PROGRAM ADDRESS INTERPRETATION GUIDE

DESCRIPTION

NO. 4 ELECTRONIC SWITCHING SYSTEM

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INTRODUCTION

1.01 This section describes the address spectrum of No. 4 ESS in terms of storage devices. It reviews the aids to relative and absolute address determination and gives examples of converting from one to the other. Determination of an address (either relative or absolute) from a symbolic name is also reviewed.

1.02 Whenever this section is reissued, the reasons for reissue will be listed in this paragraph.

Unless otherwise specified, all numbers and mathematical manipulations in this section will be presented in base 8 (octal). References to bit numbers will be given in base 10 (decimal).

2. NO. 4 ESS ADDRESSING

2.01 Data is loaded into the machine via tapes. This is true of both the generic program and the office data assembler (ODA), network management (NM) pages, and traffic tapes. This data is loaded into call store (CS), program store (PS), and file store (FS). Additional tapes containing library programs to be loaded into PS K-Code 36, and trouble locating procedure (TLP) tapes are available.

2.02 Figure 1 shows the memory spectrum and related K-Codes for PS and CS. In the next section, the mapping of this spectrum into the physical units will be discussed. It should be noted that if the office does not contain the full complement of K-Codes for CS and PS, not all of the address spectrum will be available.

2.03 In general, PS is loaded from the generic tape. Most CS loading takes place from

the ODA tape although some sections are loaded from the generic tape.

2.04 Portions of the generic load tape and the associated data tapes (parts of ODA and all of NM) are loaded into FS. The FS address spectrum is shown in Fig. 2. When given a numerical value with no supporting information, it is not possible to determine whether it is a core address or a file store address.

3. MAPPING ADDRESSES TO EQUIPMENT

3.01 In No. 4 ESS, a 22-bit address is used for CS and PS. CS addresses are defined as follows:

- Bits 0-14 = Data location address
- Bit 15 = Module
- Bits 16-20 = K-Code
- Bit 21 = 0 = Community select bit (not sent to stores).

PS addresses are defined in the following manner:

- Bit 0 = Module (gated to bit 15 before accessing stores)
- Bits 1-15 = Data location address (gated to bits 0-14 before accessing stores)
- Bits 16-20 = K-Code
- Bit 21 = 1 = Community select bit (not sent to stores).

3.02 FS addresses are 23 bits in length. Some programs display bit 23 (24th bit) equal to one to denote an FS address. Bit 22 is the community select bit. Bits 0-4 specify a particular word in a sector. Bits 5-21, when converted to 5 decimal digits, specify the disk and face, track, and sector to be accessed (Fig. 3).

4. AIDS TO ADDRESS INTERPRETATION

4.01 There are several documents to aid the user in converting to and reverting back from absolute and relative addresses. Several of the documents also contain information concerning the definition and/or contents of the storage location. The documents are:

(a) Generic loader map

(b) Library program loader map

(c) Cross-reference listings (Datapool and PRs)

(d) Equivalence cross-reference listing (Datapool)

(e) ODA functional listing

(f) ADDRINDX.

A. Generic Loader Map

4.02 The generic loader map is an output of the loader program. It is a program which is used in the program development process to merge all individual pidents into an executable generic program.

4.03 This document describes the locations of generically loaded information (information that is the same for every office using a specific generic issue). The descriptions of these locations are found in PRs. The subdivisions of the loader map include:

(a) Pident map (Fig. 4)

(b) LDR (Loader) known symbols map (Fig. 5)

(c) Paged program information (Fig. 6)

(d) Address space map (Fig. 7)

(e) Available space map (Fig. 8)

(f) Patches by pident map (Fig. 9)

(g) Patches by section map (Fig. 10)

(h) TV (Transfer Vector) address map (Fig. 11).

B. Library Program Loader Map

4.04 Library programs are tape programs which are read into PS K-Code 36 for execution (this results in their addresses falling between 17400000 and 17577777). Section 254-280-213 describes the generic library control program (permanently loaded).

4.05 Each library tape has a library program loader map delivered with it. The area configured for load of this tape is PS K-Code 36 and the library vector tables only.

4.06 This loader map consists of an abbreviated version of the generic loader map. It contains the following maps:

(a) Pident map (Fig. 4)

(b) Address space map (Fig. 7)

(c) Patches by pident map (Fig. 9).

C. Cross-reference Listings (Datapool and PRs)

4.07 At the end of each Datapool library and PR, a list of symbol references and a list of macros are provided. The symbol cross-reference list (Fig. 12) is identified by the VALUE column. A separate list of macros is provided following the symbol references. Instead of a VALUE column, the macro list contains a COUNT column. This column provides a count of the number of times a macro is used in a given pident or Datapool library. With the exception of the COUNT column, the information in the macro list is identical to the information in the symbol list.

D. Equivalence Cross-reference Listing (Datapool)

4.08 This is a numerically ordered listing in the back of each Datapool library. It lists each symbol that has its VALUE field set to a numerical value. For storage locations, this numerical value is the address. For items, it may be the absolute address or the relative address. For equivalences (EQU pseudo - op defined), it is the equivalent value. Figure 13 is an example of this listing.

E. ODA Functional Listing

4.09 The ODA functional listing, an output of the ODA (Office Data Assembler) process, is a hard copy listing of the office-dependent data contained in a particular office. A copy of the functional listing is delivered with the ODA tape. Since this data changes (through recent changes), it is advised that the data verification system (VER input verb) and/or generic utilities (DUMP input verb) be used to determine the data in the office, rather than this listing.

F. ADDRINDX

4.10 Software problems incurred after the issue of a generic program are corrected by overwriting instructions or data in accordance with established software change procedures. The ADDRINDX is an accumulative listing of all overwrites made since the previous program issue. The listing is issued with each Software Change Procedure (SCP) package.

4.11 The entries in the listing are arranged numerically according to the beginning and end address of the overwrite issued. Figure 14 is a page from the ADDRINDX. Some of the key information given is as follows:

(a) The range of addresses changed

(b) The date the overwrite was issued

(c) The pident affected by the overwrite

(d) The CRNUM (Correction Report Number).

5. ABSOLUTE ADDRESS TO RELATIVE ADDRESS CONVERSION

5.01 This type of conversion is required to get from machine generated information to a description of the referenced data. Generally, the address is retrieved from a printout or display in octal form. Using the output manual (OM), this BSP, or TOP (Task Oriented Practices) information, the printout or display can be interpreted.

5.02 In general, absolute address to relative address conversion is done to access a PR. This makes the process more meaningful for PS than for CS or FS. However, it is sometimes necessary to know which word of a structure in FS or CS is being referenced. The difference in the method relates to whether or not the data was loaded into the address from tape (ie, whether or not the data in the address appears in the generic loader map).

USING THE LOADER MAP

5.03 A large amount of loaded data falls into PS. Most of the FS data, diagnostic programs, are used in PS and any address will be done from the PS address. Some CS and FS addresses will be directly resolvable using the loader map. The

techniques used will be the same as those used to determine a PS absolute address. Therefore, the following description will assume a PS address.

5.04 Programs found in PS fall into three catagories:

(1) Fixed loaded programs

(2) Paged programs

(3) Library client programs.

5.05 The generic loader map address space map and ADDRINDX are the key to determining which program category an address falls into. Basically, if the address falls into an address range covered in the address space map, it refers to data in a fixed loaded pident. If it does not, the address could be in a library program, a paged program, or a patch area. If the address is found in the available space map, some program is malfunctioning and assistance is required.

5.06 If the address does not appear in the loader map (generic or library tape) or ADDRINDX, see Section 6, using Datapool, for techniques to use.

FIXED LOADED AND LIBRARY CLIENT ABSOLUTE ADDRESS TO RELATIVE ADDRESS COMPUTATION

5.07 Given an absolute address, the following method should be used to determine the relative address. Using the given address, index the address space map and ADDRINDX. If the address is in the ADDRINDX, PECC must be called for assistance. Locate the address that is both closest to and smaller than the address you are looking for. The address just found is the beginning address of the associated pident and strip. Using octal arithmetic, subtract the beginning address from the given absolute address. The result will be the relative address within the pident.

5.08 The following examples should clarify this procedure:

Example 1: PS (or CS) Program Address

(a) Find the start address of the pident and the pident name. The given address is 17341173. Since 17341173 is less than 17400000, use the generic loader map. ***(NOTE:*** If the address was larger than 17400000, this would indicate a library program. The library program loader map would be used to locate the address and associated pident, using the same procedure as with fixed loaded data.) The address space map (Fig. 15) reveals that 17341044 is the closest address that is less than the given address. To insure that the address is within the range specified by this entry, octally add the beginning address and the OSIZE (octal size). 17341044 + 413 = 17341457. This manipulation shows that the given address does indeed fall within this range. The pident is therefore, TNFRISAD strip GE.

(b) Compute the relative address.

17341173 = machine generated address

-17341044 = beginning address of pident, strip

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127 = relative address within pident, strip.

(c) With this relative address, index PR TNFRISAD strip GE and analyze the data associated with this address.

Example 2: Fluke Address

(a) The given address is 10007352 (***NOTE: Not a library program address.) The address is not in the address space map of the generic loader map.***

(b) Turning to the available space map, the address falls within the entry 100007350 range of available addresses. It is therefore a fluke and requires PECC aid to resolve the problem.

(c) If the address is not in either of these maps (and is not a library program address), see the paragraphs concerning Paged Programs and Using Datapool.

Example 3: Disk Address, Loaded Data

(a) Find the start address and the related pident. The address is 7125527 and is an FS address.

The address space map (Fig. 7) shows that the address is in pident MUDG97 strip AB. The beginning address of this pident is 7125522. The relative address within this pident would be 5 (7125527 - 7125522 = 5).

PAGED PROGRAMS

5.09 Addresses relating to paged programs fall within the areas PG1PAGEMTCE, PG1PAGECDGN, PG1PAGEGUTL, and PG4PAGEMTC3. The size and address of PG1PAGEMTCE, PG1PAGECDGN, and PG1PAGEGUTL are currently defined in library P1AMEM (Fig. 16). PG4PAGEMTC3 is defined in library NO4MEM. The layout of a page is shown in Fig. 17.

5.10 To determine the relative address within a paging area, use the following procedure:

(a) Determine which paging area the given address is in.

(b) Octally subtract the beginning address of this area from the given address.

(c) The result is the relative address within the paging area.

The following examples should clarify the procedure relating to paged programs:

Example 1: Address is in a Paged Program

(a) Determine that the program is a paged program. The given address is 14344041. Consulting the address space map and the available space map of the generic loader map, the address is not found in either. Consulting the Datapool equivalence cross-reference listing of library P1AMEM (Fig. 18), the next lower address belongs to symbol PG1PAGECDGN (address 14344000).

(b) A MAC Control Memory dump was output with your interrupt printout. Using Fig. 19 and the interrupt printout, determine the paging class, program, and page.

(c) The relative address within the paging area can be computed by octally subtracting the beginning address of the paging area from the given address (14344041 - 14344000 = 41). The result is the relative address within the paging area.

(d) Find the corresponding class, program, and page in the paged program information map (Fig. 20) of the generic loader map with the information obtained in Step b.

(e) Add the relative address within the paging area to the beginning disk address of the page (Fig. 20). This would yield 7473672 + 41 = 7473733. This number should be matched against the disk addresses for the PGSECTs and SUBs to find the beginning address of a PGSECT or SUB that is nearest to, yet smaller than the address obtained above. In this case it is in a PGSECT with a beginning address of 7473730. To obtain the relative address within the PGSECT, subtract 7473730 from 7473733 which is equal to 3. Therefore, the address referred to is word 3 of PGSECT ERAPIMOR (ERAP.CN).

6. USING DATAPOOL

6.01 As stated in the introduction to this section, relative addresses are not as important for nonloaded data as for loaded data. However, the identify of the structure referred to in PS, CS or FS and access to its item layouts and equivalences is important.

6.02 To determine the symbolic name(s) associated with an address not found in the loader map, the Datapool cross-reference listings should be used. In general, the recommended method is to:

(1) Find the address in question in a Datapool memory library equivalence cross-reference listing (NO4MEM or P1AMEM).

(2) Find the symbolic name that corresponds to that address.

(3) The Datapool master index should then be accessed to determine the defining library.

(4) The defining library symbol cross-reference listing will reveal the defining page and line number.

(5) This page and line number should be referenced to obtain the required information.

A few words of caution and explanation will make this much easier:

(a) There are several Datapool libraries in each office. Each library is defined on a functional basis.

(b) It is necessary to locate both the symbol cross-reference and the equivalence cross-reference listings in each of the memory defining libraries (P1AMEM and NO4MEM). Section 254-280-010, Datapool Documents, describes these listings.

(c) Some addresses are allocated by ODA. If it is suspected that the data in question is office-dependent data (ODD), the ODA functional listing should be consulted.

6.03 The problem in question is to find out which memory structure is defined by an address. Start with both memory allocation listing equivalence cross-reference listings (P1AMEM and NO4MEM). If the address is listed, copy all symbolic names at that equivalence value that begin with a letter in both libraries. If the address is not listed, find the next lowest address which is listed and copy all of its symbolic names. Throw out any names that begin with QQ. (Start looking for next lower addresses if this eliminates everything that has been listed.)

6.04 The printout or display information has identified the address as PS, FS or CS. It is important to know which classification the address is, due to the overlap of FS on core addresses. In general, FS addresses have IDTAG= specified for them in the ATTRIBUTES AND REFERENCES section of the symbol cross-reference listing. If there is more than one name, look up the symbol definition. The name defined without OVERLAY prefixed to the type of structure is the main memory allocation definition. The use of the memory could be either its original definition or any of its overlays. An ODA= indication under ATTRIBUTES AND REFERENCES indicates that office-dependent data is loaded here.

6.05 The relative address within a memory area is computed as follows:

given address
-start address of structure
relative address within structure

This information may be misleading on tables and scatables and some engineered memory (such as call registers, trunk registers, etc). The whole memory allocation is referred to by one name. In the symbol cross-reference list, under ATTRIBUTES AND REFERENCES are two entries, N= and S=, for tables and scatables. N= refers to the number of subdivisions of words in a particular table or scatable. S= refers to the number of words per subdivision in the table or scatable.

NOTE: N= and S= are displayed in octal form in cross-reference sections; in symbol layout sections, the same information will be displayed in decimal form (Fig. 25, 28).

This information will be particularly useful when trying to determine which item in a table or scatable is the proper one for a given address. To find the relative address in a substructure, determine the start address of the substructure. Then octally subtract the start address of the substructure from the given address. This yields the relative address within the substructure.

6.06 Relative addresses within substructures are often useful in determining which items apply to a specific address.

6.07 The following examples should clarify this procedure:

Example 1: Finding a Structure and Its Items

(a) The address is a PS address and is 14344000.

(b) Figures 17 and 20 are pages from the equivalence cross-reference listings for P1AMEM and NO4MEM memory allocation listings. The NO4MEM library does not contain the PS address of interest. P1AMEM points to PG1PAGECDGN as the related symbol.

(c) Figure 22 shows the Datapool master index reference for PG1PAGECDGN. This index identifies P1AMEM as the defining library. Figure 16 is a page from the symbol cross-reference

listing for library P1AMEM. According to this listing, PG1PAGECDGN is defined on page 83, line 5. Figure 23 verifies that the symbol is defined at that location.

Example 2: Determining the Relative Address in a Scatable

(a) The given address is 73417. Figure 24 shows that the next lowest address is assigned to symbol LI1EXECSTAT (a check of NO4MEM would also be made, but is omitted here for brevity). Its address is 73401.

(b) Figure 25 shows that LI1EXECSTAT is defined in library P1AMEM. Figure 26 is a page from the symbol cross-reference section of P1AMEM. This page indicates that the symbol is defined on page 59, line 18. Figure 27 is page 59 of P1AMEM. This page reveals that the symbol in question is a scatable made up of 8 tables, each being 5 words long. Each table is an exact copy of the other.

(c) To find the layout of this symbol, it would be necessary to enter the Datapool master index (Fig. 24). The RERERENCES column of this index indicates that the symbol is referenced in library P1ALAY.

(d) The symbol reference section of P1ALAY (Fig. 28) would then be referenced to determine the page and line number of its reference. In this case it is page 170, line 17.

(e) Figure 29 is page 170 of library P1ALAY. Lines 17 through 40 give the layout of all 5 words in the table.

(f) To determine which of these items apply, find the relative address in LI1EXECSTAT.

73417 = given address

-73401 = start address of LI1EXECSTAT

16 = octal 16 = decimal 14.

(g) From the definition of LI1EXECSTAT, there are 8 tables of 5 words each. Then, word 14 is word 4 (5th word) of the third table. Therefore, item LI1EXPDTA (Fig. 28) should be used to interpret data.

7. RELATIVE ADDRESS TO ABSOLUTE ADDRESS CONVERSION

FIXED LOADED PROGRAMS

7.01 When an absolute address is required and the information given is the pident name, strip name, and the relative address within the pident, the following procedure should be utilized:

(a) Obtain the absolute address of the beginning of the pident by accessing the alphabetically arranged patches by pident map (Fig. 13).

(b) Octally add the beginning address of the pident to the relative address given. This will yield the absolute address desired.

SYMBOL NAME TO ADDRESS CONVERSION

7.02 There are a few types of symbols for which an address equivalence might be needed:

(a) GLOBAL/EXTERNAL/PUBLIC/DIRECT

(b) Local label

(c) Storage location.

A. GLOBAL/EXTERNAL/PUBLIC/DIRECT

7.03 In most cases, the pident in which a GLOBAL/EXTERNAL/PUBLIC/DIRECT symbol is resident can be found by analyzing the first four letters of the symbol name. This is because in some cases the first four letters of the pident and the first four letters of the symbol are the same. Sometimes this is not very helpful. Under these circumstances, the LDR known symbols of the generic loader map can be used to find the pident in which a GLOBAL or PUBLIC symbol resides.

7.04 Find the required symbol in the alphabetically arranged LDR known symbols map. The address of the symbol is revealed under the ADDRESS column. The pident in which the symbol

resides may also be determined from the LDR known symbols map.

B. Local Label to Address

7.05 The easiest way to find a local address is to use the symbol cross-reference listing of the pident (the one with the first column labeled VALUE). Find the symbol in this list.

7.06 The entry under VALUE is the relative address within the pident or the pident and strip of the symbol (a strip relative address will have two alphabetic characters to the right of the number; these form the strip name). The page and line number on which this relative address appears is under DEF/REF.

C. Symbol to Storage Address

7.07 Given a symbol, look closely at the storage symbol name. The first three letters give the identity of the defining document.

(a) letter letter number (ie, PG1..., PG4...) or number letter letter (ie, 4RC..., 1I0...)

where number is 1 or 4 (only) use Datapool.

(b) Any other combination, use the cross-reference listing of the PR.

7.08 Regardless of the listing used, the technique is the same. Use the symbol cross-reference listing to locate the symbol name. The VALUE column gives its defined address. However, if the symbol is an item (TYPE = I or P) the address may not be the address where the symbol is used; it may be a relative address defined on a block of storage. (These addresses are extremely small, in the range 0 to 400.) In these cases, find the start address of the BLOCK/TABLE/SCATABLE of interest, and resolve an absolute address. Under DEF/REF, the page and line number of the definition of the storage location can be found. If under DEF/REF there is no entry in a pident cross-reference listing, the symbol is defined in Datapool.

STORE ADDRESS RANGES

PROGRAM STORE ADDRESS	K-CODE	CALL STORE ADDRESS	K-CODE
10000000-10177777	0	00000000-00177777	0
10200000-10377777	1	00200000-00377777	1
10400000-10577777	2	00400000-00577777	2
10600000-10777777	3	00600000-00777777	3
11000000-11177777	4	01000000-01177777	4
11200000-11377777	5	01200000-01377777	5
11400000-11577777	6	01400000-01577777	6
11600000-11777777	7	01600000-01777777	7
12000000-12177777	10	02000000-02177777	10
12200000-12377777	11	02200000-02377777	11
12400000-12577777	12	02400000-02577777	12
12600000-12777777	13	02600000-02777777	13
13000000-13177777	14	03000000-03177777	14
13200000-13377777	15	03200000-03377777	15
13400000-13777777	16	03400000-03577777	16
13600000-13777777	17	03600000-03777777	17
14000000-14177777	20	04000000-04177777	20
14200000-14377777	21	04200000-04377777	21
14400000-14577777	22	04400000-04577777	22
14600000-14777777	23	04600000-04777777	23
15000000-15177777	24	05000000-05177777	24
15200000-15377777	25	05200000-05377777	25
15400000-15577777	26	05400000-05577777	26
15600000-15777777	27	05600000-05777777	27
16000000-16177777	30	06000000-06177777	30
16200000-16377777	31	06200000-06377777	31
16400000-16577777	32	06400000-06577777	32
16600000-16777777	33	06600000-06777777	33
17000000-17177777	34	07000000-07177777	34
17200000-17377777	35	07200000-07377777	35
17400000-17577777	36	07400000-07577777	36
		07600000-07777777	37

Fig. 1—Store Address Ranges and Related K-Codes

FS Community 0

Disk File (DF)	Range*
0	0 — 2341777
1	2342000 — 4703777
2	4704000 — 7245777
3	7246000 — 1160777

FS Community 1

Disk File (DF)	Range*
0	20000000 — 22341777
1	22342000 — 24703777
2	24704000 — 27245777
3	27246000 — 31607777

* Bit 23 is set to 1 to indicate an FS address. Essentially, this has the same effect as adding 40000000 to the address. This may or may not appear on the printout or display.

Fig. 2—FS Address Spectrum

Convert bits 5-21 to 5 decimal digits (xyyzz) which are:

x = disk and face*
yy = track
zz = sector.

The octal address 51600000 becomes:

binary 101 001 110 000 000 000 000 000

bits 5-21 = 10 011 100 000 000 000

octal = 234000

decimal =	7	98	72
	disk 3 face 1	track	sector

The location is: Community 0, disk 3 face 1, track 98, sector 72.

*
0 = disk 0 face 0
1 = disk 0 face 1
2 = disk 1 face 0
3 = disk 1 face 1
4 = disk 2 face 0
5 = disk 2 face 1
6 = disk 3 face 0
7 = disk 3 face 1

Fig. 3—FS Address Interpretation

PIDENT MAP

PIDENT NAME	-----ASSEMBLY----- DATE	TIME	FLGS*	VERSION NUMBER	LBRY ID	COMP VER	EPL VER	------PR NAME	INFORMATION------ NUMBER	ISSUE	--PAGING----- CLASS_PROGRAM
ADDG22	10/20/77	23:29:35	NC	04	02	3.81	NONE	ADDG22	5A512	01	MTCE(1)_ADDG(6)
	ADDG22		AB	PG	PAGE ADDR = 10 IN PAGE 12END OPTION IS ON						
ADDG23	10/20/77	23:30:11	NC	04	02	3.81	NONE	ADDG23	5A513	01	MTCE(1)_ADDG(6)
	ADDG23		AB	PG	PAGE ADDR = 10 IN PAGE 13END OPTION IS ON						
ADDG24	10/20/77	23:37:21	NC	04	02	3.81	NONE	ADDG24	5A514	01	MTCE(1)_ADDG(6)
	ADDG24		AB	PG	PAGE ADDR = 10 IN PAGE 14END OPTION IS ON						
ADDG25	10/20/77	23:38:02	NC	04	02	3.81	NONE	ADDG25	5A515	01	MTCE(1)_ADDG(6)
	ADDG25		AB	PG	PAGE ADDR = 16 IN PAGE 15END OPTION IS ON						
ADDG41	10/20/77	23:42:59	NC	04	02	3.81	NONE	ADDG41	5A516	01	MTCE(1)_ADDG(6)
	ADDG41		AB	PG	PAGE ADDR = 6 IN PAGE 16END OPTION IS ON						
ADDG42	10/20/77	23:43:33	NC	04	02	3.81	NONE	ADDG42	5A517	01	MTCE(1)_ADDG(6)
	ADDG42		AB	PG	PAGE ADDR = 6 IN PAGE 17END OPTION IS ON						
ADDG43	10/20/77	23:48:32	NC	04	02	3.81	NONE	ADDG43	5A518	01	MTCE(1)_ADDG(6)
	ADDG43		AB	PG	PAGE ADDR = 6 IN PAGE 20END OPTION IS ON						
ADDG44	10/20/77	23:49:42	NC	04	02	3.81	NONE	ADDG44	5A519	01	MTCE(1)_ADDG(6)
	ADDG44		AB	PG	PAGE ADDR = 6 IN PAGE 21END OPTION IS ON						
ADDG45	10/20/77	23:54:07	NC	04	02	3.81	NONE	ADDG45	5A520	01	MTCE(1)_ADDG(6)
	ADDG45		AB	PG	PAGE ADDR = 6 IN PAGE 22END OPTION IS ON						
ADDG46	10/20/77	23:55:00	NC	04	02	3.81	NONE	ADDG46	5A521	01	MTCE(1)_ADDG(6)
	ADDG46		AB	PG	PAGE ADDR = 6 IN PAGE 23END OPTION IS ON						
ADDG61	10/22/77	12:39:23	NC	04	02	3.81	NONE	ADDG61	5A522	01	MTCE(1)_ADDG(6)
	ADDG61		AB	PG	PAGE ADDR = 14 IN PAGE 24END OPTION IS ON						
ADDG91	10/21/77	00:02:34	NC	04	02	3.81	NONE	ADDG91	5A523	01	MTCE(1)_ADDG(6)
	ADDG91		AB	PG	PAGE ADDR = 12 IN PAGE 25END OPTION IS ON						
ADDG92	10/26/77	13:03:38	NC	04	02	3.81	NONE	ADDG92	5A524	01	MTCE(1)_ADDG(6)
	ADDG92		AB	PG	PAGE ADDR = 14 IN PAGE 26END OPTION IS ON						
ADDG93	10/22/77	12:43:20	NC	04	02	3.81	NONE	ADDG93	5A525	01	MTCE(1)_ADDG(6)
	ADDG93		ABQ	PG	PAGE ADDR = 16 IN PAGE 27END OPTION IS ON						
ADDG99	10/21/77	00:03:20	NC	04	02	3.81	NONE	ADDG99	5A738	01	MTCE(1)_ADDG(6)
	ADDG99		AB	PG	PAGE ADDR = 10 IN PAGE 30END OPTION IS ON						
ADGINIT	2/18/78	08:27:42	N	04	02	3.81	1.17	ADGINIT	4A1049	01	

* THE FLAGS ARE: D-DIAGNOSTIC,N-NEW THIS CYCLE,C-COMMON

HEADING	SUBHEADING	DEFINITION
PIDENT	NAME	Assembly unit name
ASSEMBLY	DATE	Date of unit assembly
	TIME	Time of unit assembly
FLGS		Flags related to assembly process (an explanation of each flag symbol is at the bottom of each page)
VERSION	NUMBER	Generic number plus 1 (ie, 4E3 generic version number = 3+1 = 4
LBRY	ID	Datapool version used during assembly
COMP	VER	Compiler version used during assembly
EPL	VER	Version of EPL (ESS Programming Language) used for coding
PR INFORMATION	NAME	Mnemonic assigned to pident
	NUMBER	Program listing number of pident.
	ISSUE	Program listing issue number of pident
PAGING	Paged pident information — blank for CS, PS loaded pidents	
	CLASS	Major grouping number of paged pident
	PROGRAM	Subgrouping under class of paging under class of paged pident

Fig. 4—Explanation of Pident Map Information Fields

LDR KNOWN SYMBOLS MAP

USAGE	HOWUSED*	HOWDEF	TV SLOT	ADDRESS	DISP/VAL	SYMBOL	PIDENT	SECTION	DEFINING NODE
0		ABS	2		14020200	:::UNDEF	-NO PID.-	-NO SEC.-	
1	V	REL	3667	13404470PS	4470	A_LEVEL	UTILITYT	UTILITYT_AA	UTILITYT_AA
0		REL		6676262FS	0	ABDG00	ABDG00	ABDG00	ABDG00
0	S	REL		6677322FS	1040	ABDG00_AB_1040	ABDG00	ABDG00	ABDG00
0	S	REL		6677474FS	1212	ABDG00_AB_1212	ABDG00	ABDG00	ABDG00
0	S	REL		6677537FS	1255	ABDG00_AB_1255	ABDG00	ABDG00	ABDG00
0	S	REL		6677554FS	1272	ABDG00_AB_1272	ABDG00	ABDG00	ABDG00
0	S	REL		6676420FS	136	ABDG00_AB_136	ABDG00	ABDG00	ABDG00
0	S	REL		6700554FS	2272	ABDG00_AB_2272	ABDG00	ABDG00	ABDG00
0	S	REL		6700656FS	2374	ABDG00_AB_2374	ABDG00	ABDG00	ABDG00
0	S	REL		6701127FS	2645	ABDG00_AB_2645	ABDG00	ABDG00	ABDG00
0	S	REL		6701131FS	2647	ABDG00_AB_2647	ABDG00	ABDG00	ABDG00
0	S	REL		6701274FS	3012	ABDG00_AB_3012	ABDG00	ABDG00	ABDG00
0	S	REL		6701327FS	3045	ABDG00_AB_3045	ABDG00	ABDG00	ABDG00
0	S	REL		6701353FS	3071	ABDG00_AB_3071	ABDG00	ABDG00	ABDG00
0	S	REL		6701425FS	3143	ABDG00_AB_3143	ABDG00	ABDG00	ABDG00
0	S	REL		6701470FS	3206	ABDG00_AB_3206	ABDG00	ABDG00	ABDG00
0	S	REL		6701522FS	3240	ABDG00_AB_3240	ABDG00	ABDG00	ABDG00
0	S	REL		6701633FS	3351	ABDG00_AB_3351	ABDG00	ABDG00	ABDG00
0	S	REL		6701657FS	3375	ABDG00_AB_3375	ABDG00	ABDG00	ABDG00
0	S	REL		**6701707FS**	3425	ABDG00_AB_3425	ABDG00	ABDG00	ABDG00
0	S	REL		6677037FS	555	ABDG00_AB_555	ABDG00	ABDG00	ABDG00
1	X	REL		7764656FS	0	ABDG11	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG12	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	ABDG12E	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG17	ABDG11	ABDG11	ABDG11
0		REL		**7770071FS**	3213	ABDG17E	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG18	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	**ABDG18E**	ABDG11	ABDG11	ABDG11
1	X	REL		7770100FS	0	ABDG19	ABDG19	ABDG19	ABDG19
0		REL		7764656FS	0	ABDG31	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	ABDG31E	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG32	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	ABDG32E	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG37	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	ABDG37E	ABDG11	ABDG11	ABDG11
0		REL		7764656FS	0	ABDG38	ABDG11	ABDG11	ABDG11
0		REL		7770071FS	3213	ABDG38E	ABDG11	ABDG11	ABDG11
0		REL		7770100FS	0	ABDG39	ABDG19	ABDG19	ABDG19
0		REL		7770245FS	145	ABDG39E	ABDG19	ABDG19	ABDG19
1	X	REL		7770254FS	0	ABDG99	ABDG99	ABDG99	ABDG99
0		ABS	4200		14020200	ABFPRT	-NO PID.-	-NO SEC.-	
0		REL		6701744FS	0	ADDG00	ADDG00	ADDG00	ADDG00
0	S	REL		6702102FS	136	ADDG00_AB_136	ADDG00	ADDG00	ADDG00
0	S	REL		6703441FS	1475	ADDG00_AB_1475	ADDG00	ADDG00	ADDG00
0	S	REL		6703746FS	2002	ADDG00_AB_2002	ADDG00	AADDG00	ADDG00

* THE USAGE IS:X-DIRECT,V-INDIR,T-INTSUB,S-PCALL,M-IMPSUB,N-NPGSECT,O-OPERAND

HEADING	DEFINITION
USAGE	How many times this symbol is used
HOWUSED	Symbol classification (an explanation of each classification is at the bottom of each page)
HOWDEF	Manner in which symbol is defined; ABS = Absolute, REL = Relocatable
TV SLOT	TV (Transfer Vector) slot number (indirectly referenced symbols only)
ADDRESS	Address of the symbol. If the symbol has a TV slot number this field contains the contents of the TV slot.
DISP/VAL	Displacement of the symbol after the beginning of the specified section. If this symbol is undefined the number will be a transfer to error stop address.
SYMBOL	The symbol that all other data relates to
PIDENT	The pident where the symbol is defined
SECTION	The section where the symbol is defined
DEFINING NODE	The address tree node where symbol is defined

Fig. 5—Explanation of LDR Known Symbols Map Information Fields

PAGING CLASS NAME

SIZE OF PAGING AREA IN MEMORY

```
CLASS: MTCE(1), PAGE SIZE: 16000, MAX PGM NUM: 41

     PROGRAM: MUDG(1), ROOM RESERVED: 0, CPSECT MUDG00(MUDG00.AB)
                                         SIZE: 5546, REL PAG ADDR: 10232, DISK ADDR: 7006454

                    PAGE: MUDG.1, PP INFO--DISK ADDR: 7074067, SIZE: 224
                                  SIZES--SUB DIRECTORY: 6, ALL PGSECTS: 210, ALL SUBS: 624
                                  THERE ARE 7162 (3698 DECIMAL) UNUSED WORDS AT 1042
                          PGSECTS DISK ADDR  SIZE   PGSECT NAME
                                   7074103    210  MUDG01(MUDG01.AB)
PAGE                      SUBS    DISK ADDR INTSUB SLOT (DISP  LOADER-KNOWN-SYMBOL-NAME)
PROGRAM                                             SUB-SIZE PVT-SIZE  SUBROUTINE-NAME
CLASS
1   1   1    14   A              6720270       4         61        0  XREAD(CCDG00.AJ)
1   1   1   224                  7014222      40        216        5  STWRSTAT(MUDG00.AC)
1   1   1   306                  7050024      67        323        0  PWRMON(PDDG00.AC)
1   1   1   524

                    PAGE: MUDG.2, PP INFO--DISK ADDR: 7074313, SIZE: 132
                                  SIZES--SUB DIRECTORY: 2, ALL PGSECTS: 122, ALL SUBS: 216
                                  THERE ARE 7662 (4018 DECIMAL) UNUSED WORDS AT 342
                          PGSECTS DISK ADDR  SIZE   PGSECT NAME
1   1   2    10   A               7074323    122  MUDG02(MUDG02.AB)
                          SUBS    DISK ADDR INTSUB SLOT (DISP LOADER-KNOWN-SYMBOL-NAME)
                                                   SUB-SIZE PVT-SIZE SUBROUTINE-NAME
1   1   2   132                  7014222      40        216        5 STWRSTAT(MUDG00.AC)

                    PAGE: MUDG.3, PP INFO--DISK ADDR: 7074445, SIZE: 450
                                  SIZES--SUB DIRECTORY: 2, ALL PGSECTS: 440, ALL SUBS: 134
                                  THERE ARE 7426 (3862 DECIMAL) UNUSED WORDS AT 576
                          PGSECTS DISK ADDR  SIZE   PGSECT NAME
1   1   3    10   A               7074455    440  MUDG03(MUDG03.AB)
                          SUBS    DISK ADDR INTSUB SLOT (DISP  LOADER-KNOWN-SYMBOL-NAME)
                                                   SUB-SIZE PVT-SIZE  SUBROUTINE-NAME
1   1   3   450                  7014440      41        134        4  STWRGCP(MUDG00.AD)

                    PAGE: ML_G.4, PP INFO--DISK ADDR: 7075115, SIZE: 1440
                                  SIZES--SUB DIRECTORY: 6, ALL PGSECTS: 1424, ALL SUBS: 506
                                  THERE ARE 6064 (3124 DECIMAL) UNUSED WORDS AT 2140
                          PGSECTS DISK ADDR  SIZE   PGSECT NAME
1   1   4    14   A               7075131   1424  MUDG05(MUDG05.AB)
                          SUBS    DISK ADDR INTSUB SLOT (DISP  LOADER-KNOWN-SYMBOL-NAME)
                                                   SUB-SIZE PVT-SIZE  SUBROUTINE-NAME
1   1   4  1440                  7014222      40        216        5  STWRSTAT(MUDG00.AC)
1   1   4  1656                  7014440      41        134        4  STWRGCP(MUDG00.AD)
1   1   4  2012                  7014574      42        134        4  STRDGCP(MUDG00.AE)

                    PAGE: MUDG.5, PP INFO--DISK ADDR: 7076555, SIZE: 1174
```


Fig. 6— Paged Program Information Map—Example

ADDRESS SPACE MAP

ADDR	OSIZE	DSIZE	PIDENT	STRIP	SECTION
07074006FS	42	34	SAST	BC	READ_TROUBLE
07074050FS	17	15	SAST	BD	SEG_BRK_AU
07074103FS	210	136	MUDG01	AB	MUDG01
07074323FS	122	82	MUDG02	AB	MUDG02
07074455FS	440	288	MUDG03	AB	MUDG03
07075131FS	1424	788	MUDG05	AB	MUDG05
07076563FS	1166	630	MUDG07	AB	MUDG07
07077761FS	1143	611	MUDG09	AB	MUDG09
07101134FS	1137	607	MUDG11	AB	MUDG11
07102301FS	502	322	MUDG12	AB	MUDG12
07103011FS	1413	779	MUDG13	AB	MUDG13
07104432FS	767	503	MUDG14	AB	MUDG14
07105427FS	475	317	MUDG15	AB	MUDG15
07106132FS	1240	672	MUDG16	AB	MUDG16
07107400FS	526	342	MUDG17	AB	MUDG17
07110140FS	431	281	MUDG18	AB	MUDG18
07110603FS	776	510	MUDG19	AB	MUDG19
07111607FS	1225	661	MUDG21	AB	MUDG21
07113066FS	1037	543	MUDG22	AB	MUDG22
07114133FS	361	241	MUDG23	AB	MUDG23
07114526FS	574	380	MUDG24	AB	MUDG24
07115332FS	1374	764	MUDG25	AB	MUDG25
07116764FS	361	241	MUDG27	AB	MUDG27
07117361FS	656	430	MUDG28	AB	MUDG28
07120277FS	1001	513	MUDG29	AB	MUDG29
07121306FS	620	400	MUDG31	AB	MUDG31
07122170FS	312	202	MUDG34	AB	MUDG34
07122544FS	267	183	MUDG35	AB	MUDG35
07123075FS	265	181	MUDG36	AB	MUDG36
07123424FS	312	202	MUDG37	AB	MUDG37
07124000FS	307	199	MUDG38	AB	MUDG38
07124353FS	307	199	MUDG39	AB	MUDG39
07124714FS	23	19	MUDG94	AB	MUDG94
07124745FS	212	138	MUDG95	AB	MUDG95
07125165FS	271	185	MUDG96	AB	MUDG96
07125522FS	57	47	MUDG97	AB	MUDG97
07125613FS	125	85	CCDG01	AB	CCDG01
07125750FS	55	45	CCDG02	AB	CCDG02
07126057FS	404	260	CCDG03	AB	CCDG03
07126513FS	376	254	CCDG04	AB	CCDG04
07127133FS	742	482	CCDG05	AB	CCDG05
07120115FS	2021	1041	CCDG06	AB	CCDG0[illegible]
07132150FS	746	486	CCDG11	AB	CCDG11
07133130FS	530	344	CCDG12	AB	CCDG12
07133674FS	676	446	CCDG13	AB	CDG13
07134606FS	362	242	CCDG14	AB	CCDG14
07135204FS	406	262	CCDG15	AB	CCDG15
07135626FS	635	413	CCDG16	AB	CCDG16
07136473FS	5305	2757	CCDG17	AB	CCDG17
07144006FS	740	480	CCDG18	AB	CCDG18

HEADING	DEFINITION
ADDR	The beginning address of area in memory where a portion of this pident is loaded.
OSIZE	Octal size of the memory area in question.
DSIZE	Decimal size of the memory area in question.
PIDENT	The pident associated with this address range.
STRIP	The stip associated with this address range. A strip is a portion of a pident that is paged into CS, PS as a unit.
SECTION	The section associated with this address range.

Fig. 7—Explanation of Address Space Map Information Fields

AVAILABLE SPACE MAP

ADDR	OSIZE	DSIZE
00000400CS	400	256
00001100CS	300	192
00004162CS	16	14
00007200CS	200	128
07726241CS	37	31
07736565CS	4	4
07736575CS	4	4
07736607CS	2	2
07736613CS	6	6
07736625CS	4	4
07736655CS	4	4
07736663CS	6	6
07736703CS	6	6
07736723CS	6	6
07736733CS	6	6
07736743CS	6	6
07736757CS	2	2
07736763CS	6	6
07737033CS	6	6
07737043CS	6	5
07737065CS	4	4
07737077CS	2	2
07737107CS	2	2
07737117CS	2	2
07737127CS	2	2
07737137CS	2	2
07737147CS	2	2
07737157CS	2	2
07737167CS	2	2
07737177CS	2	2
07737207CS	2	2
07737217CS	2	2
07737233CS	6	6
07737247CS	2	2
07737257CS	2	2
07737263CS	6	6
07737273CS	6	6
07737303CS	6	6
07737313CS	6	6
07737323CS	6	6
07737337CS	2	2
07737347CS	2	2
07737353CS	6	6
07737367CS	172	122
07737615CS	44	36
07740023CS	36	30
07740310CS	151	105
07741174CS	35	29
07742132CS	536	350

HEADING	DEFINITION
ADDR	Beginning address of the available space.
OSIZE	Octal size of the available space.
DSIZE	Decimal size of the available space.

Fig. 8—Explanation of Available Space Map Information Fields

PATCHES BY PIDENT MAP

PIDENT	STRIP	ADDR	OSIZE	DSIZE
AAVECT4	AA	14176152PS	40	32
ABDG00	AB	06676262FS	3462	1842
ABDG11	AB	07764656FS	3214	1676
ABDG19	AB	07770100FS	146	102
ABDG99	AB	07770254FS	361	241
ADDG00	AB	06701744FS	5470	2872
	AC	06707434FS	35	29
	AD	06707472FS	223	147
	AE	06707716FS	312	202
ADDG01	AB	07505655FS	100	64
ADDG11	AB	07505765FS	2642	1442
ADDG12	AB	07510637FS	2641	1441
ADDG13	AB	07513510FS	616	398
ADDG14	AB	07514336FS	632	410
ADDG15	AB	07515204FS	2314	1228
ADDG16	AB	07517532FS	1152	618
ADDG17	AB	07520722FS	615	397
ADDG21	AB	07521545FS	362	242
ADDG22	AB	07522137FS	1112	586
ADDG23	AB	07523261FS	647	423
ADDG24	AB	07524140FS	1212	650
ADDG25	AB	07525370FS	1050	552
ADDG41	AB	07526446FS	1266	694
ADDG42	AB	07527742FS	1347	743
ADDG43	AB	07531317FS	1022	530
ADDG44	AB	07532347FS	1360	752
ADDG45	AB	07533735FS	731	473
ADDG46	AB	07534674FS	2170	1144
ADDG61	AB	07537100FS	5716	3022
ADDG91	AB	07545030FS	1300	704
ADDG92	AB	07546344FS	2307	1223
ADDG93	AB	07550671FS	2145	1125
ADDG99	AB	07553046FS	304	196
ADGINIT	AA	16641042PS	1174	636
ALRM01	AA	14723116PS	6506	3398
AMDX	AA	14600724PS	3677	1983
ATMECNTL	AA	17021042PS	4	4
	AB	17020512PS	102	66
	AC	17020614PS	62	50
	AD	17020676PS	62	50
	AE	17020760PS	62	50
	FJ	17012020PS	131	89
	FK	17020332PS	50	40
	FL	17020274PS	36	30
	FM	17020456PS	34	28
	FN	17020402PS	53	43
	FO	17017472PS	601	385
	FP	17016414PS	1055	557
	GA	17016042PS	351	233
	GB	17014506PS	1333	731

HEADING	DEFINITION
PIDENT	Assembly unit name associated with patch (a patch is a program change that will eventually be incorporated into the generic).
STRIP	Strip that is associated with the patch.
ADDR	The beginning address of the patch.
OSIZE	Octal size of the patch.
DSIZE	Decimal size of the patch.

Fig. 9—Explanation of Patches by Pident Map Information Fields

PATCHES BY SECTION MAP

SECTION		OSIZE	DSIZE	PIDENT&STRIP
ATME_DMD_TST	17026604PS	60	48	ATMEDIRA F1
ATME_IDL_GRD	17025266PS	62	50	ATMEDIRA DF
ATME_IDL_RES	17040744PS	122	82	ATMERESA AO
ATME_IDL_TRK	17037372PS	70	56	ATMERESA AF
ATME_IDL_TUT	17024220PS	146	102	ATMEDIRA BE
ATME_INC_CT	17033204PS	67	55	ATMEINTX BE
ATME_LD_Q	17031500PS	163	115	ATMEINTX BA
ATME_MFR_AVL	17023444PS	36	30	ATMEDIRA EE
ATME_MFR_DIR	17022316PS	140	96	ATMEDIRA FA
ATME_MFR_HNT	17022636PS	160	112	ATMEDIRA EI
ATME_MFR_REL	17022456PS	160	112	ATMEDIRA AB
ATME_NW_CON	17041066PS	302	194	ATMERESA BA
ATME_NW_RMV	17040174PS	222	146	ATMERESA AK
ATME_OPN_DD1	17024110PS	43	35	ATMEDIRA BB
ATME_OPN_DD3	17024154PS	44	36	ATMEDIRA CA
ATME_OTN_TSN	17025662PS	264	180	ATMEDIRA FG
ATME_OUTPULS	17027536PS	200	128	ATMEDIRA DJ
ATME_PEG_CNT	17025552PS	26	22	ATMEDIRA CD
ATME_POP_FSM	17020274PS	36	30	ATMECNTL FL
ATME_Q_RMV	17032510PS	172	122	ATMEINTX BC
ATME_Q_SRV	17031664PS	306	198	ATMEINTX BB
ATME_REQ_TMR	17023016PS	426	278	ATMEDIRA DE
ATME_RES_BD	17037462PS	154	108	ATMERESA AG
ATME_RES_LNK_CK	17041370PS	434	284	ATMERESA BB
ATME_RES_RLS	17037034PS	172	122	ATMERESA AD
ATME_RES_TBL	17024366PS	74	60	ATMEDIRA GC
ATME_RLS_F1	17040416PS	63	51	ATMERESA AL
ATME_RLS_SD	17042024PS	144	100	ATMERESA BC
ATME_RMV_TIM	17036114PS	256	174	ATMERESA AB
ATME_RMVE_DW	17022072PS	102	66	ATMEDIRA AH
ATME_RMVE_LL	17022174PS	122	82	ATMEDIRA BD
ATME_RQ_RESB	17040046PS	126	86	ATMERESA AJ
ATME_RSV_TNK	17024750PS	104	68	ATMEDIRA AD
ATME_SND_ANN	17040502PS	155	109	ATMERESA AM
ATME_SND_FT	17027070PS	234	156	ATMEDIRA CH
ATME_SND_F1	17040660PS	63	51	ATMERESA AN
ATME_SND_MSG	17020456PS	34	28	ATMECNTL FM
ATME_SUB_FSM	17020332PS	50	40	ATMECNTL FK
ATME_TEAR_DN	17025350PS	202	130	ATMEDIRA BA
ATME_TIME_DW	17021702PS	170	120	ATMEDIRA AG
ATME_TIME_LL	17021470PS	212	138	ATMEDIRA BC
ATME_TNK_ST	17026146PS	112	74	ATMEDIRA FH
ATME_TR_TIME	17036372PS	442	290	ATMERESA AC
ATME_TRK_TYP	17037636PS	120	80	ATMERESA AH
ATME_TRP_SI	17042170PS	26	22	ATMERESA BD
ATME_XFR_H_W	17037756PS	70	56	ATMERESA AI
ATME_ZRO_OGT	17027324PS	42	34	ATMEDIRA EA
ATMECNTL_AA	17021042PS	4	4	ATMECNTL AA
ATMEDIRA_AA	17030020PS	4	4	ATMEDIRA AA
ATMEINT_AA	16642236PS	1445	805	ATMEINT AA

HEADING	DEFINITION
SECTION	The section that contains the patch.
ADDR	The beginning address of the patch.
OSIZE	Octal size of the patch.
DSIZE	Decimal size of the patch.
PIDENT & STRIP	The assembly unit name and the strip designation where the patch resides.

Fig. 10—Explanation of Patches by Section Map Information Fields

TV ADDRESS MAP

TVNDX	GLOBAL	CONTENTS	SECTION	PIDENT STRIP
00000	EDITON	12345670		$UNVRSL
00001	FILLVECT	14020200		$UNVRSL
00002	:::UNDEF	14020200		
00003	PAGSNRER	14454547	PAGSUPER_AA	PAGSUPER AA
00004	Z9100004	14020200		
00005	UNDEFPAG	14020200		
00006	Z9100006	14020200		
00007	AUFRSTRT	14046336	AUFRCNTL_AA	AUFRCNTL AA
00010	AUFRSUPD	14047041	AUFRCNTL_AA	AUFRCNTL AA
00011	CSFRBOOT	14114162	CSFRBASE_AA	CSFRBASE AA
00012	DKAD77	14134573	DKAD_AA	DKAD AA
00013	FSFRIMP	14141246	FSFRDISK_AA	FSFRDISK AA
00014	FSFIRMP	14141421	FSFRDISK_AA	FSDRDISK AA
00015	MACPABRT	14434044	MACPROUT_AA	MACPROUT AA
00016	PATTUFAZ	15043545	SICOPRGM_AA	SICOPRGM AA
00017	PCRVFILL	14155405	PCRVCONT_AA	PCRVCONT AA
00020	PSFRBOOT	14120506	PSFRPSPG_AA	PSFRPSPG AA
00021	SAWSRAIB	14505162	SAWSSUBR_AA	SAWSSUBR AA
00022	SYURINLL	14161663	SYURPS20_AA	SYURPS20 AA
00023	SYURKRST	14141654	SYURPS20_AA	SYURPS20 AA
00024	SYURKSET	14161644	SYURPS20_AA	SYURPS20 AA
00025	SYURDMCB	14624102	SYUR_AA AA	SYUR AA
00026	SYURMAVT	14624202	SYUR_AA AA	SYUR AA
00027	SYURZERO	14624242	SYUR_AA	SYUR AA
00030	PSFRUPST	14120701	PSFRPSPG_AA	PSFRPSPG AA
00031	DKADINIT	14500613	SADK_AA	SADK AA
00032	DUADINIT	14533411	DUAD05_AA	DUAD05 AA
00033	IOCPINIT	14405172	IOCPINT1_AA	IOCPINT1 AA
00034	MACPINIT	14612007	MACPAUD1_AA	MACPAUD1 AA
00035	GULRPZAP	14325075	GULRUTCR_AA	GULRUTCR AA
00036	Z9T00036	14020200		
00037	Z9T00037	14020200		
00040	Z9T00040	14020200		
00041	Z9T00041	14020200		
00042	Z9T00042	14020200		
00043	Z9T00043	14020200		
00044	Z9T00044	14020200		
00045	Z9T00045	14020200		
00046	Z9T00046	14020200		
00047	Z9T00047	14020200		
00050	AUFRAUAX	14047216	AUFRCNTL_AA	AUFRCNTL AA
00051	AUFRBAVL	14232177	AUFRDFOR_AA	AUFRDFOR AA
00052	AUFRCKUM	14045740	AUFRCNTL_AA	AUFRCNTL AA
00053	AUFRCUMK	14045747	AUFRCNTL_AA	AUFRCNTL AA
00054	AUFRDGSV	14233346	AUFRDFOR_AA	AUFRDFOR AA
00055	AUFROPAB	14232537	AUFRDFOR_ALL	AUFRDFOR AA
00056	AUFRORMV	14232256	AUFRDFOR_AA	AUFRDFOR AA
00057	AUFRORST	14232553	AUFRDFOR_AA	AUFRDFOR AA
00060	AUFRSTOP	14046206	AUFRCNTL_AA	AUFRCNTL AA
00061	CCDG81G1	14342722	DCONTABL_AA	DCONTABL AA

HEADING	DEFINITION
TVNDX	The TVNDX is a number assigned to a global symbol that allows the symbol to be indirectly accessed by other pidents that use this symbol. This is accomplished by having the other pidents access the symbol by first going to the TVNDX. The TVNDX contains the address where the symbol is defined.
GLOBAL	The symbol that the TVNDX is assigned to.
CONTENTS	Contents of TVNDX. Actual address of the symbol.
SECTION	The section that contains the symbol.
PIDENT	The pident that contains the symbol.
STRIP	The strip that contains this symbol.

Fig. 11—Explanation of TV Address Map Information Fields

CROSS REFERENCE 20:53:20 3/08/78 ****

```
     VALUE  T  NAME          DEF/REF     ATTRIBUTES AND REFERENCES                                                    TLIN0000 01    05
'(24,RDIV(4' T  _AU_MDN48
'(48,RDIV(4' T  _AU_MDN8
             T  _AU_OPPRI       12-40     34-24,  90-11, 242-14, 251-09, 256-14, 306-37, 308-22, 310-06, 312-03, 313-27, 314-48, 316-23,
                                          318-06, 320-06, 321-38, 323-25, 325-17
'          ' T  _AU_ORCOM
'          ' T  _AU_QQ
'(HERE)'     T  _AU_RTNPNT      12-44     34-28,  90-23, 242-18, 251-13, 256-18, 306-41, 308-26, 310-17, 312-07, 313-31, 315-04, 316-27,
                                          318-10, 320-10, 321-42, 323-29, 325-21
        1524 L  _AU_SCDEF23     90-16     91-03
        5327 L  _AU_SCDEF29    310-11    310-47
'RMACS1 ((_' T  _AU_XCOM        12-44     34-28,  90-23, 242-18, 251-13, 256-18, 306-41, 308-26, 310-17, 312-07, 313-31, 315-04, 316-27,
                                          318-10, 320-10, 321-42, 323-29, 325-21
        1527 L  _AU_XFER3       90-22     90-15
        5331 L  _AU_XFER9      310-16    310-10
           0 A  _AU_XINHIA
           0 A  _AU_XINHRA
           0 A  _AU_XREFSW
' CCIS_MESS' T  _AUDS_XREF       39-05     66-19,  69-26,  71-02,  73-14,  78-16,  82-10,  88-22, 105-15, 133-12, 136,27, 138-23, 141-10,
                                          147-26, 159-16, 162-33, 164-12, 167-10, 172-26, 187-16, 190-22, 192-44, 193-33, 197-34, 201-13,
                                          204-08, 207-36, 214-41, 223-35, 234-44, 247-18, 265-30, 268-24, 271-33, 273-11, 280-40, 293-17,
                                          296-16, 300-09, 328-30, 329-26, 332-04
          21 L  _AUDS1           12-43     13-22
        5346 L  _AUDS10         312-06
        5356 L  _AUDS11         313-30
        5366 L  _AUDS12         315-03
        5376 L  _AUDS13         316-26
        5406 L  _AUDS14         318-09
        5430 L  _AUDS15         320-09
        5445 L  _AUDS16         321-41
        5460 L  _AUDS17         323-28
        5475 L  _AUDS18         325-20
         423 L  _AUDS2           34-27
        1523 L  _AUDS3           90-14
        4041 L  _AUDS4          242-17
        4156 L  _AUDS5          251-12
        4257 L  _AUDS6          256-17
        5300 L  _AUDS7          306-40
        5313 L  _AUDS8          308-25
        5326 L  _AUDS9          310-09
'TR'         T  _BASE_%F         12-18     35-39,  36,47,  72-18,  76-16,  77-16,  81-17,  84-20,  86-19
''           T  _BASE_%G
''           T  _BASE_%J
'TRB'        T  _BASE_%K         37-01
'105Q'       T  _BASE_%X         12-18     35-39,  36-45, 244-17
''           T  _BASE_%Y
''           T  _BASE_%Z
'SEND CCIS ' T  _CALLCOM         11-17     13-10,  14,27,  15-41,  16-41,  21-22,  24-12,  25-29,  26-11,  27-06,  27-40,  31-09,  31-39,
                                          33-26,  34-39,  39-07,  40-01,  40-42,  42-20,  43-22,  45-09,  48-01,  49-32,  53-33,  57-28,
```

HEADING	DESCRIPTION
VALUE	The VALUE is dependent upon the type of data specified in the type (T) column. The combinations of value and T (type) are as specified below: for this data type (T): — the VALUE is: A — Octal value (any number) C — Absolute octal address F — Absolute octal address G — Relative octal address I — Relative octal address or absolute octal address depending on definition provided J — Octal value (any number) L — Relative octal address M — Count field — number of times the macro has been called for the assembly P — A number encoding of the register identity R — A number encoding of the register identity T — Quoted text string U — A zero V — Blank X — Blank T — Type of symbol as specified below: TYPE — MEANING A — ABSOLUTE — Fixed location of data in memory C — CALL STORE STRUCTURE — Data address of first word in call store table, scatable, or block F — PROGRAM STORE STRUCTURE — Data address of first word in program store table, scatable, or block G — GLOBAL — Pseudo-operation for global label with this name in the listing I — ITEM — Address of data bits in data layout J — TRUTH VALUE or BOOLEAN — A value that a boolean expression is to have true (false) if its value is nonzero (zero) L — LOCAL — Pseudo-operation for local label with this name in listing M — MACRO NAME — Instead of column value, all macros are listed in a separate list where the first column is count (number of times macro is used in pident or Datapool library). P — ITEM IN REGISTER — The layout of items. This is the name of the item which makes up the subdivision of the layout for a particular register. R — REGISTER — Central control register name T — TEXT — Character string in quotes U — UNDEFINED SYMBOL — Miscellaneous symbol V — EXTERN — Pseudo-operation for an external location label in the vector table for a transfer to a point outside this program X — DIRECT — Pseudo-operation for an external location label
NAME	Symbolic name in alphabetical order, special symbols first, numbers last.
DEF/REF	Page and line number reference where symbol or macro is defined.
ATTRIBUTES and/or REFERENCES	Symbol characteristics and page and line number references of occurrences for symbol.

Fig. 12—Explanation of Datapool and PR Cross-Reference List Information Fields

CROSS REFERENCE 13:28:33 4/13/78 ****

COMPOOL EQUIVALENCE - SYMBOL TABLE ATMEX 01 01

```
      15 4TXAT_STATE_          52 4TXAT_ANS_NC       1003 _DEF_ATME_ID     1003 _DEF_ATME_TR
      16 4TXAT_NO_6            53 4TXAT_NO_COM       1003 _DEF_ATME_ID     1003 _DEF_ATME_TR
      16 4TXAT_STATE_          54 4TXAT_END_CO       1003 _DEF_ATME_IN     1003 _DEF_ATME_XF
      17 4TXAT_HOTL            55 4TXAT_G_DIG        1003 _DEF_ATME_LD     1003 _DEF_ATME_ZR
      17 4TXAT_STATE_          66 _IN_SCR_I          1003 _DEF_ATME_LI     1003 _MODEIND
      20 _VEPLX_LVCNT          66 _IN_SCR_I          1003 _DEF_ATME_LI     1003 _SWAP_TYPE
      20 4TXAT_START          101 _ENUMERATION       1003 _DEF_ATME_LI     1003 INT
      20 4TXAT_STATE_         102 _SUBRANGEM         1003 _DEF_ATME_MF     1003 IS4_MESSAGE_
      21 4TXAT_OOSI           103 _REFERENCEM        1003 _DEF_ATME_MF     1003 MACH_ADDR
      21 4TXAT_STATE_         104 _STRUCTUREM        1003 _DEF_ATME_MF     1003 POSINT_TYPE
      22 4TXAT_STATE_         105 _TABLEM            1003 _DEF_ATME_MF     1003 REF_TX4AT_CO
      22 4TXAT_UNASGN         121 _LEFT              1003 _DEF_ATME_MU     1003 REF_TX4AT_ME
      23 4TXAT_IDLE           122 _NOT_LEFT          1003 _DEF_ATME_NO     1003 REF_TX4AT_SE
      23 4TXAT_STATE_         122 _STRUCT_SIDE       1003 _DEF_ATME_NW     1003 REF_TX4AT_ST
      24 4TXAT_DMD            235 _VRNT_OUT          1003 _DEF_ATME_NW     1003 TX4AT_BIT_TY
      24 4TXAT_STATE_         235 _VRNT_STATE        1003 _DEF_ATME_OP     1003 TX4AT_CCITT_
      25 4TXAT_N_DMD          236 _VRNT_ENTERI       1003 _DEF_ATME_OP     1003 TX4AT_CONTRO
      25 4TXAT_STATE_        1003 _DEF_ATME_AB       1003 _DEF_ATME_OT     1003 TX4AT_FSM_TY
      26 %%%%%%%%SWAP        1003 _DEF_ATME_BA       1003 _DEF_ATME_OU     1003 TX4AT_GUARD_
      26 4TXAT_LOCK_O         1003 _DEF_ATME_C_       1003 _DEF_ATME_OU     1003 TX4AT_HIGH_A
      26 4TXAT_STATE_         1003 _DEF_ATME_CC       1003 _DEF_ATME_PE     1003 TX4AT_INTEGE
      27 4TXAT_FREE           1003 _DEF_ATME_CC       1003 _DEF_ATME_Q_     1003 TX4AT_MACHIN
      27 4TXAT_STATE_         1003 _DEF_ATME_CC       1003 _DEF_ATME_O_     1003 TX4AT_MACHIN
      30 _STRUCT_WW           1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_MESSAG
      30 BITS_WIDTH           1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_MESSAG
      30 4TXAT_A_OR_B         1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_SERVIC
      30 4TXAT_STATE_         1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_SERVIC
      31 4TXAT_C_TEST         1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_SERVIC
      31 4TXAT_STATE          1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_SIGNAL
      32 4TXAT_NO_INI         1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_STACK_
      32 4TXAT_STATE_         1003 _DEF_ATME_CK       1003 _DEF_ATME_RE     1003 TX4AT_STACK_
      33 4TXAT_INIT           1003 _DEF_ATME_CL       1003 _DEF_ATME_RE     1003 TX4AT_STATE_
      33 4TXAT_STATE_         1003 _DEF_ATME_CL       1003 _DEF_ATME_RE     1003 TX4AT_TIMING
      34 4TXAT_FAIL_I         1003 _DEF_ATME_CL       1003 _DEF_ATME_RE     1003 TX4AT_TMR_TY
      34 4TXAT_STATE_         1003 _DEF_ATME_CL       1003 _DEF_ATME_RL     1003 TX4AT_TMRA_T
      35 4TXAT_NO_ANS         1003 _DEF_ATME_CL       1003 _DEF_ATME_RL     1003 TX4AT_TRA_TY
      35 4TXAT_STATE_         1003 _DEF_ATME_CL       1003 _DEF_ATME_RM     1003 TX4AT_TSN_TY
      36 4TXAT_COMPEL         1003 _DEF_ATME_CO       1003 _DEF_ATME_RM     1003 TX4AT_UNIT_F
      36 4TXAT_STATE_         1003 _DEF_ATME_CO       1003 _DEF_ATME_RM     1003 TX4AT_UNIT_O
      37 4TXAT_EQ_CON         1003 _DEF_ATME_DE       1003 _DEF_ATME_RQ     1003 TX4AT_UNIT_T
      40 4TXAT_AUTO           1003 _DEF_ATME_DI       1003 _DEF_ATME_RS     1750 _EPL_LAST_T
      41 4TXAT_TIM_OU         1003 _DEF_ATME_DI       1003 _DEF_ATME_SN     2000 _BAIA_LIMIT
      42 4TXAT_ADC_FA         1003 _DEF_ATME_DI       1003 _DEF_ATME_SN     2000 _DAIO_LIMIT
      43 4TXAT_SA_SZ          1003 _DEF_ATME_DI       1003 _DEF_ATME_SN     5606 _EPL_LABTX_M
      44 4TXAT_F1_REC         1003 _DEF_ATME_DI       1003 _DEF_ATME_ST     5671 _EPL_INIT_TT
      45 4TXAT_F2_REC         1003 _DEF_ATME_DI       1003 _DEF_ATME_TE    27274 .END_LOAD_PO
      46 4TXAT_CLF            1003 _DEF_ATME_DM       1003 _DEF_ATME_TI    52270 .ISSUE_DDEF
      47 4TXAT_FOT            1003 _DEF_ATME_GO       1003 _DEF_ATME_TI    53050 .END_ISSUE_D
```

NUMERICAL VALUE

SYMBOL

Fig. 13—Equivalence Cross-Reference Listing — Example

C	D	ADDRESS RANGE		DATE	COUNT	PIDENT	CRNUM
	C	7741636	7741731	78/06/09	1	AUDSDATA	93097A
	C	7742700	7742717	78/08/15	1	TRAFDATA	94133
	C	7764565	7764566	78/06/09	1	PSFRCSPG	30646
	C	7775412	7775432	78/06/09	1	PSFRCSPG	30646
	C	10000000	10000021	78/06/09	1	TNFRMISC	93551
	C	10000022	10000322	78/06/28	1	NMDSTPRV	93535C
	C	10000324	10000356	78/06/28	1	RCMPRDB	93697
	C	10000360	10000503	78/07/28	2	CAMA0000	93872A
	C	10000504	10000615	78/07/10	1	CAMA0000	93873
	C	10000616	10000715	78/07/10	1	CCISSLCN	92446B
	C	10000716	10001113	78/07/10	1	RCMPUTEQ	93730
	C	10001114	10001127	78/07/10	1	ERATSUBS	93667
	C	10001130	10001151	78/07/10	1	VCFR00	93752
	C	10001152	10001164	78/07/10	1	TMAD0006	93598
	C	10001166	10001177	78/07/19	1	NMGTCALL	93898
	C	10001200	10001304	78/07/19	1	IOCPPCC4	93520
	C	10001306	10001322	78/07/19	1	TMAD0002	93691
	C	10001324	10001423	78/07/19	1	CCISCALL	93508
	C	10001424	10001700	78/07/19	1	CCISDISC	93509
	C	10001702	10001712	78/07/19	1	CCISORIG	93507
	C	10001714	10001731	78/07/19	1	CCISMESS	93713
	C	10001732	10002003	78/07/19	1	ISCCCNTL	93781A
	C	10002004	10002035	78/07/28	1	ERATSCTL	93712
	C	10002036	10002041	78/07/28	1	TNFRACC	93794
	C	10002042	10002057	78/11/03	1	TNFRMISC	94131
	C	10002060	10002077	78/11/27	1	DTFRMAIN	94586
	C	10002100	10002107	78/11/27	1	PUCN00	93448
	C	10002110	10002114	78/11/27	1	RCCP0000	94764
	C	10002116	10002122	78/11/27	1	RCCP0000	94764
	C	10002124	10002157	78/11/27	1	TMAD0002	94178B
	C	10002160	10002167	78/12/04	1	PUDGTS23	94300
	C	10013227	10013227	78/06/09	1	TASPPRGM	93427
	C	10014415	10014415	78/06/09	1	TASPPRGM	93427
	C	10014417	10014417	78/06/09	1	TASPPRGM	93427
	C	10014437	10014440	78/06/09	1	TASPPRGM	93427
	C	10014442	10015205	78/06/09	1	TNFRXMIT	93583
	C	10015340	10015445	78/06/28	1	PUDGTG08	93431
	C	10015416	10015707	78/06/28	1	PUDGTASK	93087
	C	10015710	10016001	78/06/28	1	PUDGTASK	93158
	C	10016002	10016065	78/06/28	1	PUDGTASK	93648
	C	10016066	10016176	78/06/28	1	PUDGTG09	93033
	C	10016200	10016262	78/06/28	1	PUDGTG09	93033
	C	10016264	10016352	78/06/28	1	PUDGTG09	93033
	C	10016354	10016360	78/07/28	1	TNFRACC	93970
	C	10016633	10016633	78/06/09	1	TASPPRGM	93427
	C	10016653	10016653	78/06/09	1	TASPPRGM	93427
	C	10016656	10016656	78/06/09	1	TASPPRGM	93427
	C	10016660	10016660	78/06/09	1	TASPPRGM	93427
	C	10016663	10016663	78/06/09	1	TASPPRGM	93427
	C	10016665	10016665	78/06/09	1	TASPPRGM	93427
	C	10025430	10025430	78/06/09	1	TASPPRGM	93427
	C	10025501	10025501	78/06/09	1	TASPPRGM	93427
	C	10026104	10026104	78/06/09	1	TASPPRGM	93427
		a		b		c	d

Fig. 14—ADDRINDX Page — Example

ADDRESS SPACE MAP

ADDR	OSIZE	DSIZE	PIDENT	STRIP	SECTION
17327712PS	44	36	TMAIHWET	AL	TMAIHW_PRQUE_DE
17327756PS	44	36	TMAIHWET	AM	TMAIHW_PRQUE_4S
17330022PS	60	48	TMAIHWET	AN	TMAIHW_PRQUE_1M
17330102PS	144	100	TMAIHWET	AO	PRINT_TRUNK_HAW
17330246PS	142	98	TMAIHWET	BA	SECOND_REQUEST_
17330410PS	27	23	TMAIHWET	BB	RES_AUD
17330440PS	37	31	TMAIHWET	BD	CHECK_PRQUE
17330500PS	31	25	TMAIHWET	BE	REQ 4S
17330532PS	52	42	TMAIHWET	BF	TMAIHW_PRQUE_PA
17330604PS	100	64	TMAIHWET	BG	REMTRK
17330704PS	4	4	TMAIHWET	AA	TMAIHWET_AA
17330710PS	312	202	TMAIUBLO	AB	TMAI_SEND_CCITT
17331222PS	61	49	TMAIUBLO	AC	SEARCH_ALL_QUEU
17331304PS	313	203	TMAIUBLO	AE	RELINK_TO_Q
17331620PS	132	90	TMAIUBLO	AF	UNLINK_FROM_QUE
17331752PS	67	55	TMAIUBLO	AG	UNLINK_FROM_IDL
17332042PS	75	61	TMAIUBLO	AH	UNLINK_FROM_COM
17332140PS	124	84	TMAIUBLO	AI	LINK_TO_QUEUE
17332264PS	136	94	TMAIUBLO	AJ	TMAI_LINK_TO_ID
17332422PS	117	79	TMAIUBLO	AK	LINK_TO_COMPLEM
17332542PS	210	136	TMAIUBLO	AL	SERVE_LO_PRIORI
17332752PS	257	175	TMAIUBLO	AM	SERVE_HI_PRIORI
17333232PS	62	50	TMAIUBLO	AN	SEIZE IDLE Q EL
17333314PS	513	331	TMAIUBLO	BA	TMAI_SERVE_COMP
17334030PS	415	269	TMAIUBLO	BB	SEND_BLO_UBL_ME
17334446PS	45	37	TMAIUBLO	BC	CHECK_ELAPSED_T
17334514PS	355	237	TMAIUBLO	CA	THAI_SCAN_FOR_1
17335072PS	124	84	TMAIUBLO	CB	PROCESS_15SEC_T
17335216PS	713	459	TMAIUBLO	DA	TMAI_SCAN_FOR_1
17336132PS	45	37	TMAIUBLO	DB	TMAI_PARTITIONE
17336200PS	420	272	TMAIUBLO	EA	TMAI_PROCESS_CC
17336620PS	66	54	TMAIUBLO	FA	TMAI_CCITT6_IAM
17336706PS	73	59	TMAIUBLO	GA	REPORT_TO_AUDIT
17337002PS	165	117	TMAIUBLO	GB	TMAI_DETERMINE
17337170PS	116	78	TMAIUBLO	GC	SCHEDULE_AN_UNC
17337306PS	144	100	TMAIUBLO	GD	TMAI_DETERMINE
17337452PS	341	225	TMAIUBLO	GE	TMAI_PROCESS_CC
17340014PS	16	14	TMAIUBLO	AA	TMAIUBLO_AA
17340032PS	270	184	TMFRISAD	GA	TNFR_ISOLATE
17340322PS	175	125	TNFRISAD	GB	TNFR_ACCESS
17340520PS	324	212	TNFRISAD	GC	TNFR_ANALYZE
17341044PS	413	267	TNFRISAD	GE	TNFR_ASW_RETRY
17341460PS	364	244	TNFRISAD	GD	TNFR_ROUTE
17342044PS	60	48	TNFRISAD	BB	TNFR_GET_STATUS
17342124PS	263	179	TNFRISAD	BC	TNFR_ROUT_UNIT
17342410PS	114	76	TNFRISAD	BA	TNFR_AINT_RETRY
17342524PS	4	4	TNFRISAD	AA	TNFRISAD_AA
17342530PS	1715	973	TNFRMMRT	CC	TNFR_TSI_RMM
17344446PS	160	112	TNFRMMRT	AB	TNFR_RMM_CALCUL
17344626PS	356	238	TNFRMMRT	AC	TNFR_RMM_PORT_P

Fig. 15—A Page From the Address Space Map

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES
65213	C	PC1FINI_DRR	52-39	N=1 S=1
54703	C	PC1FS_CHECK	45-15	N=1 S=1
14025375	F	PC1HISTORY	72-43	N=1 S=1 DISK=33575 72-44
14025376	F	PC1OVERRIDE	72-45	N=1 S=1 DISK=33576 72-46
45104	C	PC1SAVE_AUK	43-08	N=1 S=14
41211	C	PC1TRIGGERS	25-25	N=1 S=1
6375	C	PD1RST	17-16	N=2 S=1
6375	C	PD1RST0	17-16	
6376	C	PD1RST1	17-16	
73554	C	PG1BLPGO	59-25	N=1 S=10
14020753	F	PG1MXDSKBL	65-48	N=1 S=1 DISK=27153 66-02
14020742	F	PG1NCDSKRD	65-22	N=1 S=1 DISK=27142 65-24
14343000	F	PG1PAGECDGN	83-04-	N=1 S=1000
14344000	F	PG1PAGECDGN	83-05	N=1 S=16000
14027300	F	PG1PAGEGUTL	81-18	N=1 S=7400 DISK=35500 81-19
0	F	PG1PAGELCLT	60-03	N=1 S=2000
14362000	F	PG1PAGEMTCE	83-10	N=1 S=16000
42617	C	PG1SCRATCH	27-30	N=1 S=4
64500	C	PL1AUB_AMO	48-43	N=1 S=1
64652	C	PL1AUBDATP	52-25	N=1 S=1
64650	C	PL1AUBDGXN	52-21	N=1 S=1
64646	C	PL1AUBLF	52-19	N=1 S=1
64653	C	PL1AUBMATP	52-27	N=1 S=1
64651	C	PL1AUBMND	52-23	N=1 S=1
64647	C	PL1AUBNLF	52-20	N=1 S=1
64645	C	PL1AUBUE	52-18	N=1 S=1
64474	C	PL1CC_AMO	48-39	N=1 S=1
64517	C	PL1CCDATP	49-13	N=1 S=1
64515	C	PL1CCDGXN	49-09	N=1 S=1
64466	C	PL1CCDUIR	48-27	N=1 S=1
64457	C	PL1CCDUOR	48-13	N=1 S=1
64456	C	PL1CCFROR	48-11	N=1 S=1
64465	C	PL1CCFSIR	48-25	N=1 S=1
64513	C	PL1CCLF	49-07	N=1 S=1
64520	C	PL1CCMATP	49-15	N=1 S=1
64516	C	PL1CCMND	49-11	N=1 S=1
64514	C	PL1CCNLF	49-08	N=1 S=1
64512	C	PL1CCUE	49-06	N=1 S=1
64654	C	PL1CONTROL	52-29	N=1 S=5
64476	C	PL1CS_AMO	48-41	N=1 S=1
64502	C	PL1CSB_AMO	48-45	N=1 S=1
64643	C	PL1CSBDATP	52-13	N=1 S=1
64641	C	PL1CSBDGXN	52-09	N=1 S=1
64637	C	PL1CSBLF	52-07	N=1 S=1
64644	C	PL1CSBMATP	52-15	N=1 S=1
64642	C	PL1CSBMND	52-11	N=1 S=1
64640	C	PL1CSBNLF	52-08	N=1 S=1
64636	C	PL1CSBUE	52-06	N=1 S=1

Fig. 16—A Page From Datapool Library P1AMEM

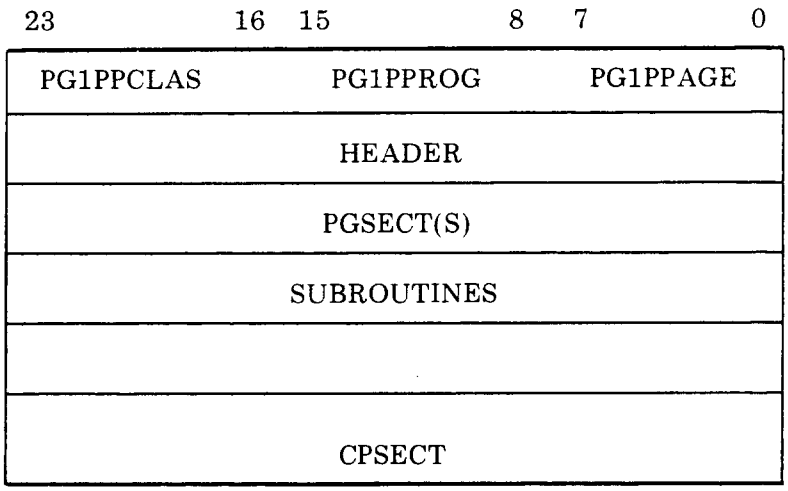

Fig. 17—Paging Area Layout

COMPOOL EQUIVALENCE - SYMBOL TABLE P1AMEM 02 02

```
14037062 IB1D_BRLT38      77776205 AC1ABR      77776267 AC1G2SP1     77776351 AC1BCS
14037063 IB1D_BRLT39      77776206 AC1G1SP1    77776270 AC1CF        77776352 AC1SAT
14037064 IB1D_BRLT40      77776207 AC1G1SP2    77776271 AC1MB        77776353 AC1PES
14037065 IB1D_BRLT41      77776210 AC1DAR      77776272 AC1SDR       77776354 AC1PCR
14037066 IB1D_BRLT42      77776211 AC1SDA      77776273 AC1G2SP2     77776355 AC1G4SP1
14037067 IB1D_BRLT43      77776212 AC11A       77776274 AC1G2SP3     77776356 AC1CLE
14037070 IB1D_BRLT44      77776213 AC11D       77776275 AC1G2SP4     77776357 AC1G4SP3
14037071 IB1D_BRLT45      77776214 AC1AOR      77776276 AC1G2SP5     77776360 AC1CSC
14037072 IB1D_BRLT46      77776215 AC1AOR1     77776277 AC1G2SP6     77776361 AC1PSC
14037073 IB1D_BRLT47      77776216 AC1AOR2     77776300 AC1ABK       77776362 AC11FR
14037074 IB1D_BRLT48      77776217 AC1UBA      77776301 AC1SVG       77776363 AC11ER
14037075 IB1D_BRLT49      777762 0 AC1ACR_B    77776302 AC1AAS_B     77776364 AC1MDF
14037076 IB1D_BRLT50      777762 1 AC1CAR_B    77776303 AC1AMB       77776365 AC1DE
14037077 IB1D_BRLT51      777762 2 AC1SCA_B    77776304 AC1AMC       77776366 AC1SCC_B
14037100 IB1D_BRLT52      777762 3 AC1SPA_B    77776305 AC1RIG       77776367 AC1SC_B
14037101 IB1D_BRLT53      777762 4 AC1PAR_B    77776306 AC1RQG       77776370 AC1LPA
14037102 IB1D_BRLT54      777762 5 AC1G1SP4    77776307 AC1ARR_B     77776371 AC1UPA
14037103 IB1D_BRLT55      777762 6 AC1G1SP5    77776310 AC1AWF_B     77776372 AC1BPS
14037104 IB1D_BRLT56      777762 7 AC1G1SP6    77776311 AC1EVG       77776373 AC1ACT
14037105 IB1D_BRLT57      777762 0 AC1UC1      77776312 AC1AMA       77776374 AC1DLR
14037106 IB1D_BRLT58      777762 1 AC1UC2      77776313 AC1AWS_B     77776375 AC1SSR
14037107 IB1D_BRLT59      777762 2 AC1UC3      77776314 AC1EBG       77776376 AC1BRS
14343000 PG1PAGEADMN      777762 3 AC1UC4      77776315 AC1VRG       77776377 AC1BR
14344000 PG1PAGECDGN      777762 4 AC1G1SP11   77776316 AC1PMO       77776600 ST10W
14362000 PG1PAGEMTCE      777762 5 AC1G1SP12   77776317 AC1PM1       77776601 ST1BOL
17400000 L11RPDT          777762 6 AC1G1SP13   77776320 AC1BCO       77776602 ST1BOR
17400000 1L1PS36TBL       777762 7 AC1G1SP14   77776321 AC1M10       77776603 ST1HWR
17400010 L11RPOMCAT       77776240 AC1LR       77776322 AC1MEO       77776604 ST1ABL
17400011 L11RPOMSCAT      77776241 AC1LRS      77776323 AC1BC1       77776605 ST1ABR
17400012 L11RPBEGSCR      77776242 AC1FR       77776324 AC1MI1       77776606 ST1G1SP1
17400013 L11RPIMDTSA      77776243 AC1FRS      77776325 AC1ME1       77776607 ST1G1SP2
17400014 L11RPIMDTEA      77776244 AC1GR       77776226 AC1MMR       77776610 ST1DAR
17400015 L11RPIMKWSA      77776245 AC1GRS      77776327 AC1MSR       77776611 ST1SDA
17400016 L11RPIMKWEA      77776246 AC1KR       77776330 AC1MOR       77776612 ST11A
17400017 L11RPKGNAML      77776247 AC1KRS      77776331 AC1M1R       77776613 ST1KD
17400021 L11RPNUSED       77776250 AC1XR       77776332 AC1MCP       77776614 ST1AOR
17400030 L11RL1BINFO      77776251 AC1XRS      77776333 AC1MCO       77776615 ST1AOR1
17400077 1L1PS36TBLM      77776252 AC1YR       77776334 AC1MCD       77776616 ST1AOR2
17400100 L11HASHTBL       77776253 AC1YRS      77776335 AC1CMO       77776617 ST1UBA
17400100 1L1PS36TBLH      77776254 AC1ZR       77776336 AC1CM1       77776620 ST1ACR_B
17400177 1L1PS36TBLN      77776255 AC1ZRS      77776337 AC11BR       77776621 ST1CAR_B
34057734 .END_LIST        77776256 AC1JR       77776340 AC1CES       77776622 ST1SCA_B
34065630 .USE_MAKELIB     77776257 AC1JRS      77776341 AC11LA       77776623 ST1SPA_B
34113374 .END_MAKE        77776260 AC1ER       77776342 AC11LR       77776624 ST1PAR_B
34115274 .STOP            77776261 AC1PRM_B    77776343 AC11NH       77776625 ST1G1SP4
77776200 AC1OW            77776262 AC1PRL      77776344 AC11NJ       77776626 ST1G1SP5
77776201 AC1BOL           77776263 AC1RR       77776345 AC11NR       77776627 ST1G1SP6
77776202 AC1BOR           77776264 AC1SR       77776346 AC11NS       77776630 ST1UC1
```


Fig. 18—Equivalence Cross-Reference Listing Page of Datapool Library P1AMEM

```
33 REPT: F-LEVEL C1Ø1Ø4653 MFNUM=ØØØØØ2Ø3 MICON=ØØØØØØ22   MSG STARTED
   LV=ØØ4Ø DØ=ØØØØØØØ2 D1=Ø4ØØØØØØ D2=ØØØØØØ37 D3=ØØØØØØØØ
    APUFS INTERRUPT TSI 2
   TNFR RESOLVED ERROR TSI 2
   TNFR RECOMMENDED REMOVAL LOM TSI 2 CONTR Ø
   TNFR RECOMMENDED DIAGNOSTICS TSI 2 CONTR Ø
   ERAT REQUESTED RESTORE NO UPDATE TSI 2 CONTR Ø
   DATA:  F-LEVEL
   ØØØØØØØ2 ØØØØØ142 ØØØ56ØØØ ØØØØ611Ø 7777ØØØØ Ø2414ØØ2
   ØØØØØØØØ Ø2416ØØ2 ØØØ112ØØ 1Ø1Ø4653 ØØØØØØ4Ø 1Ø1Ø4651
   ØØØØØØØØ 1Ø1Ø4556 Ø2ØØ4164 ØØØØØØ23 Ø721ØØØ3 ØØØØØØØ3
   14335106 Ø4ØØØØØØ.ØØØ12ØØ5 ØØ4ØØØØØ 6ØØØØØØØ ØØØØØØØØ
   Ø2416ØØØ ØØØØ25ØØ ØØ3Ø44Ø2 7777ØØØØ ØØØ12ØØ5 ØØ4ØØØØØ
   6ØØØØØØØ ØØØØØØØØ Ø2416ØØØ ØØØØ25ØØ ØØ3Ø44Ø2 ØØØØØØ23
   Ø2ØØ4164 Ø721ØØØ3 7777ØØØØ Ø3252ØØ5 Ø3252Ø15 4ØØØØ2Ø4
   42ØØØ6ØØ ØØØØØØØ2 ØØØØØØØØ ØØØØØØØØ ØØØØØØØØ
   DATA:  MAC CONTROL MEMORY
   ØØ1Ø1ØØØ ØØØØØØØØ 1Ø1Ø5176 16267133 43Ø412Ø2 ØØØ24ØØØ
   Ø3634ØØØ Ø4ØØØØØØ ØØØØØØØØ 7777ØØØØ ØØØØØØØ2 ØØØØØ13Ø
   ØØØØ5352 Ø2414ØØ2 ØØØØØØØØ Ø2416ØØ2 ØØØ56ØØØ ØØØØØØØØ
   ØØØØØØØØ ØØØØØØØØ
   Ø5/18/79 17:33:37
   #163
```

From MAC CONTROL MEMORY:

WORD Ø BITS 7-14 = Program number

BITS 15-18 = Program class

WORD 6 BITS 16-23 = Program page.

In this example: Word Ø = 00101000

Word 6 = 03634000

Bits 7-14 of word Ø = 00000100 = 4 DECIMAL

= Program number 4

Bits 15-18 of word Ø = 0001 = 1 DECIMAL

= Program class 1

Bits 16-23 of word 6 = 00001111 = 15 DECIMAL

= Program page 15

Fig. 19—Using the MAC CONTROL MEMORY Dump to Determine the Paging Class, Program, and Page

```
1   4   13   4114                7071100      0          62        3  FILEHASH(ERAP.BL)
1   4   13   4176                7071162      0          77        0  OD_DONE(ERAP.CL)
1   4   13   4234                7071220      0     (    36  ERAP_CL_36)
1   4   13   4237                7071223      0     (    41  ERAP_CL_41)
1   4   13   4276                7071262      0         131        0  DOICH(ERAP.CM)

                        PAGE: ERAP.14, PP INFO--DISK ADDR: 7472201, SIZE: 1471
                                    SIZES--SUB DIRECTORY: 36, ALL PGSECTS: 1426, ALL SUBS: 2500
                                    THERE ARE 1606 (902 DECIMAL) UNUSED WORDS AT 4164
                              PGSECTS DISK ADDR  SIZE   PGSECT NAME
1   4   14     44                     7472245   1425  OUTPUT(ERAP.CK)
                              SUBS    DISK ADDR INTSUB SLOT (DISP  LOADER-KNOWN-SYMBOL-NAME)
                                                    SUB-SIZE PVT-SIZE  SUBROUTINE-NAME
1   4   14   1472                7061314      0         773        1  EXTRACT(ERAP.AG)
1   4   14   2234                7062056      0     (   542  ERAP_AG_542)
1   4   14   2253                7062075      0     (   561  ERAP_AG_561)
1   4   14   2256                7062100      0     (   564  ERAP_AG_564)
1   4   14   2314                7062136      0     (   622  ERAP_AG_622)
1   4   14   2355                7062177      0     (   663  ERAP_AG_663)
1   4   14   2466                7062310      0          67        2  GETCBITEM(ERAP.AH)
1   4   14   2556                7062400      0         135        0  CNTBITS(ERAP.AI)
1   4   14   2714                7066372      0         642        0  DTRAN(ERAP.BE)
1   4   14   3454                7067132      0     (   540  ERAP_BE_540)
1   4   14   3512                7067170      0     (   576  ERAP_BE_576)
1   4   14   3556                7067334      0         161        6  SCAT_ERRHD(ERAP.BG)
1   4   14   3740                7071162      0          77        0  OD_DONE(ERAP.CL)
1   4   14   3776                7071220      0     (    36  ERAP_CL_36)
1   4   14   4040                7071262      0         131        0  DOICH(ERAP.CM)
```

BEGINNING DISK ADDRESS OF PAGE

PROGRAM CLASS | **PAGE**

```
                        PAGE: ERAP.15, PP INFO--DISK ADDR: 7473672, SIZE: 1076
                                    SIZE--SUB DIRECTORY:  30, ALL PGSECTS: 1040, ALL SUBS: 1532
                                    THERE ARE 3150 (1640 DECIMAL) UNUSED WORDS AT 2622
                              PGSECTS DISK ADDR  SIZE   PGSECT NAME
1   4   15     36                     7473730   1033  ERAPIMOR(ERAP.CN)
1   4   15   1072                     7474764      4  ERAPANAL(ERAP.CO)
                              SUBS    DISK ADDR INTSUB SLOT (DISP  LOADER-KNOWN-SYMBOL-NAME)
                                                    SUB-SIZE PVT-SIZE  SUBROUTINE-NAME
1   4   15   1076                7050374      0         720        4  ERAPDKWT(ERAP.AE)
1   4   15   1426                7050724      0     (   330  ERAP_AE_330)
1   4   15   1666                7051164      0     (   570  ERAP_AE_570)
1   4   15   2016                7062400      0         135        0  CNTBITS(ERAP.AI)
1   4   15   2063                7062445      0     (    45  ERAP_AI_45)
1   4   15   2154                7062576      0         115        5  CNTFILES(ERAP.AK)
1   4   15   2272                7062714      0         140        0  CONVDATE(ERAP.AL)
1   4   15   2356                7063000      0     (    64  ERAP_AL_64)
1   4   15   2432                7063054      0          46        0  CONVSRES(ERAP.AM)
1   4   15   2500                7063470      0          60        0  UNIONSR(ERAP.AO)
```

BEGINNING DISK ADDRESS OF PG SECT **BEGINNING DISK ADDRESS OF SUBROUTINES**

```
 LDR        VERSION
 LDR2       VERSION    0.000      GENERIC 4E<3>5.3.00
```


Fig. 20—A Page From the Paged Program Information Map

```
CROSS REFERENCE                                                    15:15:08    5/06/78  ****

 COMPOOL EQUIVALENCE - SYMBOL TABLE                                      NO4MEM    01   01
 7747415 ER4ANALY104          7751165 TM4SPIALT          7751774 TM4MFPSUTYN        7776027 QQ4NEXT2471
 7747423 ER4ANALY105          7751201 TM4SPIIL           7752002 TM4DOCPUTYN        7776033 OD4RAIVTRAN
 7747431 ER4ANALY106          7751201 TM4SPIILTH         7752010 TM4MDNREFS         7776034 OD4TUVTRANS
 7747437 ER4ANALY107          7751202 TM4SPIILT          7752210 TM4CCALMDAT        7776074 OD4PSVTRANS
 7747445 ER4ANALY108          7751210 TM4SPISCH          7752316 OV4DESENINT        7776135 QQ4NEXT2478
 7747453 ER4ANALY109          7751210 TM4SPISCHTH        7752317 TM4TC_FGMAP        7776137 OD4SSLVTRAN
 7747461 ER4ANALY110          7751211 TM4SPISCHT         7752517 TE4FAILTYPE        7776140 OD4MCDVTRAN
 7747467 ER4ANALY111          7751251 TM4SPIDMH          7752617 TM4SCGAMAP         7776141 OD4CPPVTRAN
 7747475 ER4ANALY112          7751251 TM4SPIDMHTH        7752657 EX40BSTAB          7776142 QQ4NEXT2485
 7747503 ER4ANALY113          7751252 TM4SPIDMHT         7752677 TM4CAMPLIST        7776144 OD4CSVTRANS
 7747511 ER4ANALY114          7751272 TM4SDAPH           7752717 FH4FHTRET_TA       7776244 QQ4NEXT2488
 7747517 ER4ANALY115          7751272 TM4SDAPLHTH        7754717 AS4APA             7776767 DD4OFCID
 7747525 ER4ANALY116          7751273 TM4SDAPLHT         7755537 AS4AID             7776775 OD4PSKTRANS
 7747533 ER4ANALY117          7751333 TM4PPAPH           7756137 TM4SPICM           7777035 OD4PSMTRANS
 7747541 ER4ANALY118          7751333 TM4PPAPLHTH        7756137 TM4SPICMH          7777200 OD4MCCMTRAN
 7747547 ER4ANALY119          7751334 TM4PPAPLHT         7756140 TM4SPICMT          7777777 4QQENDPSBC
 7747555 ER4ANALY120          7751374 TM4SPIISCH         7756160 AS4AIT            10000000 4QQSAVEPSBC
 7747563 ER4ANALY121          7751374 TM4SPIISCHH        7756160 QQ4NEXT2454       14650000 PG4PAGEMTC3
 7747571 ER4ATVEC             7751375 TM4SPIISCHT        7756560 QQ4NEXT2456       14666000 PG4PAGELCLT
 7747767 ER4TIMOUT            7751475 TM4SPIIDMH         7756560 4QQSAVEPSBL       20144210 .END CREATE_
 7750167 ER4SSTT              7751475 TM4SPIIDMHH        7756777 4QQENDPSBL        20150474 .END LIST
 7750427 TF4TDASMCTB          7751476 TM4SPIIDMHT        7776000 OD4CCVTRANS       20152640 .USE MAKELIB
 7750527 TM4TRDATA            7751536 QQ4NEXT2452        7776000 QQ4COREPSBC       20161450 .END MAKE
 7751127 TM4TESTCALL          7751536 TM4NTPIMSNT        7776000 4QQSTARTPSBC      20162340 .STOP
 7751147 TF4TPFILEID          7751636 TM4PDFAUTYN        7776002 OD4DSVTRANS       20200000 4QQDISKENG
 7751155 TM4SPIML             7751656 TM4PURIUTYN        7776006 QQ4NEXT2462       77777777 %%SCNT
 7751155 TM4SPIMLH            7751666 TM4ATXTPHR         7776010 OD4FSVTRANS       77777777 _CB_I
 7751156 TM4SPIMLT            7751726 TM4BUSPUTYN        7776014 OD4IOVTRANS
 7751164 TM4SPIAL             7751746 TM4UNIPUTYN        7776024 OD4PDFVTRAN
 7751164 TM4SPIALH            7751766 TM4620UTYN         7776026 OD4PPVTRANS

NO FLAG(S) FOUND IN THIS ASSEMBLY
```


Fig. 21—Equivalence Cross-Reference Listing Page of Datapool Library NO4MEM

COMPOOL ADMINISTRATION SYSTEM - VERSION 5.0 MODE= AUDITS

COMPOOL SYMBOL CROSS REFERENCE LISTING

FLAG	TYPE	SYMBOL	DEFINED	REFERENCES
	I	PC1HASH	P1ALAYS	
	F	PC1HISTORY	P1AMEMS	P1ALAY
	I	PC1RS_PMP	P1ALAYS	
	I	PC1INHMAF	P1ALAYS	
	I	PC1INHSMT	P1ALAYS	
	I	PC1IMNTEC	P1ALAYS	
	I	PC1MAN. PN	P1ALAYS	DFN1SUB
	I	PC1MIN_PROC	P1ALAYS	
	F	PC1OVERRIDE	P1AMEMS	P1ALAY
	I	PC1PC_IP	P1ALAYS	
	I	PC1PN_PC	P1ALAYS	
	I	PC1PN_PC1NM	P1ALAYS	
	I	PC1PS_RB	P1ALAYS	
	I	PC1PSBOOT	P1ALAYS	
	I	PC1PSO_ZERO	P1ALAYS	
	I	PC1PUBS	P1ALAYS	
	I	PC1PUMPED	P1ALAYS	
	C	CP1SAVE_AUK	P1AMEMS	P1ALAY
	I	PC1SKIP_AU	P1ALAYS	
	I	PC1SKIP_CC	P1ALAYS	
	I	PC1SKIP_NS	P1ALAYS	
	I	PC1SPECIFIC	P1ALAYS	DFN1SUB
	I	PC1SR_TRIG	P1ALAYS	
	C	PC1TRIGGERS	P1AMEMS	P1ALAY
	I	PC1ZERO_CS	P1ALAYS	
	I	PC1ZEROCS	P1ALAYS	
	I	PC10	P1ALAYS	
	I	PC11	P1ALAYS	
	I	PC12	P1ALAYS	
	I	PC13	P1ALAYS	
	I	PD00	P1ALAYS	
	C	PD1RST	P1AMEMS	P1ALAY
	C	PD1RST0	P1AMEMS	
	C	PD1RST1	P1AMEMS	
	I	PD10	P1ALAYS	
	C	PG1LBPGQ	P1AMEMS	MAC1SYN
	I	PG1LSTSUBRA	P1ALAYS	
	F	PG1MXDSKBL	P1AMEMS	P1ALAY
	F	PG1NCDSKRD	P1AMEMS	P1ALAY
	F	PG1PAGEADMN	P1AMEMS	P1ALAY
	F	PG1PAGECDGN	P1AMEMS	P1ALAY
	F	PG1PAGEGUTL	P1AMEMS	
	F	PG1PAGELCLT	P1AMEMS	NO4MEM
	F	PG1PAGEMTCE	P1AMEMS	P1ALAY
	I	PG1PPCLAS	P1ALAYS	
	I	PG1PPCPDA	P1ALAYS	
	I	PG1PPCPSZ	P1ALAYS	

Fig. 22—Datapool Master Index Reference for Symbol PG1PAGECDGN

DSN=TOLL.F.POOL.GCPR3.L5R.P1AMEM.SRC 9:14:48 1/11/78 ****

PROGRAM STORE 1 P1AMEM 02 02

```
                    2053.    01 # CONVERSATIONAL DIAGNOSTIC PAGING AREA

14343000            2055.    03          PORIGIN   14343000,14361777
14343000            2056.    04 PG1PAGEADMN PBLOCK 512          # PAGING AREA FOR ADMINISTRATION CLASS
14344000            2057.    05 PG1PAGECDGN PBLOCK 7*1024

                    2059.    07 # MAINTENANCE PAGING AREA

14362000            2061.    09          PORIGIN   14362000,14377777
14362000            2062.    10 PG1PAGEMTCE PBLOCK 7*1024
```


Fig. 23—Definition of Symbol PG1PAGECDGN

COMPOOL EQUIVALENCE - SYMBOL TABLE

P1AMEM 02 02

70261	QQ1T85	717 3	IB1E_4	72015	IB1E_54	73157	MA1ADMNSCP
70262	QQ1T86	717 4	IB1E_5	72016	IB1E_55	73323	MC1LASTLOOK
70263	QQ1T87	717 5	IB1E_6	72017	IB1E_56	73363	MC1BARGRAPH
70264	QQ1T88	717 6	IB1E_7	72020	IB1E_57	73377	MC1CLOCK
70265	QQ1T89	717 7	IB1E_8	72021	IB1E_58	73400	MC1SCCFLAGS
70266	QQ1T90	71740	IB1E_9	72022	IB1E_59	73401	LI1EXECSTAT
70267	QQ1T91	71741	IB1E_10	72023	IB1E_60	73451	IO1INPUTMON
70270	QQ1T92	71742	IB1E_11	72024	IB1E_61	73470	IO1ENQREQ
70271	QQ1T93	71743	IB1E_12	72025	IB1E_62	73474	LI1CHANSTAT
70272	QQ1T94	71744	IB1E_13	72026	IB1E_63	73534	LI1QUESTAT
70273	QQ1T95	71745	IB1E_14	72027	IB1E_64	73544	MA1LSPAP
70274	QQ1T96	71746	IB1E_15	72030	IB1E_65	73554	PG1LBPGQ
70275	QQ1T97	71747	IB1E_16	72031	IB1E_66	73564	IB1E_BRLT
70276	QQ1T98	71750	IB1E_17	72032	IB1E_67	73564	IB1E_BRLT0
70277	QQ1T99	71751	IB1E_18	72033	IB1E_68	73565	IB1E_BRLT1
70300	DG1T_SCTRL	71752	IB1E_19	72034	IB1E_69	73566	IB1E_BRLT2
70444	IO1MSCLK	71753	IB1E_20	72035	ER1BF_BL	73567	IB1E_BRLT3
70445	UT1OVRWTBUF	71754	IB1E_21	72535	ER1EHRCNT	73570	IB1E_BRLT4
71445	IO1OMSOMR	71755	IB1E_22	72635	LI11NBUF	73571	IB1E_BRLT5
71446	IO1TEMPSCR	71756	IB1E_23	72675	LI1LIBRBASE	73572	IB1E_BRLT6
71447	LI1OMCAT	71757	IB1E_24	72676	LI11MDTSADR	73573	IB1E_BRLT7
71450	LI1CNTL	71760	IB1E_25	72677	LI11MDTEADR	73574	IB1E_BRLT8
71450	LI1CNTL0	71761	IB1E_26	72700	LI11MKWSADR	73575	IB1E_BRLT9
71451	LI1CNTL1	71762	IB1E_27	72701	LI11MKWEADR	73576	IB1E_BRLT10
71452	LI1CNTL2	71763	IB1E_28	72702	ER1ERAPREPT	73577	IB1E_BRLT11
71453	LI1CNTL3	71764	IB1E_29	72703	ER1ERAPNOPR	73600	IB1E_BRLT12
71454	LI1CNTL4	71765	IB1E_30	72704	AS1GULPIDS	73601	IB1E_BRLT13
71455	LI1CNTL5	71766	IB1E_31	72705	AS1GULPTIME	73602	IB1E_BRLT14
71456	LI1CNTL6	71767	IB1E_32	72706	AS1TWRPIDS	73603	IB1E_BRLT15
71457	LI1CNTL7	71770	IB1E_33	72707	AS1TWRPTIME	73604	IB1E_BRLT16
71460	LI11CB	71771	IB1E_34	72710	TP1REQ_TYPE	73605	IB1E_BRLT17
71500	AS1SAWSIRSA	71772	IB1E_35	72711	LI1PKGNAME	73606	IB1E_BRLT18
71507	AS1SAWSSCB	71773	IB1E_36	72713	TA1FLAGS3	73607	IB1E_BRLT19
71533	MC1RESERVED	71774	IB1E_37	72714	DK1REQ_Y	73610	IB1E_BRLT20
71547	MC1_SPSOCS	71775	IB1E_38	72714	DK1REQBLOCK	73611	IB1E_BRLT21
71561	MC1_SUNID	71776	IB1E_39	72715	DK1REQ_Z	73612	IB1E_BRLT22
71562	MC1_SCANRST	71777	IB1E_40	72716	DK1REQ_G	73613	IB1E_BRLT23
71563	MC1_SC_S_F	72000	IB1E_41	72717	DK1REQ_X	73614	IB1E_BRLT24
71564	MC1_SC_S_G	72001	IB1E_42	72720	DK1REQ_J	73615	IB1E_BRLT25
71565	MC1_SC_S_K	72002	IB1E_43	72721	DK1REQ_TYPE	73616	IB1E_BRLT26
71566	MC1_SC_S_X	72003	IB1E_44	72722	LI1AUDTIMER	73617	IB1E_BRLT27
71567	MC1_RST_SAV	72004	IB1E_45	72722	QQ1NEXT211	73620	IB1E_BRLT28
71570	MC1SAV_STAT	72005	IB1E_46	72723	AB1_DATE2	73621	IB1E_BRLT29
71571	MC1REPORT	72006	IB1E_47	72724	AB1_TIME2	73622	IB1E_BRLT30
71627	ER1PT_CS	72007	IB1E_48	72725	MI1ACTNBUFF	73623	IB1E_BRLT31
71727	IB1E_	72010	IB1E_49	73105	MI1SIZEORGR	73624	IB1E_BRLT32
71727	IB1E_0	72011	IB1E_50	73125	EX1DOBW3	73625	IB1E_BRLT33
71730	IB1E_1	72012	IB1E_51	73126	MI1PUMPCTR	73626	IB1E_BRLT34

Fig. 24—Equivalence Cross-Reference Listing Page of Datapool Library P1AMEM

COMPOOL SYMBOL CROSS REFERENCE LISTING

FLAG	TYPE	SYMBOL	DEFINED	REFERENCES
	I	LI1_TPADEND	P1ALAYS	
	I	LI1_TSTNO	P1ALAYS	
	I	LI1_UNITNO	P1ALAYS	
	I	LI1_WAIT	P1ALAYS	
	C	LI1AUDTIMER	P1AMEMS	P1ALAY
	C	LI1CHANSTAT	P1AMEMS	P1ALAY
	C	LI1CNTL	P1AMEMS	P1ALAY
	C	LI1CNTL0	P1AMEMS	P1ALAY
	C	LI1CNTL1	P1AMEMS	P1ALAY
	C	LI1CNTL2	P1AMEMS	P1ALAY
	C	LI1CNTL3	P1AMEMS	P1ALAY
	C	LI1CNTL4	P1AMEMS	
	C	LI1CNTL5	P1AMEMS	
	C	LI1CNTL6	P1AMEMS	
	C	LI1CNTL7	P1AMEMS	
	I	LI1DKDKADD	P1ALAYS	
	I	LI1DKDKHOL	P1ALAYS	
	I	LI1DKMSH36	P1ALAYS	
	I	LI1DKLENG	P1ALAYS	
	C	LI1DKLIBDT	P1ALAYS	
	I	LI1DKLNHOL	P1ALAYS	
	I	LI1DKNPGD	P1ALAYS	
	I	LI1DKPAGED	P1ALAYS	
	C	LI1DKPAKTD	P1ALAYS	
	I	LI1DKPGMND	P1ALAYS	
	C	LI1DKPGMST	P1ALAYS	
	I	LI1DKPKGN1	P1ALAYS	
	I	LI1DKPKGN2	P1ALAYS	
	C	LI1EXECSTAT	P1AMEMS	P1ALAY
	C	LI1HASHBKO	P1AMEMS	P1ALAY
	F	LI1NASHTBL	P1AMEMS	P1ALAY
	C	LITICB	P1AMEMS	P1ALAY
	C	LI1IMDTEADR	P1AMEMS	P1ALAY
	C	LI1IMDTSADR	P1AMEMS	P1ALAY
	C	LI1IMKWEADR	P1AMEMS	P1ALAY
	C	LI1IMKWSADR	P1AMEMS	P1ALAY
	C	LI1INBUF	P1AMEMS	P1ALAY
	C	LI1LIBRBASE	P1AMEMS	P1ALAY
	C	LI1OMCAT	P1AMEMS	P1ALAY
	C	LI1PKGNAME	P1AMEMS	P1ALAY
	C	LI1QUESTAT	P1AMEMS	P1ALAY
	F	LI1RLIBINFO	P1AMEMS	P1ALAY
	F	LI1RPBEGSCR	P1AMEMS	P1ALAY
	F	LI1RPDT	P1AMEMS	P1ALAY
	F	LI1RPIMDTEA	P1AMEMS	P1ALAY
	F	LI1RPIMDTSA	P1AMEMS	P1ALAY
	F	LI1RPIMKWEA	P1AMEMS	P1ALAY

Fig. 25—Datapool Master Index Reference for Symbol LI1EXECSTAT

```
  VALUE  T  NAME          DEF/REF    ATTRIBUTES AND REFERENCES
  41035  C  I01PRWD        23-38 N=1  S=1
   3076  C  I01REASSIGN    11-29 N=1  S=140
  41162  C  I01REQERR      25-20 N=1  S=1
  42436  C  I01ROUTBASE    26-47 N=1  S=1
   7026  C  I01RSTIOMP     18-33 N=1  S=20
   5546  C  I01RSTIOUC     17-01 N=1  S=200
   5536  C  I01RSTIOUS     16-36 N=1  S=10
  42435  C  I01RULEBASE    26-46 N=1  S=1
  42336  C  I01RULSTACK    26-45 N=25  S=3
  74202  C  I01SCATPAG     59-40 N=2  S=100
  74202  C  I01SCATPAG0    59-40
  74302  C  I01SCATPAG1    59-40
   7016  C  I01SCCMON      18-32 N=2  S=4
  42552  C  I01SCRX        27-09 N=1  S=40
  40666  C  I01STKPTRS     23-33 N=1  S=1
  54712  C  I01SVBUFA      45-24 N=1  S=1
  42437  C  I01SVCHAN      26-48 N=1  S=1
  54675  C  I01SVRTNA      45-08 N=1  S=1
  42335  C  I01SYMBASE     26-42 N=1  S=1
   4342  C  I01SYSTAT      14-30 N=1  S=1
  71446  C  I01TEMPSCR     57-25 N=1  S=1
  74402  C  I01TXTPAG      59-41 N=2  S=40
  74402  C  I01TXTPAG0     59-41
  74442  C  I01TXTPAG1     59-41
  73127  C  I01VARCHAN     59-10 N=1  S=4
  73674  C  I01XLB         59-38 N=2  S=43
  73674  C  I01XLB0        59-38
  73737  C  I01XLB1        59-38
  73672  C  I01XLCNT       59-37 N=2  S=1
  73672  C  I01XLCNT0      59-37
  73673  C  I01XLCNT1      59-37
  73671  C  I01XLCW        59-36 N=1  S=1
      3  R  J
  72722  C  L11AUDTIMER    59-03 N=1  S=1
  73474  C  L11CHANSTAT    59-21 N=10  S=4
  71450  C  L11CNTL        57-30 N=10  S=1
  71450  C  L11CNTL0       57-30
  71451  C  L11CNTL1       57-30
  71452  C  L11CNTL2       57-30
  71453  C  L11CNTL3       57-30
  71454  C  L11CNTL4       57-30
  71455  C  L11CNTL5       57-30
  71456  C  L11CNTL6       57-30
  71457  C  L11CNTL7       57-30
  73401  C  L11EXECSTAT    59-18 N=10  S=5
   6675  C  L11HASHBKO     18-14 N=1  S=1
17400100 F  L11HASHTBL     87-34 N=1  S=100
  71460  C  L111CB         57-33 N=1  S=20
```


Fig. 26—Symbol Cross-Reference Listing Page of Datapool Library P1ALAY

```
DSN=TOLL.F.POOL.GCPR3.L5R.P1AMEM.SRC                                    9:14:78   1/11/78 ****

UDN24 CALL STORE                                                                  P1AMEM    02   02
                    0040000    -002-   01          CORIGIN   40000,77777
                    0072722    -002-   02          CORIGIN   72722
                    0072722  1529.1000 03 L11AUDTIMER BLOCK  1              #LIBRARY 1 SEC AUDIT TIMER
                    0072723  1531.     04 AB1_DATE2 BLOCK    1              #SAVES AMA DATE AFTER CHANGE.
                    0072724  1532.     05 AB1_TIME2 BLOCK    1              #SAVES AMA TIME AFTER CHANGE.
                    0072725  1533.     06 MI1ACTNBUFF SCATABLE 16.7         #MULTIPLE ACTION LINES INTERRUPT INFO
                    0073105  1534.     07 MI1SIZEORGR BLOCK  16             #SIZE AND ORGR OF MI1ACTNBUFF ENTRY
                    0073125  1535.     08 EX1DOBW3 BLOCK     1              #ORDERED BITS WORD FOR DPD - NO. 4 ESS
                    0073126  1536.     09 MI1PUMPCTR BLOCK   1              #BINK PUMP COUNT
                    0073127  1537.     10 IO1VARCHAN BLOCK   4              #VARIABLE CHANNEL DESTINATION BLOCK
                    0073133  1538.     11 MA1ADMNCNTL BLOCK  20             #CONTROL BLOCK FOR ADMINISTRATION CLASS
                    0073157  1539.     12 MA1ADMNSCP BLOCK   100            #SCRATCH PAD FOR ADMINISTRATION CLASS
                    0073323  1540.     13 MC1LASTLOOK BLOCK  02             #PPI CONTROL AND DISPLAY MATRIX LAST
                                                                            LOOK TABLE
                    0073363  1541.     15 MC1BARGRAPH BLOCK  12             #MCC BAR GRAPH VALUES
                    0073377  1542.     16 MC1CLOCK BLOCK     1   ┌──N-      #TIMING WORD FOR APPL MCC DATA
                    0073400  1543.     17 MC1SCCFLAGS BLOCK  1   │ ┌──S-    #SCCADMN FLAG WORD
                    0073401  1544.     18 L11EXECSTAT SCATABLE 8,5          #LIBRARY SYSTEM EXECUTION STATUS BLOCK
                    0073451  1545.     19 IO1INPUTMON SCATABLE 5,3
                    0073470  1546.     20 IO1ENQREQ BLOCK    4
                    0073474  1547.     21 L11CHANSTAT SCATABLE 8,4          #AUX INPUT CHANNEL STATUS BLOCK
                    0073534  1548.     22 L11QUESTAT BLOCK   8              #AUX INPUT QUEUE STATUS BLOCK
                    0073544  1553.     23 MA1LSPAP BLOCK     8              #LIBRARY SUBCLASS PAGING AREA POINTER
                                                                            TABLE
                    0073554  1554.     25 PG1LBPGQ BLOCK     8              #DYNAMIC LIBRARY PAGING AREA ALLOCATION
                                                                            QUEUE
                    0073564  1555.     27 IB1E_BRLT TABLE    60.1           #E LEVEL INT. BIN FOR BOOTSTRAP RESULTS
                    0073660  1555.5000 28 MI1PRINTPRI BLOCK  1
                             1555.6000 29 #UNIT CONTROL BLOCK LAYOUT (DC1U_---)
                             1555.8000 30 #INPUT DATA BLOCK LAYOUT (DC1I_---)
                    0073661  1555.9000 31 DC1I_DATA TABLE    8.1            #INPUT DATA (ABSOLUTE)

                             1555.9200 34 # OUTPUT MESSAGE TRANSLATOR ALLOCATIONS

                    0073671  1555.9400 36 IO1XLCW  BLOCK     1              # EXECUTING TRANSLATOR STORAGE ADDRESS
                    0073672  1555.9500 37 IO1XLCNT TABLE     2.1            # TRANSLATOR CONTROL MEMORY
                    0073674  1555.9600 38 IO1XLB   TABLE     2.35           # TRANSLATOR STORAGE AREA
                    0074002  1555.9700 39 IO1MCATPAG TABLE   2.64           # MAIN CATALOG PAGING AREA
                    0074202  1555.9800 40 IO1SCATPAG TABLE   2.64           # SUBCATALOG PAGING AREA
                    0074402  1555.9900 41 IO1TXTPAG TABLE    2.32           # TEXT PHRASE PAGING AREA

                    0074502  1555.9920 44 MA1LOOPCNTS BLOCK  1              #INDEX BY DUC NUMBER (BASE='DUC')
                    0074503  1555.9930 45 DC1U_UCB TABLE     16.32
                             1556.     46          SAVE      UDN24
                    0075503    -002-   47 QQ1NEXT213 BLOCK   1              #ADDRESS OF NEXT AVAILABLE SPACE
          -002-   48 #******* END OF UNPROTECT, DUPLICATED, NON-BACKED  24-BIT ADDRESS AREA

1A   P R O C E S S O R   M E M O R Y   A L L O C A T I O N                    PK-5A107-04-C59

                        SEE TRADE SECRET RESTRICTIVE NOTICE ON INDEX PAGE          P1AMEM   ISSUE    1
```

Fig. 27—P1AMEM Reference to Symbol L11EXECSTAT

```
  VALUE  T  NAME          DEF/REF    ATTRIBUTES AND REFERENCES
      0  I  LI1_UNITNO    172-26 S=6  H=11
  71450  I  LI1_WAIT      164-42 S=1  H=27
  72722     LI1AUDTIMER          N=1  S=1          165-39
  73474  C  LI1CHANSTAT          N=10 S=4          164-29
  71450  C  LI1CNTL              N=10 S=1          164-33
  71450  C  LI1CNTL0               164-35
  71451  C  LI1CNTL1               164-45
  71452  C  LI1CNTL2               165-08
  71453  C  LI1CNTL3               165-11, 165-22, 165-31
      0  I  LI1DKDKADD    163-09 S=26 H=0
      0  I  LI1DKDKHOL    163-29 S=26 H=0
      2  I  LI1DKHSH36    163-15 S=30 H=0
      1  I  LI1DKLENG     163-13 S=30 H=0
      0  C  LI1KDLIBDT    163-07 N=20 S=20
      1  I  LI1DKLNHOL    163-31 S=30 H=0
      0  I  LI1DKNPGD     163-11 S=1  H=27
      0  I  LI1DKPAGED    163-10 S=1  H=26
    400  C  LI1DKPAKTB    163-27 N=20 S=2
      5  I  LI1DKPGMNO    163-21 S=30 H=0
    440  C  LI1DKPGMST    163-37 N=1  S=1
      3  I  LI1DKPKGN1    163-17 S=30 H=0
      4  I  LI1DKPKGN2    163-19 S=30 H=0
  73401  C  LI1EXECSTAT          N=10 S=5          170-17
   6675  C  LI1HASHBK0           N=1  S=1          164-28
17400100 F  LI1HASHTBL          N=1  S=100        164-22
  71460  C  LI1ICB              N=1  S=20         166-02
  72677  C  LI1IMDTEADR         N=1  S=1          165-45
  72676  C  LI1IMDTSADR         N=1  S=1          165-44
  72701  C  LI1IMKWEADR         N=1  S=1          165-47
  72700  C  LI1IMKWSADR         N=1  S=1          165-46
  72635  C  LI1INBUF            N=10 S=4          172-24
  72675  C  LI1LIBRBASE         N=1  S=1          165-42
  71447  C  LI1OMCAT            N=1  S=1          165-38
  72711  C  LI1PKGNAME          N=1  S=2          166-04
  73534  C  LI1QUESTAT          N=1  S=10         164-30
17400030 F  LI1RLIBINFO         N=1  S=10         164-13
17400012 F  LI1RPBEGSCR         N=1  S=1          164-06
17400000 F  LI1RPDT             N=1  S=10         164-03
17400014 F  LI1RPIMDTEA         N=1  S=1          164-08
17400013 F  LI1RPIMDTSA         N=1  S=1          164-07
17400016 F  LI1RPIMKWEA         N=1  S=1          164-10
17400015 F  LI1RPIMKWSA         N=1  S=1          164-09
17400017 F  LI1RPKGNAME         N=1  S=2          164-11
17400021 F  LI1RPNUSED          N=1  S=7          164-12
17400010 F  LI1RPOMCAT          N=1  S=1          164-04
17400011 F  LI1RPOMSCAT         N=1  S=1          164-05
      4  I  MA1ABORT            S=3  H=21 SA=10        240-13, 240-14
  73157  C  MA1ADMNSCP          N=1  S=144        190-29
```


Fig. 28—Symbol Cross-Reference Listing Page of Datapool Library P1ALAY

```
13050.9090 01 2       LAYOUT   ----------------DDDCBA                    P1ALAY   02   02
13050.9180 02 LI1_CBCUT ITEM   A              # 1 = OFFICE IS PRECUT
13050.9270 03 LI1_CBGRTH ITEM  B              # 1 = OFFICE IS IN GROWTH STATE
13050.9360 04 LI1_CBUNRES ITEM C              # 1 = PROGRAM IS OF UNRESTRICTED TYPE
13050.9450 05 LI1_CBBLOCK ITEM D              # PROGRAM'S EXECUTION BLOCKING ATTRIBUTE

13050.9630 07 3       LAYOUT   AAAAAAAAAAAAAAAAAAAAAAA
13050.9720 08 LI1_CBPGM ITEM   A              # PROGRAM NAME - 4 6-BIT ASCII CHARS


13052.     13 #
13053.     14 #   LIBRARY EXECUTION STATUS CONTROL BLOCK
13054.     15 #
13055.     16 LI1EXECSTAT SCATABLE 8.5        #LIBRARY SYSTEM EXECUTION STATUS BLOCK

13057.     18 0       LAYOUT   AAAAAAAAAAAAAAAAAAAAAAA
13058.     19 LI1_EXPKG03 ITEM A              # EXECUTING CLIENT'S PKG NAME (CHAR 0-3)

13060.     21 1       LAYOUT   AAAAAAAAAAAAAAAAAAAAAAA
13061.     22 LI1_EXPKG47 ITEM A              # EXECUTING CLIENT'S PKG NAME (CHAR.4-7)

13063.     24 2       LAYOUT   AAAAAAAAAAAAAAAAAAAAAAA
13064.     25 LI1_EXPGM ITEM   A              # EXECUTING CLIENT'S PROGRAM NAME

13066.     27 3       LAYOUT   JJJIHGFFFEEEDDDCCCBBBAAA
13067.     28 LI1_EXTASK ITEM  A              # EXECUTING CLIENT'S TASK NUMBER
13068.     29 LI1_EXPGMN ITEM  B              # EXECUTING CLIENT'S PROGRAM NUMBER
13069.     30 LI1_EXIDENT ITEM C              # EXECUTING CLIENT'S IDENTITY
13070.     31 LI1_EXCLVEC ITEM D              # EXECUTING CLIENT'S STATE VECTOR
13071.     32 LI1_EXBLOCK ITEM E              # EXECUTING CLIENT'S BLOCKING ATTRIBUTE
13072.     33 LI1_EXTERMR ITEM F              # EXECUTING CLIENT'S TERMINATION REASON
13073.     34 LI1_EXCUT ITEM   G              # 1 = CLIENT IS FOR PRECUT OFFICE
13074.     35 LI1_EXGRTH ITEM  H              # 1 = CLIENT IS FOR GROWTH OFFICE
13075.     36 LI1_EXUNRES ITEM I              # 1 = CLIENT IS OF UNRESTRICTED TYPE
13076.     37 LI1_EXNUSED ITEM J              # THIS FIELD IS PRESENTLY UNUSED

13078.     39 4       LAYOUT   AAAAAAAAAAAAAAAAAAAAAAA
13079.     40 LI1_EXPDTA ITEM  A              # EXECUTING CLIENT'S PGM DIR TABLE ADDRESS


13081.     45         ASSIGN_  LI1_EXCLVEC.
13082.     46         MC       (1LICLNOTIP.0.CLIENT NOT STARTED).
13083.     47         MC       (1LICLACTRP.1.CLIENT ACTIVE IN ROVER PS).
13084.     48         MC       (1LICLACTPG.2.CLIENT ACTIVE IN PAGING AREA).
```

LI1EXECSTAT SCATABLE LAYOUT

Fig. 29—Symbol LI1EXECSTAT Memory Layout

ABBREVIATIONS AND ACRONYMS

Note: Refer to Section 234-010-002 for a complete list of abbreviations and acronyms.

ABBREVIATION	TERM
CS	Call Store
FS	File Store
NM	Network Management
ODA	Office Data Assembler
ODD	Office Dependent Data
OM	Output Manual
PS	Program Store
TLP	Trouble Locating Procedure
TOP	Task Oriented Practices
TV	Transfer Vector