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User's Guide for the AWARDS Database System

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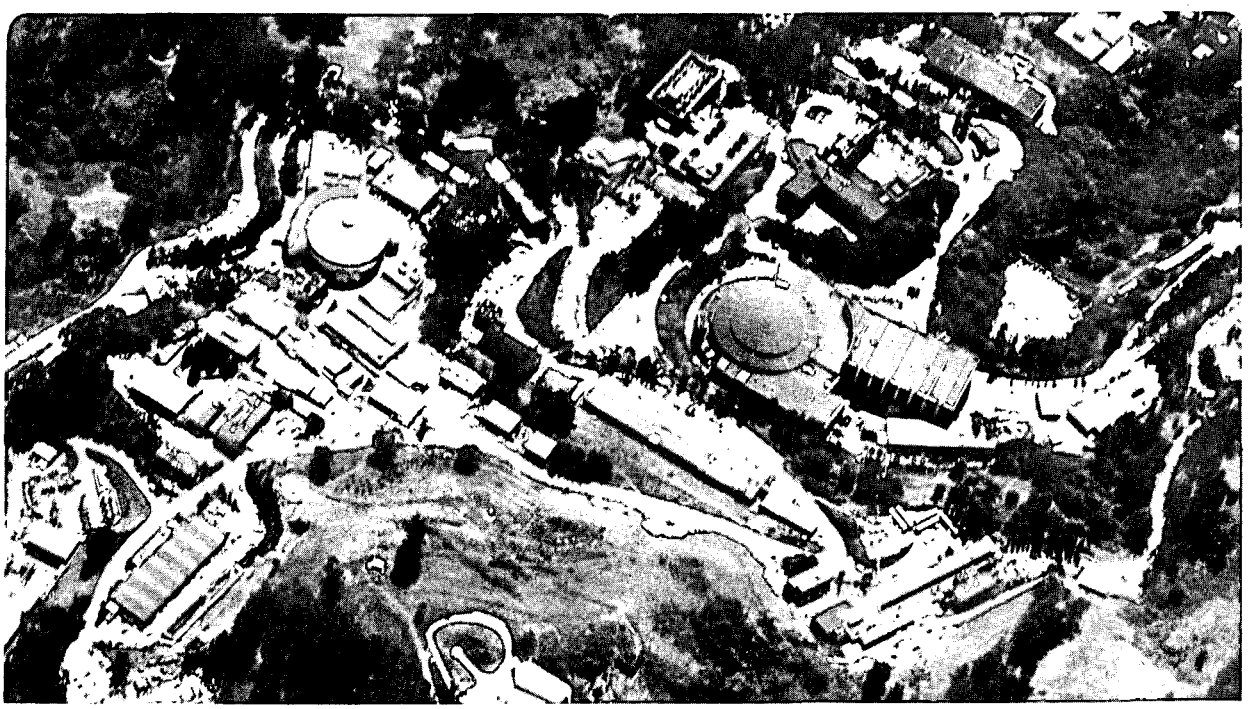
May 1984



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DISCLAIMER

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User's Guide
for the AWARDS Database System

Prepared for the U.S. Department of Energy under Contract DE-AC03-76SF00098

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Computing Division

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I. Introduction:

.1 Introduction: CMS, SPIRES, the CMS/SPIRES interface
.2 General information about SPIRES.

I.1 Introduction: CMS, SPIRES, the CMS/SPIRES interface

The purpose of the AWARDS database system is to maintain current descriptive information about various awards, such as their name, sponsoring agency, purpose, tangible form of the award, due dates for nominations and past winners.

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

The diagram below 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.

I.2 Introduction: General information about SPIRES.

The information is stored directly into a SPIRES record for each award. Each award is represented in the database by a collection of elements as described below, e.g., name, sponsor, etc. Each record has a unique identifier often called *key* or in this awards database, **ENTRY-NUMBER.**

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 normal SPIRES prompts are as follows:

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

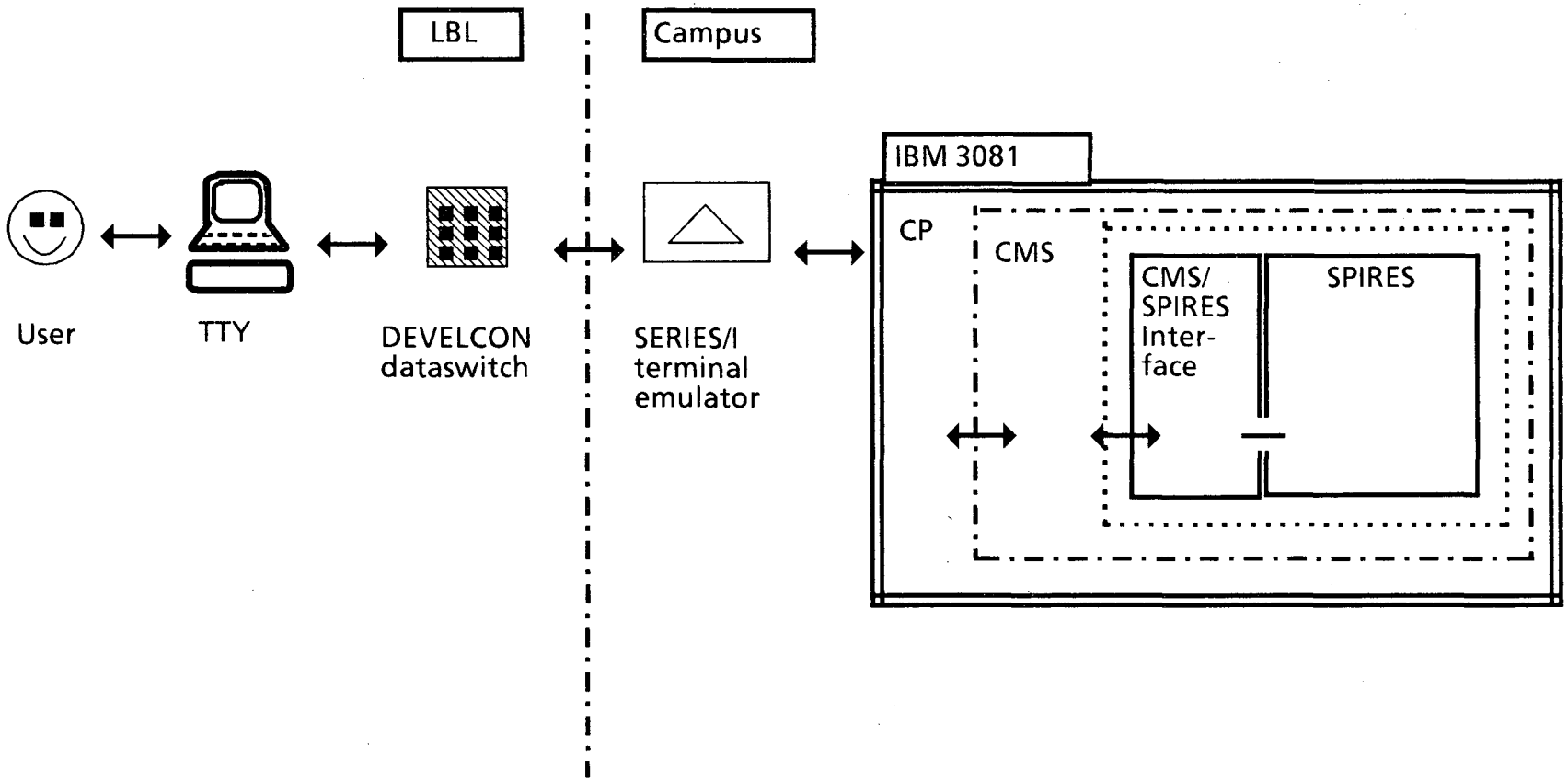
All the modifications made to the database during the day (adds, updates, and removes) take effect immediately and are reflected the very next time the record is displayed. However, the indexes which are searched using the FINd command are not usually updated until early the next morning. Thus, FINd commands will not necessarily fetch records with newly added values for indexed elements until the next day.

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

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

SPIRES.

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



Pathway between user and SPIRES

II. Getting Started.

.1 Logging ON
.2 Logging OFF
.3 Printing; the LPR and LPRCC commands
.4 Using Xedit

II.1 Logging ON.

1. Turn terminal on and make sure the blue TSB box displays either a green or red light.

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

3. 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.

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

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

6. **YALE ASCII TERMINAL COMMUNICATIONS SYSTEM V2.1**
   enter terminal type: adm3a [CR].

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

8. The screen will clear. Enter:
   L AWARDS [CR].

9. **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 lengthy paragraph beginning with the word **"RECONNECTED . . . "** appears.

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

    call SPIRES
    SELECT AWARDS
    SET LENGTH 80
    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 CNTRL-sequences.

II.2 To LOGOFF

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

The system will respond that it is **Leaving SPIRES.** Enter: LOG

If you wish to logon again and your TSB box lamp has remained green, you may enter two carriage returns [CR] [CR], then begin with step 7 above.

II.3 Printing; the LPR and LPRCC commands

Generally, usage of the AWARDS system is for the purpose of generating printed reports. Pre-stored groups of commands called EXECs are provided to enable staff to generate the desired reports easily, and are described in Section VI. These EXECs include command language to print hard copies of the reports. Therefore, no special facilities are needed for printing these standard report products.

However, 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.) 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** do 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.
```

II.4 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, and vice-versa. The default for the AWARDS file 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

To edit a file, issue the command

X fn ft

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

X ACTIVE FILE

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

x active file

If the file ACTIVE FILE did not exist (on your A disk or any other disk attached to your virtual machine) 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 **CNTL-D** and **CNTL-E** keys (see Appendix B)

Use the "cursor" keys to move the cursor around on the screen. On an ADM3A terminal, depress the **CONTROL** key, and while holding it, press either **H, J, K,** or **L** depending on which direction you wish to move the cursor. After you release **CONTROL**, whatever characters you type will replace the text in your file, if any.

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.

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 22 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 you 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.

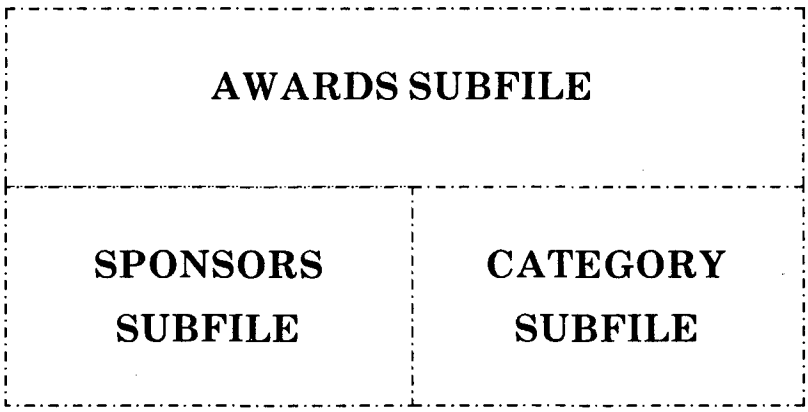
Finally, the insert command, **i**, discussed above, is entered from the command line and allows you to insert a virtually infinite number of new lines at that point in the file.

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.

III. Organization of the database.

The Awards database is comprised of three interconnected SPIRES "subfiles" or databases. The primary subfile is called **AWARDS**; hence the name for the entire system. The other two associated subfiles are entitled **SPONSORS** and **CATEGORY**. Each subfile is selectable as a database in its own right. Schematically, they appear:

Awards Database System ("AWARDS file")



Most of this information is stored directly in the AWARDS subfile. However, to avoid redundant storage of data, two separate subfiles were created to contain information that may apply to more than one award. Specifically, as any particular agency may offer more than one award, the SPONSORS subfile contains most of the pertinent information about the sponsor, rather than it being duplicated in every award record affiliated with a given sponsor.

Each record in each subfile is comprised of *elements*. The elements and their attributes will be described below. Among these elements, each award record contains references to the categories and sponsors with which that award is affiliated. All awards are assigned to one or more award categories, e.g., biological science, chemistry, energy, etc. The CATEGORY subfile acts as a lookup table, as well as a database, to insure that the category assignments are valid.

IV. Using the AWARDS Subfile

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

The purpose of the AWARDS database system is to maintain current descriptive information about various awards, such as their name, sponsoring agency, purpose, tangible form of the award, due dates for nominations and past winners.

Most of this information is stored directly into the SPIRES record for each award. However, to avoid needless storage of redundant information, two additional subfiles were created to contain information that may apply to more than one award. Specifically, as any particular agency may offer more than one award, the SPONSORS subfile stores information about a sponsor. Then a short "pointer" to that sponsor's record, which contains full information about that sponsor, is stored in each AWARD record. The same is true of CATEGORIES. Both SPONSORS and CATEGORY subfiles act as look-up tables, but can also be searched and updated as databases in their own right.

Each award is represented in the database by a collection of elements as described above, e.g., name, sponsor, etc. Each record has a unique identifier often called *key* or in this awards database, **ENTRY-NUMBER**. This entry-number is assigned by SPIRES at the moment the new record is added to the database. They are assigned sequentially.

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.

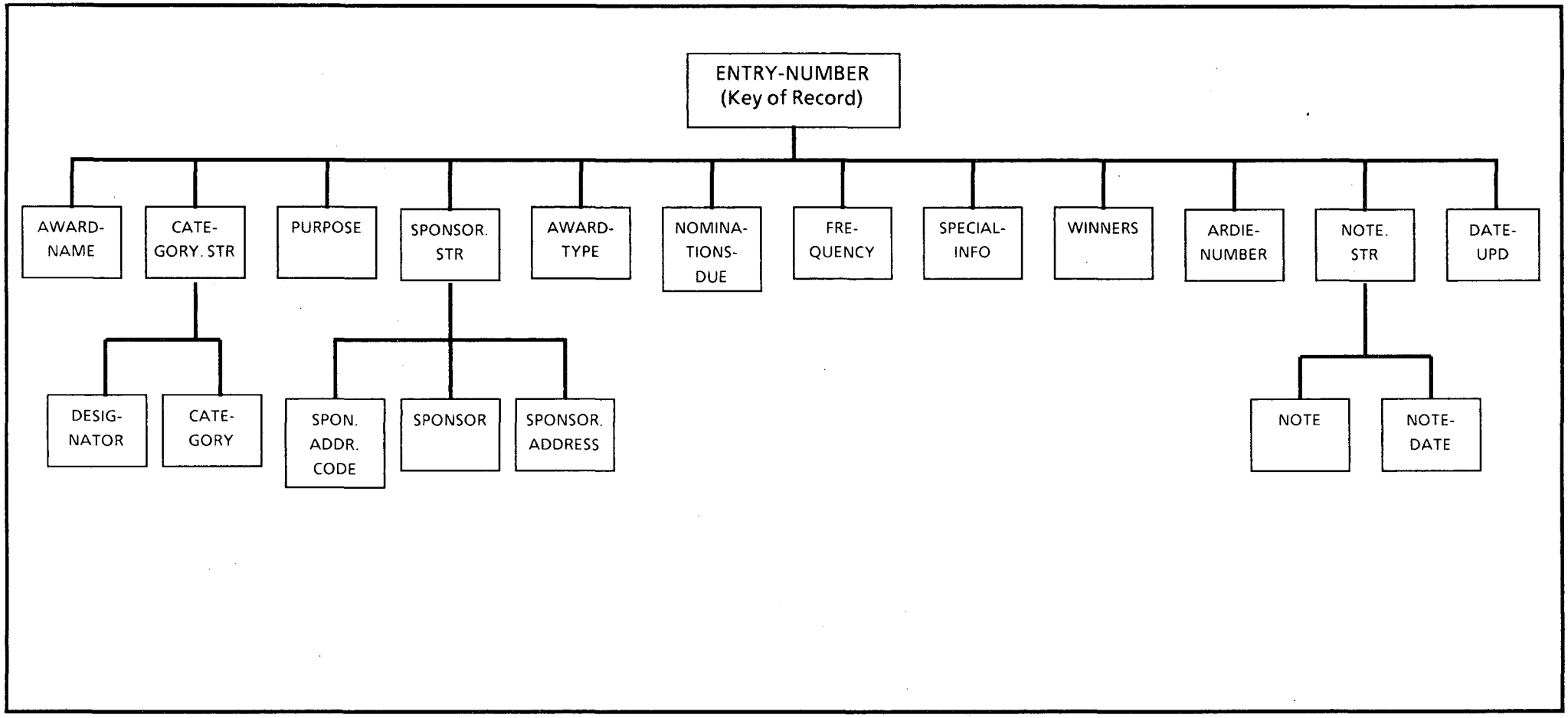
IV.1 Description of elements in the AWARDS subfile

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
ENTRY-NUMBER (key of the record)	Required	Fixed	Single	Integer	Indexed†
AWARD-NAME (NAME, TITLE, T)	Required	Variable	Single	Character	Indexed
CATEGORY.STR (CS):	Required	Variable	Multiple	Structure	
DESIGNATOR (CAT, C) (category code)	Optional	Variable	Single	Character	Indexed
CATEGORY	Virtual	Variable	Single	Character	
PURPOSE (PUR, P)	Required	Variable	Multiple	Character	Indexed
SPONSOR.STR	Required	Variable	Multiple	Structure	
SPON.ADDR.CODE (SAC)	Optional	Variable	Single	Character	Indexed
SPONSOR	Virtual	Variable	Single	Character	
SPONSOR.ADDRESS (SADDR)	Virtual	Variable	Single	Character	
AWARD-TYPE (AWARD, AWD,A)	Required	Variable	Multiple	Character	Indexed
NOMINATIONS-DUE (DUE, D)	Optional	Fixed	Multiple	Day*	Indexed
FREQUENCY (FREQ, F)	Optional	Variable	Single	Character	
SPECIAL-INFO (INFO, I)	Optional	Variable	Single	Character	
WINNERS (WIN, W)	Optional	Variable	Single	Character	
ARDIE-NUMBER (ARDIE, AN)	Optional	Fixed	Single	Character	Indexed
NOTE.STR	Optional	Variable	Multiple	Structure	
NOTE	Optional	Variable	Single	Character	
NOTE-DATE	Automatic	Fixed	Single	Date	
DATE-UPD	Automatic	Fixed	Single	Bits	

† Implemented beginning with the 1984 version of SPIRES.

*This is *not* a date element; i.e., the day and the month are legal, but not the year: "January 23" is legal, "January 23, 1984" is not.

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


ENTRY-NUMBER
(Key of Record)
AWARD-NAME
CATE-GORY. STR
PURPOSE
SPONSOR. STR
AWARD-TYPE
NOMINA-TIONS-DUE
FRE-QUENCY
SPECIAL-INFO
WINNERS
ARDIE-NUMBER
NOTE. STR
DATE-UPD
DESIG-NATOR
CATE-GORY
SPON. ADDR. CODE
SPONSOR
SPONSOR. ADDRESS
NOTE
NOTE-DATE

IV.2 Displaying Records.

If you know the ENTRY-NUMBER for a record which you wish to see, you can use the DISplay command to view it directly:

DIS <entry-number>

If you do not know the ENTRY-NUMBER 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.

IV.3 Searching in SPIRES; Searching the AWARDS Subfile

You may search for AWARDS 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 indexes 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.

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

DESIGNATOR (category code)
SPON.ADDR.CODE
AWARD-NAME
PURPOSE
AWARD-TYPE
NOMINATIONS-DUE
ARDIE-NUMBER
ENTRY-NUMBER (key of the record)

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. The goal records are stored in order by key. (This capability is implemented in the 1984 version of SPIRES.)

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

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

For example, to find all the awards that are in the nuclear science category (the DESIGNATOR for nuclear science is NS), enter:

FIND CAT = NS

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

FIND CAT NS

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.

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

To update a 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** <entry-number> **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> just to verify that the record looks correct.

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. **Values for CATEGORY and SPONSOR codes must exist in their respective subfiles before they can be used in an AWARDS record. If an error message indicates that either of these element values are invalid, xedit ACTIVE FILE to check for typograpical error. If you believe the value to be correct, SELect the CATEGORY or SPONSORS subfile to check the entry (Sections V and VI).**

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 some records were changed. Such problems are resolved by examining the source material for additions and updates to the database.

NOTE: The key of a record (ENTRY-NUMBER) **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

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 breif summary and sample session provides an adequate overview.

First, examine the data to be added to determine that the category and sponsor codes are valid and exist in their respective subfiles. If not, follow the instructions in Sections V and VI to add them. Once you are sure the values to be added are valid, then:

SET FORMAT $PROMPT

ADD

You will then be prompted for the value of each element. If an *optional* element should be left blank, simply 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.

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

```
set format $prompt
-?
ADD
:AWARD-NAME
Smith Memorial Award
[CR]
   Struc:  CATEGORY.STR
:  DESIGNATOR(1)
ns  [CR]
   Struc:  CATEGORY.STR
:  DESIGNATOR(2)
[CR]
   Struc:  SPONSOR.STR
:  SPON.ADDR.CODE
:acs  [CR]
   Struc:  SPONSOR.STR
:  SPON.ADDR.CODE
[CR]
:PURPOSE(1)
To demonstrate the adding of new records to the awards subfile.  [CR]
:PURPOSE(2)
[CR]
:AWARD-TYPE(1)
$100,000  [CR]
:AWARD-TYPE(2)
[CR]
:NOMINATIONS-DUE(1)
06/01  [CR]
:NOMINATIONS-DUE(2)
[CR]
:FREQUENCY
annual.  [CR]
:SPECIAL-INFO
```

```
[CR]
:WINNERS
Alice B. Toklas (1968), Amanda B. Reckondwith (1984)  [CR]
:ARDIE-NUMBER
[CR]
   Struc:  NOTE.STR(1)
:  NOTE
We should verify the rumor that a trip to Monaco is also included.  [CR]
:  NOTE-DATE
[CR]
   Struc:  NOTE.STR(2)
:  NOTE
[CR]
:DATE-UPD
[CR]
-ADDED RECORD 642
-?
dis 642
   ENTRY-NUMBER = 642;
   AWARD-NAME = Smith Memorial Award;
   CATEGORY.STR;
   DESIGNATOR = NS;
      CATEGORY = Nuclear Science;
   SPONSOR.STR;
   SPON.ADDR.CODE = ACS;
      SPONSOR = American Chemical Society;
   PURPOSE = To demonstrate the adding of new records to the awards subfile.;
   AWARD-TYPE = $100,000;
   NOMINATIONS-DUE = JUNE   1;
   FREQUENCY = annual.;
   WINNERS = Alice B. Toklas (1968), Amanda B. Reckondwith (1984);
   NOTES.STR;
     NOTE = We should verify the rumor that a trip to Monaco is also included.;
     NOTE-DATE = 04/14/84;
   DATE-UPD = 04/14/84;
```

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 adequate overview.

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

REM <record-id>

For example, to REMove record 393, enter:

REM 393

If you wish to restore a record that was erroneously removed, you may do so by using FOR REMoves and the DEQueue command anytime during the same day. If you don not DEQ the erroneous REMove before overnight processing takes place, the record will be gone forever. See Searching and Updating for further details.

IV.7 Changing the Key of a Record.

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

2. **TRAnsfer** <entry-number> **CLR**
3. **X ACTIVE FILE** (this enables you to use the editor to modify the file)
4. Edit the ENTRY-NUMBER to be the new key. Then, enter the command **FILE** on the command line. This will return you to SPIRES.
5. **ADD**
6. **DIS**play < *new* entry number> just to verify that the record looks correct.
7. **REMove** <*old* entry-number> this gets rid of the version with the old key.

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

V. Using the CATEGORY subfile

V.1 Description of elements in the CATEGORY subfile.

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
CAT.CODE (CC) (key of the record)	Required	Variable	Single	Character	
CAT.NAME	Required	Variable	Single	Character	

V.2 Searching in the CATEGORY subfile

None of the elements in the CATEGORY subfile are indexed, although the subfile is itself an index to the AWARDS subfile. You may use Global For (See Searching and Updating Manual) and also DISplay records directly with their key, CAT.CODE.

V.3 Updating records.

The only element that may be updated is the CAT.NAME element (SeeV.6 for updating the key). Use the TRAnsfer and UPDate procedure as described in Sect. IV.4 above.

V.4 Adding records.

To add a new CATEGORY record:

SEL CATEGORY

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**):

```
sel Category   [CR]
-?
set format $prompt   [CR]
-?
ADD   [CR]
:CAT.CODE
SX    [CR]
:CAT.NAME
Experimental Science  [CR]
-?
```

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.

To REMove a record in the CATEGORY subfile, enter the command:

REM <cat.code>

For example, to REMove record SX, enter:

REM SX

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

NOTE: You will not be permitted by SPIRES to remove any record that contains a POINTER element. If you wish to remove such a record, you must first SELect AWARDS, FIND the AWARDS records that have that CATEGORY, and modify them to exclude the category to be removed. The next day, you may then REMove the record in the CATEGORY subfile. If you attempt a REMove, and the system responds:

-PRIVILEGED COMMAND

then that category has POINTERs. Follow the the procedure below:

Step 1. **SELect AWARDS**
Step 2. **FINd CAT** <category to be removed>
Step 3. If the result is **not zero** then delete from each AWARD record in the result the CATEGORY that is to be discontinued.

Step 4. The *following day* you may then **SELect CATEGORY**
Step 5. **REMove** <cat.code>

V.6 Changing the Key of a CATEGORY record.

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

1. create the new CATEGORY record (Sect V.3)
2. SELect AWARDS
3. FIND CAT <old category> and update those records with the new CAT.CODE
4. The *following day* you may then SEL CATEGORY
5. **REMove** <key of the old CATEGORY> (as described in Sect. V.4 above.)

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

VI. Using the SPONSORS subfile

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

VI.1 Description of elements in the SPONSORS subfile.

Element Name	Required/Opt	Length	Occurrences	Data Type	Indexed
SPON.ADDR.CODE (SAC) (key of the record)	Required	Variable	Single	Character	
SPONSOR.NAME (SN)	Optional	Variable	Single	Character	Indexed
SPONSOR.ADDRESS (SADD)	Optional	Variable	Multiple	Character	

VI.2 Searching in the SPONSORS subfile

The SPONSOR.NAME element is indexed and may be searched using the FINd command as described in IV.3 You may also use Global For (See Searching and Updating Manual) as well as DISplaying records directly with their key, SAC.

VI.3 Updating records.

Elements that may be updated are SPONSOR.NAME and SPONSOR.ADDRESS. Use the TRAnsfer and UPDate procedure as described in Sect. IV.4 above. See Sect. VI.6 for changing the key of a record.

VI.4 Adding records.

To add a new SPONSORS record:

SEL SPONSORS

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**):

```
sel SPONSORS  [CR]
-?
set format $prompt  [CR]
-?
ADD  [CR]
:SPON.ADDR.CODE
GF    [CR]
:SPONSOR.NAME
Generous Foundation  [CR]
:SPONSOR.ADDRESS
12 Giveaway Lane  [CR]
:SPONSOR.ADDRESS
New York, NY 10019  [CR]
:SPONSOR.ADDRESS
 [CR]
-?
```

VI.4 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.

To REMove a record in the SPONSORS subfile, enter the command:

REM <SAC>

For example, to REMove record GF, enter:

REM GF

Note: If you wish to restore a record that was erroneously removed, please call for assistance, The DEQueue command has been disabled for this subfile. See Searching and Updating for further details.

NOTE: You will not be permitted by SPIRES to remove any record that contains a POINTER element. If you wish to remove it, you must first SELect AWARDS, FIND the AWARDS records that have that SPONSOR.ADDRESS.CODE and modify them to exclude the sponsor to be REMoved. The next day, you may then remove the record in the SPONSORS subfile. If you attempt a REMove, and the system responds:

-PRIVILEGED COMMAND

then that SPONSOR record has POINTERs. Follow the the procedure below:

Step 1. **SELect AWARDS**
Step 2. **FINd SAC** <SAC for sponsor to be removed>
Step 3. If the result is **not zero** then delete from each AWARD record in the result the SPONSOR that is to be discontinued.

Step 4. The *following day* you may then, **SELect SPONSORS**
Step 5. **REMove** <SAC>

VI.5 Changing the Key of a SPONSORS record.

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

1. create the new SPONSORS record (Sect VI.3)
2. SELect AWARDS
3. FIND SAC <old SAC> and update those records with the new SPON.ADDR.CODE

4. The *following day* you may then **SELect SPONSORS**
5. **REMove** <SAC> (as in Sect. VI.4 above.)

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

VII. Generating Reports; the REPORT command.

The primary usage of the AWARDS database system is to generate printed quarterly reports as specified below. To enable staff to produce these reports easily, a SPIRES protocol is provided to produce and print the reports.

As mentioned in Section II, nearly any CMS file that the user has created can be printed using the LPR and LPRCC commands. The REPORT exec includes the printing options so that the user does not have to issue print commands separately. However, the reports are stored as CMS files and can be reprinted at will using the LPRCC command (the reports all use column one for carriage control). The CMS file names for the reports as they are stored are:

Quarterly	QUARTER REPORT A
Undated	UNDATED REPORT A
Sponsor list	SPONSOR LIST A
Categories	CAT REPORT A

NOTE: The AWARDS subfile has two formats, AWARDS and QUARTERLY. The format QUARTERLY can be used **only** by the **REPORT** command. Never use it interactively as in **SET FORmat QUARTERLY**. The AWARDS format may be used interactively with **SET FORmat AWARDS**. Aside from this difference, the two formats are essentially the same.

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

CLR ELEM
DEFine TABle ENTRY-NUMBER CAT CATEGORY SAC SPONSOR
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 3000-01. The best time to generate a report is before 10 a.m.

There are four types of reports which the **REPORT** protocol can produce:

1. Awards with nomination due dates in a given quarter, for all categories
2. Awards with no nomination due date, for all categories
3. A list of sponsors and their address codes
4. All awards for a specified category without regard to nomination due date

To generate any of these reports, enter the command **REPORT**, answer the questions, and your report will be produced, printed, and stored online for later use if needed. The following is a sample session showing how to produce each type of report (system responses in **bold**):

To generate a quarterly report (example: 1st quarter):

Note: Only the most recently generated quarterly report is stored. The previous is deleted. If you wish to save the previous version of the quarterly report:

RENAME QUARTER REPORT A <newfilename> REPORT A

before you issue the REPORT command.

```
-?
report
EXEC TDISK 8 235 E
DMSTD1012I FORMAT OF 235(E) IN PROGRESS
* These reports are available:
*   CODE    RANGE          CODE    RANGE          CODE    RANGE
*     1  JAN FEB MAR         4  OCT NOV DEC         7  specified category
*     2  APR MAY JUN         5  No Due Date        8  unused
*     3  JUL AUG SEP         6  SPONSOR list       9  Return to SPIRES
:Please enter the code for the report you wish produced.
1
-
-
:How many copies do you wish printed?
1
-? EXEC LPRCC OUT FILE E
PRT FILE nnnn TO NET     COPY 001   NOHOLD
    FILE nnnn  (nnnn)  ENQUEUED ON LINK LBLGATE
DASD 235 DETACHED
* Your output is stored on QUARTER REPORT A
-?
```

To generate a report for awards with no due date:

```
-?
report
EXEC TDISK 8 235 E
DMSTD1012I FORMAT OF 235(E) IN PROGRESS
* These reports are available:
*   CODE    RANGE          CODE    RANGE          CODE    RANGE
*     1  JAN FEB MAR         4  OCT NOV DEC         7  specified category
*     2  APR MAY JUN         5  No Due Date        8  unused
*     3  JUL AUG SEP         6  SPONSOR list       9  Return to SPIRES
:Please enter the code for the report you wish produced.
5
(etc.)
* Your output is stored on UNDATED REPORT A
```

To generate a list of sponsors:

```
-?
report
EXEC TDISK 8 235 E
DMSTD1012I FORMAT OF 235(E) IN PROGRESS
* These reports are available:
*   CODE    RANGE          CODE    RANGE          CODE    RANGE
*     1  JAN FEB MAR         4  OCT NOV DEC         7  specified category
*     2  APR MAY JUN         5  No Due Date         8  unused
*     3  JUL AUG SEP         6  SPONSOR list        9  Return to SPIRES
:Please enter the code for the report you wish produced.
6
*Generating list of sponsors, please stand by ...
(etc.)
* Your output is stored on SPONSOR LIST A
```

To generate a report for a specified category (example CAT.CODE = NS):

```
-?
report
EXEC TDISK 8 235 E
DMSTD1012I FORMAT OF 235(E) IN PROGRESS
* These reports are available:
*   CODE    RANGE          CODE    RANGE          CODE    RANGE
*     1  JAN FEB MAR         4  OCT NOV DEC         7  specified category
*     2  APR MAY JUN         5  No Due Date         8  unused
*     3  JUL AUG SEP         6  SPONSOR list        9  Return to SPIRES
:Please enter the code for the report you wish produced.
7
:Please enter the CAT.CODE for the category which you wish reported
NS
(etc.)
* Your output is stored on CAT REPORT A
```

VIII. 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 **ESC** commands on the menu at the bottom to perform various operations, e.g., **ESC-4** or an **X** will invoke the editor on the selected file, an **EXC-2** will allow you to browse the file, and **ESC-8** 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 **ESC-3** 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 A

DIP-SWITCH SETTINGS FOR ADM-3A TERMINALS FOR USE ON SERIES/I 3270 EMULATOR

INTERNAL

	ON	OFF		ON	OFF
none			7	X	
6	X		6		X
5		X	5	X	
4	X		4		X
3		X	3		X
2		X	2		X
1		X	1		X

EXTERNAL

	ON	OFF
Bit 8-0	X	
Parity	X	
STOP	X	
Data 7	X	
Parity		X
LC	X	
Auto NL	X	
RS232	X	
HDX		X
All speeds but 9600		X
9600	X	

APPENDIX B

TERMINAL CONTROL

The SERIES/1 terminal controller commands are summarized in the document "Key Definitions for IBM 3277 Terminal Emulation", section, "ADM-3A Key Definitions for IBM 3277 Terminal Emulation" available from the Electronics Shop in 50B-2259 (see Saul Duenas). Other ASCII terminals such as the VT100 may be used as well. Each has its own key definitions which are summarized in the same document.

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** wil 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 **CNTL-Z**. 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 **CNTL-Z**. The **HT** halts typing, preventing the rest of the lines from being displayed. The **CNTL-Z** then clears the screen .

Several helpful CMS terminal commands are available:

The pound sign (#) acts as a LINEND character (line end).
The double-quote (") acts as an ESCAPE character
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 - ADM3A terminal control commands (The complete list can be found in "ADM-3A Key Definitions for IBM 3277 Terminal Emulation" available from the Computer Center Library.):

CNTL-N	go to next line
CNTL-H (or left-arrow key)	move cursor to the left
CNTL-L (or right-arrow key)	move cursor to the right
CNTL-K (or up-arrow key)	move cursor up
CNTL-J (or down-arrow key)	move cursor down
CNTL-D	deletes a character
CNTL-E	deletes a line
ESC-spacebar	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 an ADM-3A terminal, the PF keys are implemented as a sequence of two keys: the **ESC** key followed by some other key. For PF1 through PF9, use **ESC 1** through **ESC 9**. **ESC-:** (colon) is equivalent to **EXC-11**, and deletes to the end of line in the FLIST facility. **ESC-3** usually means "quit". **ESC-1** usually calls a CMS help screen. Often a menu of valid PF keys will be displayed in utilities where they are recognized.

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

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

APPENDIX D

Virtual Elements

The AWARDS database system contains several virtual elements. These are indicated in the listings of elements for the AWARDS subfile (Please see IV.1).

Virtual elements do not exist. That is, they are not stored and they cannot be edited. They *can* be displayed, records *can be* sequenced according to their values, and indexes *can be* built based on their values. Generally, they are derived from elements in other subfiles or other databases, or system information.

By default, only the real elements are displayed in SPIRES. To be able to see the virtual elements, a SET ELEM command must be issued in SPIRES. However, for the AWARDS application, the **SET ELEM** command is automatically issued each time the AWARDS Subfile is **SEL**ected. If you wish not to see them, you may issue the command **CLR ELEM**. The command **SHOW ELEM** will indicate which virtual elements are to be displayed by notating " - SET" after the element name. If you clear away the virtual elements with **CLR ELEM**, you can reset them easily by the command **SETELEM**. Notice that **SETELEM** has no space between the words, but **CLR ELEM** does.

Occasionally you may wish to use some other format than the default SPIRES format. Two customized formats have been provided, named AWARDS and QUARTERLY. The command **SHOW FORMATS** will list these and also indicate if either one is currently in effect by notating " - SET" after the format name.

RULE: If any virtual element is **SET,** then the format will not take effect. That is, presence of a virtual element overrides a format. Thus, in order to use a format, you should enter the command **CLR ELEM** beforehand. The REPORT EXEC does this automatically for making reports.

The same restriction applies to generating tables with the **DEFine TABle** or the **SET FORmat $REPORT** formats. Virtual elements must be cleared by **CLR ELEM** before the table will take effect.

APPENDIX E

Documentation

A complete set of SPIRES 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. 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 RTSG Electronics Shop in Bldg. 50B-2259 has copies of the following documents:

1. ADM-3A Key Definitions for IBM 3277 Terminal Emulation
2. VT100 Key Definitions for IBM 3277 Terminal Emulation

APPENDIX F

Human Help

For assistance, call:

Jeanine Augst	x 6307
Allan Konrad	x 5458
Jim Miller	x 6255

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