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GEOLOGICALLY ORIENTATED BIBLIOGRAPHY PROGRAM

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DGGS BIBLIOGRAPHY PROGRAM

INTRODUCTION

The DGGS Bibliography Program is written to handle all aspects of bibliographical data beginning with the entering of information for individual journal articles in a data base to the outputting of all or selected references in various forms. There is also a search option which enables you to select references which meet a combination of subject, quadrangle, and author criteria. Though the prompts are geologically orientated, the program can be used by people in other fields. It is written in an interactive menu driven format so that once the system is set up and running, it is usable by a person with minimal computer expertise. However the system is not completely "idiot-proof" so backup often. When you are working with multiple bibliographies the chances of accidentally adding data to the wrong file increases.

These programs are an outgrowth of a bibliography program written several years ago by Gar Pessell of DGGS. The originals were in DBASE 2. The current DBASE3+ programs were written by Kurt Johnson and Shirley Liss and debugged by S. Liss. The Fortran portions are entirely by S. Liss. The current version was compiled using Microsoft Fortran version 4.1 but it also runs using versions 2 and higher.

Various bibliographies have been compiled by the Alaska Division of Geological and Geophysical Surveys and are or will be available as .DBF files which can be used with this system.

I. SYSTEM REQUIREMENTS

A. HARDWARE

The program was written for an IBM/PC with 640K memory, a printer, a hard drive, and a preferably color monitor. The color monitor is optional and one of the first choices given in the main menu is to let system know that the available monitor is black and white only.

B. SOFTWARE

1. DBASE3+

Parts of the program are written in DBASE3+. These include anything to do with adding and editing records along with certain types of output. You must have DBASE3+ for these sections to work.

a. CHANGES TO CONFIG.SYS & CONFIG.DB

In order for the DBASE3+ parts to work properly, your CONFIG.SYS file must include the following two entries in addition to anything else you have included.

```
FILES=20
```

```
BUFFERS=15
```

Also, if this system is going to be your main use of DBASE3+, it

might be helpful to include the following entry in your CONFIG.DB file.

```
STATUS=ON
```

What this does is give you the dot prompt immediately when you bring up DBASE3+ thus saving a few steps. It is not necessary.

b. USE OF ALTERNATE EDITOR

The DBASE programs that are part of the system were created and edited using the NORTON editor. This results in procedure files that are too long to be edited by the editor that comes supplied with the DBASE programs. Should you ever decide to modify them you would have to go outside DBASE or add a line to your CONFIG.DB file telling it to use another editor. In this case it would be

```
TEDIT=NE
```

The NE is the name of the command (COM) file for the Norton Editor. You would supply the name of the command file for whatever editor you are using.

2. FORTRAN SUBPROGRAMS

Two routines are written in Microsoft Fortran. These are SEQRAN to generate the random access files and SEARCH to use them. The compiled versions are included and you do not need to have a

Fortran compiler or linker for them to work. They are called by the DBASE programs and can also run stand-alone if necessary. This will be explained later.

3. WORD PROCESSING PROGRAMS

A separate word processing program is not necessary for the operation of this system. However, several of the output options give files which are designed for custom editing in a word processing program - like Microsoft WORD. The main bibliography and listings of short references by author, subject, or quadrangle can all be output to either files or directly to the printer.

C. WHAT IS ENCLOSED ON DISK

The enclosed floppy disk has all the programs and file setups necessary for running the Bibliography System. They MUST be transferred to a hard drive to run. First - there are the two CONFIG files which were used during the creation of the Bibliography System. These are CONFIG.DB and CONFIG.SYS. Second - there are two DBASE procedure (or program) files. These are STARTUP.PRG and ADGGSREF.PRG which is called by STARTUP. Third - there are two executable Fortran programs. These are SEQRAN.COM and SEARCH.COM. Both are called by the DBASE programs or can run independently. Fourth - there are an assortment of empty files into which your bibliography data will be placed. They have the extensions .DBF for the 4 data base files and .NDX for the assortment of index files.

II. ORGANIZATION OF PROGRAM

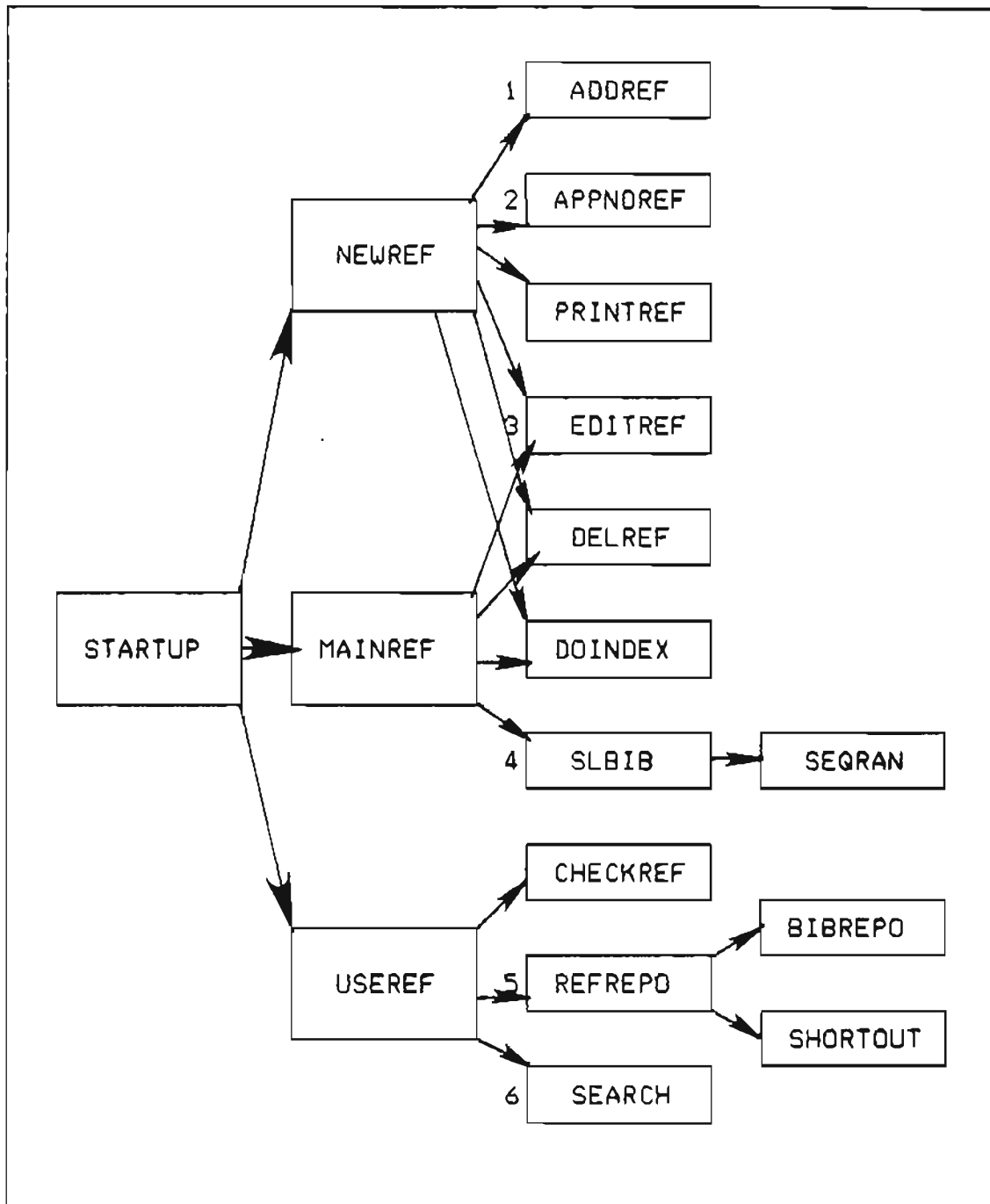


Figure 1. Flow diagram for bibliography program. Labels in boxes are names of program procedures. Numerals correspond to the 6 parts of the program.

A. THE 6 PARTS OF THE PROGRAM

The program can be divided logically into 6 parts, which do not correspond neatly to 6 menu entries. See Figure 1, which is a procedure diagram for the system. Part 1 is the input of new data into the "Temporary Data-Bases". It includes adding initial new information for the reference, editing it for typos, deleting erroneous records, and inserting missing information. Part 2 is generating the "Main Data Base" by appending corrected records to the it. The files for the "Main Data Base" always exist and are empty to start. After a set of new references are completely edited and error free, you can add these to "Main" record file. This speeds up editing in the "Temporary" section. Part 3 is further editing of "Main Data-Base". Most typos should be out by now but it is possible that duplicate references exist and this section enables you to delete one and concatenate their subjects and quadrangles. Part 4 takes the "Main Data-Base" and runs it through a Fortran program to generate 4 unformatted random access files for use in the "Search" part. Part 5 is the output part. It uses the "Main Data-Base" to generate a variety of reports. Part 6 is the "Search" option. Using a Fortran program, it is possible to generate a mini-bibliography of records with your choice of individual author, subject, or quadrangle or any combination of all three.

The program is menu driven and all 6 parts are accesible via the main DBASE part. However parts 4 and 6 can be run stand-alone. It may be convenient to have i computer with the entire system and

pass around the search program with the smaller files to individual users.

B. FILES - USE & STRUCTURE

You do not need to know or worry about the structure of the files to run the programs. The information is included here mostly for reference.

1. DBASE FILES

Three varieties of DBASE files are used in the program. The .DBF files which contain the data as entered, the .NDX files which are sorted versions of the .DBF files, and the .TXT files which are ASCII output files.

Files BIB.DBF and TBIB.DBF: These are the files which have the bibliographical data for the "Main" and "Temporary or New" sections of the program. The structure and field names are the same for both.

Field	Type	Width	
AUTH	Character	200	
YEAR	Character	5	Structure of
TITLE	Character	250	
PUB	Character	175	EIB & TBIB
SREF	Character	65	
KEY	Numeric	5	

The .NDX or index files associated with these .DBF files are BIB.NOX, TBIB.NDX, and ALPHA.NOX. BIB.NOX and TBIB.NOX are the data files BIB.DBF and TBIB.DBF sorted in order by KEY number. ALPHA.NOX is BIB.DBF sorted alphabetically on the first 90 characters of AUTH (the author list) plus the year. This is because the limit in DBASE for a sort key is 100 characters. Hopefully there won't be too many references exactly alike for 100 characters.

Files AUTHOR.DBF and TAUTHOR.DBF: These two files consist of truncated individual author names and both have the following structure.

Field	Type	Width	
KEY	Numeric	6	Structure of
AUTH	Character	30	AUTHOR & TAUTHOR

The .NOX files associated with these .DBF files are AUTHOR.NOX, TAUTHOR.NOX, AUTHOX.NOX, and AUTHCODE.NOX. AUTHOR.NOX and TAUTHOR.NOX are AUTHOR.DBF and TAUTHOR.DBF sorted by KEY number. AUTHOX.NOX is AUTHOR.DBF in alphabetical order by AUTH, author name. AUTHCODE.NOX is like AUTHOX.NOX but it lists unique authors only once.

Files SUBJECT.DBF and TSUBJECT.DBF: These two files consist of subject records and both have the following structure.

Field	Type	Width	
KEY	Numeric	6	Structure of
SUBJECT	Character	40	SUBJECT & TSUBJECT

The .NDX files associated with these .DBF files are SUBJECT.NDX, TSUBJECT.NDX, SUBJDX.NDX, and SUBJCODE.NDX. SUBJECT.NDX and TSUBJECT.NDX are SUBJECT.DBF and TSUBJECT.DBF sorted by KEY number. SUBJDX.NDX is SUBJECT.DBF in alphabetical order by SUBJECT, the subject. SUBJCODE.NDX is like SUBJDX.NDX but it lists unique subjects only once.

Files QUAD.DBF and TQUAD.DBF: These two files consist of truncated individual author names and both have the following structure.

Field	Type	Width	
KEY	Numeric	6	Structure of
QUAD	Character	25	QUAD & TQUAD

The .NDX files associated with these .DBF files are QUAD.NDX, TQUAD.NDX, QUADDX.NDX, and QUADCODE.NDX. QUAD.NDX and TQUAD.NDX are QUAD.DBF and TQUAD.DBF sorted by KEY number. QUADDX.NDX is QUAD.DBF in alphabetical order by QUAD, quadrangle or region name. QUADCODE.NDX is like QUADDX.NDX but it lists unique quadrangles or regions only once.

File TFILE.DBF: This is a temporary file used when generating final listing of "Short References" for various authors, subjects or quadrangles. It's format is

Field	Type	Width	Structure of
TOPIC	Character	40	Structure of
SREF	Character	35	TFILE
KEY	Numeric	6	

Output ASCII .TXT files: These files are report files which are intended for input into WORD or another word processing program for additional formatting. BIBOUT.TXT is the main alphabetical bibliographical listing, one record per reference, separated by blank records. AUTHOUT.TXT, QUADOUT.TXT, and SUBOUT.TXT are listings of short references by author, quadrangle, or subject. The general format is one record with author, quad, or subject, one blank record, one record with the short reference for every reference associated with that author, quad, or subject, one blank record, then repeat.

Intermediate ASCII .TXT files: These files are the intermediate files which are input to the Fortran programs. DBOUT.TXT is an alphabetical list of the entire data base. Its format is:

Record	Description
1	KE: + Key number
2	AL: + Author list

3	YR: + Year	
4	TI: + Title	
5	PB: + Publisher	
6	SR: + Short Reference	
7 to x	AI: + Individual Author	as many records
x to y	SB: + Subjects	as needed for
y to z	LC: + Quadrangles	items, some >100

This sequence repeats itself for each reference. Extra blanks are removed from the right of all fields where necessary. UQA.TXT is an ASCII listing of the unique authors in AUTHCODE.NDX, 1 author per record, no blank records.

2. FORTRAN FILES

One of the Fortran portions of the program (SEQRAN) uses DBOUT.TXT and UQA.TXT to create 4 random access files which are used by the other (SEARCH). By changing file type and format, the data from over 2000K bytes of DBF and NDX files can be stored in less than 400K bytes and accessed faster.

a. RANDOM FILES

All the random files are unformatted, fixed length records. For the user, that means if you try to print them, you will see garbage since they are not ASCII files. This system has four such files. RBIB has the bibliographical information for each

reference. RAUT, RSUB, RLOC has author, subject, and location records with pointers to RBIB. The record lengths for these records were computed so that for 90% of authors, subjects, and locations in the Alaska Geothermal Bibliography, 1 record was sufficient.

File RBIB: Record length is 124 bytes. The first record in the file gives the number of records in the file. The number of records for each reference can vary. The maximum size possible for a reference is 740 bytes - if all fields are filled. This would take up almost 6 records with 4 bytes left over for other information. For a given reference, the first 2 bytes in record 1 (lbib) give the number of characters in the bibliographical portion of the record - this is in INTEGER*2 format. The second 2 bytes in record 1 (lsr) give the position of the last non-blank character in the short reference. This is also in INTEGER*2 format and can be up to $66 + lbib$. The short reference is a maximum of 65 characters and the 1 extra is for a separating blank. The rest of record 1 (120 bytes or characters) is filled with alphabetic information for the reference. Records 2 to however many it takes are filled with 124 characters of information for the same reference.

File RAUT: Record length is 60 bytes. The first record in the file is the number of records on the file. All the authors records in the file are in alphabetical order so binary searches can be used. After the first, all other records have the following format. The first 30 bytes give the authors name. The last 30

bytes are 15 variables all in INTEGER*2 format. The first variable tells how many other variables (1-14) are on the rest of the record. The other variables are the starting numbers of the records in RBIB where bibliographical information for this author can be found. There can be more than 1 record for each author.

File RSUB: Record length is 180 bytes. The first record in the file is the number of records on the file. All the subject records in the file are in alphabetical order so binary searches can be used. After the first, all other records have the following format. The first 40 bytes give the subject. The last 140 bytes are 70 variables all in INTEGER*2 format. The first variable tells how many other variables (1-69) are on the rest of the record. The other variables are the starting numbers of the records in RBIB where bibliographical information for this subject can be found. There can be more than 1 record for each subject.

File RLOC: Record length is 120 bytes. The first record in the file is the number of records on the file. All the location records in the file are in alphabetical order so binary searches can be used. After the first, all other records have the following format. The first 26 bytes give the locations name. The last 94 bytes are 47 variables all in INTEGER*2 format. The first variable tells how many other variables (1-46) are on the rest of the record. The other variables are the starting numbers of the records in RBIB where bibliographical information for this location can be found. There can be more than 1 record for each location.

b. OUTPUT FILES

There are two types of output files, both consist of bibliographical listings. If you choose an ordinary print file, the records are written as lines 72 characters long, with a 5 character hanging indent, and can fit on paper 8 1/2 inches wide. There are no breaks in the middle of words, references are separated by blank lines, and no attempt is made at pagination. This file is ASCII and can be sent directly to printer or written to a disk file for printing later. If you choose a file for Microsoft WORD, 1 record is written for each reference with blank lines separating references. WORD can then be used to insert headers, page numbers, etc. When the files are created, the user is prompted for a name and extension. The files will be placed in the current default directory.

III. STARTING THE PROGRAM

This section will describe how to start with the enclosed disk and get the program executing. The simplest method will be used although others exist. It will be assumed that the user knows DOS.

A. SETTING UP ON HARD DRIVE

The program MUST have a hard drive to run. For exemplary purposes assume it is the "C" drive. Also assume that all the DBASE programs exist on C in a directory named DB3. The setup

described here will keep the user out of trouble should he/she want to maintain multiple separate bibliographies. The general plan is to have a directory BIB with the program files and to have subdirectories under BIB which contain separate bibliographies - in this example ALASKA is to be a bibliography. Also under BIB is a subdirectory BEGFYL which has the original startup configuration of empty files. Whenever you want to begin another separate bibliography, create another subdirectory under BIB, and copy the contents of BEGFYL into it and go from there. In the following discussion CR = Carriage Return and items to be typed by user are underlined. If XTREE or some other disk management system is available, it is faster to use that to create the directories and copy the files into them.

- | What to do. | What should be on screen after command is entered. |
|---|--|
| 1. Get system prompt on C drive - type <u>c:</u> CR | C:\> |
| 2. Make directory BIB by typing <u>MKDIR BIB</u> CR | C:\> |
| 3. Move to directory BIB by typing <u>cd\BIB</u> CR | C:\BIB> |
| 4. Put floppy disk with files and programs in drive B | |

5. Copy the two DBASE program files to c:\BIB, type
COPY b:*.PRG c: CR
The names STARTUP.PRG and ADGGSREF.PRG will be listed as they are copied. Last line reads C:\BIB>
6. Copy the two FORTRAN program files to c:\BIB, type
COPY b:*.COM c: CR
The names SEQTRAN.COM and SEARCH.COM will be listed as they are copied. Last line reads C:\BIB>
7. Make a sub-directory in BIB by typing MKDIR BEGFYL CR
C:\BIB>
8. Move to sub directory BEGFYL type cd \BIB\BEGFYL CR
C:\BIB\BEGFYL>
9. Copy all the empty data base files into this directory.
COPY b:*.DBF c: CR
The names of the 9 DBF files will be listed as they are copied. Last line reads C:\BIB\BEGFYL>
10. Copy all the empty index files into this directory
COPY b:*.NDX c: CR
The names of the 15 NDX files will be listed as they are copied. Last line reads C:\BIB\BEGFYL>

11. Go back to main directory
BIB by typing, cd\BIB_CR C:\BIB>

12. Make another sub directory
in BIB by typing
MKDIR ALASKA_CR C:\BIB>

13. Move to sub directory ALASKA
cd\BIB\ALASKA_CR C:\BIB\ALASKA>

14. Copy all the empty files from
sub directory BEGFYL to sub
directory ALASKA, type
COPY C:\BIB\BEGFYL*.* c:
C:\BIB\ALASKA>
The names of the 24 files
will be listed as they
are copied. Last line is

15. Tell DOS where the executable
fortran program files, the 2
.COM files, are found, type
PATH C:\BIB_CR C:\BIB\ALASKA>
(See NOTE 1.)

16. Bring up DBASE3+ by typing
C:\DB3\DBASE_CR DBASE copyright info and
its ASSIST menu
(See NOTE 1.)

17. Get DBASE "Dot Prompt" by
hitting the ESC Key .

18. Tell DBASE where its program files are stored, type

SET PATH TO C:\BIB CR

(See NOTE 2.)

19. Start Bibliography Program

type DQ_STARTUP CR

There should be a box
DGGS Biblio System and
a set of 6 options

NOTE 1.: If in your AUTOEXEC.BAT file you have a statement which sets paths to the DBASE and BIB directories, then step 15 can be omitted and at step 16 you type only DBASE CR. The line in your AUTOEXEC.BAT file would read something like PATH C:\DB3;C:\BIB. For more information consult your DOS manual.

NOTE 2.: DOS and DBASE do not "talk" to each other and tell which paths are set and therefore which directories are to be searched for program files

At this point the program is running. Follow instructions in the menus. In most cases, if you make an incorrect entry you can back out of it. More information on using the program is in section IV.

B. RUNNING FROM HARD DRIVE

The next time you wish to start up enter the following commands.

- | What to do. | What should be on screen after it is done. |
|--|--|
| 1. Get on the C drive - enter
<u>c: CR</u> | C:> |
| 2. Move to the directory which contains the bibliography you want to use. type
<u>cd \BIB\ALASKA CR</u> | C:\BIB\ALASKA> |
| 3. Tell DOS where to find the 2 .COM files. type
<u>PATH C:\BIB CR</u> | C:\BIB\ALASKA> |
| 4. Start DBASE - enter
<u>c:\DB3\DBASE CR</u> | DBASE copyright info |
| 5. Get Dot prompt hit <u>ESC key</u> | . |
| 6. Tell DBASE where programs are stored. type
<u>SET PATH TO C:\BIB CR</u> | . |
| 7. Start Bibliography program
type <u>DO STARTUP CR</u> | First menu of Biblio pgm. |

When there are several bibliographies, it might be a good idea to start with the edit portion of the program to view a few records and be sure you are using the one you want to have before adding new records.

C. STOPPING PROGRAM

To terminate the program type Q in the menu selections. The last Q will put you back in DBASE with a "Dot Prompt". Type QUIT and you will be back at the system level. Execution can be halted at any time by hitting the ESC (Escape) key and you will be back at the DBASE "Dot Prompt". Use this method at your own risk - you may lose edits this way. Once in DBASE you should use QUIT to exit program rather than simply turning computer off. QUIT closes all files before exiting so records are not lost whereas "pulling the plug" does not. However, while testing the programs, CNTRL-ALT-DEL was necessary to get out of some situations and no data was lost and all files were ok.

IV. USING THE PROGRAM

At this point, all the programs and empty files are in directories and you have the "First Level Menu" on the screen.

D G G S B I B L I O G R A P H Y S Y S T E M

- 1> ADD-EDIT NEW REFERENCE SECTION
- 2> ADD-EDIT MAIN REFERENCE SECTION
- 3> SEARCH USING MAIN REFERENCE SECTION
- 4> OUTPUT REPORTS FROM MAIN REFERENCE SECTION
- 5> SET FOR MONOCHROME SCREEN

- Q> QUIT

select : :

If you do not have a color monitor select option 5 first. All other options give you "Second Level Menu"s. Option 1 gives the NEW Reference Section Menu. Option 2 gives the MAIN Reference Section Menu, and Options 3 & 4 both give the USE or Search and Output Reference Section Menu. If the user is familiar with DOS and DBASE, it is possible to bypass the program entirely and do what needs to be done to any of the files.

A. THE NEW REFERENCES SECTION

When all the files are empty you have to start here.

N E W R E F E R E N C E S E C T I O N

- 1> ADD NEW REFERENCE
- 2> EDIT/VIEW NEW REFERENCES
- 3> DELETE NEW REFERENCE
- 4> REINDEX
- 5> UPDATE NEW REFERENCES TO MAIN DATABASE
- 6> PRINT SELECTED COMPLETE REFERENCES

- Q> QUIT

select : :

Selections 1-4 refer to Part 1 of the program - see discussion page 2. Selection 5 refers to Part 2, and Selection 6 is an extra.

1. ADDING NEW REFERENCES

The purpose of this option is to add new references to the bibliography. All entries in the system must start here. When number 1 is selected, a message is written on the screen if there are 50 or more entries in the temporary files. It will suggest that these be edited and added to the main files to keep the editing of the temporary section fast and make the main section current. This message can be ignored and there is no programmed limit to the number of records in the temporary section. The printer must be turned on. Simply answer questions and fill in the blanks.

a. AUTHOR FIELD

Enter the author names as they appear in the original reference followed by a carriage return (CR). When all names are entered, hit escape key (ESC) to bypass blank author fields. Be sure to be on a blank line when you hit ESC or the last author entered will be lost. Eg. enter Motyka, Roman J. (CR) The name will be stored as typed for the bibliographical listing and entered as Motyka, R.J. in the individual author listing file. This is done so that when you search for Motyka, R.J. all records will be

located regardless of how they were originally entered. The disadvantage of this method is that John Thomas Smith and James Timothy Smith will be combined as Smith, J.T. in the author list. However, in the output section there is a provision to preview records and throw out those that are not wanted. Do not put words like editor, compiler, etc. in the author list - that results in the word "editor" being inserted in the author file. Up to 16 author fields are displayed on the screen. If each author had a 30 character name, that would come to 480 characters and exceed the 200 character limit on the author list. After 200 characters, the author list is truncated but the extra authors are inserted in the author file. When this happens you may decide to do some editing of names in the list before transferring the reference to the "Main" data base.

Key numbers are generated automatically.

b. YEAR

Enter the year and (CR) or down arrow. The comma following the year is entered automatically.

c. TITLE

Include all punctuation in the title field. Hitting CR or the down arrow takes you to next item as does typing past the highlighted area. Up arrow returns you to previous items. If reference is an abstract, [abs.] should be included immediately

before the final ":". Standard formats are:

This is the title of article: or

This is the title [abs.]: or

This is the title of article, in Person, A.B. ed., Name of book:

or

This is the name of book:

d. PUBLISHER

As in Title field, include all punctuation. After all publisher data is entered you are immediately given the option to re-edit any portion of what has just been entered for this reference. If you bypass this opportunity and find errors you can still use the edit option. Normally do not use abbreviations in this field, the U.S. in United States Geological Survey is an exception. Standard formats for publisher are:

Journal Name, v. 58, no. 9, p. 53-69. or

Publishing Co. of Book, City of Publication (State or country if not obvious), p. 371-401. or 231 p. or

City, University, unpublished M.S. thesis, 477 p. or

U.S. Geological Survey Circular (or Bulletin or Map or whatever), 345 p., 1 pl., scale=1:240,000.

e. LOCATION

The location codes were designed to generate a document like the U.S.G.S. Cobb Index. What should be entered here are quadrangle names, regions of the state - like Interior, Southeast, etc. or Statewide. The Statewide designation is for references which discuss Alaska in general terms and you have not taken time to break it down into regions or quads. The regions designations are references that discuss an area less than the entire state but more general than individual quadrangles. The quadrangle is the basic location. If you analyzed the article and enter all appropriate quads then do not enter any region. If you entered regions, do not enter quadrangles or Statewide. And if you entered Statewide, do not enter anything else. The names of individual mountains, cities, rivers, hot springs, etc. are considered subjects as far as this program is concerned. A reminder of that is printed on the screen in this section. The idea is to avoid duplication when you are using the search. If you want to know what was written about the "Tanana" quadrangle, you would search location "Tanana" and get x number of references. Then you would search "Interior" and get y more different references that are a bit more distantly related. Lastly you would search "Statewide" and get z additional, possibly relevant references. A reverse system of organization would result in every reference being coded as "Statewide". There is no limit to the number of locations for a given reference. Enter CR (carriage return) on blank entry to terminate LOCATION section.

f. SUBJECT

Add as many as needed similar to the location section. Apparent locations like Brooks Range, Makushin Volcano, Circle Hot Springs, or Porcupine River are subjects. Also general topics like Geophysics, Engineering Geology, Volcanology. The regions Interior, Northern, Seward Penin., etc. also have been used as subjects. Another possibility for subjects are terrane, formation, and fault names like Chugach Terrane, Katakturnuk Dolomite, and Kaltag Fault. The amount of work you input here determines how useful the search section of the program will be. Enter CR (carriage return) on blank entry to terminate SUBJECT section.

After entering locations and subjects, you have the option to re-edit and immediately fix your typos and erroneous entries. The program uses the DBASE "EROWSE" command and you must end the editing of both locations and subjects with a "CNTRL-END", else all edits will be lost. The program prompts you to do this and then asks if you did it to save rechecking.

g. SHORT REFERENCE

When you have finished with the location and subject and enter "C" to continue, the program automatically generates a 65 character short reference. It is one of the following 3 forms:

1. If there is only one author in reference
Author + year + Title - til 65 characters used

2. If there are two authors in reference
Author 1 & Author 2 + year + Title - til 65 characters
3. If there are three or more authors in reference
Author 1 & "others" + year + Title - til 65 characters

The characters from the title are taken from the beginning to a random ending when 65 characters are used. You have the option to accept this or change it to whatever you want. Usually if a reference is an abstract, [abs.] is put in the short reference. When you type past the highlighted area or hit the enter key, everything you have just entered for this reference is printed on the printer and stored on file. You can check this print out for errors and if any are found they can be fixed in the "EDIT/VIEW" section

2. EDITING & VIEWING NEW REFERENCES

The purpose of this option is to fix any errors found in the printout of the new references and add any additional records to subject or location files. When 2 is selected, the "Edit/View Menu" comes on the screen. This consists of the record that has KEY=1 above the dashed line and various choices of what to do below the line. If there are no records currently in the temporary files, a record with KEY=0 and blank fields is shown. When you have numerous references in the temporary files, particularly references with alot of subjects and quads, this section is slowed down and this is why you are prompted to update rather than add when the number reaches 50.

Line 1 of the choices consists of the edit options for the particular reference shown. If you wish to edit anything you currently see on the screen, choose "R". You will be prompted to terminate edit with a CNTRL-END. After selecting "R", if you make any changes to an author name, be sure to select "A" at some time and fix the same author in the Author file. If you wish to edit something in the Author, Subject, or Quadrangle/Location file, select "A", "S", or "Q". For these files, the DBASE "FILTER" option is selected and the only records you can see are those which have the KEY number of the reference. When there are a lot of references it takes a while, be patient and don't bang on the keyboard. You may regret it. While editing, the DBASE "BROWSE" command is used and you will need to terminate editing by hitting CNTRL-END. The program will remind you to do this. If you want to add more authors, subjects, or locations, hit the down arrow as if to try to go beyond the last item in the list. You will then be asked whether you wish to add new records. Answer "Y" and add them. Be sure to input the key exactly as it appears in the previous records. After adding more authors, subjects, or locations, you will need to reindex the files, using option 4, before using the delete or update options, numbers 3 and 5. The program will prompt you. If you select "D", to delete the reference, every record relating to the reference (same KEY number) is marked for deletion on all four of the DBF files. In this part of the program, the records are only marked for deletion, to actually eliminate record from file you need to use option 3 "Delete Reference". The CR, carriage return, gets you out of the Edit/View section.

Line 2 of the choices consists of instructions to get you to new references. Go forward and backwards one record at a time with the "N"ext, and "P"revious selections. If you know the key number of a reference to edit "F"ind Key will get it for you. The "L"ocate author option only works in the "Main Reference Section".

3. DELETING NEW REFERENCES

The purpose of this section is to physically remove erroneous records from the files. If this is not done before an update, all records marked for deletion are transferred to Main Files and remain marked for deletion. Deletion is a two step operation. First references and records must be marked for deletion - done in the "EDIT/VIEW" section. Second, they are physically removed from file. During execution, when a marked reference is encountered, you are again asked if you are sure you want to delete it before it is erased. When you select this option and no references are marked for deletion, you get a message and are sent back to a previous menu. After all deletions are done, everything is reindexed as described in section 4.

4. REINDEXING NEW REFERENCES

The purpose of this section is to recreate all the index files. The four temporary .DBF files all have corresponding .NDX files which are in order by KEY. After certain operations, reindexing is done automatically, eg. the delete section. Since

all index files have to be current for delete and update to work. select 4 and reindex if you have any doubts. In the temporary section, a reindex of 50 records or less takes less than 5 minutes (on a PC with a Tallgrass TG-3000 hard drive, it's 10 times faster on a Compaq 286) and is preferable to sorting out any errors which would result from failing to reindex.

5. APPENDING NEW REFERENCES TO MAIN BIB

The purpose of this section is to transfer the now error-free references of the temporary files to the main data base. When 5 is selected, you will be asked if the index files are up to date. If you have any doubt, exit this section and reindex. If files are up to date, you will be asked to enter a code to get to the update section. Currently it is set to "A1 z2". To change it requires some familiarity with DBASE programming as you need to modify the command file "ADGGSREF.PRG", lines 10 and 20 of procedure "appndref".

The first thing that happens when updating is that the KEY numbers of all records in all the Temporary files are changed to numbers which are greater than the current last KEY number on the Main file. Then all records in all Temporary .DBF files are appended to the corresponding Main .DBF files. The Main bibliography files are then all reindexed. The Temporary files are all zapped - emptied out. The next ADD new reference will again start with KEY number 1.

6. PRINTED LIST OF NEW REFERENCES

The purpose of this section is to list on the screen or printer, all information associated with a specific KEY number. The output from this section is identical in format to the printout you get as you are entering information in the "Adding New References" section. Your choice is to select individual KEY numbers or print data for all entries. No attempt is made to give a fancy format with headings and page numbers. That will be done in the Main section only. This is just a handy way to get a hard copy of everything ever entered for a specific reference.

8. THE MAIN REFERENCES SECTION

This section should contain the error-free files for the bibliographical system.

M A I N R E F E R E N C E S E C T I O N	
1>	EDIT/VIEW REFERENCES
2>	DELETE MAIN REFERENCES
3>	REINDEX DATABASES
4>	CREATE FORTRAN SEARCH FILES
Q>	QUIT
_____select : :_____	

Selections 1-3 refer to Part 3 of the program, see discussion page 2, and Selection 4 refers to Part 4.

1. EDITING/VIEWING MAIN REFERENCES

The purpose of this option is to eliminate any errors which are found in the supposedly "error-free" files of the Main section. Mainly it's expected to be used to eliminate duplicates and concatenate subject and location entries. Everything works the same here as in the Edit/View section of the temporary section, see discussion there for details. Since there are more references here, you will notice the effect of the "FILTER" option. There is one additional feature available in this section. It is the "Locate Author" option. After selecting "L" you will be prompted for the name of the author. Enter the name of the author, last name first, space, initials. The initials are optional. A search is made for all authors which match the information you input. For example, if you input "Smith" only, all Smiths are pulled in regardless of initials. If you input "Smith, T.", all Smiths are pulled in with a first initial of T and any second initial. If you input "Smith, T.E." all records for only Smith, T.E. are pulled in. When a record is listed on the screen you are asked if it is the correct reference, ie. the one you want to edit. If it is not, the program will keep presenting references til the correct one is selected. The author selection can occur in any position and is not restricted to first author.

2. DELETING MAIN REFERENCES

The purpose of this selection is the removal of duplicate references which occurs when merging bibliographies created by

several different people. It works just like the delete option in the new or temporary section. Be sure index files are up to date.

3. REINDEXING MAIN BIBLIOGRAPHY

The purpose and methods of this section are identical to those in the temporary section. See discussion in that section.

4. CREATING THE REFORMATTED FILES FOR FORTRAN SEARCH

The purpose of this option is to take all the information in the 4 .DBF files and the 8 .NOX files and arrange it in 4 random access files to be used by the Fortran search program. The DGGS Geothermal Bibliography consists of approximately 800 references. It takes 1652 K bytes of storage for the DBASE files (largest file is 527 K) plus 524 K bytes for the DBASE program to use access the information. After reformatting, the random files takes 334 K of storage (largest file is 250 K) and a 54 K program is used to access the same information. This means that the search portion of the program and some of the output options can be run off floppy disks.

The method used to create the random files is as follows. A DBASE procedure "Slbib", in program file ADGGSREF.PRG uses all the .DBF and .NOX files to create two intermediate ASCII files, OBOUT.TXT and UQA.TXT. The user is prompted as to the path where these files are to be put, use C:\BIB if the same directory as

other Fortran program or C:\BIB\ALASKA if you want them with the corresponding bibliography. For an IBM/PC with a Tall Grass TG 3000 hard drive, this first part takes 45 minutes for an 800 reference file. The Compaq 386 is ten times faster. Then a Fortran program "SEQRAN" reads these two files and creates or updates the four random files, RBIB, RAUT, RLOC, and RSUB. For the file just described, the second part took 3 1/2 hours on the PC. When the Fortran program is running, you are queried about the name of the input file and whether this is the first time the programs is being run. Updating is faster than creating so answer the questions appropriately. During execution the KEY number of the reference being processed and its order is printed on the screen so you have an idea of how long the run is going to take and you can see some progress. The last information on the screen is a summary sheet stating the number of bibliography entries and the number of records in each file. After the Fortran part is finished, DBOUT and UQA can be deleted along with RTMP, which was created by SEQRAN if the run was an update run.

If the power goes out or the run is interrupted, files DBOUT and UQA still exist and you can run SEQRAN independently from DBASE and the other bibliography programs. Use the procedure described in the "Running the Program" discussion to get to the directory with the programs, C:\BIB. If the files DBOUT were put on the subdirectory with the bibliography, type path c:\BIB\ALASKA first. Then, instead of bringing up DBASE, type SEQRAN. You will be asked for input file name, etc. When done use DOS to delete DBOUT, UQA, and RTMP. If the escape key (ESC) is hit during execution, the program is terminated and you can restart later.

C. THE SEARCH & OUTPUT REFERENCE SECTION

This section uses the bibliography data base files that you worked so hard to create and edit in the other sections.

S E A R C H A N D O U T P U T R E F S E C T I O N
1> LIST AUTHOR, SUBJECT OR LOCATION CODES 2> BIBLIOGRAPHY OR SHORT REFERENCE REPORTS 3> QUERY & OUTPUT SELECTED REFERENCES Q> QUIT
_____select : ;_____

Selections 1 and 2 refer to Part 5 of the program, see discussion page 2, and selection 3 refers to Part 6.

1. SPECIAL LISTINGS

Select option 1 for a listing which will help you with the entry or editing. Choices are either listings of all unique authors, subjects, or locations/quadrangles, or for an alphabetical listing of all short references with KEY numbers. Each listing has 50 entries per page with headings and page numbers. The listings of unique entries makes it easy to spot typos and is convenient to have handy when entering codes to check spelling and how an item was initially entered. The listing of short references can be used

to check for duplicate references and then use the key number to delete one.

2. OUTPUTTING THE ENTIRE BIBLIOGRAPHY

Select option 2 for the major reports this system was originally designed to produce. The first choice to make is whether to send output directly to the printer or to an intermediate file. Then you can choose individual reports or a set of all the reports.

When sent to the printer, headers and page numbers are automatically added and report is formatted to fit on 8 1/2 by 11 inch paper. The four reports will be individually paginated, ie. the first page of each one will be page 1. Additional formats for each report will be discussed in that section. The job will be as slow as the printer.

When sent to a file, no headers or page numbers will be added. The file will be an ASCII text file ready to be input to a word processor. At this option, you will be prompted as to the path where you want to put these files. Enter path name or carriage return for the current default directory. This permits the option of sending the .TXT files to the same directory as the word processing program you want to use. Since the file names are set by the program, it is possible to accidentally write over a file you want to keep. Be careful.

a. AS A STANDARD BIBLIOGRAPHY

This report is generated by selecting option 1 or 5. If sent to the printer, each reference will be printed with a 5 character hanging indent. If sent to disk, the file name will be BIBOUT.TXT and will consist of bibliography records separated by blank records.

b. BY AUTHOR WITH SHORT REFERENCE

This report is generated by selecting option 2 or 5. If sent to the printer, format will be: author, blank line, alphabetical listing of short references for this author - single spaced, blank line. The authors are in alphabetical order. If sent to disk, the file name will be AUTHOUT.TXT. The order of the records will be the same as the printer version.

c. BY SUBJECT WITH SHORT REFERENCE

This report is generated by selecting option 3 or 5. If sent to the printer, the format will be similar to that for author with subjects in the place of authors. If sent to disk, the file name will be SUBOUT.TXT.

d. BY LOCATION WITH SHORT REFERENCE

This report is generated by selection option 4 or 5. The discussion under subject applies here. Name of disk file is QUADOUT.TXT.

3. SEARCHING THE BIBLIOGRAPHY FOR SELECTED REFERENCES

Select option 3 for the search program. This section is written in Fortran to take advantage of the random files which are faster than sequential. You will need to hit carriage return (CR) after answering questions and making selections in this part. At any time in the program, if you want to restart the selection process, enter "*" CR. This will take you back to square 1. The search section gives the option to combine up to 10 authors in an AND/OR relationship. Similarly you can combine up to 10 subjects and up to 10 locations/quadrangles. The output section "AND"s together your author, subject, and location choices.

a. THE SEARCH PART

The first choice you have is to search for a particular "A"uthor, "S"ubject, "L"ocation/quad, out "P"ut, "Q"uit, or "*"restart.

Assume you choose "A", the program works similarly for "S" or "L". You will then be asked to enter an author name. It must be

entered exactly as it is on the file for a match to be made. If it is not, you will be given some help. For example, author Roman J. Motyka is on the file as Motyka, R.J. If you do not know the initials, enter as much as you know. In this case if you simply entered "Motyka", the message:

"Author Motyka was not found"

is printed along with the extra information:

"The author you requested is not on file, could you be looking for

Morris, C.W.

Morris, D

Morrison, P.

Moses, T.H.Jr.

Motyka, R.J.

Muffler, L.J.P.

Muller, E.H.

Monroe, R.J.

Murphy, J.M."

The middle name is the one in the location where your requested name should have been. Four are listed on either side. This enables you to reinput the name with the correct initials or correct any typos. When you initially enter the name, it is

reprinted and you are asked to verify it for correctness. If one letter is incorrect, you can use the space bar to automatically repeat correct letters and change only the error. This avoids making a second typo.

When "Motyka, R.J." is entered correctly, you will get the following message:

"Author Motyka, R.J. occurs in 46 references"

then you will get the option to choose another author, a subject, etc. Suppose for now a second author "Nye, C.J." has been chosen with the resulting message:

"Author Nye, C.J. occurs in 19 references"

At this point you decide how to combine authors. The same will happen once you have 2 subjects or 2 locations. You are asked if you wish to include all references with BOTH Motyka AND Nye by entering "B", or all references with EITHER Motyka OR Nye by entering "E". Choice "B" gives the message

"Your current author selections give 4 references".

Choice "E" gives the message

"Your current author selections give 61 references".

All subsequent author selections are "AND"ed with the 4 or "OR"ed with the 61. Subject and locations will be anded/ored independently of what you choose to do for the author selections. til you choose the out"put part. If you select an author and the resulting "AND" gives zero references, it is ignored and a message is output. Current limits are 200 references per individual author and 400 combined authors, 1000 and 2000 for subjects, and 500 and 1000 for locations. A message is printed when limits are reached and the extras are ignored.

b. THE OUTPUT PART

After all combinations of authors, subjects, and locations/quads have been made choose "P". The first thing that happens is that the final sets of authors, subjects, and locations are "AND"ed together and a printed message gives results. Consider the current example with Geothermal chosen as a subject and Unalaska chosen as a location/quadrangle. If the "AND"ed authors were then "AND"ed with the location and subject the message printed would be

"Resulting selections give 1 references for output"

For the "OR"ed authors it is:

"Resulting selections give 18 references for output"

If the result happens to give zero references, the program automatically resets everything to the beginning and you get an appropriate message.

There are further choices in the output part. First you have the option to keep all 18 references or view the short references one at a time and select or reject each one. Then you are asked if you want to write references to a file. This includes the print file. If you choose "Y", you are asked for a file name. Naming the file "PRN" or "LPT1" ("COM1" for serial printer) results in sending output directly to the printer. Any other name generates a disk file. For long files it is faster to write a file and print it later. You are then asked if the file is for input into Microsoft WORD. Again answer "Y" or "N". If "Y", then each

reference is written to the file as 1 record and interpreted by WORD as 1 paragraph and easily formatted. Blank lines separate references. If "N", then each line on the screen is 1 record and what you see on the screen is exactly what you will get when you execute a DOS PRINT command. This file can be input to WORD, but each line is considered a paragraph and it is not as easily edited. The references are simultaneously scrolled on the screen while either being printed or written to a file. Output references are formatted with a 5 character hanging indent and fit on 8 1/2 inch wide paper with no attempt at pagination. When you choose "N", not to write references to a file, you are asked whether you want references listed to the terminal, 1 screen at a time. If you see what you want you can execute a print screen command. If you happen to say "N"o to all options, you are asked if you are sure before resetting to start.

If you do one search and write a file, say "JUNK1", and then do a second search, you have the option of appending the output to "JUNK1" or writing a new file, say "JUNK2". At any point "*" takes you back to the beginning.

V. WHAT WENT WRONG

The program has been debugged and does run as described but you still can get unexpected results. The following is a short list of messages(M) or problems(P) and an attempted explanation. For now they are in random order.

PROBLEM or MESSAGE	WHY and possible SOLUTION
M. Too many files open.	Incorrect version of config.db. Be sure the statements, FILES=20, and BUFFERS=15 are in your version.
P. Lost data in NEW or MAIN files.	Possibly - used delete portion of program when index files were not up to date. Or else after an edit you did not finish by hitting the CNTRL-END key combination.
P. KEY numbers messed up in MAIN file.	Most likely did an append when index files were not up to date.
M. Parity check 2.	Static electricity. Turn machine off then on and hope you haven't lost much.

P. Nothing happens when you ask for printed output.

Printer probably not turned on. Turn printer on hit enter key if nothing happens in a short amount of time.

M. Bad command or filename when you type DBASE.

A path problem. You should enter the entire path when bring up DBASE. EG. type C:\DB3\DBASE if DBASE is in directory DB3. Entering only DBASE will work if you already have the path specified in your autoexec.bat file.

M. Bad command or filename or file not found when you are in DBASE and type STARTUP.

Another path problem. You have to tell DBASE where the programs are stored. At the dot prompt, type
SET PATH TO C:\BIB CR

M. File not found when the bibliography program is running then a message to abort, cancel, or retry.

M. The message "Bad command or file name" flashes on the screen when you attempt to run either of the 2 FORTRAN parts of the program and you then get a DBASE menu.

Another path problem. When you started DBASE, you were not in a bibliography directory as the default directory. At this point choose abort, you will get a DBASE dot prompt. Type quit, then move to the appropriate directory. Enter C:\BIB\ALASKA CR or whatever and restart DBASE.

Another path problem. You have to tell DOS where the *.COM files are before you load DBASE. Type Q to get out of the bibliography programs, then type QUIT at the DOT "." prompt in DBASE. At this point the screen should read C:\BIB\ALASKA>. Type PATH C:\BIB CR, then restart DBASE and go from there.

M. When running SEQRAN, you get the message "File not found..error in file RAUT with other lines giving ERROR CODE=, PC=XXXX; SS=XXXX; etc.

What happened here is that when you were queried "Is the first time the program is being run?", you said "no" when it was the first time. This message appears when you try to open the random files as old when they do not exist. At this point, do not delete DBOUT and UQA, get out of the bibliography program by entering "Q" at all menus, and "QUIT" DBASE. The screen should read C:\BIB\ALASKA>. Enter the DIR command and check if RAUT, RSUB, RLOC, and RBIB exist. If not, type SEQRAN CR. This starts the program independently of the bibliography system and generates the 4 random files. Use DOS to delete DBOUT.TXT and UQA.TXT when finished.

M. When trying to run SEARCH you get the message "File not found..error in file RAUT with other lines giving ERROR CODE=, PC=XXXX; SS=XXXX; etc.

P. When putting program on disk, the computer response in C: or something else other than what is listed in this manual.

P. Program just bombs with lots of "Called from adggsprg..." messages then C=Cancel, A=Abort.

What happened here is you tried to run the SEARCH program and the 4 random files were not created. Go back to the Main References Section and select option 4 to create the Fortran search files. Do number 3 first if there is any doubt about the index files being up to date.

The listing of current directory and subdirectory terminated by ">" is controlled by commands in the autoexec.bat file. If you insert the statement
PROMPT \$p\$g\$_
you will get the listed responses. See DOS manual for more information.

This may happen if you are randomly hitting keys, including ESC or other control keys and entering "JUNK". If you were actually entering good data - try to reconstruct your sequence of entries and call S. Liss, 474-7147. It may be a real bug.