
**Assurance Program for
Remedial Action (APRA)
Microcomputer-Operated
Bibliography Management
System**

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June 1985

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ASSURANCE PROGRAM FOR REMEDIAL ACTION
(APRA) MICROCOMPUTER-OPERATED
BIBLIOGRAPHY MANAGEMENT SYSTEM

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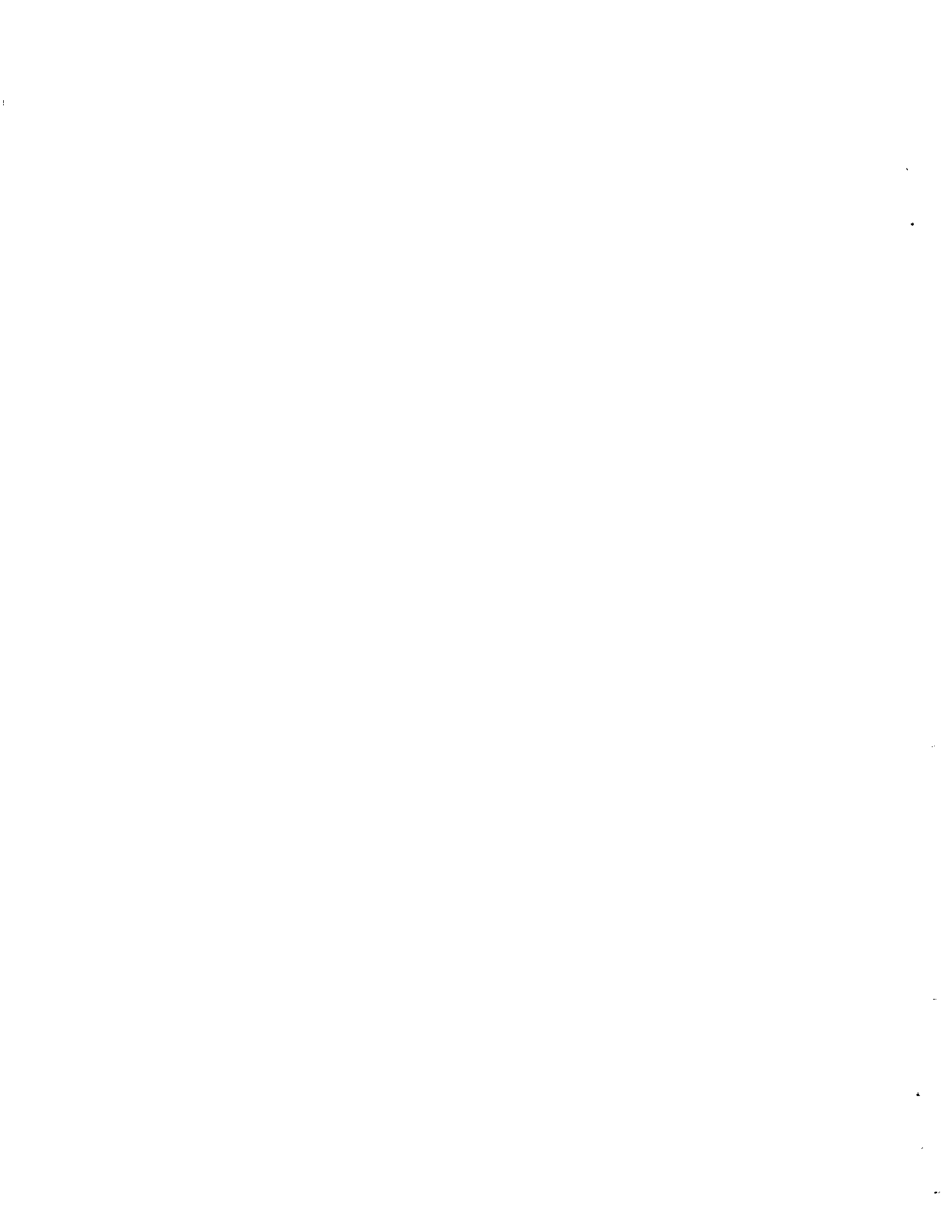
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Pacific Northwest Laboratory
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ABSTRACT

Pacific Northwest Laboratory (PNL) provided technical assistance to the Office of Operational Safety (OOS) in developing their Assurance Program for Remedial Action (APRA). The APRA Bibliography Management System (BMS), a microcomputer-operated system designed to file, locate and retrieve project-specific bibliographic data, was developed to manage the documentation associated with APRA. The BMS uses APRABASE, a PNL-developed computer program written in dBASE II^(a) language, which is designed to operate using the commercially available dBASE II database software. This document describes the APRABASE computer program, its associated subprograms, and the dBASE II APRA file. A User's Manual is also provided in the document. Although the BMS was designed to manage APRA-associated documents, it could be easily adapted for use in handling bibliographic data associated with any project.

(a) dBASE II is a trademark of Ashton-Tate, Culver City, California.



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SUMMARY

The Assurance Program for Remedial Action (APRA) Bibliography Management System (BMS) was developed by Pacific Northwest Laboratory (PNL) and is a microcomputer-operated system that was designed for the purpose of filing, locating and retrieving bibliographic data associated with the Department of Energy's Office of Operational Safety-sponsored APRA project.

The BMS uses the commercially available dBASE II^(a) database software to create and maintain bibliographic data files. The dBASE II system is versatile in its ability to manipulate and file data. The BMS uses the PNL-developed APRABASE computer program to organize information, search for specific bibliographic data or keywords associated with a document set, and prepare user-tailored bibliographic reports. The APRABASE program is written in the dBASE II programming language and operates within the main dBASE II program. APRABASE is made up of the main APRABASE program and several smaller subprograms, i.e., MIREPT3, MKREPT3A, MKREPT3B, MKREPT3C, MSREPT3, MSFORM3 and MTITLE.

Although the BMS system was designed to manage APRA-associated documents, it could be easily adapted for use in handling bibliographic data associated with almost any project. The overall premise in establishing the system was to keep the system simple to use and as straight forward as possible. It should be kept in mind that the BMS is a microcomputer-operated interactive system designed to assist in tracking documents associated with a specific project. It is not intended to replace any of the larger, main-frame, computer-operated general bibliographic systems. It should be used in conjunction with the larger systems and, in fact, we have found that the BMS is a good tool for organizing and retrieving blocks of data obtained from the general bibliographic systems.

The document describes the APRA Database file and APRABASE computer program that are the two main components of the BMS. A user's manual and a complete listing of the APRABASE computer program and associated subprograms are provided in the appendices.

(a) dBASE II is a trademark of Ashton-Tate, Culver City, California.

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1.0 INTRODUCTION

Pacific Northwest Laboratory (PNL) provided technical assistance to the Department of Energy's Office of Operational Safety in developing their Assurance Program for Remedial Action (APRA). One of PNL's tasks in the APRA project was to define and locate various published documents that were associated with the DOE remedial action programs. As remedial action documents were discovered and located, it became apparent that some form of tracking system was needed to organize and manage all the bibliographic information associated with the documents. It was felt that such a system should be computerized, preferably on a microcomputer for flexibility and ease of access, to allow for rapid tracking and retrieval of the information. It was also thought desirable to use commercially available database software, because this would greatly reduce the cost of developing the system.

The APRA Bibliography Management System was established using the dBASE II^(a) database software. The system's bibliography data are entered and edited using standard dBASE II procedures. Data organization, searches, and report writing are accomplished using the APRABASE computer program, which was written by PNL in the dBASE II programming language. The PNL APRA Bibliography Management System was developed to operate on an IBM^(b) personal computer that was connected to a 20-megabyte Tallgrass Technologies Corporation hard disk. The system can be run using only the IBM-system floppy disks for storage; however, this greatly limits the size of the bibliography file. The size of the present APRA file requires use of the hard disk.

As with most data management systems, consistency of format of the data entered into the database file (APRA file) is critical. Data must be entered in the same format each time or it will be difficult to conduct a search of the data. The system is also sensitive to spacing between words and characters in the data entries. For example, if a blank space is left after

(a) dBASE II is a trademark of Ashton-Tate, Culver City, California.

(b) IBM is a trademark of the International Business Machines Corporation.

a word or character in the data set, it will also have to be entered as such in the search query or the system will not find it during a search of the data set. The dBASE II system is also sensitive to upper- and lower-case letters. Thus, during search routines, it is necessary to query using the same upper- and lower-case letters as those used during data entry into the APRA file.

This document discusses in detail the bibliography data base file (APRA) and the search and report writing program APRABASE. The appendices include a user's manual for the BMS (Appendix A), a list of the programs, subprograms, and files necessary for operation (Appendix B), and program listings of APRABASE and subprograms (Appendix C).

2.0 APRA DATABASE FILE

The APRA Bibliography Management System uses standard dBASE II procedures to set up and maintain the APRA bibliography file. The dBASE II operational procedures will not be discussed in this document, because they are readily available in the dBASE II User's Manual that is supplied with the dBASE II software.

The dBASE II system requires that database files be set up using user-specified fields to identify the parameters being used for search purposes. The fields established for the APRA file are as follows: LEADAUTHOR, AUTHORS, DAY, MONTH, YEAR, INITITLE, TITLE, VOLUME, DOCNUM1, DOCNUM2, PAGES, ORIGINATOR, PUBLISHER, CITY, STATE, COUNTRY, APRAPROG, DOCTYPE, LOCATION, KEYWORD1 through KEYWORD10 AND DUP. The APRA file structure is shown in Table 1.

To help perform a search on the main author of a document, the author parameter is broken down into two fields: LEADAUTHOR and AUTHORS. The LEADAUTHOR field accepts up to 25 characters. If a name longer than 25 characters is encountered, the program will truncate the remaining characters; however, this is not expected to be a problem since the first 25 characters should be sufficient to specifically identify the particular author. All author names should be entered as "Last name," "First initial.," and "Middle initial."

The DAY, MONTH, and YEAR fields are used to enter the date of the publication. They are entered as separate fields, so the system can easily search for documents published during a particular year, a particular time frame during a year, a several-year period, or on a particular date. The DAY is recorded as the numerical calendar date for the particular day. For consistency and ease of reporting, the system is designed to store these numbers as if they were characters. Storing them as characters allows the entry of a range of days (e.g., 12-15). The convention used for entering the MONTH is to spell out the entire name of the month. The YEAR field provides for up to 9 characters, which also allows for entering a date range (e.g., 1981-1985).

TABLE 1. APRA Structure

<u>Field Number</u>	<u>Field Name</u>	<u>Type (Character or Numeric)</u>	<u>Width (Number of Characters)</u>
001	LEDAUTHOR	C	25
002	AUTHORS	C	75
003	DAY	C	05
004	MONTH	C	09
005	YEAR	C	09
006	INITITLE	C	10
007	TITLE	C	200
008	VOLUME	C	10
009	DOCNUM1	C	20
010	DOCNUM2	C	20
011	PAGES	C	08
012	ORIGINATOR	C	80
013	PUBLISHER	C	80
014	CITY	C	20
015	STATE	C	15
016	COUNTRY	C	25
017	APRAPROG	C	07
018	DDCTYPE	C	05
019	LOCATION	C	05
020	KEYWORD1	C	30
021	KEYWORD2	C	30
022	KEYWORD3	C	30
023	KEYWORD4	C	30
024	KEYWORD5	C	30
025	KEYWORD6	C	30
026	KEYWORD7	C	30
027	KEYWORD8	C	30
028	KEYWORD9	C	30
029	KEYWORD10	C	30
D30	DUP	C	01

The document title is entered using the fields INITITLE and TITLE. Because most document titles are too long to search efficiently, the INITITLE field was set up to allow for a rapid title search. The first 10 characters of a document's title should be entered in the INITITLE field. The TITLE field allows up to 200 characters.

The VOLUME field is provided for recording the volume number of a several-volume set of documents. In many cases this may be the only field that distinguishes between the different documents of a several-volume set because their document numbers, titles, authors, etc. may be the same. This field may be left blank if the document being recorded is a single volume.

The document numbers are entered using the fields DOCNUM1 and DOCNUM2. Two fields are provided since some documents have two different numbers assigned to them. For example, some NUREG documents are assigned both a Nuclear Regulatory Commission number and a generating-laboratory number. Both document number fields allow up to 20 characters or numbers.

The PAGES field is provided for recording the total number of pages in a document. This information will tell you whether you are looking for a large or small document when physically looking for the document on a shelf. It also indicates the depth to which a subject is covered in the document.

The name of the organization(s) producing the document is covered in the fields ORIGINATOR and PUBLISHER. In many cases the originator and publisher are the same. The ORIGINATOR field is set up to record the name of the company or laboratory that wrote the document. The PUBLISHER field is set up to record either the sponsoring organization's name or the name of the organization that made the document available to the outside community. Both the PUBLISHER and the ORIGINATOR fields allow up to 80 characters.

The geographical area of the organization responsible for the document is recorded in the CITY, STATE and COUNTRY fields. The CITY field allows up to 20 characters, the STATE field provides for a maximum of 15 characters, and the COUNTRY field permits up to 25 characters.

The APRAPROG field allows the user to record the name of the DOE remedial action program that is associated with the document. The APRA Bibliography Management System includes the following five categories of APRAPROG choices:

- UMTRAP (Uranium Mill Tailings Remedial Action Program)
- GJRAP (Grand Junction Remedial Action Program)
- FUSRAP (Formerly Utilized Sites Remedial Action Program)
- SFMP (Surplus Facilities Management Program)
- GENERAL (Documents associated with other programs)

A special screening classification system was set up for the APRA Bibliography Management System that allows the user to generally classify by code each document entered into the system. DOCTYPE is a five-character field used to record this classification code. The document classification codes established for the APRA Bibliography Management System are presented in Table 2.

TABLE 2. APRA Bibliography Management System Document-Classification Code

<u>Code</u>	<u>Description</u>
CP	Document is located in a conference proceedings (This can stand alone or it can be added to the end of any of the other categories to indicate that the document can be found in a conference proceedings, e.g., DCP.)
CT	Document contains mainly remedial action project control technology information
D	Document contains mainly dose criteria, standards, guidelines or limits
DE	Document contains both D and E
DR	Document contains both D and R
DSD	Document contains both D and SD
DSP	Document contains both D and SP
E	Document contains mainly environmental pathway analysis information
EA	Document is a Remedial Action Engineering Assessment
ER	Document contains both E and R
F	Document is a final decommissioning report
GP	Document is of general program interest but does not address any area specifically
Q	Document contains mainly quality assurance information
QD	Document contains both Q and D
QSP	Document contains both Q and SP
R	Document contains mainly risk assessment information
SD	Document contains mainly survey data
SDSP	Document contains both SD and SP
SP	Document contains mainly survey protocol

The LOCATION field is used to record the physical location of a document at PNL. A five-character location-code system was developed to describe and record information pertaining to the physical location of a document. This five-character location-code system is described in Figure 1.

The five-character location code format is:

XXXYZ

where

- X - represents space for the initials of the person whose office contains the document
- Y - represents space for one of these information-type code letters
 - H - Hardcopy
 - M - Microfiche
 - B - Bibliography Information Only
 - L - Located at One of the Main Libraries (some information at office indicated)
 - Z - represents space for one of these codes which will describe location with the office or further specify the document
 - If Y = H:
 - S - Bookshelf
 - F - File Cabinet
 - If Y = L:
 - B - Battelle Technical Library
 - R - Battelle Research Technical Laboratory (RTL) Library
 - If Y = B:
 - T - Title Only
 - A - Abstract Only

FIGURE 1. Five-Character Document-Location Code for the APRA Bibliography Management System

A series of ten keywords may be recorded in the fields KEYWORD1 through KEYWORD10. These keywords can be descriptive words or phrases containing no more than 30 characters each. The system will accept any keywords or phrases entered. However, for ease in searching on key descriptive words, a set of keywords and phrases was developed for the APRA Bibliography Management System.

A list of the keywords developed for the APRA Bibliography Management system is presented in Table 3. It is expected that this list will be expanded over time.

The DUP field is provided to indicate that more than one physical copy of the document is available at the location indicated in the LOCATION field. The DUP field is designed to accept a "Y" when more than one copy is available. The DUP field should either be left blank or have an "N" entered in it if only a single copy is available.

TABLE 3. Keyword List for APRA Bibliography Management System Keyword Search Option

KEYWORD	KEYWORD	KEYWORD
DECOMMISSIONING	STANDARDS	NATURAL PRODUCTS
DECONTAMINATION	REGULATIONS	FISSION PRODUCTS
R&D FACILITIES	STATUTES	ACTIVATION PRODUCTS
IRRADIATION FACILITIES	GUIDES	FUSION PRODUCTS
REACTORS	CRITERIA	PLUTONIUM
ACCELERATOR	HANDBOOK	UNRESTRICTED USE
FUEL FABRICATION	DATABASE	SAMPLING
FUEL REPROCESSING	COSTS	STABILIZATION
TRU (transuranics)	BUDGET	DISPERSIVITY
NUCLIOES	ECONOMICS	SPECTROMETRY
RADON	PROCEDURES	TOXICOLOGY
RADON-DAUGHTERS	METHODS	ENVIRONMENTAL
RESUSPENSION	INSTRUMENTS	PATHWAYS
QUALITY ASSURANCE	CALIBRATION	NEPA
RECOMMENATIONS	SURVEYS	SURVEILLANCE
TERMINATION	METEOROLOGY	EROSION
ENVIRONMENTAL CONTROLS	HYDROLOGY	GEOLOGY
WASTE DISPOSAL	HEALTH EFFECTS	GAMMA RADIATION
WASTE MANAGEMENT	CANCER RISK	ALPHA RADIATION
WASTE TRANSPORTATION	DOSIMETRY	BETA RADIATION
RISK ASSESSMENT	SOLID WASTE	X-RAYS
RADIATION DETECTORS	LIQUID WASTE	BETA-GAMMA RADIATION
RADIATION MONITORIN	GLOW-LEVEL WASTE	GAMMA MEASUREMENTS
RADIOLOGICAL SURVEYS	HIGH-LEVEL WASTE	BETA MEASUREMENTS
BACKGROUND RADIATION	IRRADIATION	ALPHA MEASUREMENTS
RADIOACTIVE SOURCES	URANIUM MINING	RADIOCHEMISTRY
RADIOACTIVE DECAY	URANIUM MILLING	MIGRATION
OCCUPATIONAL EXPOSURE	MILL TAILINGS	SEWAGE
POPULATION EXPOSURE	URANIUM, WINDBLOWN	DRINKING WATER
GROUNDWATER MONITORING	AIR MONITORING	SOIL SAMPLING
METEOROLOGICAL MONITORING	MILK SAMPLING	SEDIMENT SAMPLING
REMEDIAL ACTION	RADON	GASDOSE
RADIOACTIVE MATERIAL	EXPOSURE	DOSE RATE
GROUNDWATER CONTAMINATION	INTAKE	SURROGATE EFFECTS
REMEDIAL ACTION TECHNOLOGY	AIR POLLUTION	WATER POLLUTION
MONTE CARLO SIMULATION	HAZARDOUS WASTE	DOSE-RESPONSE

3.0 APRABASE PROGRAM

The APRABASE program and its subprograms MIREPT3, MKREPT3A, MKREPT3B, MKREPT3C, MSREPT3, MSFORM3, and MTITLE were written to arrange and report the bibliographical data in the APRA file by selected fields. These programs were also designed to allow searching of the file on specified parameters to locate documents and prepare user-selected/tailored reports of the bibliographic information found.

APRABASE is a menu-driven interactive program that is written in the dBASE II language. The user operates the program from the main menu, which provides for selection of the following options:

- Option I Index the file on a choice of specified parameters, and receive a written report organized according to index parameters.
- Option K Search the file for selected keywords, and receive a written report describing the documents containing the selected keywords.
- Option S Search the file for a document that contains a specified known parameter (e.g., document number), and, if found, receive a written report describing the document.
- Option D Organize the file by document number, and print out a listing that can be used to easily locate and remove duplicate entries.
- Option Z Exit the APRABASE program and place control back at the main dBASE II program level.

Option I allows the user to index the APRA file by selecting parameters from the displayed parameter menu. Upon entry of the parameter, the user will receive a written report that is organized as specified by the selected parameters. The following are index parameter choices:

LEADAUTHOR(25)	INITITLE(10)	DOCNUM1(20)	CITY(20)
LOCATION(5)	OOCTYPE(5)	DOCNUM2(20)	STATE(15)
APRAPROG(7)	YEAR(9)	PAGES(8)	COUNTRY(25)
PUBLISHER(80)	ORIGINATOR(80)		

The numbers in parentheses indicate the number of characters located in the respective fields. APRABASE can index on one, two, or three index parameters at one time. The dBASE II system will permit a maximum combined length of 100 characters in the field for indexing. Thus, any combination of up to three parameters can be chosen as long as the total of the numbers in parentheses does not exceed 100.

Option K is designed so the user can search the APRA file on selected keywords and receive a written bibliographic report describing the documents that contain such keywords. A list of suggested keywords used when conducting a search is provided in Table 3.

Option S allows the user to search the APRA file for a document that contains a specified known parameter (e.g., document number, author(s), originator, etc.) and, if found in the file, receive a written report describing the document. This option involves entering the appropriate parameter field name, relational operator and known parameter. A list of the possible parameter field names and relational operators available for use in this option is provided in Table 4. These entries are delimited using the dBASE II format. Delimiting is accomplished by enclosing the entry in quotation marks. The known parameter has to be delimited using double quotation marks. An example of how each entry should be delimited is provided on the screen when APRABASE queries such an entry. Because it is easy to forget to delimit the entries, upon receipt of the entries the program will immediately ask if they were delimited. If they were not delimited, it will loop back and allow reentry of the parameters.

Option D automatically organizes the file by document number and prints out a listing that can be used to locate and remove duplicate entries in the APRA file. The printout from this option includes the APRA file individual record numbers, which make it easy to use the standard dBASE II editing routine to locate a record and either eliminate a duplicate or correct a field.

Option Z allows the user to exit APRABASE. It returns the user to the main dBASE II program. It is then necessary to enter QUIT to completely leave the dBASE II system. The user can quit a run at any time by pressing ESC,

which will automatically exit to the computer's operating system. However, if the program is exited this way, it may be necessary to manually turn off the printer (press Ctrl PrtSc). This is necessary only when the program is exited during operation within a loop containing an internal command to print.

Menu-driven options I, K and S allow the user to choose report formats for printing the results of the index or search operations. When the user enters the number indicated, the report format choices are as follows:

- 1 - Informal report in tabular form that includes the first document number, title, lead author and document location. (See Figure 2 for an example of this report format.)
- 2 - Informal report in tabular form that includes the first document number, second document number, volume, year, document type, APRA program code, country of publication, and number of pages. (See Figure 3 for an example of this report format.)
- 3 - Data listing that includes lead author, all authors, title, volume, year, document numbers, originator, publisher, country of publication, APRA program code and number of pages. This report format produces a separate page of output for each document. (See Figure 4 for an example of this format.)
- 4 - Informal report in tabular form which user designs (using the menu-driven REPORT FORM routine of dBASE II; any of the field names contained in the APRA file structure can be used when designing the informal report).
- 5 - Informal report in tabular form which user previously designed and renamed. Do not select this report unless you have previously selected informal report format choice 4 and saved the report format.

The MIREPT3, MKREPT3A, MKREPT3B, MKREPT3C, MSREPT3, MSFORM3 and MTITLE subprograms are automatically called by APRABASE. MIREPT3 is used to print the report when report format option 3 is selected under the main program option I. MKREPT3A, MKREPT3B and MKREPT3C are used to print the report for report format option 3 under the main program option K. MSREPT3 and MSFORM3 are used to print the report for report format option 3 under the main program option S. MTITLE is used by all of the programs to label the reports.

PAGE NO. 00001
06/04/85

APRA SELECTED BIBLIOGRAPHY

DOCUMENT NUMBER	DOCUMENT TITLE	LEAD AUTHOR	LOCATION
CONF-791234	Environmental Decontamination--Proceedi ngs of the Workshop	Chester, C.V.	RDSHS

FIGURE 2. Example of the APRA Bibliography Management System Option 1 Report Format

PAGE NO. 00001
06/04/85

APRA SELECTED BIBLIOGRAPHY

FIRST DOC. #	SECOND DOC. #	VOLUME	YEAR	TYPE	PROGRAM	COUNTRY	PAGES
CONF-791234	U	U	1981	CP	GENERAL	USA	255

FIGURE 3. Example of the APRA Bibliography Management System Option 2 Report Format

APRA BIBLIOGRAPHY

DATA LIST

LEAD AUTHOR: Chester, C.V.

AUTHORS: Cristy, G.A., and Vernigon, H.C.

TITLE: Environmental Decontamination--Proceedings of the Workshop

VOLUME: U

YEAR: 1981

DOCUMENT NUMBER: CONF-791234
U

ORIGINATOR: Oak Ridge National Laboratory Energy Division

PUBLISHER: Oak Ridge National Laboratory

COUNTRY: USA

APRA PROGRAM CODE: GENERAL

PAGES: 255

FIGURE 4. Example of the APRA Bibliography Management
System Option 3 Report Format

TABLE 4. APRA Bibliography Management System Option S Search Parameter and Relational Operator Choices

<u>Parameter</u>	<u>Relational Operator</u>
LEADAUTHOR	= (Equal To)
AUTHORS	<> (Not Equal To)
YEAR	>= (Greater Than or Equal To)
TITLE	<= (Less Than or Equal To)
DOCNUM1	> (Greater Than)
DOCNUM2	< (Less Than)
DOCTYPE	
LOCATION	
ORIGINATOR	
PUBLISHER	
CITY	
STATE	
COUNTRY	
APRAPROG	
KEYWORDS	

APPENDIX A

APRA BIBLIOGRAPHY MANAGEMENT
SYSTEM USER'S MANUAL

APPENDIX A

A.1 DESCRIPTION

The Assurance Program for Remedial Action (APRA) Bibliography Management System operates using dBASE II^(a) software. The main bibliographic file (APRA) is developed and maintained using the standard dBASE II operational commands for establishing and editing a database file. The APRABASE program and its associated subprograms, which organize, search and prepare reports on data in the APRA file, are written in the dBASE II language and are operated within the dBASE II program. APRABASE is a menu-driven interactive program. APRABASE is controlled mainly by selecting choices from the menus and answering requests for input as they are queried.

The APRA Bibliography Management System described in this manual is operated on an IBM PC^(b) microcomputer with 128K ram memory that uses a Tallgrass Technologies Corporation 20-megabyte hard disk, or other similar storage system.

(a) dBASE II is a trademark of Ashton-Tate, Culver City, California.

(b) IBM PC is a trademark of the International Business Machines Corporation.

A.2 OPERATION

A.2.1 DATABASE FILE (APRA)

The APRA file is edited or appended by the dBASE II system using the normal commands of that system. Since the dBASE II user's manual, that is provided with the software package when it is purchased, discusses these commands in detail, they will be only lightly discussed in this manual. Bibliography data can be appended, edited or deleted by using the following commands (enter boldface commands exactly as shown; substitute specific entry for lower-case commands; terminate each entry with a return):

<u>Enter</u>	<u>Explanation</u>
A> DBASE	The DBASE command calls up the dBASE II system from the disk using the computer's operating system. A> is the disk operating system (DOS) prompt.
. USE C:APRA.DBF	The USE command followed by the file name designates the file that is to be appended. The " C: " designates the disk location where the file can be found. The " ." is the dBASE II system prompt.
. APPEND	The APPEND command automatically finds the end of the file and sets up the next record number in sequence for data entry. (Note - If editing or deleting data from the file, omit this command.)
. EDIT record number	The EDIT (record number) command (e.g., EDIT 001 or EDIT 250) finds the record number specified and calls the record to the screen for editing. The normal scrolling and function keys of dBASE II should be used to move within the record/file when editing (reference the dBASE II manual for key definitions and usage instructions). Use CTRL W when editing is complete. This will allow the changes to be saved and return control to the dBASE II system.

Enter	Explanation
. DELETE RECORD number	The DELETE command marks a record for deletion from the file. The command is used by first going into the file, using the edit mode, and finding/confirming the record that is to be deleted. This is necessary to make sure the correct record is being deleted. Exit the edit mode by using either a CTRL W or CTRL Q (CTRL Q exits without saving edit changes). Then use the command specifying the record number to be deleted (e.g., DELETE RECORD 001).
. QUIT	The QUIT command exits the dBASE II program and returns control to the computer's OOS.

It is good practice to use the computer's DOS system to make backup copies of the APRA file each time that a major modification is made to the file. Occasionally a disk can become damaged causing the data in the file to be lost.

Searching for and retrieving information in the APRA Bibliography Management System is sensitive to the format used when data are entered into the APRA file. Order is important (e.g., Doe, J.R. is not the same as J.R. Doe). Spacing is important (e.g., Doe, J. R. is not the same as Doe, J.R.). When specifying data for the system to search or retrieve, upper- and lower-case letters must be repeated exactly as they are entered in the file or the system will not be able to find the data (e.g., if the file contains the name Doe, J.R. and DOE, J.R. is specified, the system will not be able to find it). Because the system is sensitive to the format, an example record format has been established and should be followed when entering data into the APRA file. Figure A.1 demonstrates this record format along with the structure of the records contained in the APRA file. Figure A.1 is organized so that it displays the record structure (data fields) on the far left followed by a colon. Following the colon is an example input for each field. In brackets below each input example is a description of the format used.

RECORD #00133 [This is the record number of the data entry. It is the identifying number of this particular data set in the file.]

LEADAUTHOR :Miner, J.R.
 [Enter the last name first (using upper-case letters on only the first letter or on those which normally are capitalized such as in McMurray), a comma, a space, the first initial (upper case), a period, the middle initial (upper case), and a period (do not put a space between the first and middle initial).]

AUTHORS :Public, J.Q., Manager, J.B., Legislator, W.K., Regulator, R.T.
 [Enter the last name first followed by a comma, a space, and the initials as described for LEADAUTHOR. Follow each complete name with a comma and a space, except for the last complete name in the list. Do not put a comma after the next-to-the-last complete name; instead, enter a space, the word "and" (lower case) and a space.]

DAY :29
 [Enter the numerical calendar day of the month.]

MONTH :February
 [Enter the calendar month using upper case on only the first letter. Do not abbreviate since many end uses of the reports will call for the word to be written out.]

YEAR :1984
 [Enter the numerical calendar year.]

INITITLE :DETERMININ
 [Enter the first 10 letters of the title (upper case). Do not include small insignificant words that are a part of the title. The INITITLE field is used by the system to index and search on titles.]

TITLE :Determining the Ultimate Fate of the Uranium - Industry
 [Enter the title using upper-case letters on only the first letter of each significant word. Do not use quotes around the title. Use the normal convention of not capitalizing the first letter of insignificant words. Enter one space only between each word in the title.]

VOLUME :13
 [Enter either Arabic or Roman numeral volume number. Use the system that the author used when titling the particular document.]

FIGURE A.1. Format and Structure of Records Within the APRA File (Example entries are in boldface type)

Figure A.1 Contd

DOCNUM1 :HDW-639
[Enter the document number exactly as it is listed on the document.]

DOCNUM2 :MY/SURMISE-1984
[If applicable, enter the second document number exactly as it is listed on the document.]

PAGES :625
[Enter the number of pages that the document contains.]

ORIGINATOR :Hard Times National Laboratory
[Enter the name of the organization responsible for the document. The name should be spelled out using upper-case letters on all of the significant words. Enter only one space between words in the name.]

PUBLISHER :Uncle Sam's Printing House
[Enter the name of the organization that published the document. This will often be the same organization as the ORIGINATOR. The name should be spelled out using upper-case letters on all of the significant words. Enter only one space between words in the name.]

CITY :Denver
[Enter the name of the city from which the document was published. Use upper case on the first letter of each word and spell out the city's name.]

STATE :Colorado
[Enter the name of the state from which the document was published. Use upper case on the first letter of each word and spell out the name of the state.]

COUNTRY :USA
[Enter the name of the country from which the document was published. Use the conventional abbreviation for the name of the country. Use upper-case letters as appropriate in the conventional abbreviation.]

APRAPROG :UMTRAP
[Enter one of the five possible APRA program codes (UMTRAP, GJRAP, FUSRAP, SFMP or GENERAL). Use upper case for all letters in the code.]

DOCTYPE :GP
[Enter the most representative document classification code (reference Table 2 on page 6 of the APRA Microcomputer Operated Bibliography Management System document for a listing of the codes). Use all upper-case letters in the code.]

Figure A.1 Contd

LOCATION :RDSBT
[Enter the five-character document location code (reference Figure 1 on page 7 of the APRA Microcomputer Operated Bibliography Management System document for a description of how to generate the code). Use all upper-case letters in the code.]

KEYWORD1 :URANIUM MILLING
KEYWORD2 :RISK ASSESSMENT
KEYWORD3 :ENVIRONMENTAL CONTROLS
KEYWORD4 :REGULATIONS
KEYWORD5 :CRITERIA
KEYWORD6 :RECOMMENDATIONS
KEYWORD7 :WASTE DISPOSAL
KEYWORD8 :WASTE MANAGEMENT
KEYWORD9 :TERMINATION
[Enter the appropriate keywords that best describe the document contents (reference Table A.1 for a list of suggested keywords). The list of keywords in Table A.1 should be expanded as the user progresses with the program, and new keywords that are added should be noted so they can be used when searching the file for associated documents. Use all upper-case letters when entering keywords. Keywords can involve more than one word or they can be phrases up to 30 characters in length.]

DUP :
[This field is used only when there is more than one copy of the document available at the location indicated in the LOCATION field. If there is more than one copy available, enter an upper-case Y. If not, leave blank or enter an N.]

NOTE: If data for any of the fields listed above are not available, enter an upper-case U in the field. This will allow the file to be searched on U at a later time to locate and correct unknown data fields.

A.2.2 BIBLIOGRAPHY DATA SEARCH AND REPORT PROGRAM OPERATION (APRABASE)

The APRABASE program is simple to operate. It can be accessed and run by calling up the location of the program files (addressing the directory and

TABLE A.1. List of Keywords/Phases for the APRA Bibliography Management System Keyword Search Option

Keyword	Keyword	Keyword
DECOMMISSIONING	STANDARDS	NATURAL PRODUCTS
DECONTAMINATION	REGULATIONS	FISSION PRODUCTS
R&D FACILITIES	STATUTES	ACTIVATION PRODUCTS
IRRADIATION FACILITIES	GUIDES	FUSION PRODUCTS
REACTORS	CRITERIA	PLUTONIUM
ACCELERATOR	HANDBOOK	UNRESTRICTED USE
FUEL FABRICATION	DATABASE	SAMPLING
FUEL REPROCESSING	COSTS	STABILIZATION
TRU (transuranics)	BUDGET	DISPERSIVITY
NUCLIDE	SECONOMICS	SPECTROMETRY
RADON	PROCEDURES	TOXICOLOGY
RADON-DAUGHTERS	METHODS	ENVIRONMENTAL
RESUSPENSION	INSTRUMENTS	PATHWAYS
QUALITY ASSURANCE	CALIBRATION	NEPA
RECOMMENDATIONS	SURVEYS	SURVEILLANCE
TERMINATION	METEOROLOGY	EROSION
ENVIRONMENTAL CONTROLS	HYDROLOGY	GEOLOGY
WASTE DISPOSAL	HEALTH EFFECTS	GAMMA RADIATION
WASTE MANAGEMENT	CANCER RISK	ALPHA RADIATION
WASTE TRANSPORTATION	DOSIMETRY	BETA RADIATION
RISK ASSESSMENT	SOLID WASTE	X-RAYS
RADIATION DETECTORS	LIQUID WASTE	BETA-GAMMA RADIATION
RADIATION MONITORING	LOW-LEVEL WASTE	GAMMA MEASUREMENTS
RADIOLOGICAL SURVEYS	HIGH-LEVEL WASTE	BETA MEASUREMENTS
BACKGROUND RADIATION	IRRADIATION	ALPHA MEASUREMENTS
RADIOACTIVE SOURCES	URANIUM MINING	RADIOCHEMISTRY
RADIOACTIVE DECAY	URANIUM MILLING	MIGRATION
OCCUPATIONAL EXPOSURE	MILL TAILINGS	SEWAGE
POPULATION EXPOSURE	URANIUM, WINDBLOWN	DRINKING WATER
GROUNDWATER MONITORING	AIR MONITORING	SOIL SAMPLING
METEOROLOGICAL MONITORING	MILK SAMPLING	SEDIMENT SAMPLING
REMEDIAL ACTION	RADON GASDOSE	
RADIOACTIVE MATERIAL	EXPOSURE	DOSE RATE
GROUNDWATER CONTAMINATION	INTAKE	SURROGATE EFFECTS
REMEDIAL ACTION TECHNOLOGY	AIR POLLUTION	WATER POLLUTION
MONTE CARLO SIMULATION (a)	HAZARDOUS WASTE	DOSE-RESPONSE
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----

(a) Blank spaces are provided for additional keywords.

subdirectories that contain the APRABASE program, subprograms, and data files) and entering the following commands:

<u>ENTER</u>	<u>EXPLANATION</u>
C> DBASE	"C>" is the system prompt for directory C. DBASE calls in the dBASE II main program.
. DO APRABASE	The "." is the dBASE II prompt. DO APRABASE calls in APRABASE and runs it under the dBASE II system.

Once the DO APRABASE command has been entered, the user simply selects items from the menu and provides input as it is queried by the program. To exit APRABASE simply select the "Z" choice from the main menu, which places control back at the main dBASE II program level, and enter QUIT, which will cause the system to exit dBASE II and return control to the computer's main DOS level.

A.2.3 APRABASE Menus and Input Queries

Upon starting a run of the APRABASE program, the user will first see the following warning printed on the screen:

***** WARNING *****

THE APRABASE PROGRAM IS SENSITIVE TO THE FORMAT OF ITS INPUT. ORDER IS IMPORTANT (e.g., Doe, J.R. IS NOT THE SAME AS J.R. Doe). SPACING IS ALSO IMPORTANT (e.g., Doe, J. R. IS NOT THE SAME AS Doe, J.R.). UPPER- AND lower-CASE LETTERS MUST BE REPEATED EXACTLY AS THEY ARE IN THE FILE (e.g., DOE, J.R. IS NOT THE SAME AS Doe, J.R.). REFER TO THE APRA BIBLIOGRAPHY USER'S MANUAL FOR MORE INFORMATION REGARDING FORMAT OF DATA IN THE APRA.DBF FILE.

The warning reminds the user that the data format used for searches and reports must be the same as that used when the data were filed. If the formats are different, the program will not be able to locate the input parameter in the file. Reference is made to Figure A.1 for details regarding

the format to use when entering queried information. Whenever the system prints out a message for the user to read, it will stop execution of the program and print (directly below the information message) a message similar to the following:

STRIKE ANY KEY TO BEGIN (or CONTINUE, whichever is appropriate) THE PROGRAM

WAITING

After reading the message, the user simply presses a key and the program will continue execution.

The user will next see the following main menu:

PROGRAM CHOICES:

I = Indexes the File on Specified Parameters
K = Searches the File on Keywords
S = Searches the File on Specified Parameters
D = Organizes the File to Identify Duplicate Records
Z = Exits the Program

NOTE: There may be delays in the program as it finds the appropriate subroutines and search parameters. Remember patience is a virtue.

SET CAPS LOCK ON

Enter Program Choice:

The I choice allows the user to index the APRA file using up to three parameters. Selection of I will result in the following display:

INDEX CHOICES:

LEADAUTHOR(25)	INITITLE(10)	DOCNUM1(20)	CITY(20)
LOCATION(5)	DOCTYPE(5)	DOCNUM2(20)	STATE(15)
APRAPROG(7)	YEAR(9)	PAGES(8)	COUNTRY(25)
PUBLISHER(80)	ORIGINATOR(80)		

You may enter one, two, or three index parameters. The principal index parameter is the one which will be indexed first. Any following parameters will be indexed within the context of the previous index. The number that follows each parameter represents the length of the field.

*** NOTE *****
* Index commands will not work if the combined length of *
* field is greater than 100. *

How many parameters will you index on? 1, 2, or 3:

The numbers in parentheses after the index choices indicate the number of characters located in the respective fields. The dBASE II system permits up to 100 characters in the field when indexing; thus, any combination of up to three of the above parameters can be indexed on as long as the total number of characters being used for indexing does not exceed 100. Once the indexing parameters are selected, the program will organize the file according to the first parameter; then, each main category as determined by the first parameter will be organized according to the second parameter and so forth up to the three parameters. After the file is indexed, the program will display the following menu for selecting the report format used when printing the indexed data:

REPORT FORMAT CHOICES:

- 1 = Informal report in tabular form that includes first document number, title, lead author, and location
- 2 = Informal report in tabular form that includes first document number, second document number, volume, year, document type, APRA program code, country of publication, and number of pages
- 3 = Data listing that includes lead author, all authors, title, volume, year, document numbers, originator, publisher, country of publication, APRA program code, and number of pages
- 4 = Informal report in tabular form which user designs
- 5 = Informal tabular report which user previously designed and renamed. Do not select this report unless you have previously selected informal report format choice 4 and saved the report format.

Enter Report Format Choice:

Examples of report formats 1, 2, and 3 are supplied in figures 2, 3, and 4, respectively (found on pages 13 and 14). Choice 4 allows the user to select the parameters to be included in the informal report. When choice 4 is selected the following will be displayed on the terminal:

You have chosen a program that will allow you to create your own informal report format in the dBASE standard form.

Strike any key to run program.

WAITING

Upon pressing a key, the following will be displayed (input requests will be displayed one at a time upon entering a response to the first/previous request):

You will define the format of this report.

Generally, options are defined as M=12, L=54 and W=86. The heading is "APRA SELECTED BIBLIOGRAPHY" Double space the report and do not use totals. The width of the columns is defined first, then the field name. Enter whatever column heading you desire. When you are through defining columns strike a carriage return.

No printout will be made as you define the report format.

```
ENTER OPTIONS, M=LEFT MARGIN, L=LINES/PAGE, W=PAGE
WIDTH
PAGE HEADING? (Y/N)
ENTER PAGE HEADING:
DOUBLE SPACE REPORT? (Y/N)
ARE TOTALS REQUIRED? (Y/N)
COL          WIDTH, CONTENTS
001 ENTER HEADING:
002 ENTER HEADING:
003
```

Note: For further assistance, refer to the REPORT FORM procedures described in the dBASE II user's manual.

The requested inputs should directly follow the request. Input for the first request (ENTER OPTIONS, M=LEFT MARGIN, L=LINES/PAGE, W=PAGE WIDTH) should directly follow the word WIDTH and be as follows:

M=12,L=54,W=86 (assuming that 12, 54 and 86 are the desired left margin, lines per page, and page width).

Respond to the page heading question with a yes or no (Y or N). If "Y" is entered, the "ENTER PAGE HEADING:" query will be displayed and should be responded to by entering the desired page heading. Usually the reports are

double spaced for ease of reading. This is accomplished by responding with a "Y" to the question. Respond to "ARE TOTALS REQUIRED? " with a no (N), because this is needed only when numerical values are used and a total is desired. The next items to be input are the column "WIDTH" and "CONTENTS." The "WIDTH" specifies the number of characters that are allowed in the report column for the "CONTENT" item. The choices the user has available for the "CONTENT" and associated "WIDTH" inputs can be found in Table 1 (page 4) of the APRA Micro-computer-Operated Bibliography Management System document. Since the program will wrap words to fit columns, the specified column width does not have to be the same as the width listed in Table 1. Respond to the "ENTER HEADING:" request with an appropriate heading for the "CONTENT" item. The heading can be no longer than the number of characters specified in the "WIDTH" input. Upon entry of all the "CONTENT" items desired, strike the carriage return as a response to the request for an additional "WIDTH,CONTENT" input; the program will then begin printing the report according to the format just defined. After the report is written, the program will ask if the new report format should be saved. If the response is yes (Y), the following message will be displayed:

To save this report format you will have to rename the file.
Check the list of files which are already created and make sure
you do not duplicate one of them. Do not worry about adding
a prefix (e.g., B:) or suffix (e.g., FRM).

Strike any key to see list of report format files.

WAITING

Upon striking a key, the list of previously created format files will be displayed in the upper-left corner of the screen. The following message will be displayed on the lower part of the screen:

The report name does not have to be "FORM."
The prefix "I, K, or S" are useful when identifying the formats.
Do not use periods or spaces in the format names.

Enter report format name:

Upon entry of the name, the program will respond with an empty inverse video space at the top of the screen. The form name should be reentered in this space. Reentry of the name in the inverse video space will add the new name

to the file list. After the name is reentered, the program will redisplay the list of files, which will now include the name you just entered. The program will then ask if you want to make another printout. If the response is yes (Y), the program will loop back to the report format menu. If the response is no (N), it will ask if you want to make another search. If the response is yes (Y), the program will loop back and request the new input parameters. If the response is no (N), it will loop back to the main menu where another option can be chosen or the "Z" option can be selected to end the program.

Option K allows the user to search the APRA file on selected keywords and receive a bibliographic report on the documents that contain these keywords. When option K is chosen the following message will be displayed on the screen:

KEYWORD OPTIONS:

Check the list of keywords found in Table A.1 of the user's manual. If you do not have the users manual and want to see the keyword list, type "Y". If you do not want to see the keyword list press any other key.

WAITING

Table A.1 contains a list of keywords to select from when performing a keyword search under option K. New keywords may be added to the list as desired by the user. A blank page is provided in Table A.1 for recording new keywords. It is important to record new keywords so they can be easily recalled when conducting a search. If the user wants the new keywords added to the computer-displayed list, it will be necessary to use the dBASE II editor, go into the APRABASE program, and add them to the existing list.

If a yes (Y) is entered as a response to the displayed message, the computer will, along with the list of words, print out the following message:

Chemical symbols are listed either by symbol-mass number (i.e., CO-60) if they are radioactive, or by symbol only (i.e., CO, FE) if they are not radioactive.

The chemical symbol message provides a convention for adding radionuclides or nonradioactive chemical elements to the keyword list. Once the keywords are entered, the program will search the file to locate documents

containing these words. The program will then display the report format choices menu on the screen and allow the user to select the type of report desired. The report format choices menu and the remainder of the program under Option K operate the same as Option I.

The Option S allows the user to search the APRA file for documents containing a specified known parameter (e.g., document number, author, originator).

When Option S is selected, the following message will be displayed on the screen:

<u>Parameter Choice:</u>		<u>Relational Operator:</u>
LEADAUTHOR	ORIGINATOR	= Equal to
AUTHORS	PUBLISHER	<> Not equal to
YEAR	CITY	>= Greater than or equal to
TITLE	STATE	<= Less than or equal to
DOCNUM1	COUNTRY	> Greater than
DOCNUM2	APRAPROG	< Less than DOCTYPE
LOCATION		

The parameter (field name) must be delimited by quotation marks (e.g., "LEADAUTHOR"). The relational operator must also be delimited and spaces placed in front of and behind the relational operator entered (e.g., "="). The variable must be delimited with both a set of double quotation marks and a set of single quotation marks (e.g., "'Doe, J.R.'"). Use quotation marks on the same key (using shift).

Strike any key when you are ready to begin.

WAITING

The parameter choices should be entered exactly as the message describes. The quotation and double quotation marks (delimiting) are necessary because the input parameters are automatically called into the standard dBASE II program to conduct the search, and dBASE II requires the delimiting of its inputs. Each part of the input parameter expression is queried separately. That is, the parameter choice option is queried first (an example of the first entry would be: "LEADAUTHOR"). Next, the relational operator is queried (an example of the next entry would be: "="). Finally, the specific parameter is queried (an example of this entry would be: "'Doe, J.R.'"). The program will allow up to three parameter expressions to be searched at one time.

After the input parameters expressions are entered, the program will ask if variables have been delimited and if the search parameters are correct. If the answer is no (N), the program will loop back to the parameter expression input queries and allow the user to reenter the parameters. If the answer is yes (Y), the program will search the file to locate any documents containing fields that satisfy the expression(s) entered. The program will then display the report format choices menu to allow selection of the report format type. The report format choices menu and the remainder of the program under the Option S operate the same as Option I.

Option D automatically organizes the file by document number and prints out a listing that can be used to locate and remove duplicate entries in the APRA file. The printout from this option includes the APRA file record number, which makes it easy to locate and either eliminate a duplicate file or correct a field. Editing is performed under the standard dBASE II editing routine.

Option Z allows the user to exit the APRABASE program. It returns the user back to the main dBASE II program. It is then necessary to enter QUIT to completely leave the dBASE II system. The user can quit a run by pressing ESC, which will automatically exit to the computer's operating system. However, if the program is exited this way, it may be necessary to manually turn off the printer (press Ctrl PrtSc). This is necessary only when the program is exited while it is operating in a loop that contains an internal command to print.

APPENDIX B

APRA BIBLIOGRAPHY MANAGEMENT SYSTEM
PROGRAM, SUBPROGRAMS AND FILES

LIST OF PROGRAMS AND SUBPROGRAMS

DBASE.COM
DBASEOVR.COM
INSTALL.COM
DBASEMSG.TXT
APRABASE.PRG
MIREPT3.APR
MKREPT3A.APR
MKREPT3B.APR
MKREPT3C.APR
MSREPT3.APR
MSFORM3.APR
MTITLE.APR

LIST OF FILES

APRA.DBF
TEMP.NDX
MILIST.DBF
MKLIST.OBF
MSLIST.DBF
IFORM1.FRM
IFORM2.FRM
IFORM5.FRM
IFORM6.FRM
KFORM1.FRM
KFORM2.FRM
SFORM1.FRM
SFORM2.FRM

APPENDIX C

PROGRAM LISTINGS OF APRABASE AND SUBPROGRAMS


```

STORE 1 TO MIndx
DO WHILE MIndx = 1
  ERASE
  USE AFRA.DBF
  @ 7,5 SAY 'INDEX CHOICES:'
  @ 9,8 SAY 'LEADAUTHOR(25)      INITITLE(10)      DOCNUM1(20)      CITY(20)'
  @ 10,8 SAY 'LOCATION(5)          DOCTYPE(5)       DOCNUM2(20)     STATE(15)'
  @ 11,8 SAY 'AFRPRD(7)         YEAR(9)          PAGES(8)        COUNTRY(25)'
  @ 12,8 SAY 'PUBLISHER(80)     ORIGINATOR(80)'
  @ 14,8 SAY 'You may enter one, two, or three index parameters. The principal'
  @ 15,8 SAY 'index parameter is the one which will be indexed on first. Any'
  @ 16,8 SAY 'following parameters will be indexed within the context of the'
  @ 17,8 SAY 'previous index. The number which follows each parameter represents'
  @ 18,8 SAY 'the length of the field.'
  @ 20,8 SAY '*** NOTE *****'
  @ 21,8 SAY ' * Index commands will not work if the combined length of *'
  @ 22,8 SAY ' * field is greater than 100. *'
  @ 23,8 SAY '*****'
  ?
  ?
  INPUT 'How many parameters will you index on? 1, 2, or 3' TO MInum
  STORE 1 TO MIsb
  DO WHILE MIsb = 1
    DO WHILE MInum < 3
      ?
      ?
      ? R
      INPUT 'How many parameters will you index on? 1, 2, or 3' TO MInum
    ENDDO MInum validation
    DO CASE
      CASE MInum = 1
        ?
        ACCEPT 'Enter Index Parameter' TO M11
        ?
        ERASE
        @ 3,32 SAY '*** INDEXING ***'
        INDEX ON &M11 TO Tempndx
      CASE MInum = 2
        ?
        ACCEPT 'Enter First Index Parameter' TO M11
        ?
        ACCEPT 'Enter Secondary Index Parameter' to M12
        ?
        ERASE
        @ 3,32 SAY '*** INDEXING ***'
        INDEX ON &M11+&M12 TO Tempndx
      CASE MInum = 3
        ?
        ACCEPT 'Enter First Index Parameter' TO M11
        ?
        ACCEPT 'Enter Second Index Parameter' TO M12
        ?
        ACCEPT 'Enter Third Index Parameter' TO M13
        ?
        ERASE
    
```

```

@ 3,32 SAY '*** INDEXING ***'
INDEX ON &MI1+&MI2+&MI3 TO Tempndx
ENDCASE Index input
ERASE
ACCEPT "Were all the index parameters correct? 'Y' or 'N'" TO MIedit
DO WHILE MIedit<>'Y' .AND. MIedit<>'N'
  RELEASE MIedit
  ?
  ?
  ? R
  ACCEPT "Were the index parameters correct? 'Y' or 'N'" TO MIedit
ENDDO MIedit validation
DO CASE
  CASE MIedit='Y'
    STORE 2 TO MIsub
    CONTINUE
  CASE MIedit = 'N'
    STORE 1 TO MIsub
ENDCASE Index check
LOOP
ENDDO MIsub

USE APRA.DBF INDEX TEMPNDX

STORE 1 TO MIcont
DO WHILE MIcont = 1
  ERASE
  @ 2, 12 SAY 'REPORT FORMAT CHOICES:'
  @ 5, 15 SAY '1 = Informal report in tabular form that includes first document'
  @ 6, 19 SAY 'number, title, lead author, and location'
  @ 8, 15 SAY '2 = Informal report in tabular form that includes first document'
  @ 9, 19 SAY 'number, second document number, volume, year, document type, APRA'
  @ 10, 19 SAY 'program code, country of publication, and number of pages'
  @ 12, 15 SAY '3 = Data listing that includes lead author, all authors, title,'
  @ 13, 19 SAY 'volume, year, document numbers, originator, publisher,'
  @ 14, 19 SAY 'country, APRA program code, and number of pages'
  @ 16, 15 SAY '4 = Informal report in tabular form which user designs'
  @ 18, 15 SAY '5 = Informal tabular report which user previously designed'
  @ 19, 19 SAY 'and renamed. Do not select this report unless you have'
  @ 20, 19 SAY 'previously selected informal report format choice 4 and saved the'
  @ 21, 19 SAY 'report format.'
  ?
  ?
  INPUT 'Enter Report Format Choice' to Mirpt
  ERASE
  DO CASE
    CASE Mirpt < 3
      @ 12, 12 SAY 'You have chosen an informal report, which is modelled'
      @ 13, 12 SAY 'after the standard dBase report format.'
      @ 15, 12 SAY 'Strike any key to run the program.'
      WAIT
      ERASE
    DO CASE
      CASE Mirpt = 1
        SET PRINT ON

```

```

        REPORT FORM IFORM1
        SET PRINT OFF
        STORE 7 TO Mirpt
    CASE Mirpt = 2
        SET PRINT ON
        REPORT FORM IFORM2
        SET PRINT OFF
        STORE 7 TO Mirpt
    ENDCASE Informal reports
CASE Mirpt = 3
    ERASE
    @ 8,10 SAY 'This report format should only be printed out'
    @ 9,10 SAY 'on a printer with graphics. Do not use a Daisywriter.'
    @ 11,10 SAY 'Strike any key to run the report format.'
    WAIT
    ERASE
    USE APRA.DBF INDEX TEMPNDX
    DO MIREPT3.APR
CASE Mirpt = 4
    ERASE
    @ 12, 12 SAY 'You have chosen a program which will allow you'
    @ 13, 12 SAY 'to create your own informal report format, in the'
    @ 14, 12 SAY 'dBase standard form.'
    @ 16, 12 SAY 'Strike any key to run program.'
    WAIT
    ERASE
    @ 8,12 SAY 'You will define the format of this report.'
    @ 10,12 SAY 'Generally, options are defined as M=12, L=54 and W=86.'
    @ 11,12 SAY 'Heading? enter "Y" and the heading is typically "APRA"'
    @ 12,12 SAY 'BIBLIOGRAPHY". Double Space? enter "Y" and Totals? enter'
    @ 13,12 SAY '"N". Width of columns is defined first, then enter the'
    @ 14,12 SAY 'field name. Enter whatever column heading is desired'
    @ 15,12 SAY 'after Heading? Carriage return when you are done'
    @ 16,12 SAY 'defining the format.'
    @ 18,12 SAY 'STRIKE ANY KEY TO CONTINUE'
    WAIT
    ERASE
    USE APRA.DBF INDEX TEMPNDX
    REPORT FORM IFORM4 TO PRINT
    STORE 7 TO Mirpt
    ?
    ?
    ACCEPT "Do you want to save this report format? 'Y' or 'N'" To Misave
    DO WHILE Misave<>'N' .AND. Misave<>'Y'
        RELEASE Misave
        ? R
        ACCEPT "Do you want to save this report format? 'Y' or 'N'" to Misave
    ENDDO Misave validation
    DO CASE
        CASE Misave='N'
            DELETE FILE IFORM4.FRM
        CASE Misave='Y'
            ERASE
            @ 8,12 SAY 'To save this report format you will have to'
            @ 9,12 SAY 'rename the file. Check the list of files which'

```

```

@ 10,12 SAY 'are already created and make sure you do not duplicate'
@ 11,12 SAY 'one of them. Do not worry about adding a prefix (B:)'
@ 12,12 SAY 'or a suffix (.FRM).'
@ 14,12 SAY 'Strike any key to see list of report format files.'
WAIT
ERASE
USE MILIST
LIST
?
?
@ 17,10 SAY 'The new files do not have to be named "Form". The "I"'
@ 18,10 SAY 'prefix is a useful way of identifying the formats.'
@ 19,10 SAY 'Do not use periods or spaces in format names.'
ACCEPT 'Enter the name of the new file (7 characters maximum)' to Mifile
APPEND BLANK
EDIT &Mifile
LIST
RENAME IFORM4.FRM TO &Mifile..FRM
RELEASE Misave
RELEASE Mifile
ENDCASE Misave report
CASE Mirpt = 5
ERASE
USE APRA.DBF INDEX TEMPNDX
ERASE
@ 12,12 SAY 'You have chosen a program which will allow you to'
@ 13,12 SAY 'print out an informal report previously designed'
@ 14,12 SAY 'and renamed by you.'
@ 16,12 SAY 'Strike any key to begin program.'
WAIT
?
?
ACCEPT 'Enter report name (without suffix or prefix)' to MIname.
SET PRINT ON
REPORT FORM &MIname
SET PRINT OFF
STORE 7 TO Mirpt
ENDCASE Report formats
ERASE
RELEASE Mirpt
RELEASE Micont
ACCEPT "Do You Want to Make Another Printout? 'Y' or 'N'" to MIgo
DO WHILE MIgo<>'Y' .AND. MIgo<>'N'
RELEASE MIgo
? R
ACCEPT "Do you want to make another printout? 'Y' or 'N'" to MIgo
ENDDO MIgo validation
DO CASE
CASE MIgo = 'Y'
STORE 1 TO Micont
CASE MIgo = 'N'
STORE 2 TO Micont
CONTINUE
ENDCASE printouts
LOOP

```

```

      ENDDO MIcont
*
RELEASE MIndx
ERASE
ACCEPT "Do you want to create another index file? 'Y' or 'N'" to MIind
DO WHILE MIind<>'Y' .AND. MIind<>'N'
  RELEASE MIind
  ? R
  ACCEPT "Do you want to create another index file? 'Y' or 'N'" to MIind
ENDDO MIind validation
DO CASE
  CASE MIind='N'
    STORE 2 TO MIndx
    DELETE FILE Tempndx.NDX
    RELEASE MI1
    RELEASE MI2
    RELEASE MI3
    RELEASE MIedit
    RELEASE MIgo
    RELEASE MIcont
    RELEASE MIname
  CASE MIind='Y'
    DELETE FILE Tempndx.NDX
    STORE 1 TO MIndx
  ENDCASE MIind validation
LOOP
ENDDO MIndx
*
* * * CASE FOR SEARCHING THE FILE ON KEY WORDS
*
CASE Choice = 'K'
ERASE
@ 8,12 SAY 'The program you have chosen will allow you to search'
@ 9,12 SAY 'the file for a keyword which you specify.'
@ 13,12 SAY 'Strike any key to begin the program.'
WAIT
*
STORE 1 TO MKndx
DO WHILE MKndx = 1
  ERASE
  USE APRA.DBF
  @ 8, 8 SAY 'KEYWORD OPTIONS:'
  @ 10,12 SAY 'Check the list of keywords found in Table 1A of the'
  @ 11,12 SAY 'user's manual. If you do not have the user's manual and'
  @ 12,12 SAY 'want to see the keyword list type "Y". If you do not'
  @ 13,12 SAY 'want to see the keyword list press any other key.'
  WAIT TO MKkey
  DO CASE
    CASE MKkey = 'Y'
      ERASE
      @ 3,15 SAY 'KEYWORD OPTIONS:'
      @ 5,10 SAY 'DECOMMISSIONING          STANDARDS          NATURAL PRODUCTS'
      @ 6,10 SAY 'DECONTAMINATION          REGULATIONS          FISSION PRODUCTS'

```

@ 7,10	SAY	'R&D FACILITIES	STATUTES	ACTIVATION PRODUCTS
@ 8,10	SAY	'IRRADIATION FACILITIES	GUIDES	FUSION PRODUCTS
@ 9,10	SAY	'REACTORS	CRITERIA	PLUTONIUM
@ 10,10	SAY	'ACCELERATOR	HANDBOOK	UNRESTRICTED USE
@ 11,10	SAY	'FUEL FABRICATION	DATABASE	SAMPLING
@ 12,10	SAY	'FUEL REPROCESSING	COSTS	STABILIZATION
@ 13,10	SAY	'TRU (transuranics)	BUDGET	DISPERSIVITY
@ 14,10	SAY	'NUCLIDES	ECONOMICS	SPECTROMETRY
@ 15,10	SAY	'RADON	PROCEDURES	TOXICOLOGY
@ 16,10	SAY	'RADON-DAUGHTERS	METHODS	ENVIRONMENTAL
@ 17,10	SAY	'RESUSPENSION	INSTRUMENTS	PATHWAYS
@ 18,10	SAY	'QUALITY ASSURANCE	CALIBRATION	NEPA
@ 19,10	SAY	'RECOMMENDATIONS	SURVEYS	SURVEILLANCE
@ 20,10	SAY	'TERMINATION	METEOROLOGY	EROSION
@ 21,10	SAY	'ENVIRONMENTAL CONTROLS	HYDROLOGY	GEOLOGY
@ 24,15	SAY	'Press any key to view next page.'		

WAIT

ERASE

@ 2,10	SAY	'WASTE DISPOSAL	HEALTH EFFECTS	GAMMA RADIATION
@ 3,10	SAY	'WASTE MANAGEMENT	CANCER RISK	ALPHA RADIATION
@ 4,10	SAY	'WASTE TRANSPORTATION	DOSIMETRY	BETA RADIATION
@ 5,10	SAY	'RISK ASSESSMENT	SOLID WASTE	X-RAYS
@ 6,10	SAY	'RADIATION DETECTORS	LIQUID WASTE	BETA GAMMA RADIATION
@ 7,10	SAY	'RADIATION MONITORING	LOW-LEVEL WASTE	GAMMA MEASUREMENTS
@ 8,10	SAY	'RADIOLOGICAL SURVEYS	HIGH-LEVEL WASTE	BETA MEASUREMENTS
@ 9,10	SAY	'BACKGROUND RADIATION	IRRADIATION	ALPHA MEASUREMENTS
@ 10,10	SAY	'RADIOACTIVE SOURCES	URANIUM MINING	RADIOCHEMISTRY
@ 11,10	SAY	'RADIOACTIVE DECAY	URANIUM MILLING	MIGRATION
@ 12,10	SAY	'OCCUPATIONAL EXPOSURE	MILL TAILINGS	SEWAGE
@ 13,10	SAY	'POPULATION EXPOSURE	URANIUM WINDBLOWN	DRINKING WATER
@ 14,10	SAY	'GROUNDWATER MONITORING	AIR MONITORING	SOIL SAMPLING
@ 15,10	SAY	'SEDIMENT SAMPLING	REMEDIAL ACTION	MILK SAMPLING
@ 16,10	SAY	'METEOROLOGICAL MONITORING		
@ 18,10	SAY	'Chemical symbols are listed either by symbol-mass number (i.e.		
@ 19,10	SAY	'CU-60) if they are radioactive, or by symbol only (i.e. CO, FE)		
@ 20,10	SAY	'if they are not radioactive.'		
@ 23,15	SAY	'Press any key to input keyword.'		

WAIT

FRASE

ENDPAGE

ACCEPT "Enter keyword" TO MK1

?

MK1

ACCEPT "Is the keyword entered correctly? 'Y' or 'N'" TO MKedit

DO WHILE MKedit <> 'Y' .AND. MKedit <> 'N'

RELEASE MKedit

?

?

R

ACCEPT "Is the keyword entered correctly? 'Y' or 'N'" TO MKedit

ENDDO MKedit validation

DO WHILE MKedit = 'N'

RELEASE MK1

?


```

ACCEPT "Enter keyword" TO MK1
~
RELEASE MKedit
ACCEPT "Is the keyword entered correctly? 'Y' or 'N'" TO MKedit
DO WHILE MKedit<>'Y' .AND. MKedit<>'N'
  RELEASE MKedit
  ?
  ?
  ? R
  ACCEPT "Is the keyword entered correctly? 'Y' or 'N'" TO MKedit
  LOOP
ENDDO MKedit validation
LOOP
ENDDO MKedit correction
DO CASE
  CASE MKedit = 'Y'
    CONTINUE
  ENDCASE MK1 validation
*
STORE 1 TO MKcont
DO WHILE MKcont = 1
  ERASE
  @ 2,12 SAY 'REPORT FORMAT CHOICES:'
  @ 5,15 SAY '1 = Informal report in tabular form that includes first'
  @ 6,19 SAY 'document number, title, lead author, and location'
  @ 8,15 SAY '2 = Informal report in tabular form that includes first and'
  @ 9,19 SAY 'second document numbers, volume, year, document type, AFRA'
  @ 10,19 SAY 'program code, country of publication, and number of pages'
  @ 12,15 SAY '3 = Data listing that includes lead author, all authors, title,'
  @ 13,19 SAY 'volume, year, document numbers, originator, publisher,'
  @ 14,19 SAY 'country of publication, AFRA program code, and number of'
  @ 15,19 SAY 'pages'
  @ 17,15 SAY '4 = Informal Report in tabular form which user designs'
  @ 19,15 SAY '5 = Informal tabular report which user previously'
  @ 20,19 SAY 'designed and renamed. Do not select this report format'
  @ 21,19 SAY 'choice unless you have previously selected informal report'
  @ 22,19 SAY 'format choice 4 and saved the report format.'
  @ 24,15 SAY 'Keyword reports are printed out in three sections.'
  ?
  ?
  INPUT 'Enter Report Format Choice' TO MKrpt
  ERASE
  DO CASE
    CASE MKrpt < 3
      @ 12,12 SAY 'The report format you have chosen is modelled after'
      @ 13,12 SAY 'the standard dBase report format.'
      @ 15,12 SAY 'Strike any key to run the program.'
      WAIT
      ERASE
      @ 3,32 SAY '*** SEARCHING ***'
    DO CASE
      CASE MKrpt = 1
        SET PRINT ON
        SET HEADING TO SEARCH THROUGH FIRST SET OF 4 KEYWORDS

```

```

REPORT FORM KFORM1 FOR KEYWORD1='&MK1'.OR.KEYWORD2='&MK1'.OR.KEYWORD3='&MK1'.OR.KEYWORD4='&MK1'
SET HEADING TO SEARCH THROUGH SECOND SET OF 4 KEYWORDS
REPORT FORM KFORM1 FOR KEYWORDS='&MK1'.OR.KEYWORD6='&MK1'.OR.KEYWORD7='&MK1'.OR.KEYWORD8='&MK1'
SET HEADING TO SEARCH THROUGH LAST SET OF 2 KEYWORDS
REPORT FORM KFORM1 FOR KEYWORD9='&MK1'.OR.KEYWORD10='&MK1'
SET PRINT OFF
STORE 7 TO MKrpt
CASE MKrpt = 2
SET PRINT ON
SET HEADING TO SEARCH THROUGH FIRST SET OF 4 KEYWORDS
REPORT FORM KFORM2 FOR KEYWORD1='&MK1'.OR.KEYWORD2='&MK1'.OR.KEYWORD3='&MK1'.OR.KEYWORD4='&MK1'
SET HEADING TO SEARCH THROUGH SECOND SET OF 4 KEYWORDS
REPORT FORM KFORM2 FOR KEYWORDS='&MK1'.OR.KEYWORD6='&MK1'.OR.KEYWORD7='&MK1'.OR.KEYWORD8='&MK1'
SET HEADING TO SEARCH THROUGH LAST SET OF 2 KEYWORDS
REPORT FORM KFORM2 FOR KEYWORD9='&MK1'.OR.KEYWORD10='&MK1'
SET PRINT OFF
STORE 7 TO MKrpt
ENDCASE Informal reports
CASE MKrpt = 3
ERASE
@ 8,10 SAY 'This report format should only be printed out'
@ 9,10 SAY 'on a printer with graphics. Do not use the Daisywriter.'
@ 11,10 SAY 'Strike any key to run the report format.'
WAIT
ERASE
@ 3,32 SAY '*** SEARCHING ***'
USE APRA.DBF
DO MKREPT3A.APR
DO MKREPT3B.APR
DO MKREPT3C.APR
CASE MKrpt = 4
ERASE
@ 12,12 SAY 'The program you have chosen will allow you to design'
@ 13,12 SAY 'your own informal report format, in the dBase'
@ 14,12 SAY 'standard form.'
@ 16,12 SAY 'Strike any key to run the program.'
WAIT
ERASE
@ 8,12 SAY 'You will define the format for this report.'
@ 10,12 SAY 'Generally, configuration options are defined as M=12,L=54 & W=86'
@ 11,12 SAY 'The heading of the report should be: "APRA SELECTED BIBLIOGRAPHY",'
@ 12,12 SAY 'for example. Double space the report and do not use totals.'
@ 13,12 SAY 'The width of the columns are defined first, then'
@ 14,12 SAY 'the field name. Enter whatever column heading you'
@ 15,12 SAY 'desire. When you are through defining columns'
@ 16,12 SAY 'strike a carriage return.'
@ 18,12 SAY 'Strike any key to begin'
WAIT
?
)
STORE 1 TO MKkey
ERASE
@ 3,32 SAY '*** SEARCHING ***'
SET PRINT ON
SET HEADING TO SEARCH THROUGH FIRST SET OF 4 KEYWORDS

```

```

REPORT FORM KFORM4 FOR KEYWORD1='&MK1'.OR.KEYWORD2='&MK1'.OR.KEYWORD3='&MK1'.OR.KEYWORD4='&MK1'
SET HEADING TO SEARCH THROUGH SECOND SET OF 4 KEYWORDS
REPORT FORM KFORM4 FOR KEYWORDS5='&MK1'.OR.KEYWORD6='&MK1'.OR.KEYWORD7='&MK1'.OR.KEYWORDS8='&MK1'
SET HEADING TO SEARCH THROUGH LAST SET OF 2 KEYWORDS
REPORT FORM KFORM4 FOR KEYWORD9='&MK1'.OR.KEYWORD10='&MK1'
SET PRINT OFF
STORE 7 TO MKrpt

```

```

)
)

```

```
ERASE
```

```
ACCEPT "Do you want to save this report format? 'Y' or 'N'" TO MKsave
```

```
DO WHILE MKsave<>'N'.AND. MKsave<>'Y'
```

```
RELEASE MKsave
```

```
? R
```

```
ACCEPT "Do you want to save this report format? 'Y' or 'N'" TO MKsave
```

```
LOOP
```

```
ENDDD MKsave validation
```

```
DO CASE
```

```
CASE MKsave = 'N'
```

```
DELETE FILE KFORM4.FRM
```

```
CASE MKsave = 'Y'
```

```
ERASE
```

```
@ 8,12 SAY 'To save this report format you will have to'
```

```
@ 9,12 SAY 'rename the file. Check the list of files which'
```

```
@ 10,12 SAY 'are already created, and make sure that you do'
```

```
@ 11,12 SAY 'not duplicate one of them. Do not worry about'
```

```
@ 12,12 SAY 'adding a prefix (B:) or a suffix (.FRM).'
```

```
@ 13,12 SAY 'The first letter of your name should be a "I",'
```

```
@ 14,12 SAY 'which allows you to remember what type of search'
```

```
@ 15,12 SAY 'was conducted.'
```

```
@ 17,12 SAY 'Strike any key to see the list of report format files.'
```

```
WAIT
```

```
ERASE
```

```
USE MFLIST
```

```
LIST
```

```
"
```

```
,
```

```
@ 17,5 SAY 'The new files do not have to be named "Form"'
```

```
@ 18,5 SAY 'Do not use periods or spaces in format names.'
```

```
ACCEPT 'Enter the name of the new format file (7 characters maximum)' TO MKfile
```

```
APPEND BLANK
```

```
EDIT &MKfile
```

```
ERASE
```

```
LIST
```

```
RENAME KFORM4.FRM TO &MKfile.FRM
```

```
RELEASE MKsave
```

```
RELEASE MKfile
```

```
ENDCASE save reports
```

```
USE APRA.DBF
```

```
CASE MKrpt = 5
```

```
ERASE
```

```
@ 12,12 SAY 'The report format you have chosen will allow you to'
```

```
@ 13,12 SAY 'print out an informal report previously designed and renamed by you.'
```

```

@ 14,12 SAY 'This report will utilize a form format file that would have been'
@ 15,12 SAY 'created under selection 4 of the APRABASE program selection 1.'
@ 17,12 SAY 'Strike any key to begin the program.'
WAIT
?
?
ACCEPT 'Enter the the report form file name (without suffix or prefix)' TO MKname
ERASE
@ 3,32 SAY '*** SEARCHING ***'
SET PRINT ON
SET HEADING TO SEARCH THROUGH FIRST SET OF 4 KEYWORDS
REPORT FORM &MKname..FRM FOR KEYWORD1='&MK1'.OR.KEYWORD2='&MK1'.OR.KEYWORD3='&MK1'.OR.KEYWORD4='&MK1'
SET HEADING TO SEARCH THROUGH SECOND SET OF 4 KEYWORDS
REPORT FORM &MKname..FRM FOR KEYWORD5='&MK1'.OR.KEYWORD6='&MK1'.OR.KEYWORD7='&MK1'.OR.KEYWORD8='&MK1'
SET HEADING TO SEARCH THROUGH LAST SET OF 2 KEYWORDS
REPORT FORM &MKname..FRM FOR KEYWORD9='&MK1'.OR.KEYWORD10='&MK1'
SET PRINT OFF
STORE 7 TO MFrpt
ENDCASE Report forms K
ERASE
RELEASE MFrpt
RELEASE Mfcont
RELEASE Mfname
ACCEPT "Do you want to make another printout? 'Y' or 'N'" TO MKgo
DO WHILE MKgo<>'Y'.AND. MKgo<>'N'
RELEASE MKgo
? R
ACCEPT "Do you want to make another printout? 'Y' or 'N'" TO MKgo
LOOP
ENDDD MKgo validation
DO CASE
CASE MKgo = 'Y'
STORE 1 TO Mfcont
CASE MKgo = 'N'
STORE 2 TO Mfcont
CONTINUE
ENDCASE MKgo
LOOP
ENDDD Mfcont

RELEASE Mfndx
ERASE
ACCEPT "Do you want to search on another keyword? 'Y' or 'N'" TO MKind
DO WHILE MKind<>'Y'.AND. MKind<>'N'
RELEASE MKind
? R
ACCEPT "Do you want to search on another keyword? 'Y' or 'N'" to MKind
ENDDD MKind validation
DO CASE
CASE MKind = 'N'
STORE 2 TO Mfndx
CASE MKind = 'Y'
STORE 1 TO Mfndx
ENDCASE MKind
LOOP

```

```
ENDDDO MSndx
SET HEADING TO
```

```
*
*
*
*
*
```

```
* * * CASE FOR SEARCHING THE FILE ON SPECIFIED PARAMETERS
```

```
CASE Choice = 'S'
```

```
ERASE
```

```
@ 8,12 SAY 'You have chosen a program which will allow you to'
```

```
@ 9,12 SAY 'create subfile printouts of the database.'
```

```
@ 11,12 SAY 'Strike any key to begin the program.'
```

```
WAIT
```

```
ERASE
```

```
STORE 1 TO MSndx
```

```
DO WHILE MSndx = 1
```

```
USE APRA.DBF
```

```
ERASE
```

```
@ 4,12 SAY 'PARAMETER CHOICE:
```

```
RELATIONAL OPERATOR:'
```

```
@ 6,14 SAY 'LEADAUTHOR ORIGINATOR
```

```
= Equal to'
```

```
@ 7,14 SAY 'AUTHORS PUBLISHER
```

```
-- Not equal to'
```

```
@ 8,14 SAY 'YEAR CITY
```

```
>= Greater than or equal to'
```

```
@ 9,14 SAY 'TITLE STATE
```

```
<= Less than or equal to'
```

```
@ 10,14 SAY 'DOCNUM1 COUNTRY
```

```
> Greater than'
```

```
@ 11,14 SAY 'DOCNUM2 APRAFROG
```

```
< Less than'
```

```
@ 12,14 SAY 'DOCTYPE LOCATION'
```

```
@ 15,12 SAY 'The parameter (fieldname) must be delimited by quotation'
```

```
@ 16,12 SAY 'marks (e.g., "LEADAUTHOR"). The relational operator must'
```

```
@ 17,12 SAY 'also be delimited and spaces placed in front of and'
```

```
@ 18,12 SAY 'behind the relational operator entered (e.g., "=").'
```

```
@ 19,12 SAY 'The variable needs to be delimited with both a set of double'
```

```
@ 20,12 SAY 'quotation marks and a set of single quotation marks (e.g.,'
```

```
@ 21,12 SAY '" Due, J.R. "')'. Use quotation marks on the same key (using shift).'
```

```
@ 23,12 SAY 'Strike any key when you are ready to begin.'
```

```
WAIT
```

```
INPUT 'How many parameters will you search on? 1, 2, or 3' TO MSnum
```

```
STORE 1 TO MSsub
```

```
DO WHILE MSsub = 1
```

```
DO WHILE MSnum < 3
```

```
?
```

```
?
```

```
? R
```

```
INPUT 'How many parameters will you search on? 1, 2, or 3' TO MSnum
```

```
LOOP
```

```
ENDDDO MSnum validation
```

```
?
```

```
DO CASE
```

```
CASE MSnum = 1
```

```
?
```

```
ACCEPT 'ENTER PARAMETER CHOICE' TO MS1
```

```
ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR1
```

```
ACCEPT 'ENTER VARIABLE' TO MSA1
```

```
STORE %MS1+%MSR1+%MSA1 TO MStat
```

```

CASE Mnum = 2
  ?
  ACCEPT 'ENTER PARAMETER #1 CHOICE' TO MS1
  ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR1
  ACCEPT 'ENTER VARIABLE #1' TO MSA1
  ?
  ACCEPT 'ENTER PARAMETER #2 CHOICE' TO MS2
  ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR2
  ACCEPT 'ENTER VARIABLE #2' TO MSA2
  ?
  STORE &MS1+&MSR1+&MSA1 TO MS1tot
  STORE &MS2+&MSR2+&MSA2 TO MS2tot
  STORE MS1tot+".AND."+MS2tot TO MStot
CASE Mnum = 3
  ?
  ACCEPT 'ENTER PARAMETER #1 CHOICE' TO MS1
  ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR1
  ACCEPT 'ENTER VARIABLE #1' TO MSA1
  ?
  ACCEPT 'ENTER PARAMETER #2 CHOICE' TO MS2
  ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR2
  ACCEPT 'ENTER VARIABLE #2' TO MSA2
  ?
  ACCEPT 'ENTER PARAMETER #3 CHOICE' TO MS3
  ACCEPT 'ENTER RELATIONAL OPERATOR' TO MSR3
  ACCEPT 'ENTER VARIABLE #3' TO MSA3
  ?
  STORE &MS1+&MSR1+&MSA1 TO MS1tot
  STORE &MS2+&MSR2+&MSA2 TO MS2tot
  STORE &MS3+&MSR3+&MSA3 TO MS3tot
  STORE MS1tot+".AND."+MS2tot+".AND."+MS3tot TO MStot
ENDCASE Mnum input
ERASE
@ 15,10 SAY 'Did you remember to delimit the variables?'
ACCEPT 'Were the search parameters correct? 'Y' or 'N'' TO MSedit
DO WHILE MSedit > 'Y' .AND. MSedit < 'N'
  RELEASE MSedit
  ?
  ?
  ? R
  ACCEPT 'Were the search phrases correct? 'Y' or 'N'' TO MSedit
LOOP
ENDDO MSedit validation
DO CASE
  CASE MSedit = 'Y'
    STORE 2 TO MSsub
    CONTINUE
  CASE MSedit = 'N'
    STORE 1 TO MSsub
  ENDCASE MSedit
LOOP
ENDDO MSsub

STORE 1 TO MScont
DO WHILE MScont = 1

```

```

ERASE
@ 2,12 SAY 'REPOR T FORMAT CHOICES:'
@ 5,15 SAY '1 = Informal report in tabular form that includes first'
@ 6,19 SAY 'document number, title, lead author, and location'
@ 8,15 SAY '2 = Informal report in tabular form that includes first and'
@ 9,19 SAY 'second document numbers, volume, year, document type, APRA'
@ 10,19 SAY 'program code, country of publication, and number of pages'
@ 12,15 SAY '3 = Data listing that includes lead author, all authors, title,'
@ 13,19 SAY 'volume, year, document numbers, originator, publisher,'
@ 14,19 SAY 'country of publication, APRA program code, and number of'
@ 15,19 SAY 'pages'
@ 17,15 SAY '4 = Informal report in tabular form which user designs'
@ 19,15 SAY '5 = Informal tabular report which user previously designed and'
@ 20,19 SAY 'renamed. Do not select this report unless you have'
@ 21,19 SAY 'previously selected informal report format choice 4 and saved'
@ 22,19 SAY 'the report format.'

?
?
INPUT 'Enter Report Format Choice' to MSrpt
ERASE
DO CASE
CASE MSrpt < 3
@ 8,12 SAY 'You have chosen an informal report, which is modelled'
@ 9,12 SAY 'after the standard dBASE report format.'
@ 10,12 SAY 'Strike any key to continue.'
WAIT

ERASE
@ 3,31 SAY '*** SEARCHING ***'
DO CASE
CASE MSrpt = 1
SET PRINT ON
REPORT FORM SFORM1 FOR &MStat
SET PRINT OFF
STORE 7 TO MSrpt
CASE MSrpt = 2
SET PRINT ON
REPORT FORM SFORM2 FOR &MStat
SET PRINT OFF
STORE 7 TO MSrpt
ENDCASE Informal reports
CASE MSrpt = 3
ERASE
@ 8,10 SAY 'This report format should only be printed out'
@ 9,10 SAY 'on a printer with graphics. Do not use the Daisywriter.'
@ 11,10 SAY 'Strike any key to begin the report format.'
WAIT
ERASE
@ 3,31 SAY '*** SEARCHING ***'
USE APRA.DBF
DO MSREPT3.APR
ERASE
CASE MSrpt = 4
ERASE

```

```

@ 12, 12 SAY 'You have chosen a program which will allow you'
@ 13, 12 SAY 'to create your own informal report format, in the'
@ 14, 12 SAY 'dBase standard form.'
@ 16, 12 SAY 'Strike any key to run program.'
WAIT
ERASE
@ 8,12 SAY 'You will define the format of this report.'
@ 10,12 SAY 'Generally, options are defined as M=12, L=54 and W=86.'
@ 11,12 SAY 'The heading is "APRA SELECTED BIBLIOGRAPHY".'
@ 12,12 SAY 'Double space the report and do not use totals.'
@ 13,12 SAY 'The width of the columns is defined first, then'
@ 14,12 SAY 'the field name. Enter whatever column heading you'
@ 15,12 SAY 'desire. When you are through defining columns'
@ 16,12 SAY 'strike a carriage return.'
@ 17,12 SAY 'No printout will be made as you define the report format.'
?
?
REPORT FORM SFORM4 TO PRINT FOR &MStot.
STORE 7 TO MSrpt
*
?
?
ACCEPT "Do you want to save this report format? 'Y' or 'N'" To MSsave
DO WHILE MSsave<>'N' .AND. MSsave<>'Y'
    RELEASE MSsave
    ? R
    ACCEPT "Do you want to save this report format? 'Y' or 'N'" to MSsave
LOOP
ENDDO
DO CASE
CASE MSsave='N'
    DELETE FILE SFORM4.FRM
CASE MSsave='Y'
    ERASE
    @ 8,12 SAY 'To save this report format you will have to'
    @ 9,12 SAY 'rename the file. Check the list of files which'
    @ 10,12 SAY 'are already created, and make sure you do not duplicate'
    @ 11,12 SAY 'one of them. Do not worry about adding a prefix (B:)'
    @ 12,12 SAY 'or a suffix (.FRM).'
    @ 14,12 SAY 'Strike any key to see list of report format files.'
    WAIT

    ERASE
    USE MGLIST
    LIST
    @ 17,6 SAY 'The report name does not have to be "Form."'
    @ 18,6 SAY 'The prefix "S" is useful when identifying the formats.'
    @ 19,6 SAY 'Do not use periods or spaces in format names.'
    ?

    ACCEPT 'Enter report format name' to MSfile
    APPEND BLANK
    EDIT &MSfile
    LIST
    RENAME SFORM4.FRM TO &MSfile..FRM
    RELEASE MSsave

```



```

        USE Apra
    ENDCASE save report format
CASE MSrpt = 5
    ERASE
    @ 12,12 SAY 'You have chosen a program which will allow you to'
    @ 13,12 SAY 'print out an informal report previously designed'
    @ 14,12 SAY 'and renamed by you.'
    @ 16,12 SAY 'Strike any key when ready to begin program.'

    WAIT
    ?
    ?
    ACCEPT 'Enter report name (without suffix or prefix)' to MSname.
    ERASE
    @ 3,31 SAY '*** SEARCHING ***'
    SET PRINT ON
    REPORT FORM &MSname. FOR &MStat.
    SET PRINT OFF
    STORE 7 TO MSrpt
ENDCASE report formats
ERASE
RELEASE MSrpt
RELEASE MScont
ERASE
ACCEPT "Do You Want to Make Another Printout? 'Y' or 'N'" to MSgo
DO WHILE MSgo <> 'Y' .AND. MSgo <> 'N'
    RELEASE MSgo
    ? R
    ACCEPT "Do you want to make another printout? 'Y' or 'N'" to MSgo
    LOOP
ENDDO
DO CASE
    CASE MSgo = 'Y'
        STORE 1 TO MScont
    CASE MSgo = 'N'
        STORE 2 TO MScont
ENDCASE printout
LOOP
ENDDO MScont
ERASE
ACCEPT "Do you want to do another search? 'Y' or 'N'" TO MSind
DO WHILE MSind <> 'Y' .AND. MSind <> 'N'
    RELEASE MSind
    ? R
    ACCEPT "Do you want to do another search? 'Y' or 'N'" TO MSind
    LOOP
ENDDO MSind validation
DO CASE
    CASE MSind = 'Y'
        STORE 1 TO MSndx
    CASE MSind = 'N'
        STORE 2 TO MSndx
ENDCASE search check
LOOP
ENDDO MSndx

```

```

*
*
* * * CASE FOR IDENTIFYING DUPLICATE RECORDS
*
*
      CASE Choice = 'D'
      ERASE
      @ 8,12 SAY 'The program you have chosen will print out a'
      @ 9,12 SAY 'report format which will enable you to identify'
      @ 10,12 SAY 'duplicate entries.'
      @ 12,12 SAY 'Strike any key to begin program.'
      WAIT
      ERASE
      @ 3,32 SAY '*** INDEXING ***'
      INDEX on DOCNUM1 TO DUPES
      ERASE
      @ 3,29 SAY '*** LISTING FILES ***'
      USE APRA.DBF INDEX DUPES.NDX
      SET PRINT ON
      @ 4,10 SAY 'APRA DUPLICATE FILES LIST'
      LIST FIELDS DOCNUM1,LEADAUTHOR,INITITLE,LOCATION
      SET PRINT OFF
      ERASE
*
*
* * * CASE FOR EXITING THE PROGRAM
*
*
      CASE Choice = 'Z'
      STORE 2 TO START
      ENDCASE Choice
      LOOP
ENDDO Start
DELETE FILE DUPES.NDX
ERASE
?'
RELEASE ALL
RETURN
*** APRABASE PROGRAM COMPLETE ***

```

```

* MIKEPT3.APR
* DATE: 5-8-85
* MIKEPT3.APR IS A SUBPROGRAM OF APRABASE.PRG WHICH IS USED TO PRINT REPORT
* FORM3 UNDER THE 1 SELECTION CATAGORY.
SET FORMAT TO PRINT
DO MTITLE.APR
USE APRA INDEX TEMPNDX
DO WHILE .NOT. EOF
  @ 10,10 SAY 'LEAD AUTHOR:'
  @ 10,23 SAY LEADAUTHOR USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 12,10 SAY 'AUTHORS:'
  @ 12,20 SAY AUTHORS USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
xxx'
  @ 15,10 SAY 'TITLE:'
  @ 15,18 SAY TITLE USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 21,10 SAY 'VOLUME:'
  @ 21,19 SAY VOLUME USING 'XXXXXXXXXX'
  @ 23,10 SAY 'YEAR:'
  @ 23,17 SAY YEAR USING 'XXXXXXXXXX'
  @ 25,10 SAY 'DOCUMENT NUMBER:'
  @ 25,27 SAY DOCNUM1 USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 26,27 SAY DOCNUM2 USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 28,10 SAY 'ORIGINATOR:'
  @ 28,23 SAY ORIGINATOR USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 31,10 SAY 'PUBLISHER:'
  @ 31,22 SAY PUBLISHER USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 34,10 SAY 'COUNTRY:'
  @ 34,20 SAY COUNTRY USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXX'
  @ 36,10 SAY 'APRA PROGRAM CODE:'
  @ 36,29 SAY APRAPROG USING 'XXXXXXX'
  @ 39,10 SAY 'PAGES:'
  @ 39,10 SAY PAGES USING 'XXXXXXX'
EJECT
CONTINUE
ENDDO
SLI FORMAT TO SCREEN
RETURN

```

```

* MKREPT3A.APR
* DATE 4/19/1985
* MKREPT3A.APR IS USED BY THE PROGRAM APRABASE.PRG TO PRINT OUT THE FIRST
* FOUR KEYWORD CHOICES UNDER THE K OPTION.
SET FORMAT TO PRINT
DO MTITLE.APR
USE APRA.DBF
GOTO TOP
LOCATE FOR KEYWORD1='%MK1'.OR.KEYWORD2='%MK1'.OR.KEYWORD3='%MK1'.OR.KEYWORD4='%MK1'
IF EOF
    SET FORMAT TO SCREEN
    RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
    CONTINUE
    IF EOF
        SET FORMAT TO SCREEN
        RETURN
    ENDIF
    DO MSFORM3.APR
ENDDO
SET FORMAT TO SCREEN
USE APRA.DBF
RETURN

```

```
* MKREPT3B.APR
* DATE 4/19/1985
* MKREPT3B.APR IS USED BY THE PROGRAM AFRABASE.PRG TO PRINT OUT THE NEXT
* THREE KEYWORD CHOICES UNDER THE K OPTION.
SET FORMAT TO PRINT
USE AFRA.DBF
GOTO TOP
LOCATE FOR KEYWORD5='&MK1'.OR.KEYWORD6='&MK1'.OR. KEYWORD7='&MK1'
IF EOF
    SET FORMAT TO SCREEN
    RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
    CONTINUE
    IF EOF
        SET FORMAT TO SCREEN
        RETURN
    ENDIF
    DO MSFORM3.APR
ENDDO
SET FORMAT TO SCREEN
USE AFRA.DBF
RETURN
```

```

* MREPT3C.APR
* DATE 4/19/1985
* MREPT3C.APR IS USED BY THE PROGRAM APRABASE.PRG TO PRINT OUT THE LAST
* THREE KEYWORD CHOICES UNDER THE K OPTION.
SET FORMAT TO PRINT
USE APRA.DBF
GOTO TOP
LOCATE FOR KEYWORD8='&MK1'.OR.KEYWORD9='&MK1'.OR.KEYWORD10='&MK1'
IF EOF
    SET FORMAT TO SCREEN
    RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
    CONTINUE
    IF EOF
        SET FORMAT TO SCREEN
        RETURN
    ENDIF
    DO MSFORM3.APR
ENDDO
SET FORMAT TO SCREEN
USE APRA.DBF
RETURN

```

```

* MSREPT3.APR
* DATE. 4-18-85
* MSREPT3.APR IS A SUBPROGRAM OF APRABASE FOR LOCATING DOCUMENTS USING
* SPECIFIC PARAMETERS TO SEARCH FOR THE DOCUMENTS.
SET FORMAT TO PRINT
DO MTITLE.APR
USE APRA.DEF
DO CASE
* CASE OF ONE SEARCH PARAMETER
CASE Mnum=1
GOTO TOP
LOCATE FOR &Mstot
IF EOF
SET FORMAT TO SCREEN
ERASE
@ 3,28 SAY "*** SEARCH COMPLETE ***"
@ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
WAIT
RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
CONTINUE
IF EOF
SET FORMAT TO SCREEN
ERASE
@ 3,28 SAY "*** SEARCH COMPLETE ***"
@ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
WAIT
RETURN
ENDIF
DO MSFORM3.APR
ENDDU
* CASE OF TWO SEARCH PARAMETERS
CASE Mnum=2
GOTO TOP
LOCATE FOR &Mstot
IF EOF
SET FORMAT TO SCREEN
ERASE
@ 3,28 SAY "*** SEARCH COMPLETE ***"
@ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
WAIT
RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
CONTINUE
IF EOF
SET FORMAT TO SCREEN
ERASE
@ 3,28 SAY "*** SEARCH COMPLETE ***"
@ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
WAIT
RETURN

```

```
        ENDIF
        DO MSFORM3.APR
    ENDDO
* CASE OF THREE SEARCH PARAMETERS
CASE MSnum=3
GOTO TOP
LOCATE FOR &MStat
IF EOF
    SET FORMAT TO SCREEN
    ERASE
    @ 7,28 SAY "*** SEARCH COMPLETE ***"
    @ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
    WAIT
    RETURN
ENDIF
DO MSFORM3.APR
DO WHILE .NOT. EOF
CONTINUE
IF EOF
    SET FORMAT TO SCREEN
    ERASE
    @ 7,28 SAY "*** SEARCH COMPLETE ***"
    @ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
    WAIT
    RETURN
ENDIF
DO MSFORM3.APR
ENDDO
ENDCASE MSnum input
SET FORMAT TO SCREEN
ERASE
@ 7,28 SAY "*** SEARCH COMPLETE ***"
@ 7,3 SAY "PRESS ANY KEY TO CONTINUE"
WAIT
ENDDO
USE AFRA.DBF
RETURN
```


* MSFORM3.APR
* DATE: 4-18-1985
* MSFORM3.APR IS A SUBPROGRAM OF MSREPT3.APR. IT IS USED TO PRINT OUT THE
* REPORTS FOR CASE 3.

@ 10,10 SAY 'LEAD AUTHOR:'
@ 10,23 SAY LEADAUTHOR USING 'XXXXXXXXXXXXXXXXXXXXXXXXXXXX'
@ 12,10 SAY 'AUTHORS:'
@ 12,20 SAY AUTHORS USING 'XX'

XXX'

@ 15,10 SAY 'TITLE:'
@ 15,18 SAY TITLE USING 'XX'
XX'

@ 21,10 SAY 'VOLUME:'
@ 21,19 SAY VOLUME USING 'XXXXXXXXXX'
@ 23,10 SAY 'YEAR:'
@ 23,17 SAY YEAR USING 'XXXXXXXXXX'
@ 25,10 SAY 'DOCUMENT NUMBER:'
@ 25,27 SAY DOCNUM1 USING 'XXXXXXXXXXXXXXXXXXXXXXXXXX'
@ 26,27 SAY DOCNUM2 USING 'XXXXXXXXXXXXXXXXXXXXXXXXXX'
@ 28,10 SAY 'ORIGINATOR:'
@ 28,25 SAY ORIGINATOR USING 'XX'
@ 31,10 SAY 'PUBLISHER:'
@ 31,22 SAY PUBLISHER USING 'XX'
@ 34,10 SAY 'COUNTRY:'
@ 34,20 SAY COUNTRY USING 'XXXXXXXXXXXXXXXXXXXXXXXXXX'
@ 36,10 SAY 'APRA PROGRAM CODE:'
@ 36,29 SAY APRAPROG USING 'XXXXXXX'
@ 38,10 SAY 'PAGES:'
@ 38,18 SAY PAGES USING 'XXXXXXX'

RETURN

C.25

```
* M1TLE.APR  
* DATE: 4/18/1985  
* M1TLE.APR WRITES THE TITLES FOR THE BIBLIOGRAPHY REPORTS OF APRABASE.PRG  
@ 5,33 SAY 'APRA BIBLIOGRAPHY'  
@ 7,37 SAY 'DATA LIST'  
RETURN
```


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