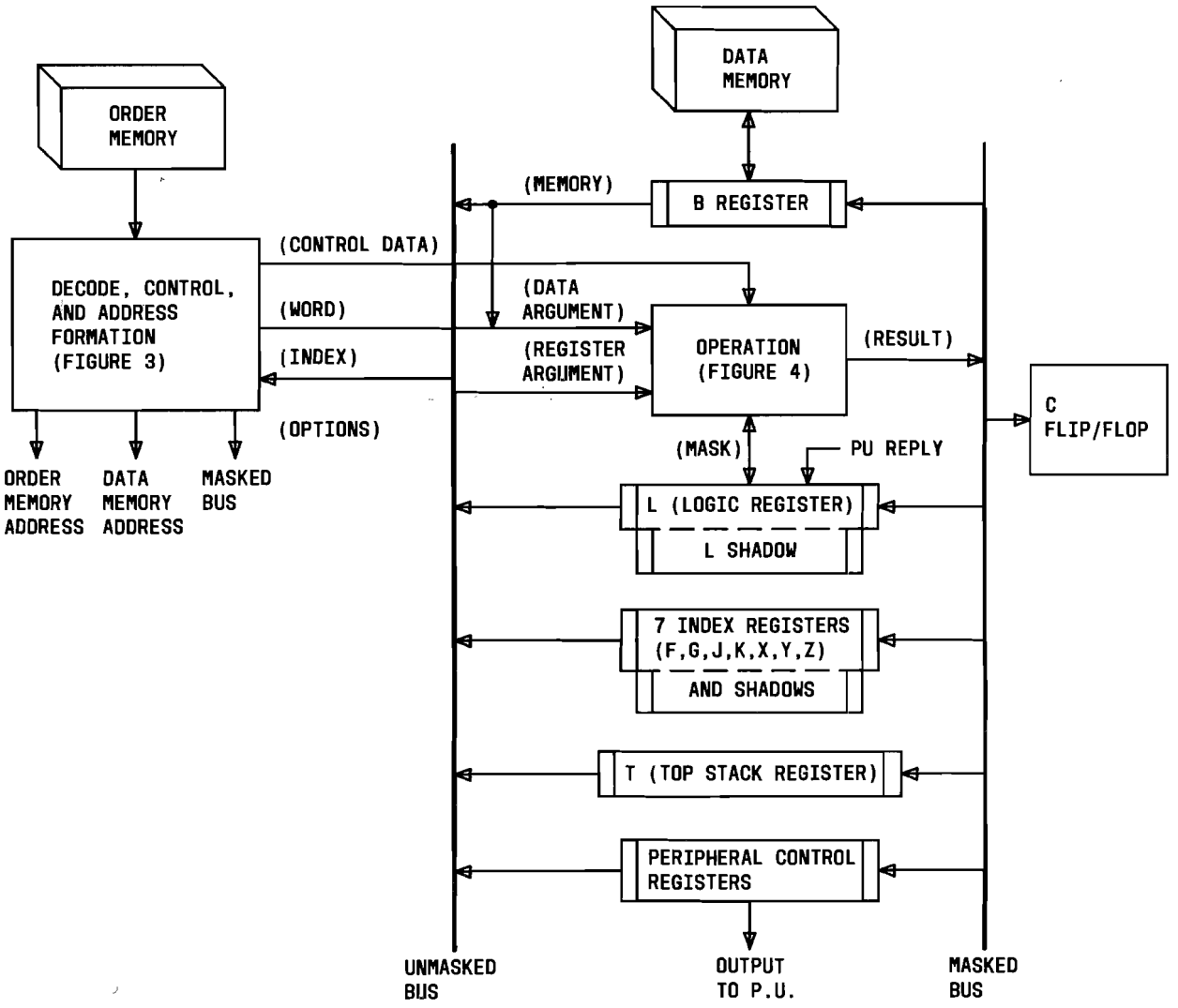


Fig. 2—Central Control Overview

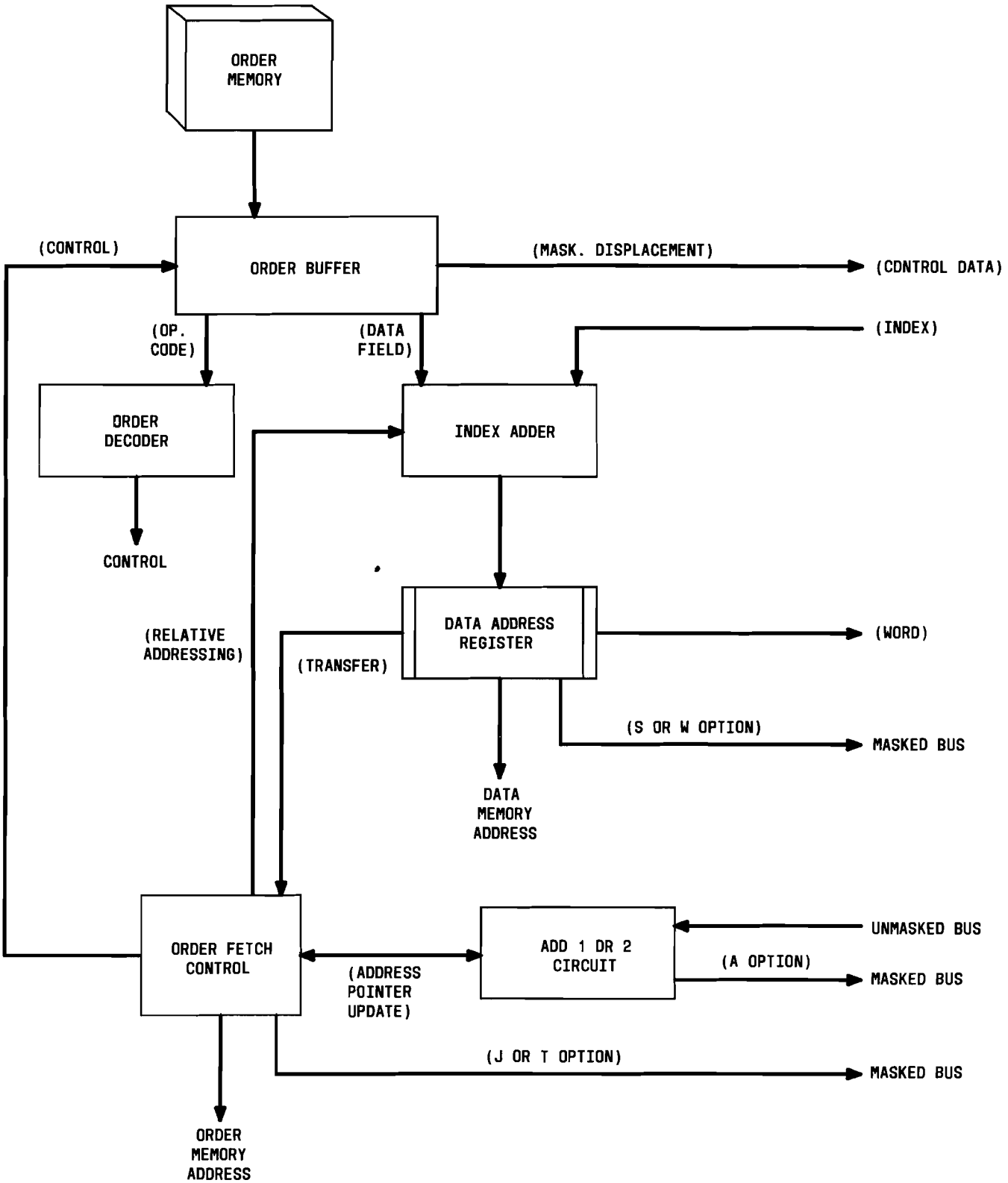


Fig. 3—Decode, Control, and Address Formation

D. Processing

General

2.12 Two internal central control buses, the masked bus and the unmasked bus, are the paths for information enroute to and from central control registers. The central control registers are fast-access flip-flop memory and may be accessed several times during the execution of a single program instruction. They consist of 24 bits which are numbered from the right, beginning with the least significant bit 0 to the most significant bit 23.

General Purpose Registers

2.13 The index registers, designated as the F, G, J, K, X, Y, and Z registers, are the general purpose registers which can be specified as the source or destination of an operation as well as a source for indexing in address information. The logic register serves as a special purpose register to receive all peripheral unit replies and to perform a specific function in certain logic operations.

Special Purpose Registers

2.14 Some of the special purpose registers and their functions are:

(a) Data Buffer Register B: A register whose contents always reflect the last data word read from or written into the data memory.

(b) Top-of-Stack Register T: A register which always contains the top or most recent entry in the Pushdown Stack, located in the call store, which is used for program transfers, ▶but may also be used for temporary data storage.◀

(c) P Register: Peripheral data register (36 bits) used for transmitting data and instructions to peripheral units on the peripheral unit write bus.

(d) E Register: A register which registers the name of the peripheral unit enabled to receive data.

(e) Control Flip-Flops (CF): Two flip-flops which are set at the completion of an arithmetic, logical, or ▶memory-read◀ operation to show the result as positive or negative and homogeneous (all ones or all zeros) or nonhomogeneous.

2.15 The logical or arithmetic functions in the execution of a program instruction are accomplished in the operation circuitry. These functions may include add, compare, logical product, logical union, exclusive-OR, rotate, shift, complement, rightmost-one detection, insertion, or some combination of these functions. These operations can have one or two 24-bit arguments (operands), which can come from a memory location or a data field of the program instruction and/or a central control register. Figure 4 gives a more detailed view of the operation circuitry and examples of instructions which utilize the circuitry.

3. PROGRAMMING LANGUAGES AND DOCUMENTATION

INTRODUCTION

3.01 The 1A ESS switch program is derived from two sources:

(a) Maintenance and administrative programs developed for the 1A processor

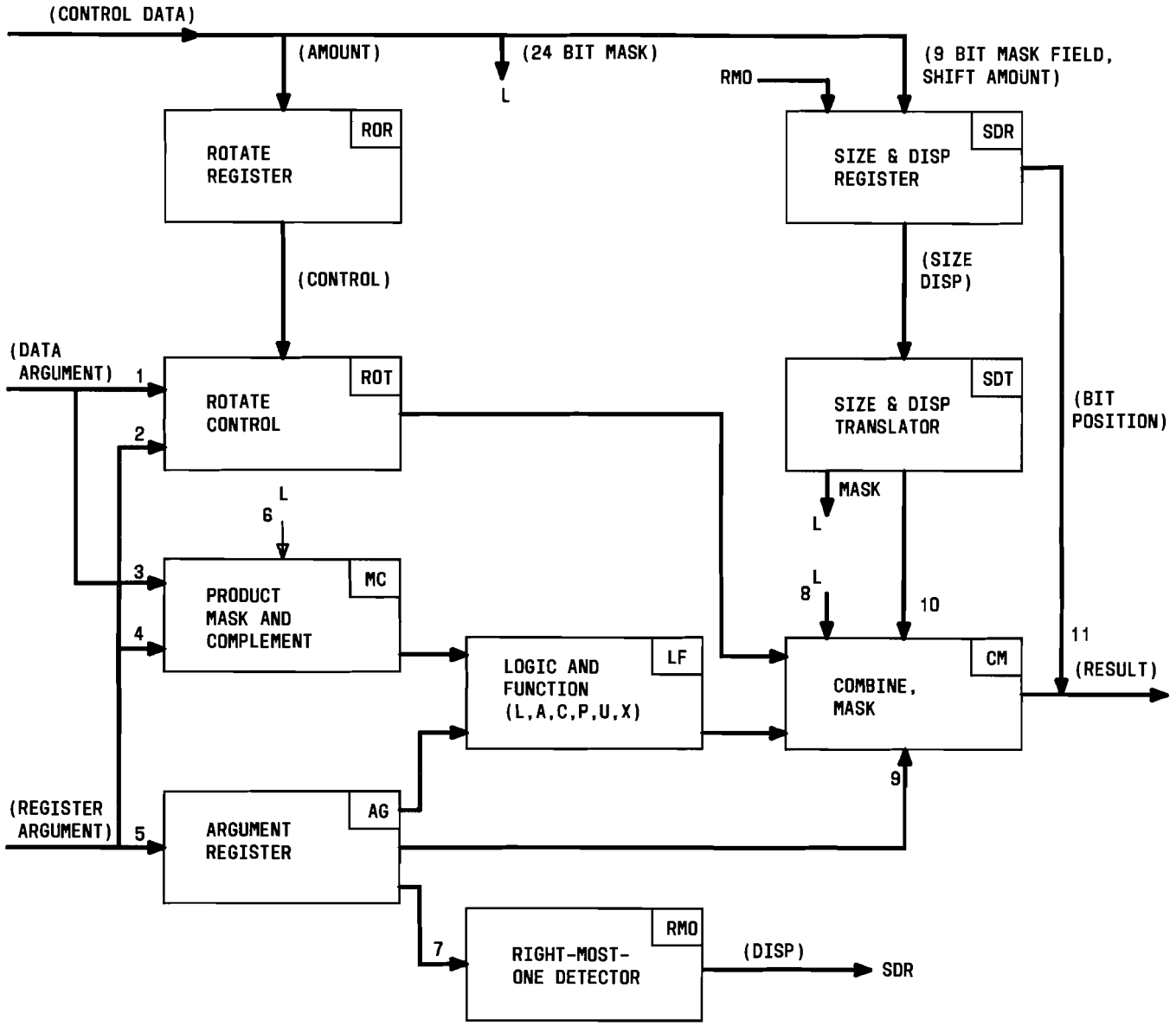
(b) New application programs developed expressly for the 1A ESS switch.

3.02 This part provides a brief introduction to the 1A processor and the 1A ESS switch programming language and associated documentation. A description of the program development process is also provided.

MACHINE INSTRUCTIONS

3.03 Instructions to the 1A processor (machine instructions) must ultimately be represented in binary. These instructions may be two 24-bit words or one 24-bit word. The primary factor which determines the length of an instruction is the number of bits needed to represent the data field and/or the number of options or additional actions which are encoded in the instruction.

3.04 Base cycle time of a particular instruction is the time required by the processor to carry out the functions specified by the instruction. The 1A processor is designed to execute instructions in fixed units of time referred to as processor cycles. ▶With the introduction of fast stores, most 1A instructions now execute within 700 nanoseconds, even if memory access is required.◀



INSTRUCTION:		PATHS:
L,LW,SD,SSD		3
(A,C,P,U,X)[W], SEARCH		3,5
S,SS,SZ,PUSH,(T OPTION)		4
	PRODUCT MASK	6
	INSERTION MASK	8
Q,QC,QS,QSC		2
H,HC		2,10
LA,LWA	PRODUCT MASK	1,8
	INSERTION MASK	1,5,8,9
SA		2,8
IF:T	MASK OPTION	4,(8,10)
F:T,Z:T		5,7,10,11

Fig. 4—Operation Circuitry

1A PROCESSOR ASSEMBLY LANGUAGE

3.05 The machine instructions are generated by translation of a set of mnemonic instructions, designated as the 1A processor assembly language. This language is used by a programmer to transform the requirements of a program into the machine instructions required to execute the program. After a program is written in this language, it is input to an assembly program which may or may not generate machine instructions, and if generated, may generate one or more machine instructions per source statement. A description of the assembly program and a brief discussion of the overall assembly process are given in paragraph 3.19.

3.06 In assembly language statements, the operation of each instruction is coded mnemonically and the data and instruction addresses are in symbolic form. For example, the mnemonic for the STORE instruction is simply S. An example is:

```
S X, SYMADDR
```

The data word to be stored is in register X and the address at which the word is to be stored is symbolically encoded as SYMADDR.

3.07 The 1A assembly language contains four classes of instructions. Each of these classes and the instructions which fall into each class are discussed in detail in section 254-280-020 (1A Processor Assembly Language). These classes are:

(a) General processing instructions, which are for directing or controlling the 1A processor

(b) Peripheral instructions, which transmit and receive data between the processor and the switching system

(c) Maintenance instructions, used to test central control, memory, and the buses

(d) Pseudo-operations, which are used only for certain directions to the assembler and loader programs in development of the overall program.

MACROS

3.08 Many similar functions are performed repetitively throughout the 1A processor and 1A ESS switch software programs. The programming of these functions is simplified by the use of the macros. A macro is a high-level statement which is translated by the assembly program into a predefined sequence of instructions or data. As an example, if the contents of a memory location (DATA_WORD20) needs to be added to the contents of another location (OTHER_LOCATION) and the result stored in a new location (NEW_LOCATION), the entire operation could be performed by the following macro call:

```
ADD  DATA_WORD20, OTHER_LOCATION
     RESULT=NEW_LOCATION REG=X
```

The following 1A assembly instructions (and machine instructions) would be generated by the assembly program:

```
L    X, DATA_WORD20 (Load contents of
     DATA_WORD20 in register X)

A    X, OTHER_LOCATION (Add contents of
     OTHER_LOCATION)

S    X, NEW_LOCATION (Store results in
     NEW_LOCATION)
```

If this macro was defined by a programmer for use in only one program, it is called a programmer-defined macro and its definition would appear in the program listing for that program. If the macro is used in more than one program, it is a system-defined macro and its definition is in Datapool, a public library listing (see Datapool, paragraph 3.16). The definition of a macro includes its name, function, format, explanation of parameters, and the program listing comments.

3.09 The macro in paragraph 3.08 is a simplified example. Generally, a greater number of options in parameters is available, which in turn provides more diversity in the code which is produced. Through this diversity, a macro's usefulness is extensive.

3.10 There are two types of macros which generate instructions.

(a) ***General purpose macro:*** A macro which generates instructions that perform a common data manipulation function, eg, IF and LET macros

(b) ***Special purpose macro:*** A macro which generates a code that performs a specific function according to the hardware or software design of a system, eg, the PRINT, CIN (change in network), and CIC (change in circuit) macros of 1A ESS switch.

ESS SWITCH PROGRAMMING LANGUAGE (EPL)

3.11 The 1A assembly language was previously defined as a language used by the programmer (and assembly program) to transform program requirements into machine instructions. The ESS switch programming language (EPL) is a higher-level language, with statements closer to English language statements. As such, EPL statements may translate into several machine instructions, meaning that programming logic takes place on a higher level, compared to the assembly language where one machine instruction is generated for each assembly statement.

3.12 Programs may contain both EPL statements and assembly language statements intermixed. During assembly of the program:

(1) An EPL compiler will transform the EPL statement to assembly language statements

(2) The assembly program will then convert these to the binary encoded machine instructions.

DIAGNOSTIC LANGUAGE (DL-1)

3.13 DL-1 is a macro language that consists of many individual statements. When these DL-1 statements are assembled, the results are data table-driven diagnostic programs that direct diagnostic tests to be run on 1A processor equipment. The diagnostic programs that run on the 1A processor are, in general, based on repetitive execution of simple tests involving:

(a) Setting a location to a known value

(b) Reading the value of a location

(c) Comparing the read results with an expected value.

3.14 Most programs repeat the same type of test hundreds of times in diagnosis of a particular unit. The program instructions required to perform each diagnosis of a particular unit differ only in the location address and the data to be read or written. Instead of repeating these instructions for each and every test, the unique portions of each, ie, addresses, data, and expected results, are referred to as data tables. Only one set of instructions, called a task routine, is then provided in the program to execute all these types of tests.

3.15 The DL-1 macro language is used to generate these data tables. A DL-1 macro is a high-level statement which is expanded by the assembly program into a predefined data table format. In general, each DL-1 statement has an associated test routine. A more detailed description of DL-1 is available in section 254-280-040 (Diagnostic Language—DL-1 Description 1A Processor).

DATAPOOL

3.16 Definitions and descriptions of data and macros which are used in more than one program pident are not given in each program listing, but appear in library listings available to all programs. These listings are designated as Datapool. Datapool is subdivided into the following sections (libraries):

(a) ***Macro Library:*** Contains the macro definitions and all names made synonymous with macro names.

(b) ***Symbol Library:*** Contains all other symbol definitions. This is the larger of the two libraries.

3.17 The macro library contains definitions of macros that are needed by more than one program pident. Each macro definition is preceded by a description which includes:

- Macro name
- Macro function
- Format for calling the macro
- The macro parameters.

A cross-reference section is provided in the macro library, giving the page and line number of the macro in the listing.

3.18 The symbol library of Datapool contains all the data definitions used by more than one pident in the generic program. The symbol library contains the following:

(a) ***Memory Allocation Section:*** ▶All symbols requiring memory allocation are defined in the memory allocation section, even those symbols which are used by only one pident.◀

(b) ***Symbol Layout Section:*** ▶Memory allocation is not repeated in the symbol layout section but other attributes may be added to some symbols defined in the memory allocation section.◀

(c) ***Cross-Reference Section:*** For each symbol, the cross-reference section of this library includes:

(1) Address (in the case of a symbolic name) or the value (if a symbolic constant)

(2) Type (item, block, or table, etc)

(3) Attributes which define certain characteristics of a symbol, such as the number of bits in an item and its displacement in a word.

The symbol library also contains an equivalent cross-reference section which is ordered numerically by the value assigned to a symbol. For a more detailed description of Datapool, see section 254-280-010 (Datapool Documents).

PROGRAM DEVELOPMENT PROCESS

3.19 The generic program for any ESS switch office is developed remotely from the ESS switch office because these offices do not have the capability of assembling the generic programs. Figure 5 shows the generic program development process. The source language statements, eg, assembly statements, EPL, DL-1, and macros, form a source program which is not executable by the 1A processor. Operation codes and symbolic addresses must first be translated into binary code. This translation process is the function of the assembly/compiler program, designated as the Switching Assembly Program (SWAP). The input to SWAP consists of the source program and two sets of Datapool libraries: one set of libraries containing information for the particular ESS switch application for which the generic program is being developed, and one set of libraries containing data common to the 1A processor and independent of application.

3.20 The assembler translates the assembly language statements to machine instructions on a one-to-one basis. Macros and EPL statements are first converted to assembly language statements and then to machine instructions. The primary output of the assembler is the object program module containing the executable code. Another output of the assembler is the program listing. The object program module is then input to the 1A loader program which loads and links pidents of the program by assigning program store addresses and resolving all external pident references. Information from the Datapool libraries is also used by the 1A loader program to establish program addressing (relative, vector table, or absolute) links for transfer and data location.

3.21 Output from a 1A loader program includes the loader map, available in each ESS switch office, which is a table identifying the starting address of the pident, the pident name, and the ending address of the pident. The other output from the 1A loader program is the loader history which is the generic program information without the office dependent data, and is used as input to the output tape program to generate a loader output tape. The loader output tape contains the generic program information. A detailed description of the generic program development and installation is given in section 254-280-020 (1A Processor Assembly Language).

OFFICE DATA

3.22 The generic tape contains the operational programs and data which are the same in every office. In addition to the generic data, all office-dependent data, unique in each office, must be developed and installed. Office data includes ▶the engineered quantities of call registers, trunk registers, network memory, etc, as well as◀ translation data, which primarily reflects the office equipage and connections in addition to trunks and routing.

3.23 For new central office installations, all office dependent data is developed by the Parameter Data Assembler (PDA) and the Translation Data Assembler (TDA). The PDA and TDA are off-line processing systems which compile office data required by the generic program. The PDA compiles office data such as the number of call registers,

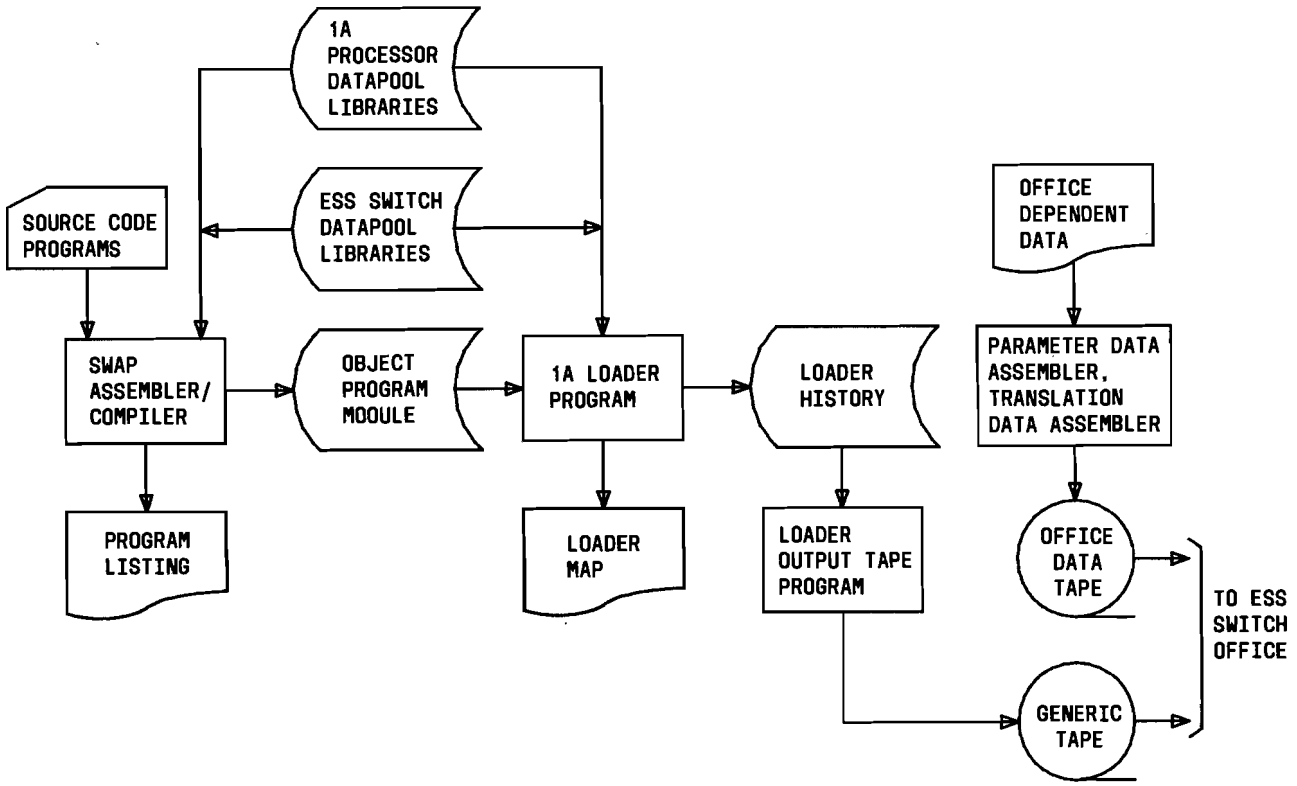


Fig. 5—Program Development Process

amount of duplicated and unduplicated call store, etc. The TDA compiles the translation data needed for a particular ESS switch office. The output of these assemblers is placed on tape for input to the 1A ESS switch memory. The translation data may be altered by the telephone company after original installation to reflect changes in line and trunk assignments as well as routing information via recent change inputs. However, the parameter data can only be altered by AT&T.

PROGRAM LISTING

3.24 A program listing is a hard copy record of a program which describes the objectives of the program, lists all instructions, and defines all data unique to the program. The listing is produced by the assembly program. Each program consists of one or more subunits called program identifications (pidents). There are two types of listings: the standard program listing and the diagnostic phase program listing. Diagnostic programs are divided into phases, where each phase contains a grouping of tests. Each phase is designated as a pident. Although the formats of each type of listing are different, each is composed of five sections:

- Prologue Section
- Macro Definition Section
- Data Definition Section
- Program Section
- Cross-Reference Section.

In addition to a description of formats of each section, section 254-280-030 (Program Listing—Description) identifies standards which provide for detailed narrative information and comments in the listings to aid the reader in understanding the purpose, flow, and contents of each program.

4. PROGRAM STRUCTURE OVERVIEW

GENERAL

4.01 The organization of the 1/1A ESS switches program is strongly influenced by the fact that it must operate in real time. That is, the program must respond promptly to signals and data submitted to it by other switching systems and customers. In addition, it must respond quickly to errors detected by one of the many trouble detector circuits. These circuits are designed into the hardware to assure dependable operations within the system at all times. Whenever it fails to do so, the result may be improper handling of calls and a general degradation of service. For example, failure to detect digit signals may result in directing a call to a wrong number, or failure to outpulse digits to another office promptly will cause the other office to return overflow tone to the calling customer. Therefore, it is necessary to establish a hierarchy of program tasks. Some tasks must be performed on a strict schedule; others may be delayed without significant adverse effects.

INTERRUPT SYSTEM

4.02 The central processor has an interrupt mechanism within it which seizes control of the system momentarily when a system configuration, a fault detector, or testing of a processing type interrupt signal occurs. The interrupt system causes the central control to stop its present program task, stores the program address at which the interrupt occurred, and then transfers to the appropriate emergency action, fault recognition test, or clock-controlled input/output program. When the interrupt programs are completed, control is returned to the program that was interrupted or to a safe starting point in the maintenance program.

4.03 Figure 6 illustrates this overall plan. The interrupt sources and their associated programs are arranged in a hierarchy of ten interrupt levels. From highest to lowest, these levels are designated A, B, C, D, E, F, G, H, J, and K. The K-level interrupt is not used in the 1A ESS switch. An interrupt source assigned to a particular level can interrupt programs of lower level only, with the exception of the A and B levels which can interrupt each other as well as their own levels. The interrupt levels and their source conditions are listed in Table A.

4.04 Every 5 milliseconds a system clock activates a level J interrupt which gives control to the input/output programs. The level H is used to interrupt the J-level input/output program when tasks being performed exceed 5 milliseconds.

INPUT/OUTPUT MAIN PROGRAM

A. Introduction

4.05 In order to perform all tasks promptly, the individual task must not take too long. Thus it is necessary to limit the amount of processing performed by the interrupt programs. The input programs are confined to scanning for and recognizing input signals and storing the input information in a call store hopper. Each hopper is inspected by the base-level programs. When data is present in the hoppers, appropriate base-level programs start or continue the processing of the call. Likewise, call store buffers are provided for the base-level programs to load output area. At an appropriate time, the call store buffers are unloaded by output programs which deliver the information to the peripheral equipment. The peripheral order buffers are used to store address and control information for peripheral equipment, such as network controllers and signal distributors. These buffers provide the means for communication between the scheduled input/output programs and the base-level call processing programs. In a 1A ESS switch, flags are set in an activity word which is used in the base-level programs. This is described in paragraph 5.04.

4.06 The 700-nanosecond clock pulses in the central control are counted, and every 5 milliseconds (actually 5.005) the counting circuit generates an output signal which interrupts the base-level program being performed. The interrupt signal causes the central processor to transfer to the J-level input/output main program. All input/output programs are classified into high-priority and low-priority tasks according to the frequency and urgency with which these tasks must be performed.

4.07 The low-priority tasks can be delayed for a few milliseconds without an adverse effect on the operation of the system. This will be the case when the coincidence of input work under a peak traffic load causes the system to take more than 5 milliseconds to complete the high- and low-priority tasks. In this event the H-level interrupt will occur and the low-priority work will be interrupted. The

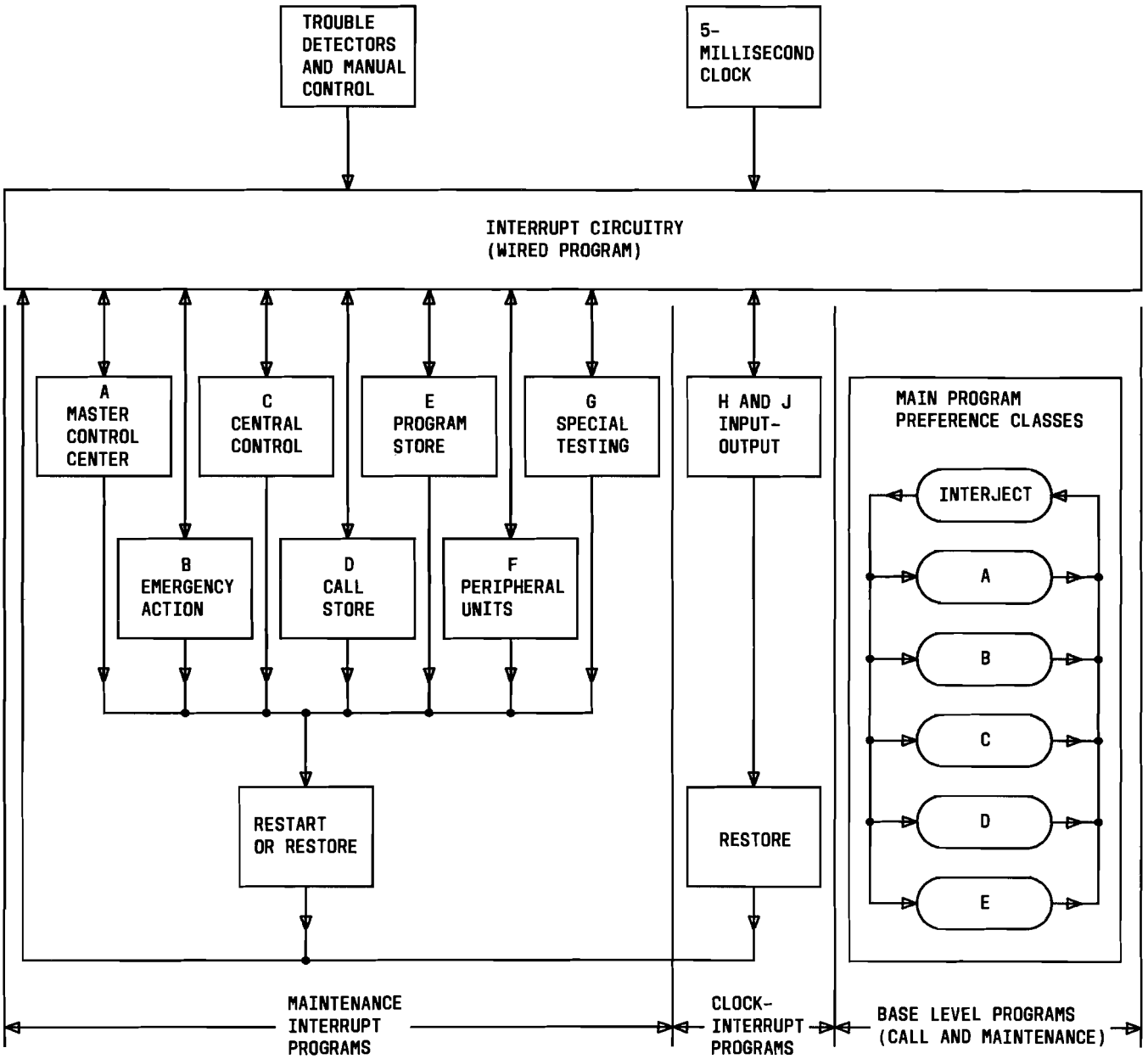


Fig. 6—Program Control Plan

accumulated high-priority work will again be performed before returning to the low-priority program that was interrupted.

B. Characteristics

4.08 Since this program must be executed every 5 milliseconds, the time required by the central control to cycle through all of the input/output task programs is held to a minimum, even at the expense of a small increase in the total number of program words. For example, it is expedient in some cases to have a number of program blocks that perform nearly equal tasks instead of a common program capable of performing all of the tasks. A common program would, in general, involve more machine operations to accommodate the small variations in each of the individual programs and, as a result, would require more time.

TABLE A

INTERRUPT LEVELS

LEVEL	SOURCE CONDITION
A	Manually Initiated
B	Processor Configuration
C	Central Control Mismatch
D	Call Store Read/Write Failure Auxiliary Unit Read/Write Failure* Protected Area Violation* Pushdown Stack Violation*
E	Program Store Read/Write Failure
F	Peripheral Unit Failure
G	Maintenance Clock Time-Out Special Match Function Utility Computer
H	Interrupt J Level After 5 ms
J	Interrupt Periodically After 5 ms
K	Interject Time-Out†

* Denotes 1A ESS switch only.
† Not used by 1A ESS switch.

4.09 The program plan is sufficiently flexible that the same program can provide service after changes in the system due to growth. Also, the same program must operate during and after certain changes in the features offered by an office.

C. Organization

4.10 A block diagram of the input/output main program is shown in Fig. 7. At 5-millisecond intervals, a J-level interrupt normally occurs and control is transferred to the input/output main program, which operates as follows:

(a) It saves the contents of the central control registers to allow resumption of the base-level program at the point of interruption.

(b) It updates the time counter and activates, one at a time, all input/output programs that require action. If a 5-millisecond interrupt occurs before the input/output programs are executed, an H-level interrupt occurs. Then the input/output tasks, which must be executed to ensure proper call processing, are executed.

(c) It then refills the central control registers with the information saved in (a) and returns control to the interrupted base-level program.

5. BASE-LEVEL PROGRAMS

GENERAL

5.01 The bulk of the 1/1A ESS switches programs, both call processing and maintenance, are executed on the base level (level L) without interrupt lev-

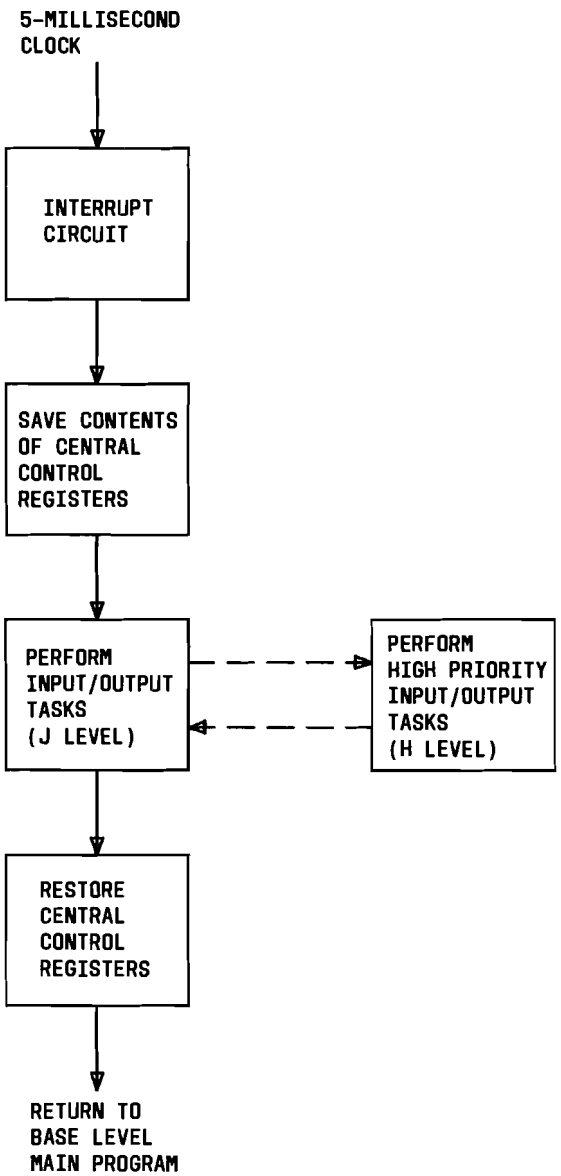


Fig. 7—Input/Output Main Program

els A through K in effect. All base-level work can be deferred to some extent, but the amount of delay each program can tolerate varies widely. It is for this reason that a priority system implemented by a control program is used within the base level.

MAIN PROGRAM

5.02 All base level programs are controlled by a single program called the Executive Control Main Program (ECMP). In the 1ESS switch, the main program performs its control function on the base level with the use of six priority classes of programs. The highest priority class is called interject. The other five classes are A, B, C, D, and E, in descending order of frequency of examination. Specifically, the main program delivers control to these frequency classes according to the following pattern which is repeated endlessly:

...ABACABADABACABAEABACABADABACAB...

5.03 The 1A ESS switch has refined and enlarged the design of the base level programs. The new algorithm incorporates two major concepts. First, the base-level scheduling universe is expanded to include a domain external to the existing five frequency classes. Second, the idea of performing or looking for work only when it is "time to do so" is incorporated.

5.04 The base-level frequency classes are retained and remain internally intact from a functional viewpoint. However, the method of visiting the classes is changed. In general, base-level main program classes are scheduled by a J-level routine in pident ECIO, ▶which is executed every 5 milliseconds.◀

6. ORGANIZATION OF 1/1A ESS SWITCHES SOFTWARE SECTIONS

GENERAL

6.01 Figures and tables are referenced in this part which:

(a) Describe the organization and assignments of sections under the individual major system software functions.

(b) Provide pident section cross-references to facilitate access information on any function or individual program.

An explanation of each table and figure is given in the following paragraphs.

FUNCTIONAL ORGANIZATION OF 1/1A ESS SWITCHES SOFTWARE DESCRIPTIONS

6.02 The organizational chart in Fig. 8 illustrates the assignment of sections to major functions of the overall 1/1A ESS switches program structure.

The four levels or groups of documents as shown in Fig. 8 are:

- System Level Description
- Major Control Level Descriptions
- Program Functional Descriptions
- 1A Processor Descriptions.

The first six digits of the section numbers have been assigned to show the breakout of the 1A processor, 1/1A ESS switches, and 1A ESS switch programs as follows:

NUMBER	DESCRIPTION
231-045-	1/1A ESS Switches Program/ Documents
231-310-	1A ESS Switch Programs/ Documents
254-280-	1A Processor Program/ Documents

The last three digits designate the functional portion on the organizational chart in Fig. 11 as follows:

NUMBER	DESCRIPTION
-0XX	Support Documents
-1XX	Operational Software Structure
-2XX	Maintenance Software Structure
-3XX	Interrupt Software Structure
-4XX	Feature Based Structure

DESCRIPTION OF CONTENTS—1/1A ESS SWITCHES SOFTWARE SECTIONS

6.03 Table B supplements the organizational chart in Fig. 8 by providing a brief description of:

(a) The major software functions covered in each program description section

(b) Contents of each section support document.

SECTION-TO-PIDENT CROSS-REFERENCE INDEX

6.04 Table C serves as a cross-reference index for all 1/1A ESS switches software descriptions and the programs/pidents described in each. The programs and pidents listed in the table are not intended to represent a complete office generic listing, but only to include those which require description in accordance with the high-level functional nature of these documents.

PIDENT-TO-SECTION CROSS-REFERENCE INDEX

6.05 Table D provides a cross-reference index for all programs/pidents described in the 1/1A ESS switches software descriptive documents. The programs and pidents listed in Table D do not represent a complete office generic listing, but only include those which require description in accordance with the high-level functional nature of these documents.

7. ABBREVIATIONS AND ACRONYMS

7.01 The following are abbreviations and acronyms used in this section.

DAR	Data Address Register
DL	Diagnostic Language
ECMP	Executive Control Main Program
EPL	ESS Switch Programming Language
PDA	Parameter Data Assembler
SWAP	Switching Assembly Program
TDA	Translation Data Assembler

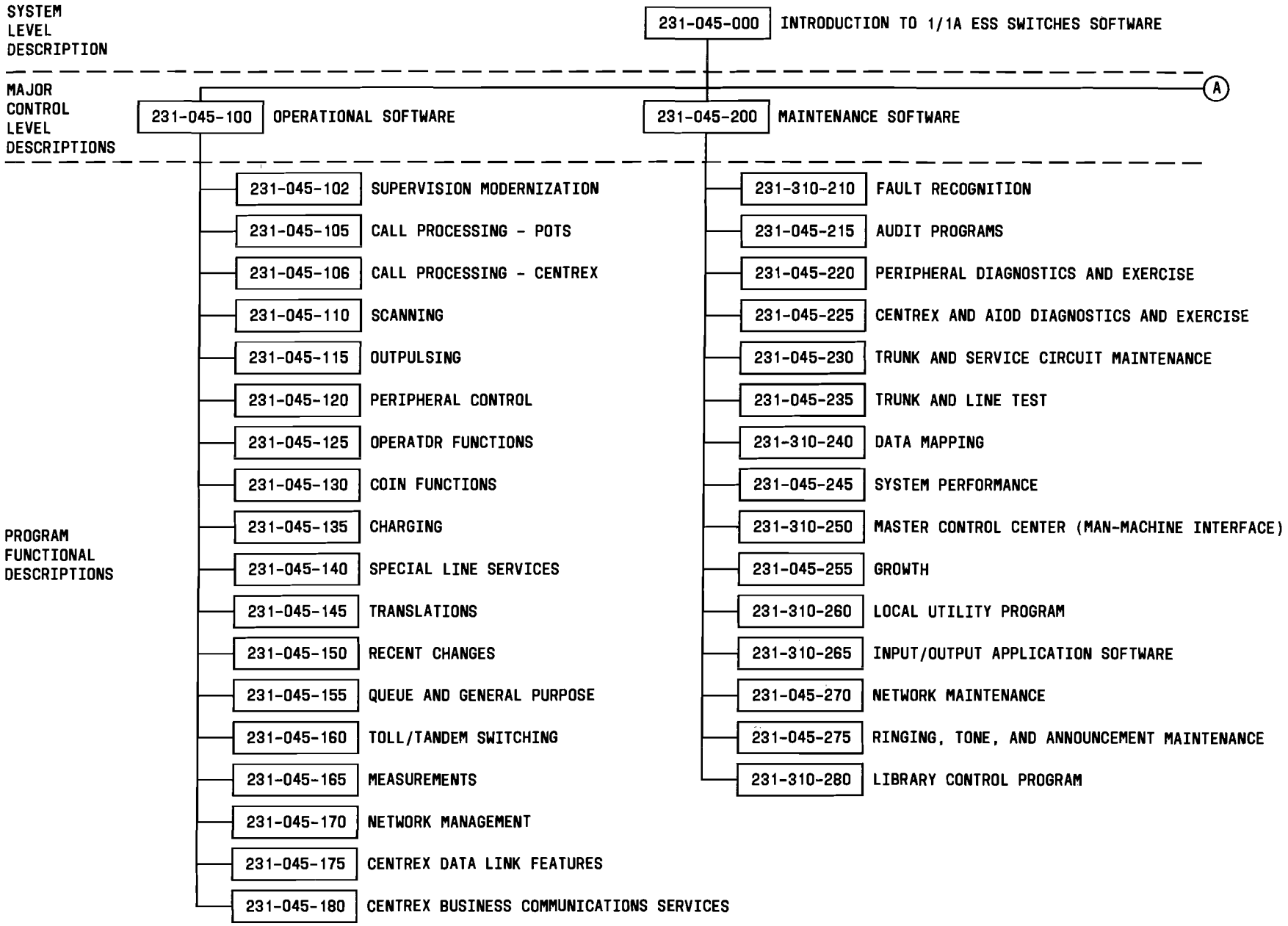


Fig. 8—Organization of 1/1A ESS Switches Software (Sheet 1 of 4)

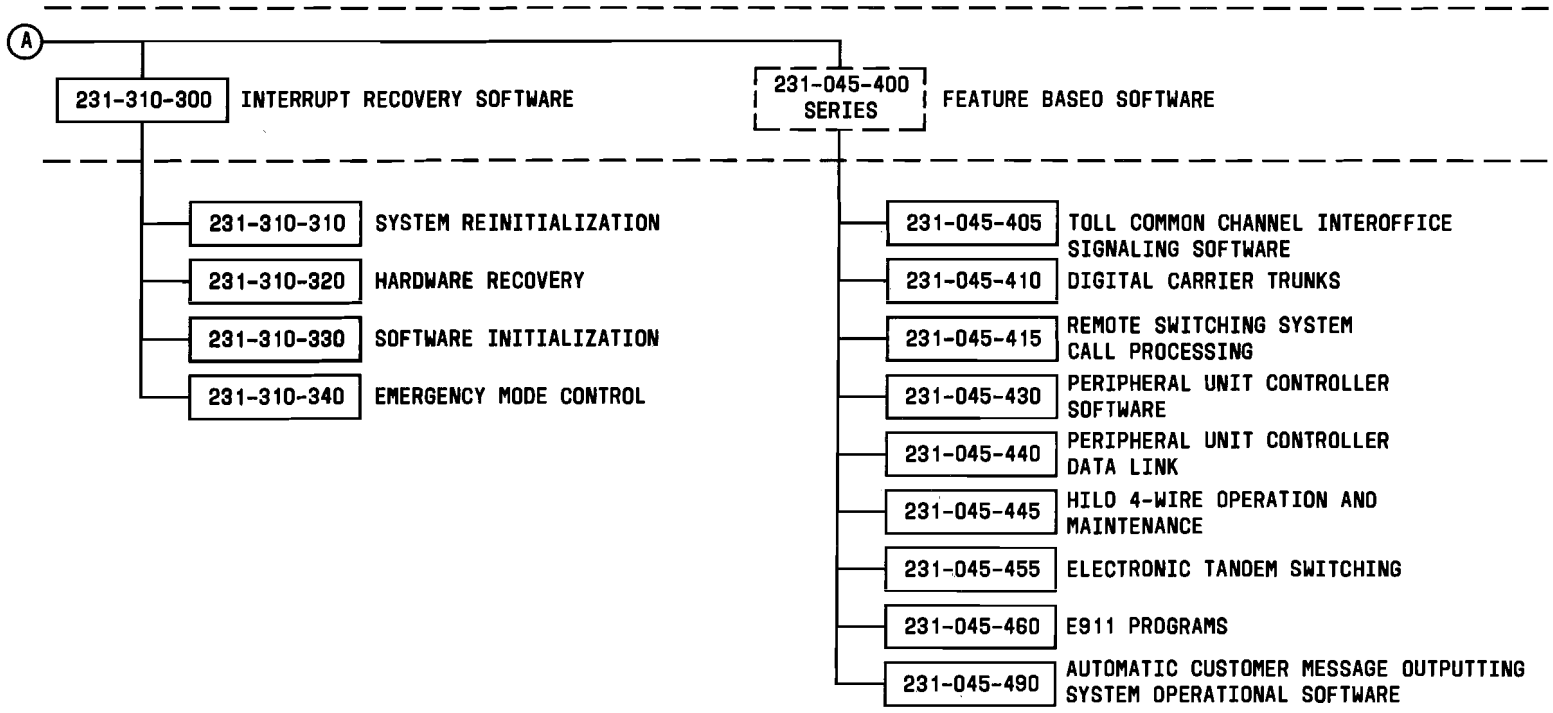


Fig. 8—Organization of 1/1A ESS Switches Software (Sheet 2 of 4)

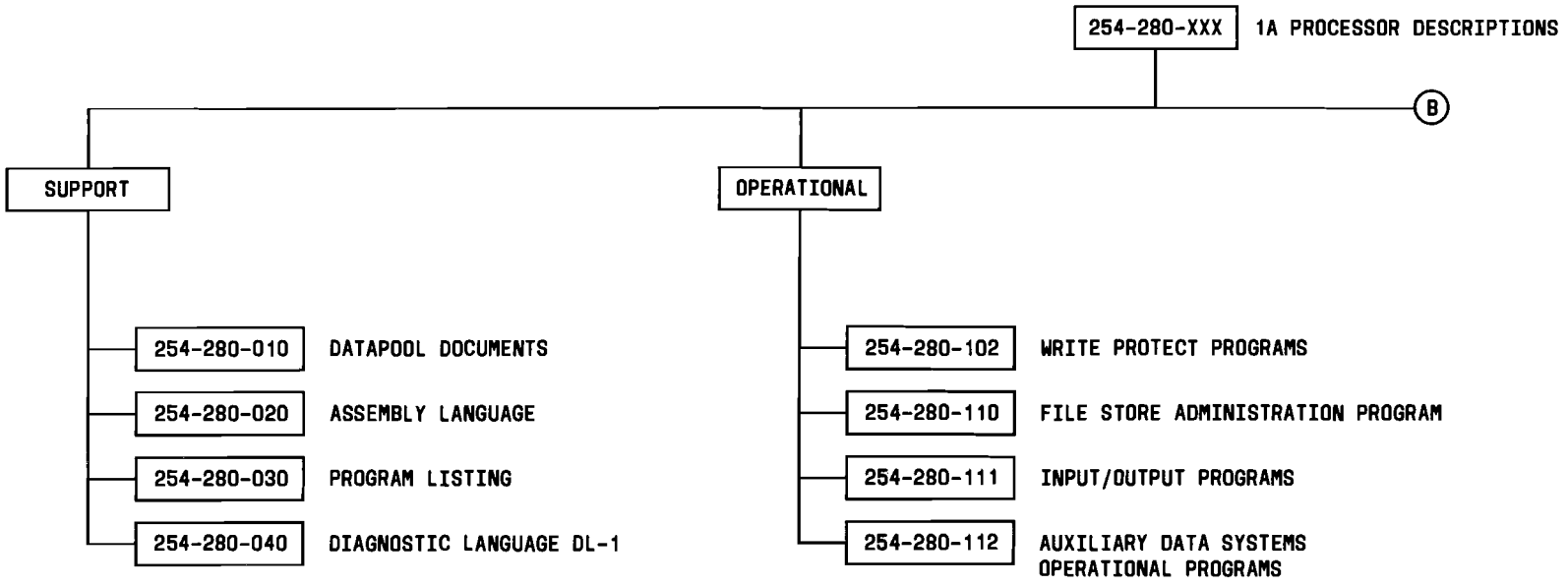


Fig. 8—Organization of 1/1A ESS Switches Software (Sheet 3 of 4)

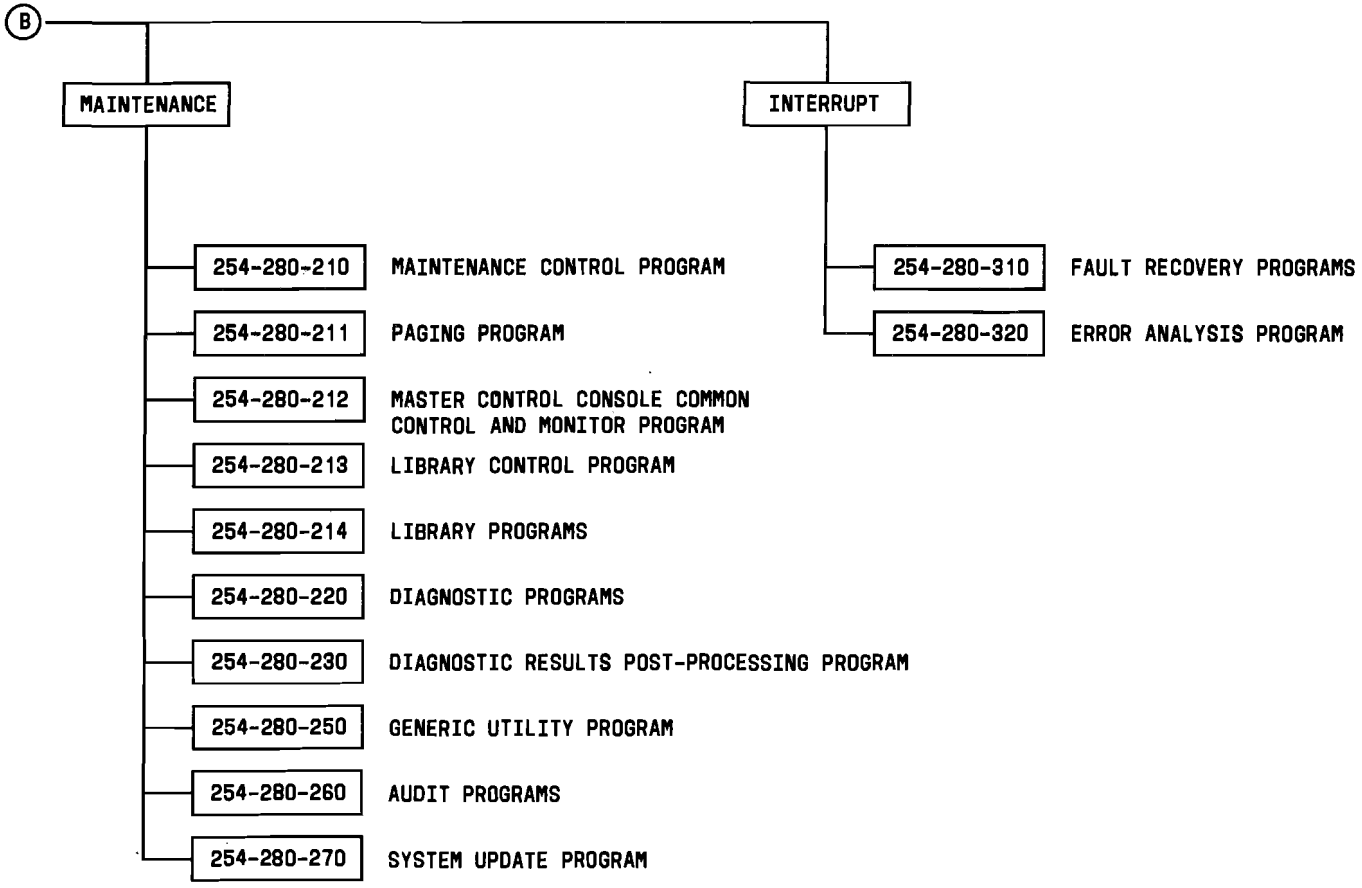


Fig. 8—Organization of 1/1A ESS Switches Software (Sheet 4 of 4)

TABLE B

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-045-100	Operational Software	Describes three functions: call processing, equipment dependent overhead, and administrative work. All three are performed on both L (base) level and J level. Coverage also includes base level, J- and H-level interrupt structures, base level main program (including scheduling, timing, and system clock), J-level main program (including high-priority work and low-priority work), Automatic Overload Control (AOC), Line Load Control (LLC) maintenance, and emergency action recovery.
231-045-102	Supervision Modernization	Describes the Supervision Modernization feature for the 1 and 1A ESS switches and is a base feature in the 1E7, 1AE7 and later generic programs. The Supervision Modernization feature is part of a program modernization plan designed to aid in the development and testing of features for both the 1 and 1A ESS switches.
231-045-105	Call Processing — POTS	Describes programs which specialize in the processing of information associated with nonbusiness type calls. Coverage includes the following operations: dialing connection, digit analysis line, digit analysis trunks, ringing, and disconnect.
231-045-106	Call Processing — Centrex	Describes programs/subroutines used to process calls to and from a subscriber line located at a centralized telephone communication exchange. Coverage includes only those functions applicable to a centrex office.
231-045-110	Scanning	Describes a subsystem which supervises call processing activities by detecting and reporting changes of electrical states at specific points within the system. The scanning function detects change of states on lines, junctor circuits, trunk circuits, and selected other points for service requests, disconnects, and information such as line and trunk maintenance.
231-045-115	Outpulsing	Describes the outpulsing control program which includes interfacing with programs requiring outpulsing control, establishing necessary network connections, initializing the outpulsing control register, seizing the outgoing trunk, unloading the start-pulsing signal detection output link list, maintenance tests, and other outpulsing related functions.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-045-120	Peripheral Control	Describes the peripheral control programs used to interconnect line, trunks, service circuits, and tone sources associated with the central office. These programs perform specific functions (hunts for idle paths, administers network map, and administers path memory) associated with loading and unloading an instruction in a peripheral order buffer.
231-045-125	Operator Functions	Describes the operation programs which control calls to assistance operators, toll operators, information operators, business office operators, intercept operators, and repair service operators. Each program has its own functions and signaling arrangements which interface with other call processing programs.
231-045-130	Coin Functions	Describes the coin control program which handles toll calls, local calls, signaling, and detection of required operator signals for call originating from coin telephone sets.
231-045-135	Charging	Describes the charging programs which have responsibility for collecting, assembling, and storing data pertinent to billable calls (eg, message rate and toll calls). The Automatic Message Accounting (AMA) process is covered in this subsystem section.
231-045-140	Special Line Services	Describes the programs that allow the customer to have special line services. Speed calling, reverting calling, call waiting, call forwarding, add-on, and conference are examples of these special services.
231-045-145	Translations	Describes the translation program which consists of service routines which are used to transform known data supplied by a client program into related data that is returned to the requesting program. The translation program provides client programs with related information about customer lines, directory numbers, trunk and service circuits, junctors office codes, rates, routes, and miscellaneous items.
231-045-150	Recent Changes	Describes the recent change subsystem which provides means for the telephone company personnel to alter translation data. Translation data is altered to reflect changing service requirements of subscribers and internal system considerations such as growth, traffic engineering, network management, and more.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-045-155	Queue and General Purpose	Describes queuing programs which act as administrators for various queues or lists containing items waiting to be handled by the system. This section also describes general purpose programs which perform preliminary work and particular functions for other client programs.
231-045-160	Toll/Tandem Switching	Describes programs required to establish connections necessary for toll/tandem service in 1/1A ESS switches. Toll/tandem offices provide switching capability for trunk-to-trunk connections.
231-045-165	Traffic Data Measurements	Describes traffic data measurement programs which are used to generate, accumulate, collect, and print out 1A ESS switch traffic data. This traffic data consists of peg, usage, and overflow counts generated by call processing and maintenance programs as specific events occur.
231-045-170	Network Management	Describes network management programs which provide a means of reducing traffic overloads, resulting from earthquakes, snowstorms, telethons, etc. Network management closely interfaces with the Calling Line Identification (CLID) program.
231-045-175	Centrex Data Link Features	Describes data link features available to a centralized telephone exchange service that uses the data handling capabilities of a nearby 1/1A ESS switches central office. These features include calls handled by centrex attendant, transmission of lamp orders and reception of key signals, call pickup at night station, and answer codes from other noninward phones or premises.
231-045-180	Centrex Business Communication Services	Describes the essential operations for providing business communications services to centrex customers. The specific centrex operations described in this section include: (a) calling station identification, eg, centrex control unit originatins which require AMA or sampling; (b) record keeping for certain types of calls; (c) performing switching office functions in a tandem tie line network.
231-045-200	Maintenance Software	Provides an overall view of the maintenance software which can be divided into two areas: fault recognition/isolation and recovery.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-045-200 (contd)		Fault recognition/isolation programs continuously exercise the system and isolate fault(s). The second area, recovery, provides programs which rapidly recover the call processing ability of the system during trouble conditions.
231-310-210	Fault Recognition	Describes the fault recognition program which is implemented by a central control interrupt circuit when a system fault (circuit troubles) is detected. The fault recognition program determines which system unit has failed and establishes an operational configuration.
231-045-215	Audit Programs	Describes the audit programs which consist of corrective programs that audit call store and program store for inconsistencies. Coverage includes error detection, writing corrective information into memory, initializing the system for the first time, audits used when changes are made to the system, and audits requested by TTY.
231-045-220	Peripheral Diagnostic and Exercise	Describes diagnostic programs which are used to localize fault(s) to a small number of plug-in circuit packs within a system unit that have been taken out of service. Exercise programs which closely interface with diagnostic programs to check for faults are also covered in this section.
231-045-225	Centrex and AIOD Diagnostic and Exercise	Describes programs designed to test the entire console data interchange system. Coverage includes the busying of faulty data links, testing the data link to isolate the fault, restoral and reinitialization to service of the repaired data link and certain centrex exercises.
231-045-230	Trunk and Service Circuit Maintenance	Describes the trunk and service circuit maintenance programs used for diagnostic testing on various trunks, junctors, and service circuits used in 1/1A ESS switches central office.
231-045-235	Trunk and Line Test	Describes the carrier group alarm program, the automatic line insulation test program, the incoming trunk test program, the automatic trunk test termination program, and the station ringer and touch-tone test programs.
231-310-240	Data Mapping	Describes data mapping which is used to copy transient data blocks from their current locations

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-310-240 (contd)		to the locations which are compatible with the update issue of data.
231-045-245	System Performance	Describes program operations designed to indicate the system's ability to perform its call processing functions. These operations consist of tests which check various types of calls, queues, hoppers, registers, and special tasks.
231-310-250	Master Control Center (Man-Machine Interfacing)	Describes the Master Control Center (MCC) which serves as the interface between the switching system and operating telephone company personnel. It represents the central maintenance, control, and administration point of the 1A ESS switch.
231-045-255	Growth	Describes the growth programs which provide the required operations to change information about quantities of central office equipment as the office grows. Coverage also includes growth program operations during the cutover of a central office.
231-310-260	Local Utility	Describes the local utility program which provides the means to read, move, and, with certain restrictions, overwrite data retained in any addressable location in the system.
231-310-265	Input/Output Application Programs	Describes the TTY programs which serve as the input/output intermediaries between operating company personnel and 1/1A ESS switches programs.
231-045-270	Network Fabric Maintenance	Describes the network failure action program which is executed when the peripheral order buffer (POB) execution program encounters certain failing conditions during the execution of an order from a POB. Coverage also includes network fabric routines which serve primarily as an aid to maintenance personnel in testing, repairing, and replacing faulty crosspoints in the network fabric.
231-045-275	Ringing, Tone, and Recorded Announcement Maintenance	Describes the programs which monitor and test circuitry and equipment associated with ringing, tones, and recorded announcements.
231-310-280	Library Program Control	Discusses the concentration of all changeable information (ie, number of lines and trunks, types of signaling, and other variables) into one place.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-310-280 (contd)		The programmed ability to interface with and tie off auxiliary programs (temporary loaded programs for growth and upgrading) are also covered.
231-310-300	Interrupt Recovery Software Control Structure	Provides an overview of the interrupt recovery software control structure that is entered after an interrupt has occurred. Coverage also includes description of the system interrupt recovery program, the A-level interrupt recovery program, and the restart program for all levels of interrupts.
231-310-310	System Reinitialization	Describes the programs that reinitialize the software system in the event of severe memory mutilation. These programs reinitialize program store, call store, and file store with tape-stored data.
231-310-320	Hardware Recovery	Describes the programs that are designed to recover the system processing ability when the fault recognition on software sanity programs are unable to process the given faults. These programs attempt to establish a valid hardware configuration for the processor and the periphery.
231-310-330	Software Initialization	Describes the program that executes any phases requested to accomplish a return to normal processing. A description of the program which guarantees that the hardware state of a line agrees with the software state of the line is also included.
231-310-340	Emergency Mode Control	Describes the program that provides an emergency method for the 1A ESS switch to return to an operational state. This program is only executed when a severe hardware or software malfunction prevents system recovery via the normal automatic or manual techniques.
231-045-405	Toll Common Channel Interoffice Signaling	Provides a functional description of the programs which comprise the Toll Common Channel Interoffice Signaling System.
231-045-410	Digital Carrier Trunk Software	Provides a software functional description of the operational, maintenance, and interface capabilities of the digital carrier trunk software.
231-045-415	10A Remote Switching System	Describes the call processing actions performed by the Remote Switching System Programs.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
231-045-430	Peripheral Unit Controller	Describes the programs which form the software functional interface between the ESS switch processor and the peripheral unit controller.
231-045-440	Peripheral Unit Controller/Data Link	Describes the functional operation of the peripheral unit controller/data link (PUC/DL) software for processing the information received from and sent to the remote terminals via data links.
231-045-445	HILO 4-Wire Operation and Maintenance	Describes the HILO 4-wire operational and maintenance software programs. This feature is to provide two electrically independent transmission paths through the switching network for toll applications.
231-045-455	Electronic Tandem Switching	Describes the Electronic Tandem Switching (ETS) feature software package consisting of a group of programs which enable the 1/1A ESS switches to serve as a tandem office in a centrex network. It gives centrex customers additional flexibility by allowing them to control station features and routing of calls. It also provides information to the customer about the status of the network and the individual calls.
231-045-460	E911 Programs	Describes the E911 (enhanced 911) software programs collectively which perform the control functions necessary for E911 tandem offices to selectively route 911 calls originated from any station in their 911 service area to the correct primary public safety answering point (PSAP) and provide specific E911 feature services.
231-045-490	ACMOS Operational Software	Describes the Automatic Customer Message Outputting System (ACMOS) software which performs the control functions necessary for providing call data to customer owned and maintained hotel/motel property management computer systems. The 1/1A ESS switches supply the telephone service for the administrative and guest lines directly from the centrex office.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
254-280-010	Datapool Documents — Description — 1A Processor	Describes types of information contained in Datapool documents (PK computer listings). A Datapool library (portion of Datapool) may be either a macros library (containing macro definitions) or a symbols library (containing data definitions) and may be either a common library (1A processor) or an application (toll unique).
254-280-020	1A Processor Assembly Language — Description	Describes the 1A processor assembly language, a set of mnemonic instructions used to generate the machine language that controls the ESS switches using a 1A processor.
254-280-030	Program Listing — Description — 1A Processor	Explains the format of program listings (PRs) and describes the information contained in these listings for both a standard program and a diagnostic phase program.
254-280-040	Diagnostic Language (DL-1) — Description — 1A Processor	Describes the basic structure of DL-1, a macro language used by diagnostic testing programs applicable to 1A processor equipment. Explains each DL-1 statement and provides examples.
254-280-110	File Store Administration Program — Description — 1A Processor	Describes the File Store Administration Program (DKAD) used to transfer information between (to or from) a file store (disk storage) and a client program.
254-280-111	Input/Output Programs — Description — 1A Processor	Describes the input/output (I/O) programs used to process input and output messages between a hardware terminal (TTY, CRT, etc) and a client program.
254-280-112	Auxiliary Data System Operational Programs — Description — 1A Processor	Describes the Data Unit Administration Program (DUAD), the Automatic Message Accounting Data Transfer Program (AMDX), and the backup Tape Writing Program (TWRP) and its control program (TWRT). DUAD administers the transfer of data between (to or from) tape storage and client program. AMDX and TWRP/TWRT are clients of DUAD. AMDX is primarily used for toll call billings; TWRP (a library program) writes the backup tapes used by system reinitialization and certain system audits.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
254-280-210	Maintenance Control Program — Description — 1A Processor	Describes the common pidents of the Maintenance Control Program (MACP). MACP schedules and controls the execution of deferrable, base-level maintenance programs and utility programs. See section 231-045-200 for a description of the application MACP pidents.
254-280-211	Paging Program — Description — 1A Processor	Describes the Paging Program (PAGS) which supervises the retrieving of a program stored in file store and placing of this program in core store for execution.
254-280-212	Master Control Console Common Control and Monitor Program — Description —1A Processor	Describes the Master Control Console Common Control and Monitor program (MCCM) which controls input and output functions associated with the Master Control Console (MCC) common processor panels and power control switches on various processor units.
254-280-213	Library Control Program — Description — 1A Processor	Describes the Library Control Program (LIBR) which controls all library client programs. Library programs are special, infrequently used programs designed for running tests associated with installations, office growth, traffic, etc.
254-280-220	Diagnostic Programs — Description — 1A Processor	Describes the common diagnostic programs (ie, 1A processor diagnostic and the Diagnostic Control Program [DCONMAIN]). A diagnostic consists of a local control program which points to table-driven (segmented test phases) and to task subroutines for testing 1A processor units. DCONMAIN controls the execution of diagnostics.
254-280-230	Diagnostic Results Post-Processing Program — Description — 1A Processor	Describes the common portion of Diagnostic Results Post-Processing Program (DRPP). DRPP is a collection of common and application programs that are used to turn failing diagnostic raw data into a list of components that could possibly be faulty.
254-280-250	Generic Utility Program (GULP) — Description — 1A Processor	Describes GULP, a manually initiated program, which is used in performing utility functions, ie, dump, load, and copy, to aid in the resolution of hardware/software problems.

TABLE B (Contd)

DESCRIPTION OF CONTENTS — 1/1A ESS SWITCHES SOFTWARE SECTIONS

SECTION NO.	TITLE	DESCRIPTION OF MAJOR CONTENTS
254-280-260	Audit Programs — Description — 1A Processor	Describes the 1A processor Writable Store Audit Program (SAWS), System Audit of Stores Using Tape programs (SAST), and Auxiliary Unit System Audit program (SADK). SAWS and SAST check the integrity of the stored program and nontransient data, provide error information, and provide corrective action. SADK initializes the file store system, audits memory, times file store requests, and audits AMA buffer points.
254-280-270	System Update Program — Description — 1A Processor	Describes the system update program which is used to load a complete generic program and/or office dependent data from tape into a presently operating 1A processor system.
254-280-310	Fault Recovery Programs — Description — 1A Processor	Describes the fault recovery programs which isolate faults in the 1A processor system or direct program control to the appropriate peripheral fault recovery program if a nonprocessor fault is indicated.
254-280-320	Error Analysis Program — Description — 1A Processor	Describes the 1A processor error analysis programs (ERIF, ERAP) which gather various data during a fault recovery process and during diagnostic and other maintenance actions, and processes this data for analysis and retrieval.

▶TABLE C◀

SECTION-TO-PIDENT CROSS-REFERENCE (NOTE)

SECTION AND PIDENT	PIDENT NAME
231-045-100	
AOVD1A00	Automatic Overload Control
ECIO1A00	Executive Control Input Output
ECMP1A00	Executive Control Main Program
LLOD1A00	Line Load Control and Toll Network Protection
231-045-102	
SASS1A00	System Audit, Supervisory Signaling
SCJT1A00	Scanner J and T Bit Control
SSCD1A00	Supervisory Signal Change Direction
SSCN1A00	Supervisory Signal Control
SSDC1A00	Supervisory Signal Delivery
SSPL1A00	Supervisory Signaling Path Locator
231-045-105	
CHGD1A00	Scan Point Change Director
DCNT1A00	Dialing Connection
DISC1A00	Disconnect Program
DITS1A00	Time Scan Junior Register Processing
ICAL1A00	Digital Analysis Trunks
ICRV1A00	Digital Analysis Trunks — Revertive
ISXS1A00	Step-by-Step Incoming Calls
ORDL1A00	Digital Analysis Lines
PSPD1A00	Permanent Signal — Partial Dial
PSTP1A00	Permanent Signal and Partial Dial Timing Program
PSXS1A00	Step-by-Step Timing
RING1A00	Ringing and Answer Detection
RRSP1A00	Special Ringing
RVRC1A00	Revertive Pulse Generation (Digit Reception)
SUSC0000	Supervisory Scan
YFTO1A00	Incoming Trunk to Busy — Overflow or Special Service Circuit
YRGD1A00	Trunk Guard Timing
YTTO1A00	Originating Line to Busy — Overflow or Special Service Circuit
231-045-106	
CXDS1A00	Disconnect Program
CXIC1A00	Digital Analysis Trunk
CXOR1A00	Originating Digit Analysis for Centrex
CXYH1A00	Seize and Release Routines and L, J, and T Bit Administration

Note: This table does not represent a program and pident listing for a complete office generic but lists only those programs and pidents that require description in accordance with the high-level functional nature of these sections.

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
231-045-110	
CCLT1A00	Supervisory Scan
DITS1A00	Time Scan Junior Register Processing Program
MUMB1A00	Multiple Bit Scan
OGGT0000	Revertive Pulse Detection Scanning
OGLF1A00	Line Ferrod Scan
OGWN1A00	Start Pulsing Signal Detection Program
RSCN1A00	Digit Reception Scan
SURG1A00	Ring Trip Supervisory Scan
SXSI0000	Step-by-Step Incoming Dial Pulse Detection
231-045-115	
DPGE1A00	Dial Pulse Digit Generation
DPOP1A00	Dial Pulse Outpulsing Control Program
MFOP1A00	Multifrequency Digit Transmission
MFPR1A00	Multifrequency Transmitting Control — Load Tones in MFJR
MFTL1A00	Multifrequency Transmitting Control
OGGT0000	Revertive Digit Reception
OGPC1A00	Panel Call Indicator Pulse Digit Generation
OGRV1A00	Revertive Outpulsing Control
OGTC1A00	Outpulsing Control
OPCI1A00	Panel Call Indicator (PCI) Outpulsing
RVRC1A00	Revertive Pulse Generation (Digit Reception)
231-045-120	
CHAT1A00	Peripheral Order Load Program for Change in Circuit
CHIT1A00	Peripheral Order Load Program for Change in Circuit
CICS1A00	Change In Circuit Subroutines
DSUB1A00	Distributor and Scanner Subroutines
JPOB1A00	J-Level Disconnect for Step-by-Step Incoming Trunk
NCIN1A00	Change in Network
NMAC1A00	Network Macro Expansions for Use by the Change in Network MACR
NMAP1A00	Network Map Administration
NTWK1A00	Network Transition Control Program
N4PL1A00	Network Path Hunt
QEPR1A00	Peripheral Order Buffer Execution Program
QEXC1A00	Peripheral Order Buffer Execution Program
231-045-125	
OFGT1A00	Operator Functions — Miscellaneous Outgoing to Switchboards and Desk
OFML1A00	Emergency Manual Line Program
OFNT1A00	Operator No-Test
OFTR1A00	Toll Switch Recording
TSPS1A00	Traffic Service Position System Programs
231-045-130	
CNCR1A00	Coin Control for RSS Program
COCN1A00	Coin Control
COIN1A00	Coin Charging
DCNT1A00	Dialing Connections Program
OFTR1A00	Operator Functions Program

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
231-045-135	
AMAC1A00	Automatic Message Accounting Data Accumulator
CAMA1A00	Centralized Automatic Message Accounting
CDIS1A00	Centralized Automatic Message Accounting Disconnect
231-045-140	
ADBN1A00	Multiport Control and Switching — Abandon and Answer
ADCI1A00	Conference Register Initialization
ADDA1A00	Multiport Control and Switching — Dialed Additions
ADDB1A00	Drop-Back Analysis
ADDX1A00	Multiport Control and Switching — Dialed Additions for Centrex
ADLR1A00	Multiport Control and Switching — Action Requiring Filtering
ADPB1A00	Initial Peripheral Order Buffer Loading
ADPT1A00	Program Tag Report Analysis
ADUP1A00	Update Routines
ADUX1A00	Multiport Control and Switching — Update Routines for Centrex
CCAD1A00	Customer Changeable Speed Calling
CFUP1A00	Call Forward Usage Print
TXFR1A00	Call Forwarding Service
WAIT1A00	Call Waiting Program
231-045-145	
NEJR1A00	Junctor Translations
TRANCOMN	Translation Program
TRBD1A00	Translation Routines — Basic Digit Analysis and Conversion
TRBL1A00	Translation Routines — Basic Line and Directory Number
TRBT1A00	Translation Routines — Basic Trunk
TRCD1A00	Translation Routines — Centrex Digit Analysis
TRCL1A00	Translation Routines — Centrex Line and Directory Number
TRCT1A00	Translation Routines — Centrex Trunk
TRLC1A00	Translation Routines — Line Cutover
TRML1A00	Translation Routines — Multiline Hunt Arrangements
TRUR1A00	Translation Routines — Universal Subroutines
TVBD1A00	Translation Data Verification Messages — Basic Digit Analysis
TVBL1A00	Translation Verification Messages — Basic Line and Directory Number
TVBT1A00	Translation Data Verification Messages — Basic Trunk
TVCD1A00	Translation Data Verification Messages — Centrex Digit Analysis
TVMN1A00	Translation Data Verification Messages — Main Control
TVCL1A00	Translation Data Verification Messages — Centrex Line
231-045-150	
QURC1A00	Queuing for Recent Change Control
RCCH1A00	Recent Change Change Control
RCDY1A00	Delayed Storage and Activation
RCFI1A00	Recent Change Format Interpreter
RCIB0000	Recent Change Interface Buffer
RCIE1A00	Recent Change Input Editor
RCIG1A00	Recent Change Initialization and Control

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
RCKI1A00	Recent Change Keyword Input
RCMU0000	Recent Change Message Update
RCSI1A00	Recent Change Shared Information and Table Subroutines
RCTF1A00	Recent Change Translator Format Builder
RCTS1A00	Recent Change Table Subroutines
RCVC1A00	Recent Change Validity Check
RCWL1A00	Recent Change Work List Processing
RSUB1A00	Recent Change Subroutines
231-045-155	
COPR1A00	Report and Miscellaneous Subroutines
CXYH1A00	Seize and Release Routines and L-, J-, and T-Bit Administration for Centrex
QAPR1A00	QTL — Queue Administration and Processing
QCDL1A00	QTL — Queuing Data Link ACD
QCIA1A00	QTL — Customer Interface and Special Auditing Routines
QEDA1A00	QTL — Queue Entry and Destination Assignment Routines
QSIF1A00	QTL — Queue State Information Features
QTAL1A00	QTL — Audible, Disconnect, and Line Termination Routines
QTRK1A00	QTL — Terminate to Trunk Facility Subroutines
QWAT1A00	QTL — Queuing For WATS
TRCE1A00	Call Trace
WQUE1A00	Queue Administration
YAHA1A00	Seize and Release Routines and L-, J-, and T-Bit Administration
YCLK1A00	Register Linking Routine
YFDS1A00	Scan of Single Master Scanner Point
YFTO1A00	Incoming Trunk to Busy, Overflow, or Special Service Circuit
YMRG1A00	Miscellaneous Register Subroutines and Tables
YTTO1A00	Originating Line to Busy, Overflow, or Special Service Circuit
ZERO1A00	Call Store Zeroing
231-045-160	
TAND1A00	Tandem Connections Program
TOPR1A00	Toll Operator Signaling
TSPS1A00	Traffic Service Position System Program
231-045-165	
PPMP1A00	Plant Measurements Program
TFCL1A00	General Traffic Data Collection
TFPT1A00	Traffic Data Printing
TFQR1A00	Quarter Hour Traffic Data Collection
231-045-170	
CLID1A00	Calling Line Identification List Administration
EDAS1A00	EDAS Interface
EDVF1A00	EDAS Translation Verification Routines
NMEA1A00	EDAS/NM Interface
NMGT1A00	Network Management
NMIN1A00	Network Management Indicators

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
NMMP1A00	Network Management Maintenance Program
NMRR1A00	Network Management Reroute Control
NMTC1A00	Network Management Toll Code Blocking
NMTD1A00	Transmit Dynamic Overload Control Signals
NMTG1A00	Network Management
231-045-175	
CNLP1A00	Centrex Console Lamp Control Program
CXIO1A00	Centrex Input-Output Program
CXKY1A00	Centrex Group Status Check, Block, Queue, Seize Console Register
CXLO1A00	Line and Trunk Seizure of Centrex Attendant
CXTA1A00	Trunk Answering Night Service
231-045-180	
AIOD1A00	Automatic Identified Outward Dialing
CXBV1A00	Busy Verify on Lines and Trunks
CXSF1A00	Centrex Simulated Facilities Program
CXTP1A00	Centrex Trunk Preemption Program
CX1X1A00	1XX Tandem Tie Line Program
HMTL1A00	Hotel-Motel
231-045-200	
CXMS1A00	Centrex Maintenance Supervisory Program
DOCT1A00	Dictionary Trouble Number Production
MACAADMN	1A ESS Switch Audit Scheduler
MACR1A00	Maintenance Control Program
PAIRLOCL	Processor/Application Interface Routines
231-310-210	
AIFR1A00	Automatic Identified Outward Dialing Fault Recognition
CPFR1A00	Central Pulse Distributor Fault Recognition
NMRF1A00	Network Management Fault Recognition Program
SCFR1A00	Scanner Fault Recognition Program
231-045-215	
AUDSMDIO	Common Input/Output Audit
CXSR1A00	Centrex Call Register Audit
MACAADMN	1A ESS Switch Audit Scheduler
NEGN1A00	Network Head Cell and Junctor List Audit
NMDT1A00	Line Bit Audit
NSUP1A00	Enable Table Maintenance Routines
POMC1A00	Peripheral Order Buffer Audit
SACT1A00	Cutover Program
SACV1A00	Receiver Scan Audit
SACX1A00	Centrex Registers Audit
SADA1A00	Regenerated Constant Audit
SADT1A00	System Audit Programs
SAH01A00	Hopper and Fixed Length Queue Audit

▶TABLE C◀ (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
SALTWORT	Translation Audit
SAMP1A00	Network and Map Audit
SANK1A00	Linkage Audit of Junior Registers
SAQU1A00	Audit Variable Length Queues
SARG1A00	Call Register Audit
SASU0000	Supervisory Scan Data Tables Audit
SATS1A00	Expanded Enable Audit
SAWSLOCL	Writable Store Audit
SURT1A00	Ring Tip Supervisory Scan Initialization
231-045-220	
CPBD1A00	Enable and Verify Bus Diagnostics
CPDG1A00	Central Pulse Distributor Diagnostics
CPDX1A00	Central Pulse Distributor Exercises
CPRX1A00	Central Pulse Distributor Routine Exercises
DCPBDGNC	Diagnostic Control for Peripheral Bus
NMDP1A00	Network and Diagnostics
NMMX1A00	Network Matrix Routine Exercises
PUBD1A00	Peripheral Unit Bus Diagnostics and Exercises
SCDG1A00	Scanner and Answer Bus Diagnostics
SCDX1A00	Scanner Demand Exercises
SCRX1A00	Scanner Routine Exercises
231-045-225	
AIDG1A00	Automatic Identification Outward Dialing
CXDX1A00	Central Data Link and Console Demand Exercise Program
CXMA1A00	Centrex Maintenance Program
CXMC1A00	Data Link Diagnostic Control
CXMS1A00	Centrex Maintenance Supervisory Program
231-045-230	
CXTN1A00	Centrex Trunk Maintenance Diagnostic Program
TERA1A00	Trunk Error Analysis Program
TMAC1A00	Trunk Maintenance Control Program
TNDC1A00	Centralized Automatic Message Accounting Diagnostic Program
TNDN1A00	Trunk Maintenance Diagnostic Program
TNKC1A00	Trunk and Service Circuit Maintenance Control
TNLS1A00	Trunk List Programs
231-045-235	
ALIT1A00	Automatic Line Insulation Test
APCI1A00	ATMS Processor Controlled Interrogator
ATTT1A00	Automatic Trunk Transmission Test
CGTB1A00	Carrier Group Alarm, Trunk Make Busy
ICAL1A00	Digit Analysis For Trunks
ITCI1A00	CCIS Incoming Trunk Test Termination
ITTT1A00	Incoming Trunk Test Termination
LTDK1A00	Local Test Desk Program

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
MCCP1A00	Master Control Center Program
ORDL1A00	Digit Analysis For Lines
PLUG1A00	Plugging Up
PLIT1A00	Remote Automatic Line Insulation Test
RLTDK1A00	Remote Local Test Desk Program
SRTT1A00	Station Ringer Test
TBTF1A00	Through Balance Test Facility
TLTA1A00	Trunk and Line Test Panel Part A
TBTL1A00	Trunk and Line Test Panel Part B
TLTC1A00	Trunk and Line Test Panel Part C
TLTD1A00	Trunk and Line Test Panel Part D
TLTE1A00	Trunk and Line Test Panel Part E
YFTO1A00	Incoming Trunk to Busy
231-310-240	
DMAPAPPL	Data Mapping Control and Linking
231-045-245	
DDDO1A00	Direct Distance Dialing Service Observing
DTST1A00	Dial Tone Speed Test
LLOD1A00	Line Load Control and Toll Network Protection
RADR1A00	Receiver Attachment Delay Report Program
SOBR1A00	Multiline Service Observing
SYPI	System Performance Indicators
231-310-250	
LTDK1A00	Local Test Desk
MALM1A00	System Alarm
MAUD1A00	Maintenance Audit
MCCP1A00	Maintenance Control Center
MCTWADMN	Master Control Center Administration
TLTA1A00	Trunk and Line Test Panel (A)
TLTB1A00	Trunk and Line Test Panel (B)
TLTC1A00	Trunk and Line Test Panel (C)
TLTD1A00	Trunk and Line Test Panel (D)
TLTE1A00	Trunk and Line Test Panel (E)
231-045-255	
NETG1A00	Network Make Busy Routine
SACT1A00	Cutover Program
231-310-260	
LULPUTIL	Local Utility Program
231-310-265	
IOCPIMC2	Input Message Directory and Catalog
IOCPOMC2	Output Message Catalog and Test Phrases
IOCPOMT2	Miscellaneous Input/Output Translation Routines
TTIA1A00	TTY Input Message Directory and Catalog

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
TTOA1A00	TTY Output Message Catalog
TTOB1A00	TTY Output Message Catalog
TTOC1A00	TTY Output Message Catalog
TTOD1A00	TTY Output Message Catalog
TTOE1A00	TTY Output Message Catalog
TTOF1A00	TTY Output Message Catalog
TTOG1A00	TTY Output Message Catalog
TTOH1A00	TTY Output Message Catalog
TTOI1A00	TTY Output Message Catalog
TTOJ1A00	TTY Output Message Catalog
TTOK1A00	TTY Output Message Catalog
TTOL1A00	TTY Output Message Catalog
TTOM1A00	TTY Output Message Catalog
TTON1A00	TTY Output Message Catalog
TTOO1A00	TTY Output Message Catalog
TTOP1A00	TTY Output Message Catalog
TTPP1A00	TTY Output Pool Phrases
TTWK1A00	TTY Work Register
TTYM1A00	TTY Input Translation
231-045-270	
NMFA1A00	Network Fabric Routines
NMFL2A00	Network Failure Maintenance Action
231-045-275	
RAMP11A00	Recorded Announcement Machine Program
TODA1A00	Ringing and Tone Plant Diagnostics
TOMK1A00	Ringing and Tone Plant Monitor and Exercises
231-310-280	
PGID1A00	Generic Identification and Compatibility Tables
231-310-300	
IREC1A00	Interrupt Recovery Program
MARP	1A Processor Maintenance Restart Program
MARS	1A ESS Switch Maintenance Restart
MCAI	A-Level Interrupt
SIRE	System Interrupt Recovery
231-310-310	
SYSRBASE	System Reinitialization Base Recovery
SYSRCONT	System Reinitialization Control
SYSRCSPS	System Reinitialization Call Store/Program Store Configuration
SYSRTPAD	System Reinitialization Tape Paging Administration
231-310-320	
HARVRECV	Peripheral Hardware Initialization
IOTWRECV	Input/Output System Restoration Routine
PCRVCONT	Processor Configuration Recovery/Control
PCRVPUMP	Processor Configuration Recovery Pump from Disk

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
231-310-330	
MIRVRECV	Memory Integrity and Recovery
NMLI1A00	Restore Cutoff Program
231-310-340	
EMERRECV	Emergency Mode Control
231-045-405	
C01C1A00	Incoming CCIS Trunk States
C02C1A00	Outgoing CCIS Trunk States
C03C1A00	CCIS-to-CCIS Trunk States
C04C1A00	CCIS-to-PTS Trunk States
C05C1A00	PTS to CCIS Trunk States
C06C1A00	CCIS Post ADC Failure Trunk States
CIAL1A00	Alarms
CICB1A00	Change Back
CICM1A00	Common
CICO1A00	Change Over
CICP1A00	CCIS-to-PTS Routines
CIIP1A00	CCIS Input Processing
CILS1A00	Link Security State Table
CIMA1A00	Manual Actions
CIOF1A00	Office Recovery
CIOP1A00	CCIS Output Processor
CIOR1A00	CCIS Office Recovery
CIPC1A00	PTS-to-CCIS Routines
CIRA1A00	CCIS-to-CCIS and Shared Administration Routines
CIRN1A00	CCIS-to-CCIS and Shared Network Routines
CIRT1A00	CCIS Timing Routines
CITG1A00	Terminal Generic Program
CITI1A00	Terminal Initialization Program
CITQ1A00	Trunk Query
CITT1A00	CCIS Translation Integrity Check
CIXI1A00	External Interface Routines
SACC1A00	Call Processing Audits
SACL1A00	Link Security Audits
TAUP1A00	Data Terminal Frame Status Word and Enable Audit
231-045-410	
DCTC1A00	DCT Change in Circuit
DCTI1A00	DCT Frame Inpulsing
DCTO1A00	DCT TTY I/O and Common Routines
DFMP1A00	Facility Maintenance Control
TNTD1A00	Combined Channel Unit Diagnostics

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
231-045-415	
DCNR1A00	RSS Dialing Connection
RDIS1A00	RSS Disconnect
RESW1A00	RSS Reswitch
RMSG1A00	ROB Loading and Administration
RNAD1A00	RSS Network Administration
ROBE1A00	ROB Execution
ROBF1A00	ROB Failure
RRTE1A00	RSS Message Routing
RSUP1A00	RSS Supervision Report
RTAD1A00	RSS Terminal Administration
RTRF1A00	RSS Traffic
231-045-430	
DIAL1A00	Diagnostic Interpreter
DYLT1A00	DIAL Phase Table
PUCI1A00	PUC Initialization
PUCO1A00	PUC I/O Control
PUCR1A00	PUC Diagnostic Routines
PUCU1A00	PUC Unloader
PUFR1A00	PUC F-Level Recognition
PUFS1A00	PUC F-Scan
PUDA1A00	PUC Data Analysis
PUEA1A00	PUC Error Analysis
PUC01A00	PUC State Control Module
PUC11A00	PUC State Control Module
PUC21A00	PUC State Control Module
PUC31A00	PUC State Control Module
PUC41A00	PUC State Control Module
PUC51A00	PUC State Control Module
PUC61A00	PUC State Control Module
PUC71A00	PUC State Control Module
PUC81A00	PUC State Control Module
PU011A00	PUC Diagnostic
231-045-440	
PUDR1A00	PUC/DL Fault Recovery
PUDT1A00	PUC/DL Tables
PUID1A00	PUC/DL Initialization
PUTY1A00	PUC/DL TTY Interface

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
231-045-445	
ATTT1A00	Remote Office Test Line
DCNT1A00	Dialing Connections
DPOP1A00	Dial Pulse Outpulsing Control Program
HLCT1A00	HILO 4-Wire CSTI Tables
HLDI1A00	Disconnect Action for HILO 4-Wire Switching
HLIC1A00	Dialing Connection for 4-Wire Switching
HLOP1A00	Outpulsing Actions for HILO 4-Wire Switching
ICAL1A00	Digit Analysis Trunks
ISXS1A00	Step-By-Step Incoming Calls
ITCI1A00	CCIS Incoming Trunk Test Termination Program
ITTT1A00	Incoming Trunk Test Terminations
MFTL1A00	Multifrequency Transmitting Control
OGTC1A00	Outgoing Call Control Program
PMBT1A00	Precut Multifrequency Bylink Trunk
RADR1A00	Receiver Attachment Delay Report
TAND1A00	Tandem Connect
TBTF1A00	Through Balance Testing Facility
TLTA1A00	Trunk and Line Test Panel Program Part A
TLTB1A00	Trunk and Line Test Panel Program Part B
TLTC1A00	Trunk and Line Test Panel Program Part C
TLTD1A00	Trunk and Line Test Panel Program Part D
TLTE1A00	Trunk and Line Test Panel Program Part E
TNHC1A00	HILO CAMA Diagnostic Program
TNHS1A00	HILO Service Circuit Diagnostic Program Part 1
TNHT1A00	HILO Trunk Circuit Diagnostic Program
TNHV1A00	HILO Service Circuit Diagnostic Program Part 2
TNHW1A00	HILO Interprocessor Trunk Diagnostic
WQUE1A00	Queue Administration
231-045-455	
ADDX1A00	Dialed Additions for Centrex
AMAC1A00	AMA Data Accumulation
CFGR1A00	Customer Facility Group Register Routines
CGTB1A00	Carrier Group Alarm, Trunk Make Busy
CHGD1A00	Scan Point Change Director
CTRF1A00	Customer Traffic Data
CX1X1A00	1XX Tandem Tie Line
CXIC1A00	Trunk Digit Analysis for Centrex Lines
CXOR1A00	Originating Digit Analysis for Centrex
DLUP1A00	ETS Dial-Up Data Line Control
DPOP1A00	Dial Pulse Outpulsing Control
ECAC1A00	Customer Control and Status
ICAL1A00	Digit Analysis for Trunks

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
MDRO1A00	Message Detail Record Output
NMTG1A00	Network Management Trunk Group Controls
ORLD1A00	Originating Digit Analysis for Lines
PTRF1A00	ETS Customer Pollable Traffic Data
PUIO1A00	PUC/DL Input/Output
QAPR1A00	Queue Administration and Processing
QCIA1A00	Queue Customer Interface and Audit
QEDA1A00	Queue Entry and Destination Assignment
QSIF1A00	Queue State Information Features
QTRK1A00	Terminate to Trunk Facilities
QWAT1A00	Queuing for WATS
RCCX1A00	Recent Change: Centrex Common Block
RCEI1A00	Recent Change: EPSCS Customer Common Block
RCFV1A00	Recent Change: Call Forwarding
RCLI1A00	Recent Change: Line Translations
RCRL1A00	Recent Change: Route List Routing
RCSF1A00	Recent Change: Simulated Facilities
RCTG1A00	Recent Change: Trunk Group
RCTS1A00	Recent Change: Recent Change Tables
RCUP1A00	Recent Change: Recent Change Update
RCXD1A00	Recent Change: Centrex Digit Interpretation
SAQU1A00	Variable Length Queue and Timing List Audit
SARG1A00	Call Register Audit
TAND1A00	Tandem Connections Program
TFCL1A00	Traffic Count Collection
TFQR1A00	Quarter-Hour Traffic Data
TRBD1A00	Basic Digit Analysis and Conversion
TRBL1A00	Basic Line and Directory Number
TRBT1A00	Basic Trunk Translations
TRCD1A00	Centrex Digit Analysis
TRCT1A00	Centrex Trunk
TTxx1A00	TTY Output Messages
TVBD1A00	Verify Basic Digit Analysis
TVBL1A00	Verify Basic Line and Directory Number
TXFR1A00	Temporary Transfer
YAHA1A00	Seize and Release Routines, L-, J-, and T-Bit Administration
231-045-460	
COPR1A00	Report and Miscellaneous Subroutines
CXDR1A00	Originating Digit Analysis for CTX
CXIC1A00	Trunk Digit Analysis
DCNT1A00	Dialing Connections/Check for Tandem or Dedicated E911 Trunks

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
DISC1A00	Disconnect Program
ESCA1A00	Call Administration and Translation Interfaces
ESMG1A00	Error Messages and Error Counts
ICAL1A00	Digit Analysis Trunks
ISXS1A00	Step-By-Step Incoming Calls
MFTL1A00	Multifrequency Transmitting Control
OGTC1A00	Outpulsing Control
RCEN1A00	Recent Change — Emergency Service Number E911
RCER1A00	Recent Change — E911 Selective Routing
RCES1A00	Recent Change — ESCO
SASF1A00	System Audit/Local Choke
TRBL1A00	Line and Directory Number Translations
TTIA1A00	TTY Input Messages
TTOI1A00	TTY Input Messages
TTOJ1A00	TTY Output Messages
TVBL1A00	Translation Verification Messages
TVMN1A00	Translation Verification Messages/Main Control Program
YAHA1A00	Seizure and Release of E911 Register, Check E911 Local Choke
231-045-490	
COPR1A00	Unlink Call Register
CXKY1A00	Routes Input Data Link Orders to the Routine that Processes ACMOS Error Messages
CXMC1A00	Maintenance Control for Data Link
CXMS1A00	Maintenance Control for Data Link
CXOR1A00	Give Busy Message
DLLD1A00	Buffer, Block Loading
HMTL1A00	Release Register No Overtime Charging (AMA)
IRAC1A00	Check for ACMOS Feature
IRBA1A00	Update DAG Headcell
ORDL1A00	Check ADD ON, Give Reorder
RING1A00	Send New I/O Messages on MLG Retry
SAID1A00	Builds (Audits) Call Store Output Buffers and Related Printers, and Verifies Integrity
SARG1A00	Audit Dump
TRBD1A00	Conversions
TRBL1A00	DN Centrex Translations
TRCD1A00	Centrex Access Code
TRML1A00	Fetch DLG, MLG, and Hunt List LEN Number
TVBL1A00	Verify
YAHA1A00	Fetch, Release OR
YTTO1A00	Apply Audible Supscan

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
254-280-110	
DKAD	File Store Administration Program
254-280-111	
IOCPIMC1	IOCP Input Message Catalog
IOCPIMR1	IOCP Input Message Translator Routines
IOCPIMT1	IOCP Input Message Translator
IOCPINT1	IOCP Input/Output Initialization
IOCPIOC1	Input/Output Unit Controller
IOCPPMD1	Protocol Handler External Routines
IOCPPM11	Protocol Handler Output Routines
IOCPPM21	Protocol Handler Input Routines
IOCPPRC1	Protocol Handler Recovery Routines
IOCPPSC1	Protocol Handler Scheduler
IOCPIOH1	IOCP Input/Output Handler
IOCPMSR1	IOCP Output Message Save and Retrieval
IOCPOMC1	IOCP Output Message Data
IOCPOMS1	IOCP Output Message Starter
IOCPOMT1	IOCP Output Message Translator
IOCPPCH1	IOCP Print Call Handler
IOCPPDT1	Protocol Handler Tables
IOCPREA1	IOCP Channel Routine
IOCPSUB1	I/O Hardware Interface Subroutines
IOCPTIM1	IOCP Timing
IOCPUSR1	Client Service Routines
IOCPIMC1	Input Messages Catalog
254-280-112	
AMDX	Automatic Message Accounting (AMA) Data Transfer Program
DUAD	Data Unit Administration Program
DUAD01	DUAD Client Interface
DUAD02	DUAD Command Dispenser
DUAD03	DUAD TTY Input Message
DUAD04	DUAD TTY Output Message
DUAD05	DUAD Data Unit Controller Audit, Trouble Replacement, and Diagnostic Interface
TWRP	Backup Tape Writing Program (Paged)
TWRT	Backup Tape Writing Program (Core Resident)
254-280-210	
MACP	1A Processor Maintenance Control Program
MACPAUD1	MACP Audit
MACPGTIM	MACP G-Level Timing

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
MACPJCT1	MACP Job Control
MACPJSH1	MACP Job Scheduler
MACPRJOB	MACP Request Job Routines
MACPROUT	MACP Service Routines
MIRA	Manual Input Request Administration Program
254-280-211	
PAGS	Paging Program
PAGSUPER	PAGS Supervisor
254-280-212	
MCCM	Master Control Console Common Control and Monitor Program
MCCMEPS1	MCCM Program Store 1
MCCMSPS0	MCCM Program Store 0
254-280-213	
LIBR	Library Control Program
LIBRABRT	LIBR Abortion of Library System (Interrupt Monitoring)
LIBREXER	LIBR System Exerciser
LIBRINPT	LIBR Input Data Handler
LIBRLOAD	LIBR Load Library System From Tape
LIBRLVT1	LIBR Common Library Vector Table (1A Processor)
LIBRSTOP	LIBR Library System Terminator
LIBRTRP1	LIBR Common Traps Administrator (1A Processor)
254-280-220	
ABDG00	Auxiliary Bus Diagnostic Control Program
ADDG00	Auxiliary Data System Diagnostic Control Program
CCDG00	Central Control Diagnostic Control Program
DCON	Diagnostic Control Program
DCONMAIN	DCON (1A Processor Application)
DCONTABL	DCON Data Table
FSDG00	File Store Diagnostic Control Program
IODG00	Input/Output Diagnostic Control Program
MBDG00	Memory Bus Diagnostic Control Program
MCDG00	Master Control Console Diagnostic Control Program
MUDG00	Memory Unit Diagnostic Control Program
PDDG00	Power Distribution Diagnostic Control Program
254-280-230	
DRPP	Diagnostic Results Post-Processing Program
DRPPASUB	DRPP Common Subroutines (Utility, Raw Data)
DRPPCC	DRPP for Central Control
DRPPDUS	DRPP for Data Unit Selector

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
DRPPFS	DRPP for File Store
DRPPIO	DRPP for Input/Output
DRPPMC	DRPP for Master Control Console
DRPPMU	DRPP for Memory Unit
DRPPSSUB	DRPP Common Subroutines (Tape Access, Summary Processor)
DRPSUPR	DRPP Control Routines (Core Resident)
254-280-250	
GULP	Generic Utility Program
GULPIMMD	GULP Paged Immediate Verb Execution
GULPUTPP	GULP Paged Message Processor
GULPUTXP	GULP Paged Delayed Verb Execution
GULRUTCR	GULP Resident Control
254-280-260	
SADK	System Audit for File Store (Disk) Administration Program
SASR	System Audit of Stores Using Tape (Resident Portion)
SAST	System Audit of Stores Using Tape (Paged)
SAWS	Writable Store Audit Program (1A Processor)
SAWSBASE	SAWS Common Audit Functions
SAWSCMMN	SAWS Common Audit Functions
SAWSSUBR	SAWS Client Service Subroutines
254-280-270	
SUAP1A00	System Update for APS
SUFA1A00	System Update for File Store for APS
SUPL1A00	System Update Program
SYUP	System Update Program (Paged)
SYUR	System Update Program (Resident)
SYURPS20	System Update Program Store 20 (Resident Control)
254-280-310	
APFRILEV	APFR Interrupt Level
APMHCNTL	AP Message Handler Controller
APFRICON	APFR Interrupt Control
APFRBASE	APFR Base Level
AUFR	1A Processor Auxiliary Unit Fault Recovery Program
AUFRCNTL	AUFR Control (Program Store)
AUFRCPGM	AUFR Call Store Program
AUFRDFOR	AUFR Deferred Fault Recovery (Program Store)
AUFRILEV	AUFR Interrupt Level
AUFRTEST	AUFR Test Routines (Program Store)
CCFR	Central Control Fault Recovery Program
CCFRMAIN	CCFR Main Control

TABLE C (Contd)

SECTION-TO-PIDENT CROSS-REFERENCE

SECTION AND PIDENT	PIDENT NAME
CCFRTEST	CCFR Tests
CSFR	Call Store Fault Recovery Program
CSFRBASE	CSFR Code Essential to System Recovery Programs
CSFRNORM	CSFR Other System Recovery Program Code Including D-Level and Noninterrupt Recovery Routines
DUFR	Data Unit Fault Recovery Program
DUFRDFOR	DUFR Deferred Test Control Routines
DUFRDGNI	DUFR Diagnostic Interface Routines
DUFROFLN	DUFR Off-Line Routines
DUFRPCAU	DUFR Common Auxiliary Unit Service Routines
DUFRPCDU	DUFR Data Unit Selector/Data Unit Controller Software Removal/Restoral Routines
DUFRPCSB	DUFR Base Subroutines
DUFRSUBR	DUFR Nonbase Subroutines
DUFRTADM	DUFR Test Administration
DUFRTSTS	DUFR Test Routines
DUFRTTYI	DUFR TTY Interface Routines
FSFR	File Store Fault Recovery Program
FSFRDGN	FSFR Diagnostic Interfaces
FSFRDISK	FSFR Stop and Start Routines; Initialize and Restore File Store for and From Maintenance Pump; System Update Routines
FSFRSTAT	FSFR Internal Error Source Processing; Status Failure Report Processing; Short-Term Error Analysis Subroutines
PFLR	1A Processor F-Level Fault Recovery Program
PFLRPIIR	Common System's Peripheral Unit (PU) F-Level Filter, F-Level Fault Recovery for Master Control Console (MCC) and Input/Output Unit (IOU), Input/Output Processor (IOP), and Short-Term Error Analysis
PFLRBLMH	Base-Level Fault Recovery for IOU
PFLRDGNH	Base-Level Diagnostic Request Handler
PFLRRRCR	Collection of Subroutines for Use By PFLR and Other Maintenance Programs to Performs to Perform Diagnostic, Test, and Service Routines for MCC and IOU
PFLR PUMP	PUMP RAM Program to IOMP
PSFR	Program Store Fault Recovery Program
PSFRCSPG	PSFR Call Store Code for Use During E-Level Interrupt and When Called by PCRV
PSFRPSPG	PSFR Remaining System Recovery Code (Program Store)
IOPUMPPC	DDCMP RAM Program for PC
IOPUMPBX	BX.25 RAM Program for PC
254-280-320	
ERAP	1A Processor Error Analysis
ERIF	1A Processor Error Analysis Interface

▶TABLE D◀

PIDENT-TO-SECTION CROSS-REFERENCE (NOTE)

PIDENT	PIDENT NAME	SECTION
ABDG00	Auxiliary Bus Diagnostic Control Program	254-280-220
ADBN1A00	Multiport Control and Switching — Abandon and Answer	231-045-140
ADCI1A00	Conference Register Initialization	231-045-140
ADDA1A00	Multiport Control and Switching — Dialed Additions	231-045-140
ADDB1A00	Drop-Back Analysis	231-045-140
ADDG00	Auxiliary Data System Diagnostic Control Program	231-280-220
ADDX1A00	Dialed Additions for Centrex	231-045-455
ADDX1A00	Multiport Control and Switching — Dialed Additions for Centrex	231-045-140
ADLR1A00	Multiport Control and Switching — Action Requiring Filtering	231-045-140
ADPB1A00	Initial Peripheral Order Buffer Loading	231-045-140
ADPT1A00	Program Tag Report Analysis	231-045-140
ADUP1A00	Update Routines	231-045-140
ADUX1A00	Multiport Control and Switching — Update Routines for Centrex	231-045-140
AIDG1A00	Automatic Identification Outward Dialing	231-045-225
AIFR1A00	Automatic Identified Outward Dialing Fault Recognition	231-310-210
AIOD1A00	Automatic Identified Dialing	231-045-180
ALIT1A00	Automatic Line Insulation Test	231-045-235
AMAC1A00	AMA Data Accumulation	231-045-455
AMAC1A00	Automatic Message Accounting Data Accumulator	231-045-135
AMDX	Automatic Message Accounting (AMA) Data Transfer Program	254-280-112
AOVD1A00	Automatic Overload Control	231-045-100
APCI1A00	Automatic Trunk Maintenance System Processor Controlled Interrogation	231-045-235
APFRBASE	APFR Base Level	254-280-310
APFRICON	APFR Interrupt Control	254-280-310
APFRILEV	APFR Interrupt Level	254-280-310

Note: This table ***does not*** represent a program and pident listing for a complete office generic but lists only those programs and pidents that require description in accordance with the high-level functional nature of these sections.

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
APMHCNTL	AP Message Handler Controller	254-280-310
ATTT1A00	Remote Office Test Line	231-045-445
ATTT1A00	Remote Office Test Line	231-045-235
AUDSMDIO	Common Input/Output Audit	231-045-215
AUFR	1A Processor Auxiliary Unit Fault Recovery Program	254-280-310
AUFRCNTL	AUFR Control (Program Store)	254-280-310
AUFRCPGM	AUFR Call Store Program	254-280-310
AUFRDFOR	AUFR Deferred Fault Recovery (Program Store)	254-280-310
AUFRILEV	AUFR Interrupt Level	254-280-310
AUFRTEST	AUFR Test Routines (Program Store)	254-280-310
C01C1A00I	Incoming CCIS Trunk States	231-045-405
C02C1A00	Outgoing CCIS Trunk States	231-045-405
C03C1A00	CCIS-to-CCIS Trunk States	231-045-405
C04C1A00	CCIS-to-PTS Trunk States	231-045-405
C05C1A00	PTS-to-CCIS Trunk States	231-045-405
C06C1A00	CCIS PST ADC Failure Trunk States	231-045-405
CAMA1A00	Centralized Automatic Message Accounting	231-045-135
CCAD1A00	Customer Changable Speed Calling	231-045-140
CCDG00	Central Control Diagnostic Control Program	254-280-220
CCFR	Central Control Fault Recovery Program	254-280-310
CCFRMAIN	CCFR Main Control	254-280-310
CCFRTEST	CCFR Test	254-280-310
CCLT1A00	Supervisory Scan	231-045-110
CDIS1A00	Centralized Automatic Message Accounting Disconnect	231-045-135
CFGR1A00	Customer Facility Group Register Routines	231-045-455
CFUP1A00	Call Forward Usage Print	231-045-140
CGTB1A00	Carrier Group Alarm, Trunk Make Busy	231-045-235
CGTB1A00	Carrier Group Alarm, Trunk Make Busy	231-045-455
CHAT1A00	Peripheral Order Load Program for Change in Circuit	231-045-120

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
CHGD1A00	Scan Point Change Director	231-045-455
CHIT1A00	Peripheral Order Load Program for Change in Circuit	231-045-120
CIAL1A00	Alarms	231-045-405
CICB1A00	Change Back	231-045-405
CICM1A00	Common	231-045-405
CICO1A00	Change Over	231-045-405
CICP1A00	CCIS-to-PTS Routines	231-045-405
CICS1A00	Change in Circuit Subroutines	231-045-120
CIDF1A00	Office Recovery	231-045-405
CIIP1A00	CCIS Input Processing	231-045-405
CILS1A00	Link Security State Table	231-045-405
CIMA1A00	Manual Actions	231-045-405
CIOP1A00	CCIS Output Processor	231-045-405
CIOR1A00	CCIS Office Recovery	231-045-405
CIPC1A00	PTS-to-CCIS Routines	231-045-405
CIRA1A00	CCIS-to-CCIS and Shared Administration Routines	231-045-405
CIRN1A00	CCIS-to-CCIS and Shared Network Routines	231-045-405
CIRT1A00	CCIS Timing Routines	231-045-405
CITG1A00	Terminal Generic Program	231-045-405
CITI1A00	Terminal Initialization Program	231-045-405
CITQ1A00	Trunk Query	231-045-405
CITT1A00	CCIS Translation Integrity Check	231-045-405
CIXI1A00	External Interface Routines	231-045-405
CLID1A00	Calling Line Identification List Administration	231-045-170
CNCR1A00	Coin Control for RSS Program	231-045-130
CNLP1A00	Centrex Console Lamp Control Program	231-045-175
COCN1A00	Coin Control	231-045-130
COIN1A00	Coin Changing	231-045-130
COPR1A00	Report and Miscellaneous Subroutines	231-045-460
COPR1A00	Unlink Call Register	231-045-490

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
CORP1A00	Report and Miscellaneous Subroutines	231-045-155
CPBD1A00	Enable and Verify Bus Diagnostics	231-045-220
CPDG1A00	Central Pulse Distributor Diagnostics	231-045-220
CPDX1A00	Central Pulse Distributor Exercises	231-045-220
CPFR1A00	Central Pulse Distributor Fault Recognition	231-310-210
CPRX1A00	Central Pulse Distributor Routine Exercises	231-045-220
CSFR	Call Store Fault Recovery Program	254-280-310
CSFRBASE	CSFR Code Essential to System Recovery Program	254-280-310
CSFRNORM	CSFR Other System Recovery Program Code Including D-Level and Noninterrupt Recovery Routines	254-280-310
CTRF1A00	Customer Traffic Data	231-045-455
CX1X1A00	1xx Tandem Tie Line	231-045-455
CXBV1A00	Busy Verify on Lines and Trunks	231-045-180
CXDR1A00	Originating Digit Analysis for CTX	231-045-460
CXDS1A00	Disconnect Program	231-045-106
CXDX1A00	Central Data Link and Console Demand Exercise Program	231-045-255
CXIO1A00	Centrex Input-Output Program	231-045-175
CXIC1A00	Digital Analysis Trunk	231-045-106
CXIC1A00	Trunk Digit Analysis	231-045-460
CXIC1A00	Trunk Digit Analysis for Centrex Lines	231-045-455
CXIX1A00	IXX Tandem Tie Line Program	231-045-180
CXKY1A00	Centrex Group State Check Block Queue, Seize Console Register	231-045-175
CXKY1A00	Routes Input Data Link Orders to the Routines That Process ACMOS Error Messages	231-045-490
CXLO1A00	Line and Trunk Seizure of Centrex Attendant	231-045-175
CXMA1A00	Centrex Maintenance Program	231-045-225
CXMC1A00	Data Link Diagnostic Control	231-045-225
CXMC1A00	Maintenance Control for Data Link	231-045-490
CXMS1A00	Centrex Maintenance Supervisory Program	231-045-200

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
CXMS1A00	Centrex Maintenance Supervisory Program	231-045-225
CXMS1A00	Maintenance Control for Data Link	231-045-490
CXOR1A00	Give Busy Message	231-045-490
CXOR1A00	Originating Digit Analysis for Centrex	231-045-455
CXOR1A00	Originating Digit Analysis for Centrex	231-045-106
CXSF1A00	Centrex Simulated Facilities Program	231-045-180
CXSR1A00	Centrex Call Register Audit	231-045-215
CXTA1A00	Trunk Answering Night Service	231-045-175
CXTN1A00	Centrex Maintenance Diagnostic Program	231-045-230
CXTP1A00	Centrex Trunk Preemption Program	231-045-180
CXYH1A00	Seize and Release Routines and L, J, and T Bit Administration	231-045-106
CXYH1A00	Seize and Release Routines and L, J, and T Bit Administration for Centrex	231-045-155
DCNR1A00	RSS Dialing Connection	231-045-415
DCNT1A00	Dialing Connection	231-045-105
DCNT1A00	Dialing Connections Program	231-045-130
DCNT1A00	Dialing Connections Program	231-045-445
DCNT1A00	Dialing Connections/Check for Tandem or Dedicated E911 Trunks	231-045-460
DCON	Diagnostic Control Program	231-280-220
DCONMAIN	DCON (1A Processor Application)	254-280-220
DCONTABL	DCON Data Table	254-280-220
DCPBDGNC	Diagnostic Control for Peripheral Bus	231-045-220
DCTC1A00	DCT Change in Circuit	231-045-410
DCTI1A00	DCT Frame Inpulsing	231-045-410
DCTO1A00	DCT TTY I/O and Common Routines	231-045-410
DDDO1A00	Direct Distance Dialing Service Observing	231-045-245
DFMP1A00	Facility Maintenance Control	231-045-410
DIAL1A00	Diagnostic Interpreter	231-045-430
DISC1A00	Disconnect Program	231-045-460

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
DISC1A00	Disconnect Program	231-045-105
DITS1A00	Time Scan Junior Register Processing	231-045-105
DITS1A00	Time Scan Junior Register Processing Program	231-045-110
DKAD	File Store Administration Program	254-280-110
DLLD1A00	Buffer, Block Loading	231-045-490
DLUP1A00	ETS Dial Up Data Link Control	231-045-455
DMAPAPPL	Data Mapping Control and Linking	231-310-240
DOCT1A00	Dictionary Trouble Number Production	231-045-200
DPGE1A00	Dial Pulse Digit Generation	231-045-115
DPOP1A00	Dial Pulse Outpulsing Control	231-045-455
DPOP1A00	Dial Pulse Outpulsing Control Program	231-045-445
DPOP1A00	Dial Pulse Outpulsing Control Program	231-045-115
DRPP	Diagnostic Results Post-Processing Program	254-280-230
DRPPASUB	DRPP Common Subroutines (Utility, Raw Data)	254-280-230
DRPPCC	DRPP for Central Control	254-280-230
DRPPDUS	DRPP for Data Unit Selector	254-280-230
DRPPFS	DRPP for File Store	254-280-230
DRPPIO	DRPP for Input/Output	254-280-230
DRPPMC	DRPP for Master Control Console	254-280-230
DRPPMU	DRPP for Memory Unit	254-280-230
DRPPSSUB	DRPP Common Subroutines (Tape Access, Summary Processor)	254-280-230
DRPSUPR	DRPP Control Routines (Core Resident)	254-280-230
DSUB1A00	Distributor and Scanner Subroutines	254-045-120
DTST1A00	Dial Tone Speed Test	231-045-245
DUAD	Data Unit Administration Program	254-280-112
DUAD01	DUAD Client Interface	254-280-112
DUAD02	DUAD Command Dispenser	254-280-112
DUAD03	DUAD TTY Input Message	254-280-112
DUAD04	DUAD TTY Output Message	254-280-112

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
DUAD05	DUAD Data Unit Controller Audit, Trouble Replacement, and Diagnostic Interface	254-280-112
DUFR	Data Unit Fault Recovery Program	254-280-310
DUFRDFOR	DUFR Deferred Test Control Routines	254-280-310
DUFRDGNI	DUFR Diagnostic Interface Routines	254-280-310
DUFROFLN	DUFR Off-Line Routines	254-280-310
DUFRPCAU	DUFR Common Auxiliary Unit Service Routines	254-280-310
DUFRPCDU	DUFR Data Unit Selector/Data Unit Controller Software Removal/Restoral Routines	254-280-310
DUFRPCSB	DUFR Base Subroutines	254-280-310
DUFRSUBR	DUFR Nonbase Subroutines	254-280-310
DUFRTADM	DUFR Test Administration	254-280-310
DUFRTSTS	DUFR Test Routines	254-280-310
DUFRTTYI	DUFR TTY Interface Routines	254-280-310
DYLT1A00	Dial Phase Table	231-045-430
ECAC1A00	Customer Control and Status	231-045-455
ECIO1A00	Executive Control Input/Output	231-045-100
ECMP1A00	Executive Control Main Program	231-045-100
EDAS1A00	EDAS Interface	231-045-170
EDVF1A00	EDAS Translation Verification Routines	231-045-170
EMERRECV	Emergency Mode Control	231-310-340
ERAP	1A Processor Error Analysis	254-280-320
ERIF	1A Processor Error Analysis Interface	254-280-320
ESCA1A00	Call Administration and Translation Interfaces	231-045-460
ESMG1A00	Error Messages and Error Counts	231-045-460
FSDG00	File Store Diagnostic Control Program	254-280-220
FSFR	File Store Fault Recovery Program	254-280-310
FSFRDGN	FSFR Diagnostic Interface	254-280-310
FSFRDISK	FSFR Stop and Start Routines; Initialize and Restore File Store for and From Maintenance Pump; System Update Routines	254-280-310

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
FSFRSTAT	FSFR Internal Error Source Processing; Status Failure Report Processing; Short-Term Error Analysis Subroutines	254-280-310
GULP	Generic Utility Program	254-280-250
GULPIMMD	GULP Paged Immediate Verb Execution	254-280-250
GULPUTPP	GULP Paged Message Processor	254-280-250
GULPUTXP	GULP Paged Delayed Verb Execution	254-280-250
GULRUTCR	GULP Resident Control	254-280-250
HARVRECV	Peripheral Hardware Initialization	231-310-320
HICT1A00	HILO 4-Wire CDTI Tables	231-045-445
HLDI1A00	Disconnect Action for HILO 4-Wire Switching	231-045-445
HLIC1A00	Dialing Connection for 4-Wire Switching	231-045-445
HLOP1A00	Outpulsing Actions for HILO 4-Wire Switching	231-045-445
HMTL1A00	Release Register No Overtime Charging (AMA)	231-045-490
HMTL1A00	Hotel-Motel	231-045-180
ICAL1A00	Digit Analysis for Trunks	231-045-235
ICAL1A00	Digit Analysis for Trunks	231-045-455
ICAL1A00	Digit Analysis Trunks	231-045-445
ICAL1A00	Digit Analysis Trunks	231-045-460
ICAL1A00	Digital Analysis Trunks	231-045-105
ICRV1A00	Digital Analysis Trunk — Revertive	231-045-105
IOCPIMC1	Input Message Catalog	254-280-111
IOCPIMC1	IOCP Input Message Catalog	254-280-111
IOCPIMC2	Input Message Directory and Catalog	231-310-265
IOCPIMR1	IOCP Input Message Translator Routines	254-280-111
IOCPIMT1	IOCP Input Message Translator	254-280-111
IOCPINT1	IOCP Input/Output Initialization	254-280-111
IOCPIOC1	Input/Output Unit Controller	254-280-111
IOCPIOH1	IOCP Input/Output Handler	254-280-111
IOCPMSR1	IOCP Output Message Save and Retrieval	254-280-111
IOCPOMC1	IOCP Output Message Data	254-280-111

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
IOCPOMC2	Output Message Catalog and Text Phrases	231-310-265
IOCPOMS1	IOCP Output Message Starter	254-280-111
IOCPOMT1	IOCP Output Message Translator	254-280-111
IOCPOMT2	Miscellaneous Input/Output Translation Routines	231-310-265
IOCPPCH1	IOCP Print Call Handler	254-280-111
IOCPPDT1	Protocol Handler Tables	254-280-111
IOCPPM11	Protocol Handler Output Routines	254-280-111
IOCPPM21	Protocol Handler Input Routines	254-280-111
IOCPPMD1	Protocol Handler External Routines	254-280-111
IOCPPRC1	Protocol Handler Recovery Routines	254-280-111
IOCPPSC1	Protocol Handler Scheduler	254-280-111
IOCPREA1	IOCP Channel Routing	254-280-111
IOCPSUB1	I/O Handler Interface Subroutines	254-280-111
IOCPTIM1	IOCP Timing	254-280-111
IOCPUSR1	Client Service Routines	254-280-111
IODG00	Input/Output Diagnostic Control Program	254-280-220
IOPUMPBX	BX.25 RAM Program for PC	254-280-310
IOPUMPPC	DDCMP RAM Program for PC	254-280-310
IOTWRECV	Input/Output System Restoration Routine	231-310-320
IRAC1A00	Check for ACMOS Feature	231-045-490
IRBA1A00	Update Dag Headcell	231-045-490
IREC1A00	Interrupt Recovery Program	231-310-300
ISXS1A00	Step-By-Step Incoming Calls	231-045-445
ISXS1A00	Step-By-Step Incoming Calls	231-045-460
ISXS1A00	Step-By-Step Incoming Calls	231-045-105
ITCI1A00	CCIS Incoming Trunk Test Termination Program	231-045-445
ITIC1A00	CCIS Incoming Trunk Test	231-045-235
ITTT1A00	Incoming Trunk Test Terminations	231-045-445
ITTT1A00	Incoming Trunk Test Terminations	231-045-235
IVBD1A00	Verify Basic Digit Analysis	231-045-455

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
JPOB1A00	J-Level Disconnect for Step-By-Step Incoming Trunks	231-045-120
LIBR	Library Control Program	254-280-213
LIBRABRT	LIBR Abortion of Library System (Interrupt Monitoring)	254-280-213
LIBREXER	LIBR System Exerciser	254-280-213
LIBRINPT	LIBR Input Data Handler	254-280-213
LIBRLOAD	LIBR Load Library System From Tape	254-280-213
LIBRLVTI	LIBR Common Library Vector Table (1A Processor)	254-280-213
LIBRSTOP	LIBR Library System Terminator	254-280-213
LIBRTRP1	LIBR Common Traps Administration (1A Processor)	254-280-213
LLOD1A00	Line Load Control and Toll Network Protection	231-045-100
LLOD1A00	Line Load Control and Toll Network Protection	231-045-245
LTDK1A00	Local Test Desk Program	231-045-235
LTDK1A00	Local Test Desk	231-310-250
LULPUTIL	Local Utility Program	231-310-260
MACAADMN	1A ESS Switch Audit Scheduler	231-045-200
MACAADMN	1A ESS Switch Audit Scheduler	231-045-215
MACP	1A Processor Maintenance Control Program	254-280-210
MACPAUD1	MACP Audit	254-280-210
MACPGTIM	MACP G-Level Timing	254-280-210
MACPJCT1	MACP Job Control	254-280-210
MACPISH1	MACP Job Scheduler	254-280-210
MACPRJOB	MACP Request Job Routines	254-280-210
MACPROUT	MACP Service Routines	254-280-210
MACR1A00	Maintenance Control Program	231-045-200
MALM1A00	System Alarm	231-310-250
MARP	1A Processor Maintenance Restart Program	231-310-300
MARS	1A ESS Switch Maintenance Restart	231-310-300
MAUD1A00	Maintenance Audit	231-310-250
MBDG00	Memory Bus Diagnostic Control Program	254-280-220
MCAI	A-Level Interrupt	231-310-300

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
MCCM	MCC Common Control and Monitor Program	254-280-212
MCCMEPS1	MCCM Program Store 1	254-280-212
MCCMSPS0	MCCM Program Store 0	254-280-212
MCCP1A00	Master Control Center Program	231-045-235
MCCP1A00	Maintenance Control Center	231-310-250
MCDG00	MCC Diagnostic Control Program	254-280-220
MCTWADMN	MCC Administration	231-310-250
MDRO1A00	Message Detail Record Output	231-045-455
MFOP1A00	Multifrequency Digit Transmission	231-045-115
MFPR1A00	Multifrequency Transmitting Control — Load Tones in MFJR	231-045-115
MFTL1A00	Multifrequency Transmitting Control	231-045-445
MFTL1A00	Multifrequency Transmitting Control	231-045-460
MFTL1A00	Multifrequency Transmitting Control	231-045-115
MIRA	Manual Input Request Administration Program	254-280-210
MIRVRECV	Memory Integrity and Recovery	231-310-330
MUDG00	Memory Unit Diagnostic Control Program	254-280-220
MUMB1A00	Multiple Bit Scan	231-045-110
N4PL1A00	Network Path Hunt	231-045-120
NCIN1A00	Change in Network	231-045-120
NEGN1A00	Network Head Cell and Junctor List Audit	231-045-215
NEJR1A00	Junctor Translations	231-045-145
NETG1A00	Network Make Busy Routine	231-045-255
NMAP1A00	Network Map Administration	231-045-120
NMC1A00	Network Macro Expansions for Use by the CIN MACR	231-045-120
NMDP1A00	Network and Diagnostics	231-045-220
NMDT1A00	Line Bit Audit	231-045-215
NMEA1A00	EDAS/NM Interface	231-045-170
NMFA1A00	Network Fabric Routines	231-045-270
NMFL1A00	Network Failure Maintenance Action	231-045-270
NMGT1A00	Network Management	231-045-170

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
NMIN1A00	Network Management Indicators	231-045-170
NMLI1A00	Restore Cutoff Program	231-310-330
NMMP1A00	Network Management Maintenance Program	231-045-170
NMMX1A00	Network Matrix Routine Exercises	231-045-220
NMRF1A00	Network Management Fault Recognition Program	231-310-210
NMRR1A00	Network Management Reroute Control	231-045-170
NMTC1A00	Network Management Toll Code Blocking	231-045-170
NMTD1A00	Transmit Dynamic Overload Control Signals	231-045-170
NMTG1A00	Network Management Trunk Group Controls	231-045-455
NMTG1A00	Network Management	231-045-170
NSUP1A00	Enable Table Maintenance Routines	231-045-215
NTWK1A00	Network Transition Control Program	231-045-120
OFGT1A00	Operator Function — Miscellaneous to Switchboards and Desk	231-045-125
OFML1A00	Emergency Manual Line Program	231-045-125
OFNT1A00	Operator No-Test	231-045-125
OFTR1A00	Operator Functions Program	231-045-130
OFTR1A00	Toll Switch Recording	231-045-125
OGGT0000	Revertive Digit Reception	231-045-115
OGGT0000	Revertive Pulse Detection Scanning	231-045-110
OGLF1A00	Line Ferrod Scan	231-045-110
OGPC1A00	Panel Call Indicator Pulse Digit Generation	231-045-115
OGRVA00	Revertive Outpulsing Control	231-045-115
OGTC1A00	Outgoing Call Control Program	231-045-445
OGTC1A00	Outpulsing Control	231-045-460
OGTC1A00	Outpulsing Control	231-045-115
OGWN1A00	Start Pulsing Signal Detection Program	231-045-110
OPCI1A00	Panel Call Indicator (PCI) Outpulsing	231-045-115
ORDL1A00	Check Add On, Give Reorder	231-045-490
ORDL1A00	Digit Analysis for Lines	231-045-235
ORDL1A00	Originating Digit Analysis for Lines	231-045-455

▶TABLE D◀ (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
ORDL1A00	Digital Analysis Lines	231-045-105
PAGS	Paging Program	254-280-211
PAGSUPER	PAGS Supervisor	254-280-211
PAIRLOCL	Processor/Application Interface Routines	231-045-200
PCRVCONT	Processor Configuration Recovery/Control	231-310-320
PCRVPUMP	Processor Configuration Recovery Pump From Disk	231-310-320
PDDG00	Power Distribution Diagnostic Control Program	254-280-220
PFLR	1A Processor F-Level Fault Recovery Program	254-280-310
PFLRBLMH	Base Level Fault Recovery for IOU	254-280-310
PFLRDGNH	Base Level Diagnostic Request Handler	254-280-310
PFLRPIIR	Common System's Peripheral Unit F-Level, F-Level Fault Recovery for Master Control Console and Input/Output Unit, Input/Output Processor, and Short Term Error	254-280-310
PFLRPUMP	Pump RAM Program to IOMP	254-280-310
PFLRRRCR	Collection of Subroutines for Use by PFLR and Other Maintenance Programs to Perform Diagnostics, Test, and Routines for MCC and IOU	254-280-310
PGID1A00	Generic Identification and Compatibility Tables	231-310-280
PLIT1A00	Remote Automatic Line Insulation Test	231-045-235
PLUG1A00	Plugging Up Program	231-045-235
PMBT1A00	Precut Multifrequency Bylink Trunk	231-045-445
POMC1A00	Peripheral Order Buffer Audit	231-045-215
PPMP1A00	Plant Measurements Program	231-045-165
PSFR	Program Store Fault Recovery Program	254-280-310
PSFRCSPG	PSFR Call Store Code for Use During E-Level Interrupt and When Called by PCRV	254-280-310
PSFRPSPG	PSFR Remaining System Recovery Code	254-280-310
PSPD1A00	Permanent Signal-Partial Dial	231-045-105
PSTP1A00	Permanent Signal and Partial Dial Timing Program	231-045-105
PSXS1A00	Step-By-Step Timing	231-045-105
PTRF1A00	ETS Customer Pollable Traffic Data	231-045-455
PU011A00	PUC Diagnostic	231-045-430
PUBD1A00	Peripheral Unit Bus Diagnostic and Exercises	231-045-220

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
PUC01A00	PC State Control Module	231-045-430
PUC11A00	PUC State Control Module	231-045-430
PUC21A00	PUC State Control Module	231-045-430
PUC31A00	PUC State Control Module	231-045-430
PUC41A00	PUC State Control Module	231-045-430
PUC51A00	PUC State Control Module	231-045-430
PUC61A00	PUC State Control Module	231-045-430
PUC71A00	PUC State Control Module	231-045-430
PUC81A00	PUC State Control Module	231-045-430
PUCI1A00	PUC Initialization	231-045-430
PUCO1A00	PUC I/O Control	231-045-430
PUCR1A00	PUC Diagnostic Routines	231-045-430
PUCU1A00	PUC Unloader	231-045-430
PUDA1A00	PUC Data Analysis	231-045-430
PUDR1A00	PUC/DL Fault Recovery	231-045-440
PUDT1A00	PUC/DL Tables	231-045-440
PUEA1A00	PUC Error Analysis	231-045-430
PUFR1A00	PUC F-Level Recognition	231-045-430
PUFS1A00	PUC F-Scan	231-045-430
PUID1A00	PUC/DL Initialization	231-045-440
PUIO1A00	PUC/DL Input/Output	231-045-455
PUTY1A00	PUC/DL TTY Interface	231-045-440
QAPR1A00	Queue Administration and Processing	231-045-455
QARP1A00	QTL-Queue Administration and Processing	231-045-155
QCDL1A00	QTL-Queuing Data Link ACD	231-045-155
QCIA1A00	QTL-Customer Interface and Special Auditing Routines	231-045-155
QCIA1A00	Queue Customer Interface and Audit	231-045-455
QEDA1A00	QTL-Queue Entry and Destination Assignment Routines	231-045-155
QEDA1A00	Queue Entry and Destination Assignment	231-045-455
QEPR1A00	Peripheral Order Buffer Execution Program	231-045-120

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
QEXC1A00	Peripheral Order Buffer Execution Program	231-045-120
QSIF1A00	QTL-Queue State Information Features	231-045-155
QSIF1A00	Queue State Information Features	231-045-455
QTAL1A00	QTL-Audible, Disconnect, and Line Termination Routines	231-045-155
QTRK1A00	QTL-Terminate to Trunk Facility Subroutines	231-045-155
QTRK1A00	Terminate to Trunk Facilities	231-045-455
QURC1A00	Queuing for Recent Change Control	231-045-150
QWAT1A00	QTL-Queuing for WATS	231-045-155
QWAT1A00	Queuing for WATS	231-045-455
RADR1A00	Receiver Attachment Delay Report	231-045-445
RADR1A00	Receiver Attachment Delay Report Program	231-045-245
RAMP1A00	Recorded Announcement Machine Program	231-045-275
RCCH1A00	Recent Change Change Control	231-045-150
RCCX1A00	Recent Change: Centrex Common Block	231-045-455
RCEI1A00	Recent Change: EPSCS Customer Common Block	231-045-455
RCEN1A00	Recent Change: Emergency Service Number E911	231-045-460
RCER1A00	Recent Change E911 Selective Routing	231-045-460
RCES1A00	Recent Change — ESCO	231-045-460
RCFI1A00	Recent Change Format Interpreter	231-045-150
RCFV1A00	Recent Change: Call Forwarding	231-045-455
RCIB0000	Recent Change Interface Buffer	231-045-150
RCIE1A00	Recent Change Input Editor	231-045-150
RCIG1A00	Recent Change Initialization and Control	231-045-150
RCKI1A00	Recent Change Keyword Input	231-045-150
RCLI1A00	Recent Change: Line Translations	231-045-455
RCMU1A00	Recent Change Message Update	231-045-150
RCRL1A00	Recent Change: Route List Routing	231-045-455
RCSF1A00	Recent Change: Simulated Facilities	231-045-455
RCSI1A00	Recent Change Shared Information and Table Subroutines	231-045-150
RCTF1A00	Recent Change Translator Format Builder	231-045-150
RCTG1A00	Recent Change: Trunk Group	231-045-455

TABLE D (Contd)

PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
RCTS1A00	Recent Change Table Subroutines	231-045-150
RCTS1A00	Recent Change: Recent Change Table	231-045-455
RCUP1A00	Recent Change: Recent Change Update	231-045-455
RCVC1A00	Recent Change Validity Check	231-045-150
RCWL1A00	Recent Change Work List Processing	231-045-150
RCXD1A00	Recent Change: Centrex Digit Interpretation	231-045-455
RDCY1A00	Delayed Storage and Activation	231-045-150
RDIS1A00	RSS Disconnect	231-045-415
RESW1A00	RSS Reswitch	231-045-415
RING1A00	Ringing and Answer Detection	231-045-105
RING1A00	Send New I/O Messages on MLG Retry	231-045-490
RLTDK1A00	Remote Local Test Desk Program	231-045-235
RMSG1A00	ROB Loading and Administration	231-045-415
RNAD1A00	RSS Network Administration	231-045-415
ROBE1A00	ROB Execution	231-045-415
RONF1A00	ROB Failure	231-045-415
RRSP1A00	Special Ringing	231-045-105
RRTE1A00	RSS Message Routing	231-045-415
RSCN1A00	Digit Reception Scan	231-045-110
RSUB1A00	Recent Change Subrouting	231-045-150
RSUP1A00	RSS Supervision Report	231-045-415
RTAD1A00	RSS Terminal Administration	231-045-415
RTRF1A00	RSS Traffic	231-045-415
RVRC1A00	Revertive Pulse Generation (Digit Reception)	231-045-115
RVRC1A00	Revertive Pulse Generation (Digit Reception)	231-045-105
SACC1A00	Call Processing Audits	231-045-405
SACL1A00	Link Security Audits	231-045-405
SACT1A00	Cutover Program	231-045-215
SACT1A00	Cutover Program	231-045-255
SACV1A00	Receiver Scan Audit	231-045-215
SACX1A00	Centrex Register Audits	231-045-215

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
SADA1A00	Regenerated Constant Audit	231-045-215
SADK	System Audit for File Store (Disk) Administration Program	254-280-260
SADT1A00	System Audit Programs	231-045-215
SAHO1A00	Hopper and Fixed Length Queue Audit	231-045-215
SAIO1A00	Builds (Audits) Call Store Output Buffers and Related Pointers, and Verifies Integrity	231-045-490
SALTWORT	Translation Audit	231-045-215
SAMP1A00	Network and Map Audit	231-045-215
SANK1A00	Linkage Audit of Junior Register	231-045-215
SAQU1A00	Audit Variable Length Queue	231-045-215
SAQU1A00	Variable Length Queue and Timing List Audit	231-045-455
SARG1A00	Audit Dump	231-045-490
SARG1A00	Call Register Audit	231-045-455
SARG1A00	Call Register Audit	231-045-215
SASF1A00	System Audit/Local Choke	231-045-460
SASR	System Audit of Stores Using Tape (Resident Portion)	254-280-260
SASS1A00	System Audit, Supervisory Signaling	231-045-102
SAST	System Audit of Stores Using Tapes (Paged)	254-280-260
SASU0000	Supervisory Scan Data Tables Audit	231-045-215
SATS1A00	Expanded Enable Audit	231-045-215
SAWS	Writable Store Audit Program (1A Processor)	254-280-260
SAWSBASE	SAWS Common Audit Functions	254-280-260
SAWSCMMN	SAWS Common Audit Functions	254-280-260
SAWSLOCL	Writable Store Audit	231-045-215
SAWSSUBR	SAWS Client Service Subroutines	254-280-260
SCDG1A00	Scanner and Answer Bus Diagnostics	231-045-220
SCDX1A00	Scanner Demand Exercises	231-045-220
SCFR1A00	Scanner Fault Recognition Program	231-310-210
SCJT1A00	Scanner J and T Bit Control	231-045-102
SCRX1A00	Scanner Routine Exercises	231-045-220

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
SIRE	System Interrupt Recovery	231-310-300
SOBR1A00	Multiline Service Observing	231-045-245
SRTT1A00	Station Ringer — Touch-Tone Test Program	231-045-235
SSCD1A00	Supervisory Signal Change Director	231-045-102
SSCN1A00	Supervisory Signal Control	231-045-102
SSDL1A00	Supervisory Signal Delivery	231-045-102
SSPL1A00	Supervisory Signaling Path Locator	231-045-102
SUAP1A00	System Update for APS	254-280-270
SUFA1A00	System Update for File Store for APS	254-280-270
SUPL1A00	System Update Program	254-280-270
SURG1A00	Ring Tip Supervisory Scan	231-045-110
SURT1A00	Ring Tip Supervisory Scan Initialization	231-045-215
SUSC0000	Supervisory Scan	231-045-105
SXSI0000	Step-By-Step Incoming Dial Pulse Detection	231-045-110
SYPI	System Performance Indicator	231-045-245
SYSRBASE	System Reinitialization Base Recovery	231-310-310
SYSRCONT	System Reinitialization Control	231-310-310
SYSRCSPS	System Reinitialization Call Store/Program Store Configuration	231-310-310
SYSRTPAD	System Reinitialization Tape Paging Administration	231-310-310
SYUP	System Update Program (Paged)	254-280-270
SYUR	System Update Program (Resident)	254-280-270
SYURPS20	System Update Program Store 20 (Resident Control)	254-280-270
TAND1A00	Tandem Connections Program	231-045-455
TAND1A00	Tandem Connect	231-045-445
TAND1A00	Tandem Connection Program	231-045-160
TAUP1A00	Data Terminal Frame Status Word and Enable Audit	231-045-405
TBTF1A00	Through Balance Testing Facility	231-045-235
TBTF1A00	Through Balance Testing Facility	231-045-445
TERA1A00	Trunk Error Analysis Program	231-045-230
TFCL1A00	General Traffic Data Collection	231-045-165
TFCL1A00	Traffic Count Collection	231-045-455

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
TFPT1A00	Traffic Data Printing	231-045-165
TFQR1A00	Quarter-Hour Traffic Data Collection	231-045-165
TFQR1A00	Quarter-Hour Traffic Data	231-045-455
TLTA1A00	Trunk and Line Test Panel (A)	231-310-250
TLTA1A00	Trunk and Line Test Panel Part A	231-045-235
TLTA1A00	Trunk and Line Test Panel Program Part A	231-045-445
TLTB1A00	Trunk and Line Test Panel Part B	231-045-235
TLTB1A00	Trunk and Line Test Panel Program Part B	231-045-445
TLTB1A00	Trunk and Line Test Panel (B)	231-310-250
TLTC1A00	Trunk and Line Test Panel Part C	231-045-235
TLTC1A00	Trunk and Line Test Panel Program Part C	231-045-445
TLTC1A00	Trunk and Line Test Panel (C)	231-310-250
TLTD1A00	Trunk and Line Test Panel Part D	231-045-235
TLTD1A00	Trunk and Line Test Panel Program Part D	231-045-445
TLTD1A00	Trunk and Line Test Panel (D)	231-310-250
TLTE1A00	Trunk and Line Test Panel Part E	231-045-235
TLTE1A00	Trunk and Line Test Panel Program Part E	231-045-445
TLTE1A00	Trunk and Line Test Panel (E)	231-310-250
TMAC1A00	Trunk Maintenance Control Program	231-045-230
TNDC1A00	Centralized Automatic Message Accounting Diagnostic Program	231-045-230
TNDN1A00	Trunk Maintenance Diagnostic Program	231-045-230
TNHC1A00	HILO CAMA Diagnostic Program	231-045-445
TNHS1A00	HILO Service Circuit Diagnostic Program Part 1	231-045-445
TNHT1A00	HILO Trunk Circuit Diagnostic Program	231-045-445
TNHV1A00	HILO Service Circuit Diagnostic Program Part 2	231-045-445
TNHW1A00	HILO Interprocessor Trunk Diagnostic	231-045-445
TNKC1A00	Trunk and Service Circuit Maintenance Control	231-045-230
TNLS1A00	Trunk List Programs	231-045-230
TNTD1A00	Combined Channel Unit Diagnostics	231-045-410
TODA1A00	Ringing and Tone Plant Diagnostics	231-045-275

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
TOMK1A00	Ringing and Tone Plant Monitor and Exercises	231-045-275
TOPR1A00	Toll Operator Signaling	231-045-160
TRANCOMN	Translation Program	231-045-145
TRBD1A00	Basic Digit Analysis and Conversion	231-045-455
TRBD1A00	Conversions	231-045-490
TRBD1A00	Translation Routines — Basic Digit Analysis and Conversion	231-045-145
TRBL1A00	Basic Line and Directory Number	231-045-455
TRBL1A00	Line and Directory Number Translations	231-045-460
TRBL1A00	Translation Routines — Basic Line and Directory Number	231-045-145
TRBL1A00	Directory Number Centrex Translations	231-045-490
TRBT1A00	Basic Trunk Translations	231-045-455
TRBT1A00	Translation Routines — Basic Trunk	231-045-145
TRCD1A00	Centrex Access Code	231-045-490
TRCD1A00	Centrex Digit Analysis	231-045-455
TRCD1A00	Translation Routines — Centrex Digit Analysis	231-045-145
TRCE1A00	Call Trace	231-045-155
TRCL1A00	Translation Routines — Centrex Line and Directory Number	231-045-145
TRCT1A00	Centrex Trunk	231-045-455
TRCT1A00	Translation Routines — Centrex Trunk	231-045-145
TRLC1A00	Translation Routines — Line Cutover	231-045-145
TRML1A00	Fetch DLG, MLG, and Hunt List LEN Number	231-045-490
TRML1A00	Translation Routines — Multiline Hunt Arrangement	231-045-145
TRUR1A00	Translation Routines — Universal Subroutines	231-045-145
TSPS1A00	Traffic Service Position System Program	231-045-125
TSPS1A00	Traffic Service Position System Program	231-045-160
TTIA1A00	TTY Input Message Directory and Catalog	231-310-265
TTIA1A00	TTY Input Messages	231-045-460
TTOA1A00	TTY Output Message Catalog	231-310-265
TTOB1A00	TTY Output Message Catalog	231-310-265

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
TTOC1A00	TTY Output Message Catalog	231-310-265
TTOD1A00	TTY Output Message Catalog	231-310-265
TTOE1A00	TTY Output Message Catalog	231-310-265
TTOF1A00	TTY Output Message Catalog	231-310-265
TTOH1A00	TTY Output Message Catalog	231-310-265
TTOHI1A00	TTY Output Message Catalog	231-310-265
TTOI1A00	TTY Output Message Catalog	231-310-265
TTOI1A00	TTY Output Messages	231-045-460
TTOJ1A00	TTY Output Message Catalog	231-310-265
TTOJ1A00	TTY Output Messages	231-045-460
TTOK1A00	TTY Output Message Catalog	231-310-265
TTOL1A00	TTY Output Message Catalog	231-310-265
TTOM1A00	TTY Output Message Catalog	231-310-265
TTON1A00	TTY Output Message Catalog	231-310-265
TTOO1A00	TTY Output Message Catalog	231-310-265
TTOP1A00	TTY Output Message Catalog	231-310-265
TTPP1A00	TTY Output Pool Phrases	231-310-265
TTWK1A00	TTY Work Register	231-310-265
TTXX1A00	TTY Output Messages	231-045-455
TTYM1A00	TTY Input Translation	231-310-265
TVBD1A00	Translation Data Verification Message — Basic Digit Analysis	231-045-145
TVBL1A00	Translation Verification Messages — Basic Line and Directory Number	231-045-145
TVBL1A00	Translation Verification Messages	231-045-460
TVBL1A00	Verify	231-045-490
TVBL1A00	Verify Basic Line and Directory Number	231-045-455
TVBT1A00	Translation Data Verification Messages — Basic Trunk	231-045-145
TVCD1A00	Translation Data Verification Messages — Centrex Digit Analysis	231-045-145
TVCL1A00	Translation Data Verification Messages — Centrex Line	231-045-145
TVMN1A00	Translation Data Verification Messages — Main Control	231-045-145

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PIDENT-TO-SECTION CROSS-REFERENCE

PIDENT	PIDENT NAME	SECTION
TVMN1A00	Translation Verification Messages/Main Control Program	231-045-460
TWRP	Backup Tape Writing Program (Paged)	254-280-112
TWRT	Backup Tape Writing Program (Core Resident)	254-280-112
TXFR1A00	Call Forwarding Service	231-045-140
TXFR1A00	Temporary Transfer	231-045-455
WAIT1A00	Call Waiting Program	231-045-140
WQUE1A00	Queue Administration	231-045-445
WQUE1A00	Queue Administration	231-045-155
YAHA1A00	Fetch, Release OR	231-045-490
YAHA1A00	Seize and Release Routines and L-, J-, and T-Bit Administration	231-045-155
YAHA1A00	Seizure and Release of E911 Register, Check E911 Local Choke	231-045-460
YAHA1A00	Seize and Release Routines, L-, J-, T-Bit Administration	231-045-455
YCLK1A00	Register Linking Routine	231-045-155
YFDA1A00	Scan of Signal Master Scanner Point	231-045-155
YFTO1A00	Incoming Trunk to Busy	231-045-235
YFTO1A00	Incoming Trunk to Busy, Overflow, or Special Service Circuit	231-045-155
YFTO1A00	Incoming Trunk to Busy — Overflow or Special Service Circuit	231-045-105
YMRG1A00	Miscellaneous Register Subroutine and Tables	231-045-155
YRGD1A00	Trunk Guard Timing	231-045-105
YTTO1A00	Apply Audible Supscan	231-045-490
YTTO1A00	Originating Line to Busy, Overflow, or Special Service Circuit	231-045-155
YTTO1A00	Originating Line to Busy — Overflow or Special Service Circuit	231-045-105
ZERO1A00	Zeroing	231-045-155