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User's Guide for the SSC ADDRESSES Database System

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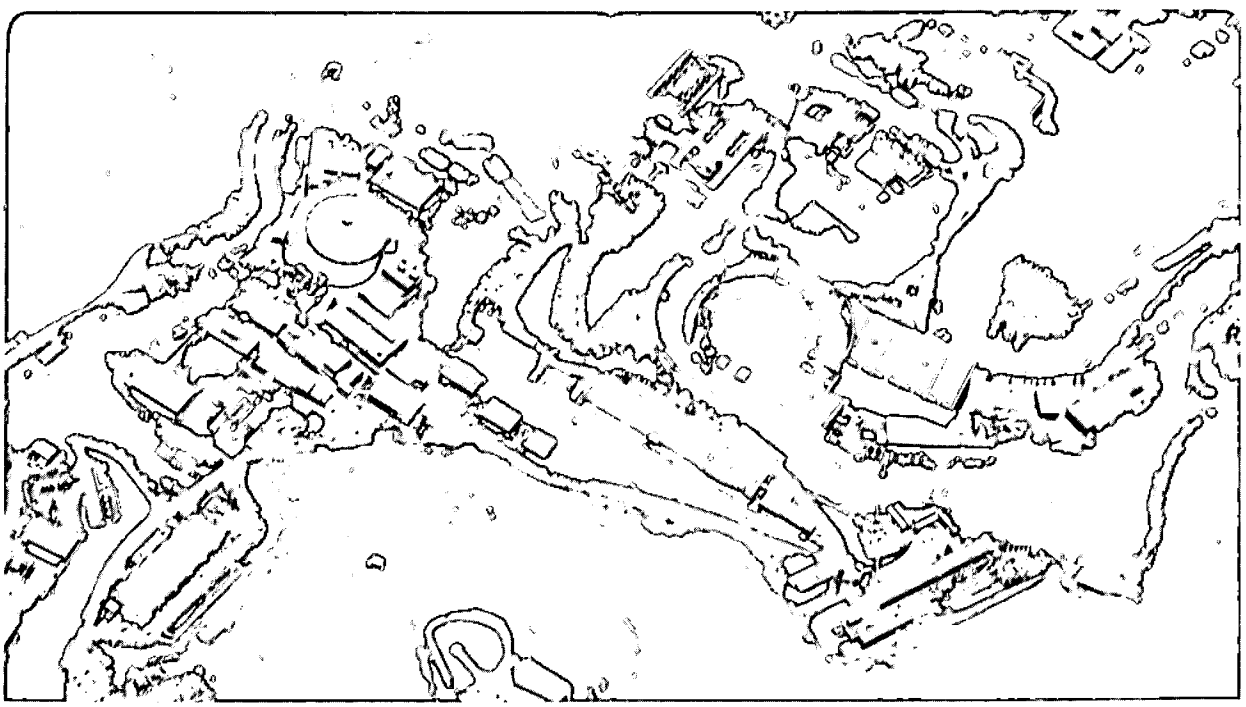
May 1985



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User's Guide for the SSC ADDRESSES Database System

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Computing Division

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I. Introduction:

.1 Purpose
.2 CMS, SPIRES, the CMS/SPIRES interface
.3 General information about SPIRES.

I.1 Purpose

The SSC ADDRESSES database was implemented at the request of the Superconducting Super Collider Design Group for management of mailing lists. However, it is a generalized system that can serve for administration of other mailing lists as well. It allows for domestic and foreign address elements, and electronic mail addresses which could be used by a SPIRES protocol to send CMS mail or files automatically. It has a format to produce adhesive mailing labels, and employs phantom structures in the LISTS subfile to give an immediate list of addressees on a particular mailing list. There is no practical limit to the number of mailing lists specifiable, nor to the length of the name of a list.

I.2 CMS, SPIRES, the CMS/SPIRES interface

The Stanford Public Information Retrieval System (SPIRES) is a product of Leland Stanford Junior University in Palo Alto, CA. The SPIRES database management system at LBL runs on the UC Berkeley Campus IBM 3081-D32 under the VM/CMS operating system. VM SPIRES consists of three components:

SPIRES itself (database management system)
CMS (the operating system that manages the computer)
SPIRES/CMS interface (maps SPIRES activity onto the CMS environment

Figure 1 indicates how these components relate to one another. Normally, SPIRES users are not and need not be concerned with the subsystems between themselves and SPIRES. The diagram is provided only to demonstrate context.

Most of the icons are self-explanatory. The purpose of the SERIES/1 is to make the user's ASCII terminal appear as an IBM 3270 terminal to the IBM 3081, and to make the IBM 3081 appear to communicate in ASCII to the user.

Section II will describe the commands to move along the path from terminal through the gateways into SPIRES. This generally requires less than 10 seconds and becomes routine.

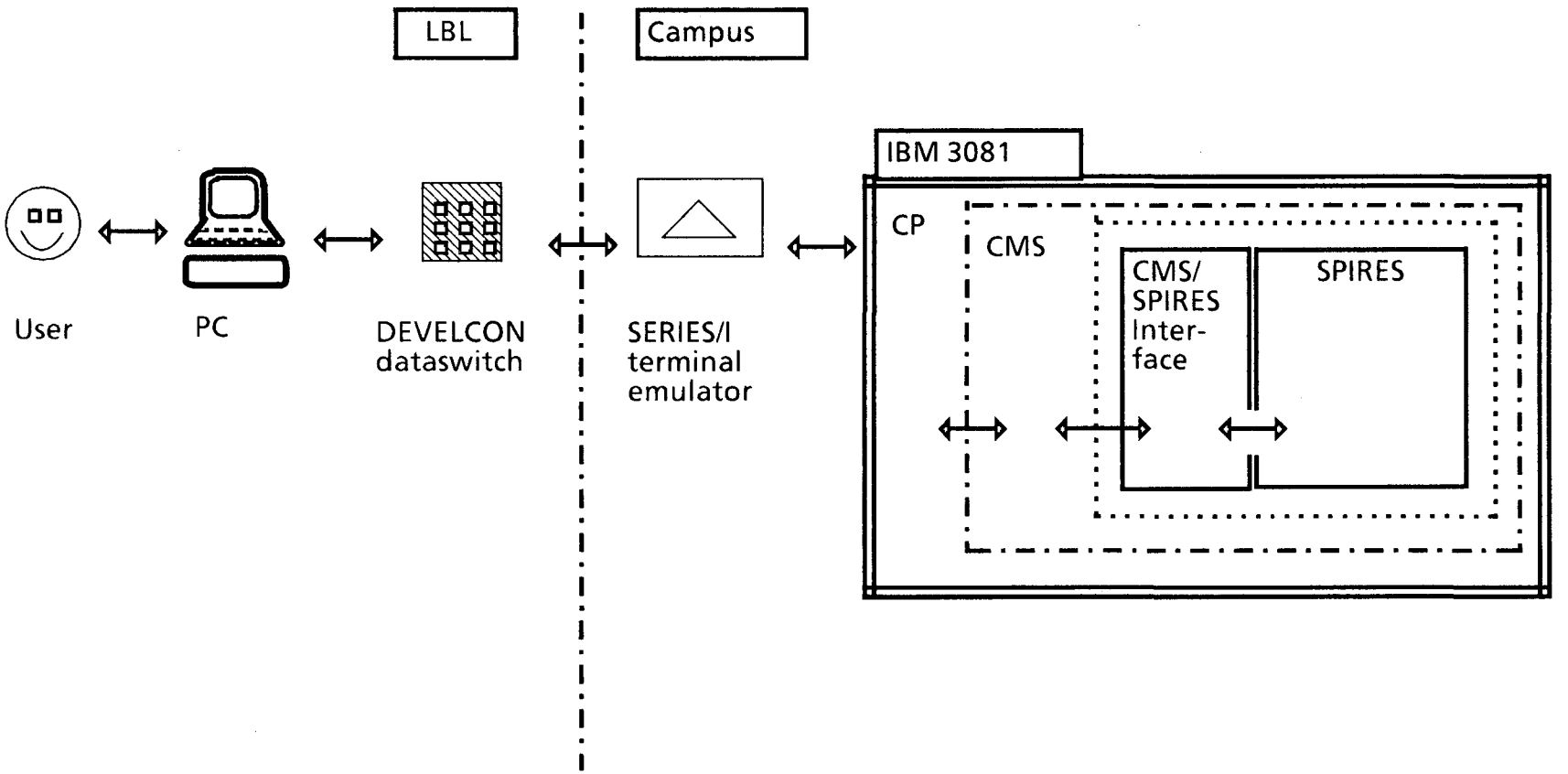

Figure 1. Pathway between user and SPIRES

I.3 General information about SPIRES.

Information for each addressee is stored directly into a SPIRES *record.* Each record in the database is comprised of a collection of elements as described below, e.g., name, street, city. Each record in a SPIRES database has a unique identifier often called *key*. In the ADDRESSEES subfile, the key is called **ID**. In the LISTS database, the key is **LIST.NAME**. The key of a record in the STATES database is the 2-character abbreviation for that state as defined by the U.S. Post Office. Further explanation of keys is found in Section IV.1, V.1, and VI.1

For each record, a particular element may be required or optional, singly or multiply occurring, have controlled allowable values, be limited to a particular type of value, and be indexed for ease in searching, etc.

If you are not in SPIRES, the CMS prompt is: **R;**

If you have EXITed SPIRES and you wish to re-enter, enter the command:

SPIRES

When logging on, the PROFILE EXEC in CMS and the ENTRY COMMANDS record in SPIRES automatically execute to enter into the ADDRESSEES subfile.

The normal SPIRES prompts are as follows:

- **-?** for UPPER case only
- **->** for upper and lower case
- **+?** UPPER case in Global For
- **+>** upper and lower case in Global For

All the modifications made to the database during the day (adds, updates, and removes) take effect immediately and are reflected the very next time the record is displayed. In this application, the indexes which are searched using the FINd command are also updated immediately.

For most SPIRES commands, only the first three characters need be entered. For example, the **FIND** command requires only **FIN** <index> <value>. In this document, commands will be fully spelled out, with the first three letters capitalized; e.g., FINd, SHOw ACTive, indicating that only the capitalized characters need be entered.

The term *file* as used in "ADDRESSES file" or "LISTS subfile" is distinct from *physical* CMS files and refers to SPIRES files, which are "logical" files that are physically stored in CMS files. **Note that the ADDRESSEES subfile is contained in the ADDRESSES file. Also note the distinction in spelling.** The "active file" is also a SPIRES concept, and usually refers to the CMS file ACTIVE FILE A, Any CMS filename can be used as the SPIRES active file and is specifiable by the user with the

SET ACTive <fn> <ft> <fm> command.

II. Getting Started.

.1 Logging ON
.2 Logging OFF

II.1 Logging ON.

1. Turn PC, disk drive, and printer on and wait for the PC to complete booting.

2. Enter the command: **CD \YTERM**

3. Enter the command: **X 7**

4. Enter the command: **T 9600 K**
   System responds: "PLEASE ENTER THE NAME OF THE KEYBOARD TABLE"

5. Enter: **UCBCAD**
   System responds by clearing the screen and displaying DISCONN in the lower left corner

6. Make sure the blue TSB box displays either a green or red light.

7. If red light is illuminated, press the blue button and wait for green light.

8. When green light is illuminated, enter carriage return [CR].

   The following dialogue should occur. The system reponse is in **bold**. The user response in modern font.

9. Request: **ccdb** [CR].

10. System will respond with a bell, and cursor and will jump to next line. Enter carriage return [CR].

11. YALE ASCII TERMINAL COMMUNICATIONS SYSTEM V2.1
    enter terminal type: **YTERM** [CR].

12. System will respond with a pseudo-three-dimensional display CFO over the letters VM. Enter another [CR].

13. The screen will clear. Enter:
    L COLLIDER [name of your virtual machine] [CR].

14. ENTER PASSWORD:
    enter your password. It is not a good idea to write your password in this set of instructions. If you write it down, do so elsewhere.

Note: If your previous session ended "abnormally", e.g., by simply pushing the blue button on the TSB box to obtain a red light, you will have to enter, at this point in the logon procedure, the command: **IPL CMS** and then a [CR]. This should always be done when a paragraph beginning with the word **"RECONNECTED . . . "** appears.

15. Enter yet another [CR]. This causes your PROFILE EXEC to execute. The system will then perform the following tasks automatically:

call SPIRES
SELect ADDRESSEES
SET LENGTH 79
SET UPLOW (for upper and lower case)

Note: Henceforth in this document, commands are assumed to be followed by a [CR], except for ESC-sequences and CNTL-sequences.

II.2 To LOGOFF

If you have one of the SPIRES prompts (-?, +?, ->, +>), enter: EXIT

The system will respond: **Leaving SPIRES.**

Enter: LOG

III. Organization of the database.

The SSC Addresses database system is comprised of one SPIRES *file*, containing three *subfiles* The file is COLLIDER:ADDRESSES. The subfiles are ADDRESSEES (note difference between ADDRESSES and ADDRESSEES), LISTS, and STATES. Each subfile is selectable as a database in its own right. The solid lines with two-way arrows in figure 2 indicate that data is shared between the two subfiles.

IV. Using the ADDRESSES Subfile

1 Description of elements in the ADDRESSEES subfile
2 Displaying records
3 Searching in SPIRES; Searching the ADDRESSEES subfile
4 Updating records
5 Adding new records
6 Removing records
7 Changing the key of a record

The purpose of the ADDRESSES subfile is to maintain current descriptive information about each addressee. Each addressee may be associated with zero or more *existing* mailing lists. **A record must be added to the LISTS subfile before an addressee's record can refer to that list.**

Each addressee is represented in the database by a collection of elements as described below, e.g., name, street, city, etc. Each record has a unique identifier often called *key* or in the ADDRESSES database, simply **ID**. This code is assigned by whoever enters the new addressee record into the database. To determine the key which should be used next, enter the command: **NEXTKEY**.

For each record, a particular element may be required or optional, singly or multiply occurring, have controlled allowable values, be limited to a particular type of value, or be indexed for ease in searching, etc. The element listing below describes the characteristics of each element.

Note that there is **no** foreign/domestic flag at present. The element STATE is for U.S. states and territories only. If STATE occurs, the addressee is U.S. If STATE does not occur, the addressee is foreign.

IV.1 Description of elements in the ADDRESSEES subfile

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
ID (key of the record)	REQUIRED	4 bytes (int)	single	INTEGER	Indexed
NAME	Optional	Variable	Multiple[1]	Name	Indexed
Title	Optional	Variable	Multiple	Character	
Institution (INST, ORG)[2]	Optional	Variable	Multiple	Character	Indexed
Attention (ATTN)	Optional	Variable	Single	Character	
Mailstop (MS)	Optional	Variable	Single	Character	
Street	Optional	Variable	Multiple	Character	
City (C)[5]	Optional	Variable	Single	Character	Indexed
State	Optional	2 characters	Single	Character Lookup/verify	Indexed
Province (PROV)	Optional	Variable	Multiple	Character	Indexed with City
ZIP	Optional	Variable	Single	Character	Indexed
Country	Optional	Variable	Single	Character	Indexed
Electronic.mail (EM)	Optional	Variable	Multiple	Character	Indexed
TELEPHONE	Optional	Variable	Multiple	Structure	
U.S.Area.Code (AC)	Optional	max 3	Single	Character	Indexed
Country.Code (CC)	Optional	Variable	Single	Character	
City.Code (CITYC)	Optional	Variable	Single	Character	
Phone.number, (Phone, PN)	Optional	Variable	Single	Character	
FTS	Optional	Variable	Single	Character	
List[3]	Optional	Variable	Multiple	Character/ Lookup/verify	Indexed
Quantity (Q, QUAN)[4]	Optional	Variable	Multiple	Character	
INDIV.CORRESPOND (IC)	Optional	Variable	Multiple	Character	
NOTE.STR	Optional	Variable	Multiple	Structure	
NOTE	Optional	Variable	Single	Character	
NOTE-DATE	Automatic	Fixed	Single	Date	
DATE.Added	Required (automatic)	Fixed 4	Single	Date	
DATE.UPDATED	Required (automatic)	Fixed 4	Single	Date	
FNFLNL†	VIRTUAL	0	single	virtual	

† Reformats the NAME element to first-name-first-last-name-last. To DISplay do:
SET ELEM ALL + FNFLNL.

[1]Use Multiple occurrences for multiple name. Do not put multiple names in a single occurrence.

[2]Enter the entire name without abbreviation, followed by abbreviations in parentheses, if desired. For example:

INSTITUTION = Stanford Linear Accelerator Center (SLAC)

[3] List values must match an existing LIST.KEY in the LISTS subfile.

[4] Use a standard format such as:

QUANTITY = Lname:nn

Where Lname is the list name, and nn is the quantity of copies, for example

QUANTITY = DOE:6

would indicate that 6 copies were to be sent to that addressee *for that list.*

Elements which are indexed are searchable using the FINd command

LIST
STATE
NAME
INSTITUTION
CITY
ZIP
Electronic.mail
U.S.Area.Code

[5] Values for the CITY element are indexed and searchable as one single value, not broken on blanks and indexed separately.

Graphically, the hierarchical nature of a typical COURSES record appears:

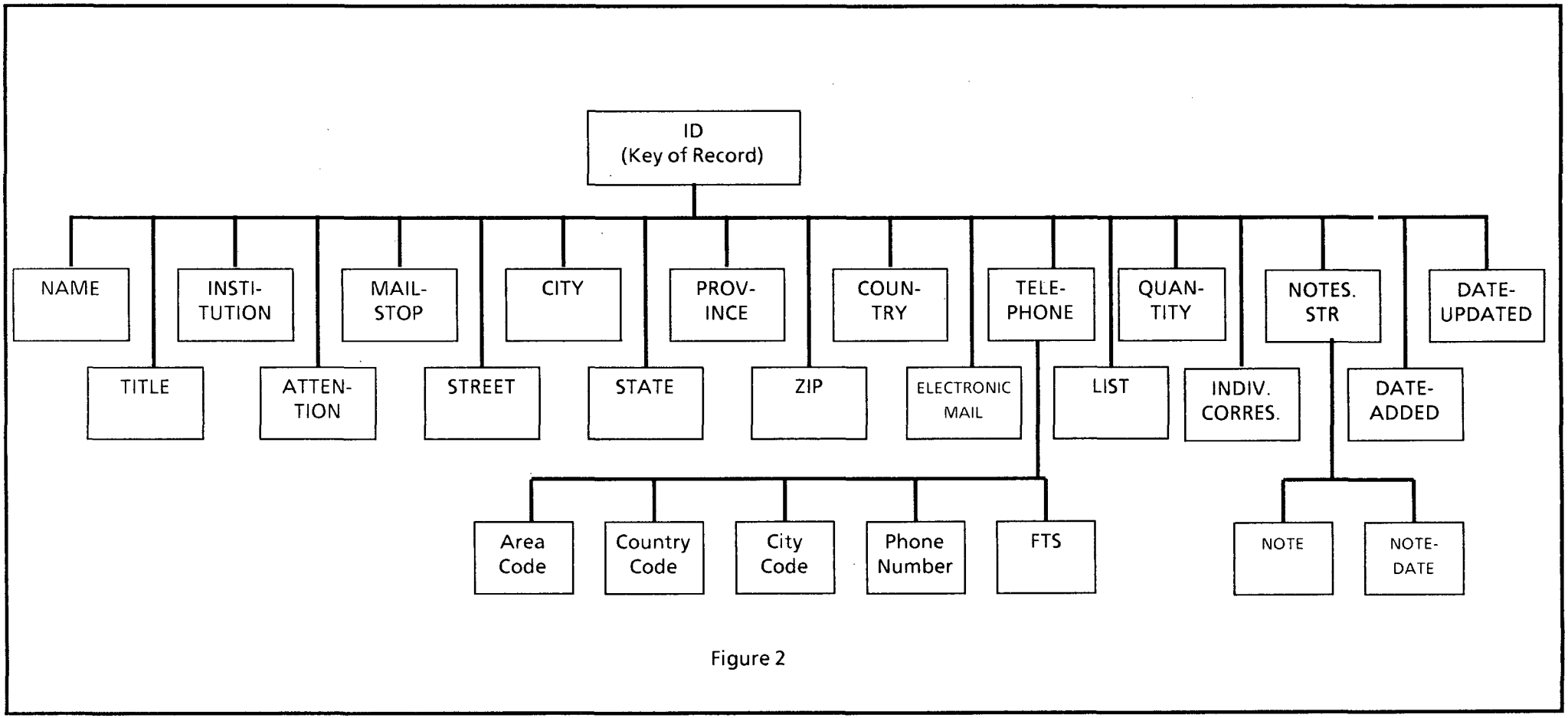
ID
(Key of Record)
NAME
INSTI-
TUTION
MAIL-
STOP
CITY
PROV-
INCE
COUN-
TRY
TELE-
PHONE
QUAN-
TITY
NOTES.
STR
DATE-
UPDATED
TITLE
ATTEN-
TION
STREET
STATE
ZIP
ELECTRONIC
MAIL
LIST
INDIV.
CORRES.
DATE-
ADDED
Area
Code
Country
Code
City
Code
Phone
Number
FTS
NOTE
NOTE-
DATE

Figure 2

IV.2 Displaying Records.

To use the ADDRESSES subfile, you must SELect it with the command:

SELect ADDRESSEES

Whenever you log on or issue the command **SPIRES** the ADDRESSEES subfile will automatically be SELected.

If you know the ID for a record which you wish to see, you may use the DISplay command to view it directly:

DISplay <ID>

If you do not know the ID for a record which you wish to see, then you must search for it based upon some criteria you do know. Use the FINd command to search for records in this way (Section IV.3) Then, to look at the records which are the result of a **FINd** command, enter the command **TYPe**. All of the records in the search result will then be displayed.

If you search on a non-indexed element (See Sect IV.3) i.e., using Global For, then use the **DISplay** <all/first/last/n/ext> command.

IV.3 Searching in SPIRES; Searching the ADDRESSEES Subfile

You may search for ADDRESSEE records based on any element or combination of elements. However, some elements are used as the basis of searching much more often than others. Those elements are *indexed* in the same way as selected keywords are indexed in the back of a book. Rather than searching sequentially through a book to find a particular topic, you find the topic in the index. Associated with its entry is an *address*, usually a page number. SPIRES indices work in much the same way. Indexed elements are listed along with their "addresses". However, you never have to worry about the addresses. You simply enter a FINd command, and SPIRES fetches the addresses and then allows you to display, re-sequence, or update the records as desired.

To see a list of the elements in the subfile, enter the command **SHOw ELEMents.**

To see a list of indexes, enter the command **SHOw INDexes.**

As indicated in the element list above, those elements which are indexed are:

LIST
STATE
NAME
INSTITUTION
CITY
ZIP
LECTRONIC.MAIL
U.S.AREA.CODE

The key of a record may also be searched as if it were an indexed element (with the FINd command), which, as implemented in SPIRES, it is, since goal records are stored in order by key.

To search for courses based on any of these elements, use the FIND command, as follows:

FIND <index name> <relational operator> <value>

For example, to find all the addressees in the 415 area code, enter:

FIND AC = 415

Then use the TYPe command to see the result (Section IV.2).

If you do not include the relational operator in your search, SPIRES assumes an "equals" operator:

FIND LIST 22

Less commonly-used elements are not indexed; for example, job title. To search for all the addressees with a specific job title, enter

FOR SUBFile WHEre <element> = <value>

For example,

FOR SUBF WHEre TITLE = PHYSICIST

Then use the DISplay command to see the result (Section IV.2).

A complete description of all the searching capabilities in SPIRES is described in the document Searching and Updating listed in Appendix E.

IV.4 Updating Records.

There are two methods for updating records in SPIRES, one, by TRAnsferring & UPDating, the other by using format $PROMPT. A complete description of updating records in SPIRES is described in the document Searching and Updating listed in Appendix E. This brief summary provides an overview.

Using TRAnsfer and UPDate

To update an ADDRESSEE record, enter the following commands:

1. Use the FINd and TYPe commands to determine the key of the record you wish to modify.
2. **TRAnsfer <ID> CLR**
3. **X ACTIVE FILE** (this enables you to use the editor to modify the file)
4. Edit the record. When all the changes are made, enter the command **FILE** on the command line. This will return you to SPIRES.
5. **UPDate**
6. **DIS**play <entry number> to verify that the record is correct.

When adding or modifying data elements, remember that the format is:

DATA ELEMENT = value ;

Don't forget the semicolon!

Further, if adding a note, insert the following lines:

NOTE.STR;
NOTE = <text of note, no limit to length> ;

Don't forget the semicolons! Or, just use FORMAT $PROMPT.

SPIRES validates the data when you update the record. If there are any illegal values, you will receive an error message when you enter the **UPDate** command. If this occurs, return to step 3 and re-edit the record.

Finally, it is always a good idea to retain your source documents after you complete any updating. In four years of running SPIRES at LBL, no data has ever been lost, but users have forgotten why they changed some records.

Note that the current version of the record will always be displayed by SPIRES.

NOTE: The key of a record (ID) **cannot** be modified by editing its value and the issuing an **UPDate** command. To change the key of a record, please see Section IV.7.

NOTE: Values for LIST must exist as keys in the LISTS subfile before they can be used in an ADDRESSEE record. If an error message indicates that the LIST element value is invalid, xedit ACTIVE FILE to check for typograpical error. If you believe the value to be correct, SELect the LISTS subfile to check the entry (Sections V).

Using format $PROMPT

To update an existing ADDRESSEE'S record using $PROMPT, enter the commands:

SEL ADDRESSEES (if not already SELected)

SET FORMAT $PROMPT (NORETURN

MERGE <ID>

You will be prompted element by element. If an element has an existing value, it will be displayed, and you will be given an opportunity to change it. You are also given the opportunity to add new occurrences of elements and structures. Please see Appendix C for $PROMPT Subcommands.

IV.5 Adding a new record.

A complete description of adding records in SPIRES is described in the document Searching and Updating listed in Appendix E. Below, a very brief summary and sample session provides an adequate overview.

SET FORMAT $PROMPT (NORETURN

ADD

You will be prompted for the value of each element. If an *optional* element should be left blank, enter a carriage return [CR]. Also note that you will be prompted twice for each multiply occuring element. Just enter a [CR] to proceed to the next element. Please see Appendix C for the subcommands used in the $PROMPT format.

To add several records, simply reissue the ADD command after each previous record is ADDed and DISplayed.

After ADDing a new record, always DISplay <key> to examine it for correctness.

Here's a sample session showing how to add a record (system responses in **bold**):

```
sel addressee                    (not necessary if ADDRESSEES is alreaded SELected)
set format $prompt
-?
ADD
:ID
115 [CR]
:NAME
Amanda B. Recondwith [CR]
:Title
Staff Scientist  [CR]
:Title
[CR]
:Institution
:Stanford Linear Accelerator Center (SLAC) [CR]
:Institution
:[CR]
:ATTENTION
[CR]
:MAILSTOP
Bldg 55-222 [CR]
:STREET
 [CR]
:CITY
Palo Alto [CR]
:STATE
CA [CR]
:ZIP
97000 [CR]
:COUNTRY
[CR]
:ELECTRONIC.MAIL
ABR AT SLACVM [CR]
     Struc:  TELEPHONE(1)
:    U.S.AREA.CODE
     415 [CR]
```

```
:     COUNTRY.CODE
       [CR]
:     CITY.CODE
       [CR]
:     PHONE.NUMBER
      854-3300  x2369 [CR]
:     FTS
       [CR]
      Struc:  TELEPHONE(2)
:     U.S.AREA.CODE
      [CR]
:LIST
      DOE [CR]
:LIST
      [CR]
:QUANTITY
      DOE:6 [CR]
:QUANTITY
      [CR]
:INDIV.CORRES
This person has been sent a notice of the Conference  4/5/85.[CR]
:INDIV.CORRES
[CR]
      Struc:  NOTE.STR(1)
:     NOTE
This is a test note in a test record.  [CR]
:     NOTE-DATE
[CR]
      Struc:  NOTE.STR(2)
:     NOTE
[CR]
:DATE.ADDED
[CR]
:DATE.UPDATED
[CR]
-?
dis 115  (or:   /dis $key)
   :ID  115
   :NAME  =  Amanda B. Recondwith
   :Title = Staff Scientist
   :Institution = Stanford Linear Accelerator Center (SLAC)
   :MAILSTOP = Bldg 55-222
   :CITY = Palo Alto
   :STATE = CA
   :ZIP = 97000
   :ELECTRONIC.MAIL = ABR AT SLACVM
      Struc:  TELEPHONE(1)
   :  U.S.AREA.CODE = 415
   :  PHONE.NUMBER = 854-3300  x2369
   :  LIST = DOE
   :  QUANTITY = DOE:6
   :INDIV.CORRES = This person has been sent a notice of the Conference  4/5/85.
      Struc:  NOTE.STR(1)
```

```
:  NOTE = This is a test note in a test record.
:  NOTE-DATE = Tues. May 7, 1985
:DATE.ADDED = Tues. May 7, 1985
:DATE.UPDATED = Tues. May 7, 1985
```

IV.6 Removing Records.

A complete description of REMoving records in SPIRES is described in the document Searching and Updating listed in Appendix E. Below, a very brief summary and sample session provides an overview.

To REMove a record from the ADDRESSEES subfile, enter the command:

REM <ID>

For example, to REMove record 115, enter:

REM 115

IV.7 Changing the Key of a Record.

The key of a record (ID) **cannot** be modified by editing its value and then issuing an **UPDate** command. To change the key of a record, enter the following commands:

1. TRAnsfer the old ADDRESSEES record
2. Edit the ID
3. ADD
4. **REMove** <key of the old record> (as described in Sect. IV.6 above)

Please ask for human help if you encounter any difficulties (Appendix F).

V. Using the LISTS subfile

.1 Description of elements in the LISTS subfile
.2 Searching in the LISTS subfile
.3 Updating records
.4 Adding new records
.5 Removing records
.6 Changing the key of a record

The purpose of the LISTS subfile is to maintain current thesaurus (controlled-value lookup table) control over element values permitted in the LIST.NUMBER element in the ADDRESSEES subfile

The only element that is required to occur is the key, **LIST.KEY**.

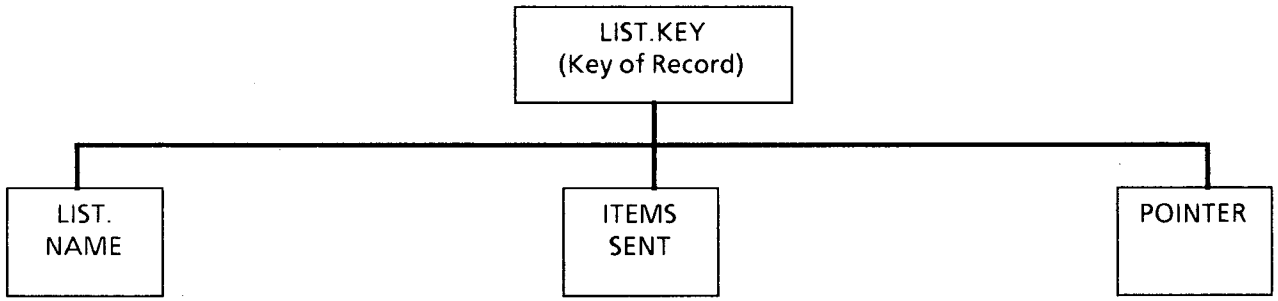

Figure 4

V.1 Description of elements in the LISTS subfile.

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
LIST.KEY[1] (key of the record)	Required	VARIABLE	Single	String	indexed *
LIST.NAME	Optional	Variable	Single	String	
ITEMS.SENT	Optional	Variable	Multiple	String	
POINTER (noupdate/nosee)	Optional	Fixed	Multiple	Hex	

[1]LIST.KEY can be either a name or a number

V.2 Searching and Displaying Records. in the LISTS subfile

To use the LISTS subfile, you must SELect it with the command:

SELect LISTS

If you do not know the LIST.KEY for a record which you wish to see (the list's ID), then you must search for it using Global For, using the form:

FOR SUBF WHEre <LIST.NAME> <operator> <value>

For example,

FOR SUBF WHEre LIST.NAME string europe

would find and list whose list name contained the word "europe", "european", etc.

Then use the DISplay <first/all/last/n/etc> command to show the result.

None of the elements in the LISTS subfile are themselves indexed because the number of lists is so small. The LIST.NAME element can be indexed in the future if requested.

A complete description of all the searching capabilities in SPIRES is described in the document Searching and Updating listed in Appendix E.

V.3 Updating records.

You may use the TRAnsfer and UPDate procedure as described in Sect. IV.4 above, or format $PROMPT. **Values for LIST.KEY must exist in the LISTS subfile before they can be used in an ADDRESSEE record.**

To update an existing LISTS record using $PROMPT, enter the commands:

SEL LISTS (if not already SELected)

SET FORMAT $PROMPT

MERGE <LIST.KEY>

You will be prompted element by element. If an element has an existing value, it will be displayed, and you will be given an opportunity to change it. You are also given the opportunity to add new occurrences of elements and structures. Please see Appendix C for $PROMPT Subcommands.

V.4 Adding records.

First, determine whether the LIST record already exists. To do so, use the DISplay command:

DIS <LIST.KEY>

If the record *does not exist*:

SEL LISTS (if not already SELected)

SET FORMAT $PROMPT

ADD

You will then be prompted for the value of each element. Here's a sample session showing how to add a record (system responses in **bold**):

```
:LIST.KEY
DOE     [CR]
:LIST.NAME
DOE Officials    [CR]
:ITEMS.SENT
[CR]

-?
dis DOE

LIST.KEY = DOE
:LIST.NAME = DOE Officials
```

V.5 Removing Records.

A complete description of REMoving records in SPIRES is described in the document Searching and Updating listed in Appendix E. Below, a very brief summary and sample session provides an adequate overview.

You do not want to REMove any list that still has addressees on that list. If you have verified that no records exist in the ADDRESSEES subfile which refer to the LIST to be removed, enter the command:

REM <LIST.KEY>

For example, to REMove record DOE, enter:

REM DOE

Note: If you wish to restore a record that was erroneously REMoved, please call for assistance. The DEQueue command may be disabled in this subfile.

NOTE: You will not be permitted by SPIRES to remove any record that contains a POINTER element. If you attempt a REMove, and the system responds:

-PRIVILEGED COMMAND

then that course record has POINTERs. If you wish to remove such a record, you must first DISplay the list to be removed. If any addressees are shown, you must SELect ADDRESSEES and modify those records to remove the list to be deleted You may then REMove the record in the LISTS subfile.

V.6 Changing the Key of a LISTS record.

The key of a LISTS record (LIST.KEY) **cannot** be modified by editing its value and then issuing an **UPDate** command. To change the key of a record, you must:

1. TRAnsfer the old record into your ACTIVE FILE
2. edit the ID to the new number
3. ADD
4. **DISplay** < *new* ID> (to verify that the record looks correct.)
5. **REMove** <old ID> (as described in Sect. V.4 above.)

NOTE: If the REMove fails, as explained in V.5, then there will be two records for the same list, the old record and the new one. You should immediately call your database administrator to have all the information for a single student gathered in a single record.

Please ask for human help if you encounter any difficulties (Appendix F).

VI. Using the STATES subfile

.1 Description of elements in the STATES subfile
.2 Searching in the STATES subfile
.3 Updating records
.4 Adding new records
.5 Removing records
.6 Changing the key of a record

The purpose of the STATES subfile is to maintain current thesaurus (controlled-value lookup table) control over element values permitted in the STATE element in the ADDRESSEES subfile

The only element that is required to occur in the STATES subfile is the key, **STATE**.

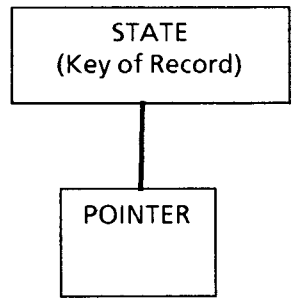

Figure 5

VI.1 Description of elements in the STATES subfile.

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
STATE (key of the record)	Required	2-Character	Single	String	indexed *
POINTER (noupdate/nosee)	Optional	Fixed	Multiple	Hex	

VI.2 Searching and Displaying Records. in the STATES subfile

To use the STATES subfile, you must SELect it with the command:

SELect LISTS

If you do not know the key for a STATE record which you wish to see (the 2-character state abbreviation), then you must search for it using Global For, using the form:

FOR SUBF WHEre STATE <operator> <2-character value>

For example,

FOR SUBF WHEre STATE > CA

would find and list those states "alphabetically greater than" California. Then use the DISplay <first/all/last/n/etc> command to show the result.

If you are unsure about an abbreviation, it is probably best to look in a U.S. Postal Zip Code Directory.

All of the abbreviations for the states have been pre-entered. You need select this subfile only to add new states or territories.

The easiest way to determine if a record exists for a state is simply to DISplay it. If you get an error, it is probably not yet entered.

A complete description of all the searching capabilities in SPIRES is described in the document Searching and Updating listed in Appendix E.

VI.3 Updating records.

You should not need to update any records in the STATES subfile. There are no elements to update.

VI.4 Adding records.

First, determine whether the STATE record already exists. To do so, use the DISplay command:

DIS <2-character abbreviation>

If the record *does not exist*:

SEL STATES (if not already SELected)

SET FORMAT $PROMPT

ADD

You will then be prompted for the value of each element. Here's a sample session showing how to add a record (system responses in **bold**):

```
:STATE
CA    [CR]
-?
dis CA
STATE = CA
```

VI.5 Removing Records.

A complete description of REMoving records in SPIRES is described in the document Searching and Updating listed in Appendix E. Below, a very brief summary and sample session provides an adequate overview.

You do not want to REMove any list that still has addressees on that list. If you have verified that no records exist in the ADDRESSEES subfile which refer to the STATE to be removed, enter the command:

REM <LIST.KEY>

For example, to REMove record CA, enter:

REM CA

Note: If you wish to restore a record that was erroneously REMoved, please call for assistance. The DEQueue command may be disabled in this subfile.

NOTE: You will not be permitted by SPIRES to remove any record that contains a POINTER element. If you attempt a REMove, and the system responds:

-PRIVILEGED COMMAND

then that course record has POINTERs. If you wish to remove such a record, you must first DISplay the list to be removed. If any addressees are shown, you must SELect ADDRESSEES and modify those records to remove the list to be deleted You may then REMove the record in the LISTS subfile.

It is unlikely that any records in the STATES subfile will need to be removed. Call for assistance (Appendix F) if you need help in removing any STATES records.

VI.6 Changing the Key of a STATES record.

It is unlikely that any records in the STATES subfile will need to have keys changed. Call for assistance (Appendix F) if you need help in removing any STATES records.

VII. Using the SERVICE subfile

.1 Description of elements in the SERVICE subfile
.2 Searching in the SERVICE subfile
.3 Updating, adding, deleting records.

VII.1 Description of elements in the SERIVCE subfile.

The SERVICE subfile is a subset of the LBLSTAFF database. SERVICE is used primarily by the telephone operators and mailroom personnel for online realtime retrieval of employee telephone extentions and mailstops. The data is maintained by the Telephone Services Department. The SERVICE subfile default format appears:

EMPLOYEE-NAME	BUILDING EXTENTIONS	DATE LAST CHANGED
MAILSTOP	PAYROLL ACCOUNT NUMBER	DIVISION

VII.2 Searching in the SERVICE subfile

To use the SERVICE subfile, enter

SELect SERVICE

Normal SPIRES searching commands are unnecessary in the SERVICE subfile when searching for employee names. When the subfile is SELected, the system responds with the prompt:

```
ENTER SEARCH STRING:
```

Simply enter a surname alone, the first part of a surname, or all or part of the given name and all or part of a surname.

E.g., to find Ernest O. Lawrence, any of the following search strings are valid:

LAWRENCE
LAWRE
LAW
E LAWRENCE
E LAWREN
E LAW
E O LAWRENCE
E O LAW
O LAWREN
ERN O LAW
ERNEST O LAWRENCE

To exit the prompting routing, enter an asterisk:

```
ENTER SEARCH STRING: *
```

When in the SERVICE subfile and exited from the automatic searching facility ("ENTER SEARCH STRING"), you may use normal SPIRES search commands such as SHOw ELEMents, SHOw INDexes, FINd, TYPe, and DISplay.

To turn the automatic prompting back on for name searching, SELect SERVICE.

VII.3 Updating, adding, deleting records.

Updating, adding and deleting records in the SERVICE subfile is prohibited.

VIII.1 Generating printout and LABELS

Your IBM PC can be used to produce paper copies on its locally-attached printer for most reports. The PC could also print adhesive mailing labels, but would require some additional formatting.

Occasionally you may wish to print paper or labels at the Bldg 50 central facility. As mentioned in Section II, nearly any CMS file that the user has created can be printed using the LPR and LPRCC commands (LPRCC recognizes carriage control in column 1). The LABEL exec is a special command to print adhesive mailing labels.

To print mailing labels:

SELect ADDRESSEES
FINd LIST <list>
SET FORMAT LABELS
IN ACT CLN CLR TYPE
LABEL ACTIVE FILE A <n> where 'n' is the desired number of sets of labels.

You may wish to use some other format than the default SPIRES format. Customized formats have been provided, as described in section. The command SHOw FORmats will list these and also indicate if either one is currently in effect by notating "-SET" after the format name.

WARNING: Standard adhesive mailing labels can accommodate only 8 lines. The LABELS format, at this time, does not count lines since the capability of printing on larger labels may be desired in the future. However, it is important to peruse the label output file before issuing the the LABEL command to insure that all labels are 8 or fewer lines, not counting the carriage control line at the top of each label.

NOTE: Before generating a report, it may be useful to validate the data in the database. To do this:

SEL ADDRESSEES
SET FORMAT $REPORT ID NAME LIST ORG STATE ZIP
FOR SUBFILE
IN ACT CLR DIS ALL
You may then see the results: **(X ACTIVE FILE)**
or print the file: **(LPRCC ACTIVE FILE)**

NOTE: The output will be printed on the IBM3204 printer on the first floor of Bldg 50B and filed in the slot for account number 8390-20.

VIII.2 Printing; the LPR and LPRCC commands

Staff may occasionally wish to print files other than standard reports. These may include a file created using the Xedit editor, or created by SPIRES as the result of a FIND or DISPLAY command. (SPIRES usually places search result displays and other output in the CMS file named ACTIVE FILE A or on the CRT or both.) Therefore, it will often be useful to be able to print files directly. There are two EXECs that will send files to the IBM 3203 printer with dual-size paper on the first floor of Bldg. 50B in the Central Computing Facility machine room area. These EXECs are:

LPR and LPRCC

The syntax of these commands is:

LPR <filename> <filetype> <filemode>

LPRCC <filename> <filetype> <filemode>

For example, to print the CMS file, ACTIVE FILE A, enter the command:

LPR ACTIVE FILE A

The distinction between the two is that **LPRCC** interprets any characters in the first column of the file (at the left margin) as carriage control (hence the CC; LPR is an acronym for line printer). Generally, users will not insert carriage control characters in a file, and so **LPR** is the appropriate command to use. However, the SPIRES facility **DEFINE TABLE** and **FORMAT $REPORT** automatically reserve column 1 for carriage control characters, with data beginning in column 2. For files generated by these utilities, **LPRCC** should be used.

A file probably includes carriage control if most of the text begins in column two and column one contains characters such as: 1, 0, and +. For example, it may look something like:

```
1
 MARY HAD A LITTLE LAMB
 ITS FLEECE WAS WHITE AS SNOW
+               WHITE AS SNOW
0
 AND EVERY WHERE THAT MARY WENT
 THE LAMB WAS SURE TO GO.
```

IX. Possible Future Enhancements

1. Phantom Structure in LISTS subfile
2. SPIRES protocol to utilize electronic mail addresses
3. Modify LABELS format to recognize QUANTITY element and implement protocol to produce multiple sets.
4. Virtual element for LIST NAME to display with each LIST.KEY.

APPENDIX A

TERMINAL Settings for VT100 for use on UCBCMSA Series/1

SETUP-B: 0101 1011 0000 1100

No scroll
Autorepeat
dark background
block cursor

Bell on
key click off
ANSI
XON

--
wrap off
newline off
interlace off

parity odd
parity off
7 bits
60 hz

APPENDIX B

TERMINAL CONTROL

The SERIES/1 terminal controller commands for the IBM PC are summarized in the document "Using the YTERM Package at UC Berkeley", available from the Computing Services Library on the second floor of Evans Hall on Campus.

Occasionally, the system will not accept characters typed on the keyboard, but rather sound the "bell". To clear this keyboard lock, depress the CONTROL key and, while depressed, enter the letter sequence: RTXQV. This is notated:

CNTL-RTXQV

When the system is displaying output on the CRT screen, it will stop after 22 or 23 lines, depending on the kind of terminal. The message **MORE** will be displayed at the lower right. At this point, one has four options:

1. Do nothing. After 50 seconds, the bell will sound. After an additional 10 seconds, the system will clear the screen and display the next page.

2. Enter (large +-key by keypad). This causes the next 23 lines to be displayed immediately.

3. Enter a [CR]. This causes the message in the lower right portion of the screen to change from **MORE** to **HOLDING**. The timer holds, and the screen will not change. Another [CR] causes the message in the lower right to return to **MORE** and the timer is reset.

4. Enter **HT** [CR], then (large +-key by keypad). The **HT** halts typing, preventing the rest of the lines from being displayed. The (large +-key by keypad) then clears the screen .

Several helpful CMS terminal commands are available:

The (@) acts as a CHARDEL (character delete) character.
The (¢) acts as a LINEDEL character (line delete)

The (#) and the (") have been disabled as CMS control characters since they confilict with often-used SPIRES characters.

Series/1 - IBM PC/YTERM control characters (complete list found in 'Using the YTERM Package at UC Berkeley")

CNTL-N	go to next line
keypad left-arrow key	move cursor to the left
keypad right-arrow key	move cursor to the right
keypad up-arrow key	move cursor up
keypad down-arrow key	move cursor down
CNTL-D	deletes a character
CNTL-E	deletes a line
INSERT-key	enter or leave *character* insert mode

These sequences work in the editor as well as outside the editor.

Program Function (PF) keys

In some utilities, such as FLIST and Xedit, PF keys are assigned specific functions. When using your IBM PC as a terminal, the PF keys are on the far left-hand side, marked F1 through F10. F11 and F12 are sometimes needed and available by pressing the **NUMLOCK** key for PF11 and **SCROLL LOCK** for PF12. PF11 deletes to the end of line in the FLIST facility. PF3 usually means "quit". PF1 usually calls a CMS help screen. Often a menu of valid PF keys will be displayed in utilities where they are recognized.

At login, your PF5 key is setup to send messages to a disconnected virtual machine at SLACVM called QSPIRES that enable you to have limited use of the HEP database. To use it, enter PF5 and a SPIRES command, such as FIND or DISPLAY. Global For commands are not allowed.

APPENDIX C

SPIRES FORMAT $PROMPT Subcommands

The following commands are recognized by SPIRES when adding new records (or modifying existing records) using SET FORMAT $PROMPT (formerly SET INPUT FORMAT):

[CR] (carriage return)	Continue to next prompt
//	Puts in a null-length value if legal, otherwise you are reprompted for a legal value.
/N	Skip to the next element of the current structure for input
/S	Skip to the next structure for input (first element of next structure)
/ <value>	Retains leading blanks (blanks in front of the value)
<value> //	Continue value on next line (for long values, e.g., paragraphs)
/E	End input for the current structure, and retain input thus far
/X	Abort input, and do not retain any input

Example of //: to enter a null value in a structure without exiting the structure, for example in the TELEPHONE structure:

```
STRUCTURE  TELEPHONE
        U.S.AREA.CODE: //
        JOB.TITLE President
        (other elements)
```

This prevents the other elements in the TELEPHONE structure from being skipped merely because there was no value entered for U.S.AREA.CODE.

The full set of subcommands can be found in the SPIRES manual Searching and Updating.

APPENDIX D

Looking at your CMS files.

The CMS FLIST facility provides a listing of your permanent files and several capabilities to browse, edit, copy, rename, and delete them. To use the FLIST facility, enter the command **FLIST** and your files will be displayed, with the cursor at the top of the list. You may move the cursor up and down to select any file You may use the **PF** commands on the menu at the bottom to perform various operations, e.g., **PF4** or an **X** will invoke the editor on the selected file, an **PF2** will allow you to browse the file, and **PF8** will allow you to see the next screenful of files on your list if you have more files than can be listed on one screen, and **PF3** will exit FLIST. All the terminal control keys work in FLIST.

There are other file listing facilities besides FLIST. FLIST currently provides the most functionality. For assistance with FLIST, please see Appendix F for human help.

APPENDIX E

Documentation

A complete set of SPIRES documentation is available by issuing the command DOCSPI and following instructions. The most important to use initially are:

1. A Guide to Searching -- A SPIRES Primer.
2. Searching and Updating.
3. Sequential Record Processing: Global FOR Reference Manual.
4. SPIRES Keyterm Index -- An index of all SPIRES terms.

A complete set of CMS documentation is available from the Computer Center library. The following are most likely to be of interest to users of the AWARDS database system.:

1. System Product Editor User's Guide (SC24-5220-1)
2. System Product Editor Command and Macro Reference (SC24-5221-1)

The Computing Services Library on the 2nd floor of Evans Hall on campus can provide documentation about YTERM, including"Using YTERM at U.C. Berkeley".

APPENDIX F

Human Help

For assistance, call:

Allan Konrad	x 5458

APPENDIX G

Using Xedit

The following describes use of Xedit with an ADM-3A terminal. For other terminals, please see Appendix B.

(**Note:** If you are using the Xedit editor and SPIRES, be aware that it is helpful to be in the same case mode in the editor as in SPIRES. That is, it is possible to be in SPIRES in upper-and-lower case, while in Xedit in upper only, or vice-versa. The default for the TRAINING system is to be in upper and lower case both in the editor and in SPIRES. If you have problems with case, call for human help (Appendix F).)

Files in the VM/CMS system have three-part names:

filename filetype filemode

usually abbreviated

fn ft fm

The filemode is generally assumed to be A, refering to you "A-disk", 191. This 191 A disk is your private disk.

To edit a file, issue the command

X fn ft

For example, to edit the CMS file ACTIVE FILE A, enter

X ACTIVE FILE A

The document will then appear ready to edit. Case is not significant on this command. You could also enter:

x active file a

If the file ACTIVE FILE did not exist on your A disk, the editor would create a new empty file, with only a top-of-file and a bottom-of-file marker.

Once in the editor, you can:

Use the **DELETE, INSERT** and **CNTL-E** keys (see Appendix B)

Use the "cursor" keys to move the cursor around on the screen. On an IBM PC terminal, depress the "arrow keys" on the numerical keypad.

Use the prefix field on the left side of the screen (the five columns of equal signs) to copy, delete or move whole lines or groups of lines.

To save your editing, enter the command **FILE** on the command line. To discard your changes and return the file to its original state, enter the command **QUIT** or **QQ**.

Often-used Prefix-field Commands.

D (delete)

To delete one line, place a **d** anywhere in the prefix field to the left of the line you wish to delete. Then hit [CR]. E.g.,

```
===== This is line one
==d== This is line two
===== This is line three
```

results in:

```
===== This is line one
===== This is line three
```

To delete a known number of contiguous lines, enter **d** and the number of lines to be deleted.

```
===== This is line one
==d2= This is line two
===== This is line three
===== This is line four
```

results in:

```
===== This is line one
===== This is line four
```

To delete an *un*known number of contiguous lines, that is, a "block" of lines enter **dd** on the first line to be deleted and on the last line to be deleted. E.g.,

```
===== This is line one
==dd= This is line two
===== This is line three
dd=== This is line four
===== This is line five
```

results in:

```
===== This is line one
===== This is line five
```

I (insert)

To insert a new blank line that can be edited, place an **i** in the prefix field on the line which you want the new line **to follow**. E.g,

```
===== This is line one
==i== This is line two
===== This is line three
===== This is line four
```

results in:

```
===== This is line one
===== This is line two
=====
===== This is line three
===== This is line four
```

The new blank line can now be edited by moving the cursor to anywhere to the right of the prefix field and the first blank column following it.

To insert a specified number of new blank lines that can be edited, place an **i** and the number of blank lines needed in the prefix field on the line which you want the new line **to follow**. E.g,

```
===== This is line one
==i3= This is line two
===== This is line three
===== This is line four
```

results in:

```
===== This is line one
===== This is line two
=====
=====
=====
===== This is line three
===== This is line four
```

It is also possible to insert lines by entering the command **i** on the command line at the bottom of the screen. This will clear the screen below the column-counter line. You can then enter text and use **CNTL-N** to go to the next line. When you hit a [CR], your text will be shifted up above the column-counter line and the lower part of the screen will be available for more input. Two consecutive [CR]'s will return you to normal edit mode.

C (copy)

To copy one line, place a **c** anywhere in the prefix field to the left of the line you wish to copy and a **p** on the line before which the newly created line should be placed. E.g,

```
===== This is line one
==c== This is line two
====p This is line three
```

results in:

```
===== This is line one
===== This is line two
===== This is line two
===== This is line three
```

the **p** stands for *prior* and instructs the system to put the new copy of the line prior to the line with the **p**. You can use the **f** instead, which means *following:*

```
===== This is line one
==c== This is line two
===== This is line three
===f= This is line four
```

results in:

```
===== This is line one
===== This is line two
===== This is line three
===== This is line four
===== This is line two
```

To copy a known number of contiguous lines, enter **c** and the number of lines to be copied on the first line to be copied, and an **f** or a **p** to mark where the copied lines should be placed:

```
===== This is line one
==c2= This is line two
===== This is line three
===f= This is line four
```

results in:

```
===== This is line one
===== This is line two
===== This is line three
===== This is line four
===== This is line two
===== This is line three
```

To copy a *un*known number of contiguous lines, that is, a "block" of lines, enter **cc** on the first line to be copied and on the last line to be copied, and an **f** or a **p** to mark where the copies should be placed:

```
==p== This is line one
==cc= This is line two
===== This is line three
cc=== This is line four
===== This is line five
```

results in:

```
===== This is line two
===== This is line three
===== This is line four
===== This is line one
===== This is line two
===== This is line three
===== This is line four
===== This is line five
```

M (move)

the move command, **m**, works similarly to copy:

```
===== This is line one
==m== This is line two
====f This is line three
```

results in:

```
===== This is line one
===== This is line three
===== This is line two
```

and,

```
=p=== This is line one
==mm= This is line two
===== This is line three
===mm This is line four
```

results in:

```
===== This is line two
===== This is line three
===== This is line four
===== This is line one
```

Most terminals can only display about 22 lines of text. Therefore, if the file you are editing is longer than 22 lines, not all of them can be displayed simultaneously.

Think of your file as if it were a very tall building. The building is a strange building however, because its floors are numbered from top to bottom rather than from bottom to top! So the first floor is at the top of the building.

Our building has a rather unique elevator. Unquestionably the oddest thing of all is that the elevator doesn't move, the building does! The elevator is fixed, but the building moves up and down, into and out of the ground.

But that's not all! First, its doors are always open, so you can always see out as the building moves up and down in front of you. Furthermore, your elevator is 21 stories high! Stranger yet is that half-way up this tall elevator is a platform on which you stand. Thus, you can see the floor that is level with yourself, the 10 floors lower, and the 10 floors higher.

This peculiar building is like your file and your terminal is like its elevator which provides you with a view of some portion of of the building. Imagine standing in the fixed elevator as the building moves up and down in front of you. This is exactly the phenomenon you experience using the editor.

When you first enter the editor, it automatically gives you a view of the top 10 lines of your file. This is like standing in your elevator at the top of the building, with a view of the 10 floors beneath you and 10 stories of thin air above you.

If you wish to look at lower floors of the building, what would you do? You would command the building to shift **up** (which is equivalent to the elevator going down). This is exactly what you do in the editor. The following is a brief summary of the commands that you can use to move around in your file. They are entered on the command line at the bottom of your screen when you're in the editor.

+5 shifts the file up 5 lines so that your view is the next 5 lines **down**. The "+" is optional. Just a 5 or any number is acceptable.

To adjust your view in the opposite direction, i.e., towards the top of the file, use a minus sign preceding the number of lines you want to shift, e.g., **-20** will display the portion of the file 20 lines above your current position.

The command **top** will go the the top of the file. The command **bot** will go to the bottom of the file.

When a number is preceeded with a colon, the editor will go directly to that absolute line number. E.g, **:104** would display lines 93 through 115, with line 104 exactly in the middle of the screen.

To locate a string of characters, enter a slash (/) and the character string to be searched for. It will locate the first instance of that string. If you want to search for later occurrences, continue entering equal signs (=) until you find the occurrence you desire.

Finally, the insert command, **i**, discussed above, is entered from the command line and allows you to insert a virtually infinite number of new lines at that point in the file.

It would not be useful to give every detail of the editor here. See Appendix E for a list of documents which describe how to use the editor. If you need assistance, please see Appendix F for human help.

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