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User's Manual for the Cultural Resources Information System (CRIS), Version 2.0

by

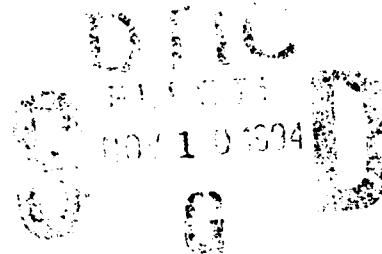
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The Cultural Resources Information System (CRIS) assists cultural resources managers and environmental planners at U.S. military installations in managing the inventory and evaluation of cultural resources that may be affected by Federally funded projects. CRIS aids in the preparation of a Historic Preservation Plan and enables managers and planners to input, edit, store, compare, analyze, and output data on historic or pre-historic cultural resources. CRIS 2.0 is an outgrowth of the Archaeological Sites Information System (ASIS) and is an updated version of CRIS 1.0 released in 1989.

CRIS 2.0 will run on a 286 IBM compatible personal computer with at least 640KB Random Access Memory (RAM). The system must be equipped with MS-DOS version 3.1 or above. For best performance, a 386SX (or higher) with 4 MB RAM is recommended. To run CRIS 2.0 on a network you will need 480KB free memory after the network shell is loaded with a NetBIOS compatible network.

This manual contains instructions for setting up the system, inputting and editing data, and conducting search/retrieval activities for analysis and reporting.



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13 ABSTRACT (Maximum 200 words) The Cultural Resources Information System (CRIS) assists cultural resources managers and environmental planners at U S military installations in managing the inventory and evaluation of cultural resources that may be affected by Federally funded projects. CRIS aids in the preparation of a Historic Preservation Plan and enables managers and planners to input, edit, store, compare, analyze, and output data on historic or prehistoric cultural resources. CRIS 2.0 is an outgrowth of the Archaeological Sites Information System (ASIS) and is an updated version of CRIS 1.0 released in 1989. CRIS 2.0 will run on a 286 IBM compatible personal computer with at least 640KB Random Access Memory (RAM). The system must be equipped with MS-DOS version 3.1 or above. For best performance, a 386SX (or higher) with 4 MB RAM is recommended. To run CRIS 2.0 on a network you will need 480KB free memory after the network shell is loaded with a NetBIOS compatible network. This manual contains instructions for setting up the system, inputting and editing data, and conducting search/retrieval activities for analysis and reporting.				
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FOREWORD

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This work was performed by the Tri-Services Cultural Resources Research Center of the Environmental Compliance Modeling and Systems Division (EC), Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). The USACERL principal investigator was Joan Cole. This research was supported in part by an appointment to the Research Participation Program at USACERL administered by the Oak Ridge Institute for Science and Education through an interagency agreement between the U.S. Department of Energy and USACERL. Dr. John T. Bandy is Chief, CECER-EC, and Dr. William D. Goran is Chief, CECER-EL. The USACERL technical editor was Thomas E. Rice, Information Management Office.

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LTC David J. Rehbein is Commander and Acting Director, USACERL, and Dr. Michael J. O'Connor is Technical Director.



**Tri-Services Cultural
Resources Research
Center**

The Tri-Services Cultural Resources Research Center is a research and technical support center that assists the U.S. military services in the stewardship of cultural resources located within Department of Defense (DOD) installations or facilities. The Center, located at USACERL, helps installations manage their cultural resources and comply with Federal, State, and DOD preservation mandates.

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DISTRIBUTION

1 Background

Researchers at the U.S. Army Construction Engineering Research Laboratories (USACERL) have developed computer capabilities to input, edit, store, compare, analyze, and output data on historic/prehistoric cultural resources. These capabilities, which were organized into the Archaeological Sites Information System (ASIS), were developed to support cultural resource managers and environmental planners at U.S. military installations.

Originally, a system called ASIS was developed on UNIX¹ computers for use with a geographic information system.² When ASIS was posted to the DOS-based microcomputer environment it was generalized to encompass cultural resources of all types, not just archaeological sites, and so was named CRIS: Cultural Resources Information System. The UNIX version of ASIS consisted of a library of programs written in the C programming language. The DOS version of CRIS was originally compiled with a commercial database management package called Quicksilver.³ This version, CRIS 1.0, was released in May 1989. CRIS 1.0 was highly successful; however, new advances in database software and recommendations from users led to the development of CRIS 2.0. CRIS 1.0 has since been upgraded and recompiled in the commercial database management package FoxPro 2.0.⁴ Enough of the original CRIS interface has been maintained in the upgrade that previous users of CRIS should have no difficulty making the transition to the new version. At the same time, new features have been added, and the user interface has been updated with bounce-bar menus, checkboxes, picklists, and so forth, so that CRIS 2.0 should be more convenient to use.

CRIS consists of three logical subsystems: (1) a setup system, (2) a data input/edit system, and (3) a search/retrieval, analysis/report system. In the setup system, you design the form for recording data by establishing categories (known in database jargon as "fields") that describe the data. Each category creates a labeled "blank" on the screen "form." The number and type of categories vary with each data set but could include such items as site location, number, condition, chronology, function, size, and artifacts for an archaeological database; building number, structure name, condition, national register status, architectural description, history, and significance for a standing structures database; or project number, cost code, project name, project type, contractors, funding information, milestone dates, and so on, for a cultural resources project management database.

¹ UNIX, a trademark of Bell Laboratories, is an operating system used on many types of computers.

² This system, called the Geographic Resources Analysis Support System (GRASS), was also developed by USACERL.

³ Quicksilver, trademark of WordTech Systems.

⁴ FoxPro is a trademark of Fox Holdings, which has since merged with Microsoft.

The data input system allows you to insert data into the blanks of the categories for each site, building, or project, and the editor is used to review, correct, update, or complete the data.

The search/retrieval system has several search functions. Locational searches, using Universal Transverse Mercator (UTM) or other geographic coordinate values, identify records occurring within a geographic area. Values for numerically recorded sites or standing structures can be grouped using a "range" search (e.g., records with >1 and <5 hearths). Boolean "and", "or", and "except" operators can be used to identify any group of records with particular combinations of attributes (for example, in the demonstration database FPOLK you may conduct a search for Mississippian Sites or Prehistoric Unknown Sites.) If the new Memo category type is used, a search for a certain phrase in a memo can be made with user oversight as to whether the particular record should be included in the search set.

As a result of any search operation, CRIS responds with the number of qualifying records. Additional information about these qualifying records can be obtained from several report options. With the "show report" command, you can request a report during any phase of a search, and select as many categories as needed. If desired, these reports can be saved in a specified file. A second report function compares a list of selected records with any set of attribute classes, such as cultural affiliation or architectural style.

Copyright and Trademark Notice

INSTALL, the program used to install CRIS, is licensed software provided by Knowledge Dynamics Corp., P.O. Box 1558, Canyon Lake, TX 78130-1558 (USA). INSTALL is copyright © 1987-1992 by Knowledge Dynamics Corp., which reserves all copyright protection worldwide. INSTALL is provided for the exclusive purpose of installing CRIS. In no event will Knowledge Dynamics Corp. provide any technical support using the distribution kit. FoxPro is a trademark of Fox Holdings, Inc., and is owned by Microsoft Corp.

Mode of Technology Transfer

Software can be obtained from the USACERL Technical Assistance Center. For technical support when using CRIS, please contact the center at (217) 373-4420 or (outside Illinois) 1-800-864-4733. Information and operating instructions for the CRIS Library databases BOAS, EXPLORE, FATHOM, HARM, and OLDHAUS are available by request from the Tri-Services Cultural Resources Research Center (TSCRRC) at USACERL. For further information about CRIS or the library databases, contact the USACERL ECC team at (217) 352-6511 or (outside Illinois) 1-800-USA-CERL, or USACERL, ECC Team, P.O. Box 9005, Champaign, IL 61826-9005.

The TSCRRC is exclusively responsible for the support of CRIS, including support during the installation phase. In no event will Knowledge Dynamics Corp. provide any technical support for CRIS. CRIS was written in the FoxPro database management product and is distributed using the distribution kit.

Version 2.0 Enhancements

- **Multi-user** (a database can be updated simultaneously by several users on a LAN.)
- **Password protection** for databases
- **Number of fields** increased from 64 to 255, record size from 1800 to 4000 characters. Additional field types: Date, Logical (Yes/No), Memo (unlimited text).
- **Select Existing Database or Create New One** has the ability, when creating a database, to borrow parts of database structures from other databases. It also has the ability to begin data entry by importing from several file types: ASCII fixed length, DIF, WKS, WK1, WK3, WRK, WR1, XLS, SYLK, MOD, FW2, PDOX.
- **Input New Data or Edit Existing Data** now supports Browse (a spreadsheet-like view of the data) and allows Memo fields to be imported from or exported to text files.
- **Input New Codes or Edit Existing Codes** now supports Browse. The codes appear when editing data as a selectable picklist rather than merely being shown on the screen.
- **Searching** adds "greater than or equal to" and "less than or equal to" operators. Three new searching features are added: beginning a new search by individually tagging records based on the contents of a Memo field, beginning a new search by typing in an XBase command (for advanced users), and Saving and Restoring Search Macros.
- The ability to sort the selected set of data for producing Column Reports and Printing Selected Records has been added.
- A Report and Mailing Label generator has been added.
- Perform Calculations on a field (sums and simple summary statistics have been added.)
- **Copy Selected Records to New Database** now allows export to several file types: ASCII delimited, ASCII fixed length, DIF, WKS, WK1, WRK, WR1, XLS, SYLK, MOD, WordPerfect Merge, and dBaseIV/FoxBase.
- A new menu, "Configuration Settings and File Utilities," has been added. This contains options to change configuration setting (including color schemes); back up, restore, or delete a database; change the password for a database; merge two databases into a third (even if structures are different); and import or export databases.

Keyboard Template

CURSOR MOVEMENT KEYS WITHIN MEMO FIELDS

Right Arrow	Moves cursor one character to the right.
Left Arrow	Moves cursor one character to the left.
Up Arrow	Moves cursor up one line.
Down Arrow	Moves cursor down one line.
PgUp	Moves cursor up one window of text.
PgDn	Moves cursor down one window of text.
Home	Moves cursor to beginning of current line.
End	Moves cursor to end of current line.
Ctrl-Right Arrow	Moves cursor one word to the right.
Ctrl-Left Arrow	Moves cursor one word to the left.
Ctrl-Home	Moves cursor to beginning of text.
Ctrl-End	Moves cursor to end of text.

SELECTING TEXT TO CUT AND PASTE (EDITING MEMO FIELDS)

Shift-Left Arrow Shift-Right Arrow	Selects one character at a time.
Shift-Up Arrow Shift-Down Arrow	Selects one line at a time.
Shift-Ctrl-Right Arrow Shift-Ctrl-Left Arrow	Selects from cursor to beginning/end of word.
Shift-Ctrl-End	Selects from cursor to end of text.
Shift-Ctrl-Home	Selects from cursor to beginning of text.
Ctrl-A	Selects all text.

SHORTCUT KEYS AVAILABLE

	ENTERING DATA	EDITING A MEMO
Ctrl-A = Select All	YES (The Field)	YES
Ctrl-C = Copy	YES	YES
Ctrl-E = Replace & Find Again	NO	YES
Ctrl-F = Find	NO	YES
Ctrl-G = Find Again	NO	YES
Ctrl-R = Redo Change	NO	YES
Ctrl-U = Undo Change	NO	YES
Ctrl-V = Paste	YES	YES
Ctrl-X = Cut	YES	YES
Ctrl-F7 = Move Window	NO	YES
Ctrl-F8 = Size Window	NO	YES
Ctrl-F10 = Zoom Window	NO	YES
F2 = Open Memo Window	YES	NO (only one memo open at a time)
F10 = Save	YES (page)	YES (memo)

How To Put the Software on Your Hard Drive

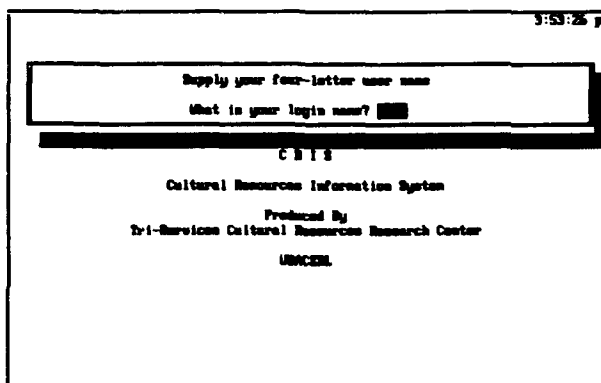
Before you install this program, make backup copies of your distribution disk. As an added precaution, you may wish to write-protect your distribution disk. Now change to the floppy drive and type **INSTALL**. If you would like to install to a drive other than C or a directory other than \CRIS, choose custom installation from the menu.

The install program will decompress the files and copy them to your hard drive. It will then ask if you wish to have it change your autoexec.bat. If you answer yes, it will add an environmental variable directing temporary files to a special directory.⁵ It will then ask if you wish to have it change your Config.Sys file. If you answer yes, it will increase the Files = xx line to 60 and the Buffers = xx line to 20. If the Config.Sys file was changed, you should reboot the computer before starting CRIS.

After installing CRIS, you begin by setting up a user file. If the program is for a single user, you can use a separate user name for each database. If several users will be utilizing CRIS, each will need to set up a user file.

Setting Up a User File

CRIS maintains a separate file for each user. These files are automatically created as needed when the user logs on to the program. To set up a new user, change to the CRIS directory and type CRIS. The box at the top of the screen asks you to type in a one- to four-letter user name.



3:53:25 pm

Supply your four-letter user name

What is your login name?

CRIS

Cultural Resources Information System

Produced By

Tri-Service Cultural Resources Research Center

UNCCM

⁵ See Appendix F, "Network Administrator's Survival Information," to learn more about environmental variables supported.

If a matching user file is not found, confirm that you want to set up a new user by selecting Yes and pressing **Enter**.

C R I S Do you want to add NEW as a new user? Yes < No > Tri-Services Cultural Resources Research Center

Then CRIS will present the following configuration screen for you to fill out information about the directory structure you've just set up, the printer port, and the screen type.

Monday 01/11/93	4:12:03 pm
Cultural Resources Information System	
SET UP DEFAULT SETTINGS	
 Enter Letter of Disk Drive with Program: C	
Enter Path of Directory with Program: NCRIS\	
Enter Letter of Disk Drive with Data: C	
Enter Path of Directory with Data: NCRIS\DATA\	
Do You Have a (C)olor or (M)onochrome Screen? C	
Enter Name of Printer Port: LPT1	
Use the SPACEBAR to Toggle Between Ports	

If you are installing CRIS on a local area network (LAN), be sure that you've logged into the network before starting CRIS so the network drives (e.g., X, Y, Z) are available to the computer. The suggested values for the "Disk Drive with Program" and "Path of Directory with Program" will be the drive and directory from which you started CRIS. These values should not be changed from the location where CRIS.EXE has been copied.

The suggested values for the "Disk Drive with Data" and the "Path of Directory with Data" will be a subdirectory of the program directory called "Data." If your databases are located elsewhere, fill in the location of the databases. Be sure to leave the final backslash on the path name.

The popup window on the bottom of the screen asks, "Are you satisfied with this set-up?" Choose "Yes" or type Y when you are ready to save the setup information.

Monday 01/11/93	4:13:21 pm
Cultural Resources Information System	

SET UP DEFAULT SETTINGS	

C:\CRIS\ is now designated for the CRIS PROGRAMS	
C:\CRIS\DATA\ is now designated for the CRIS DATA	
Screen is set for Color.	
Printer Port is set for LPT1	
Are You Satisfied with this Set-Up? (Y or N)	
☒ Yes < No >	

CRIS gives you the option of changing screen colors by choosing from a list of predefined color sets.⁶ After selecting "Yes" from the illustrated question, the first color set appears. The title of the color set will be used to initiate a color set change after viewing available color set choices. Press any key to continue through the color selections. You can view all of the color sets or press escape to immediately go to the selection list. At the end of the color display sequence, you will be asked if you want

⁶ See Appendix F to learn how to preset suggested directories.

⁷ If you are using the program IBIS (Integrated Building Inventory System) to create the databases, the data path might be \IBIS\DATA\.

⁸ See Appendix H for information about using color set creator.

to choose a different color set. Press Y and a list of color set titles will appear. Use the arrow keys to select a different color set by title, then select OK.

Do you want to change the default color settings?
☒ Yes ☐ No < No >

As no database is specified when you first install, CRIS responds with the following message. You must choose a database to continue in CRIS.

Welcome to the Cultural Resources Information System U 2.0 a

Invalid Database Is Specified in Configuration.

In the next screen type in the name of a database to use without the final .DBF extension. If you do not have any existing CRIS databases, type in the name FPOLK, the name of the demonstration database supplied with CRIS, or enter a question mark ? to select from a list of existing databases.

Monday 01/11/93 4:06:48 pm

Cultural Resources Information System

DATABASE SELECTION

Selected Database: C:\CRIS\DATA\

Enter Name of Database [REDACTED]

To Create a New Database, Enter the New Database Name.
To Select From List of Existing Databases, Enter '7'.

The next screen will prompt you to enter a password. If a password has not been defined, press **Enter**.

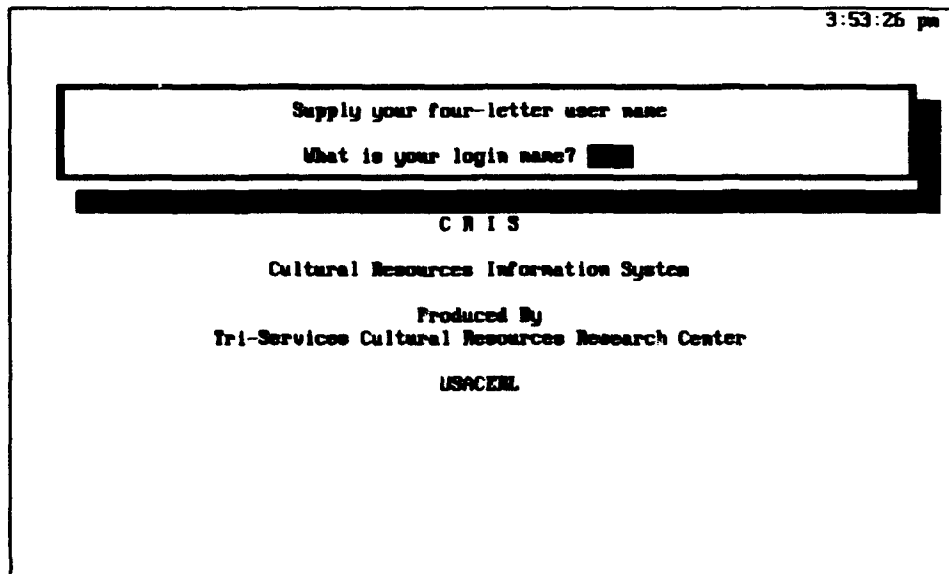
Enter the password for the Database FILE
User: [REDACTED]

2 How To Start and Exit CRIS

You may wish to set up a DOS batch file to automatically start CRIS when you type the batch file name from the DOS prompt. Consult your DOS manual for instructions on how to write a batch file. The batch file would contain the same steps listed below. (Press **Enter** after each line.)

```
C:
CD\CRIS
CRIS
```

The initial CRIS screen that follows asks you to supply your user name. The user name you define can be a maximum of four letters. You will use this name every time you initiate the CRIS program.



3:53:26 pm

Supply your four-letter user name

What is your login name?

CRIS

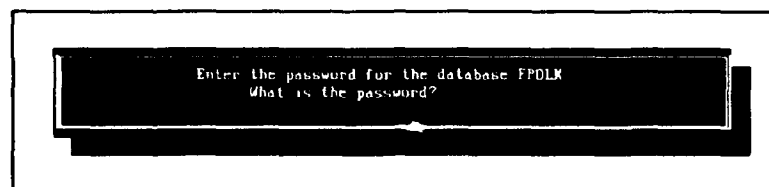
Cultural Resources Information System

Produced By

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USACEIL

If a password has not been defined, press **Enter**.



3:53:26 pm

Enter the password for the database FPOLM

What is the password?

To **exit**, choose **Quit** from the Main Menu. You run the risk of corrupting your databases if you shut off your computer without choosing **Quit**.

3 Definitions of Terms

Before discussing methods of database design, it is necessary to provide some definitions of terms as used in this manual.

1. **Database** (also known as **Table**).⁹ For this system, a database is a collection of data on a particular subject. For example, if field survey crews collect archaeological site data for the entire Fort Polk area, the data collection would be put in a database named FPOLK.

2. **Record** (also known as **Row**). A record is an entry within a database. For example, the data from one site in the FPOLK database would be placed in a single record.

3. **Category** (also known as **Field** or **Column**). This is a subdivision of a record. The words category and field will be used in this manual interchangeably. Each category represents a particular characteristic of the subject of the data record.

4. **Data Type**. Each category must be designated as either (C)haracter, (N)umeric, (D)ate, (L)ogical, or (M)emo type. **Character** categories may use fixed length letters, numbers, or a combination thereof. **Numeric** categories can only contain numbers; use these categories if you want to do math. **Date** categories are used to record date values in the mm/dd/yy format. **Logical** categories contain either Y (yes) or N (no). **Memo** categories are a type of character category that may contain a virtually unlimited amount of text. A list of all the categories and their types, maximum width, and number of decimal places (if the category is numeric) is known as the **data structure**.

5. **Value**. Value refers to the contents of a category. Each category is assigned one or more values (if data is available) for each record. For example, on an archaeological site with a prehistoric component in the database FPOLK, the designation MI (Mississippian) would constitute a value.

The sum of all the category sizes for a particular database entry comprises the record size. As the number of categories in a database expand, the size of a record also expands. The sum of all the records comprises the database. CRIS accommodates a maximum of 255 categories and approximately 1 billion records. However, available hardware, disk space, and response time on data searches and tabulations provide more practical restrictions. The response time of the computer is lengthened as both the number of categories and records increase.

⁹ Traditional XBase terminology calls one table of a relational database a database, apparently since each table is stored in a separate file. The user only creates a one-table database in CRIS 2.0.

Data Categories

A sample database called FPOLK is provided on the distribution disk with the CRIS program. The data for FPOLK was derived from an archaeological inventory at Fort Polk, Louisiana.

Data Structure for FPOLK			
Category	Type	Width	Decimal
SITENO	C	12	0
OTDESIG	C	30	0
PARISH	C	2	0
ZONE	N	2	0
NORTHING	N	7	0
EASTING	N	6	0
CULTAFL	C	16	0
REMARKS	C	55	0

Categories are customized for data entry. The kind and number of data categories will vary. You may use CRIS to record available data in a few basic categories or you may include categories for descriptions of subjects to permit analysis and interpretation. Regardless of the number and sophistication of the categories designed, the basic approach is the same. Practical constraints to be considered are:

1. Pattern of the values entered (set pattern, such as state site number; varied patterns, such as general comments on a structure or archaeological site);
2. Uniqueness of a category's values (different number for each structure);
3. Potential goals of a search of the values in a category;
4. Usefulness of information in a category for a computer search, and interrelationships between categories;
5. Range or scale of numeric values for useful searches (for example, all measurements in a category in centimeters).

Data Class Values

Every data category in CRIS can be searched. That is, the data record can be retrieved from the database in the Search and Retrieval program through one of several search strategies. To maximize the utility of the search and retrieval function, the data should be organized in a manner that will illuminate the relationships between categories.

For some data categories, such as SITENO, the value for each category is unique, but follows an assigned sequence. In these cases there is a search with which, for example, sites 10 through 50 could be located in the database and retrieved. For FPOLK, the categories for which the range search applies are identified in the following table:

Examples of Structure Considerations for FPOLK Data		
Category Title	Content	Search Potential
SITENO	State Site number	Class
OTDESIG	Other Site Names; Designations	Class - all records with a certain designation
PARISH	Parish; Geographical Unit within state	Range - or locational; sites located between certain parishes
ZONE	UTM Zone	Range - or locational; sites within UTM Zone
NORTHING	UTM North Coordinate	Range/Locational UTM Search
EASTING	UTM East Coordinate	Range/Locational UTM Search
CULTAFFL	Cultural Affiliation (e.g. Mississippian, Caddo)	Class - sites with certain cultural components
REMARKS	Additional comments	

Some categories provide locational information, such as the UTM grid coordinates in the EASTING and NORTHING categories. For these categories, there is a UTM search that allows you to define a rectangular area of interest. The Search and Retrieval program will find and retrieve all sites occurring in this area.

For many categories, the record values fall into predetermined classes, such as CULTAFFL in FPOLK. Picklist support for the data entry of these classes is available using the Enter or Edit Codes option of CRIS. Examples of these class values follow:

CULTAFFL (Cultural Affiliation)
MI (Mississippian)
PU (Prehistoric Unknown)
CAD (Caddoan)
ANTE (Historic Antebellum)
HU (Historic Unknown)
PARISH: VN (Vernon)
ZONE: 15

4 How To Use This Manual

As described in the "Background" section, CRIS was originally designed to provide basic data management features needed by cultural resource managers and environmental planners. It is a powerful program with many features available. For that reason, perhaps this manual seems intimidatingly thick. However, one of our goals in planning the upgrade from CRIS 1.0 to CRIS 2.0 was to make using a database as easy and comfortable as using a spreadsheet package. To start getting work done, you don't need to know about all of CRIS's features. If you don't have time to read the whole manual before working in CRIS, just read this section and start exploring the program. When you come to a function you don't understand, you can look up the explanation for that function in the manual.

If you've never worked with a database before, and the terms "database," "field," "record," and "data type" are Greek to you, please read the "Definitions of Terms" section. To understand how CRIS is laid out, you should know that there are five basic actions performed in a database program. They are:

- Setting up a Database
- Editing the Records in a Database
- Selecting Records from a Database
- Printing Reports
- Getting Information from Other Programs or to Other Programs

This division of tasks guided the placement of options on CRIS's menus and underlies the discussion in the remainder of this manual.

The largest section of this manual is entitled "The User Interface." It begins by describing the basics. In general terms, this section describes how CRIS will communicate with you and how you can control CRIS. You will learn how to use the menus, windows, dialogs, and controls. Then, in the section entitled "The Menu Options," you will find explanations of each option on CRIS's Main Menu, Search and Retrieve Data Menu, and Configuration Settings and File Utilities Menu. These explanations are provided in the order of the options on the menu. Finally, in the "Appendices" you will be able to find discussions of more technical issues.

If You're Really, REALLY in a Hurry

Setting Up a Database

The menu options that allow you to set up, change, and view the structure of your database are *Select Existing Database or Create New One*, *Display Data Structure*, and *Modify Data Structure*. CRIS also provides you the ability to define context-sensitive on-line help (in picklist form) for your database using the option *Input New Codes or Edit Existing Codes*.

WARNING: Spaces are not allowed in database names or field names. The only punctuation allowed is an underscore. When naming a field, you can't begin the name with a number, although numbers are allowed after the first character of the field name.

TIP: If you want to perform UTM searches on your data, you need to define two numeric fields in the database: **NORTHING** and **EASTING**.

TIP: When creating a new database, be sure to try out the feature *View other database categories* within the *Select Existing Database or Create New One* option. This allows you to copy parts of the structure of another database to your new database, and should save you time.

TIP: When defining help picklists in the *Input New Codes or Edit Existing Codes*, you can use the asterisk (*) character in the code to indicate to CRIS that it shouldn't fill in the selection from the list into the field when the list is used for editing the records in your database.

Editing the Records in a Database

The menu options that allow you to add to or edit the records in your database are *Input New Data or Edit Existing Data* (from the Main Menu) and *View/Edit Selected Records* (from the Search & Retrieve Data Menu). You can work with your data in two ways: by filling in "blanks" on a screen form, or by using *Browse* to work with selected fields in a "spreadsheet" mode. You can also add batches of records from other CRIS files to your database by using the merge options found in the Configuration Settings and File Utilities Menu *Quick Merge Two Databases with Same Structure* and *Custom Merge Two Databases (Needn't Be Same)*. Tips for these options will be given in the "Getting Information from Other Programs or to Other Programs" section.

TIP: To edit a memo, simply press F2 when your cursor is on the Memo field (or double-click with the mouse). CRIS supports a clipboard feature for cut-and-paste operations. Cut-and-paste is discussed in the "ALT Menu" section of this manual. You can also copy memo text to the clipboard, move to another record, and paste the text in that record's memo field.

TIP: When using *Browse*, you can size the fields or rearrange them in the same way it's done in most high-end modern spreadsheets. To size the field, click and drag on the vertical grid line of the field title row. To rearrange the order the fields appear in, click and drag on the field title. If you don't have a mouse, you can use the menu options found in the ALT-Browse Menu (press the **Alt** key to access the ALT Menu).

TIP: The codes picklist can be used to fill in multiple-value fields if the length of the code is less than the length of the field. Multiple values in a field are supported by using semicolons (;) as divider characters, i.e., **CODE1;CODE2;CODE3**.

Selecting Records From a Database (Querying)

To get information out of your database, you'll need to indicate which records you want included in a "search set." With databases this is called "performing a query" or "performing a search." CRIS uses the latter terminology. When you perform a search, you make a temporary subset of the data that matches some condition that you specify. Your condition could specify a certain range (such as in a UTM search) or could ask that selected records match a certain pattern (city="Champaign"). All of the options on the left-hand side of the Search & Retrieve Data Menu relate to this task.

TIP: When you want to do a search in Character or Memo fields most of the time you will be using the \$ (contains) operator. \$ works just like = except that it will match the value anywhere in the field, not just at the beginning. For example, if "Mission" is the value, \$ will indicate a match when the field contains "Spanish/Mission", but = will indicate no match. \$ is the only legal operator for searching on Memo fields.

TIP: To search on Logical (yes/no) fields, use = (equals) or <> (not equals) as the operator, and T, F, Y, or N as the value.

TIP: If you want to do a NOT CONTAINS search, choose **ALL** from *Begin a New Search*, choose **EXCEPT** as the Boolean operator, and then choose \$ (contains) and fill in the value.

TIP: If you intend to repeat a complex search you've just set up, you should save it using the *Search Macros (Save or Restore)* option.

Printing Reports

Once you've selected the records you want in your search set, you can output them to the printer, screen, or file in a variety of formats. The reporting options are all found on the right-hand side of the Search & Retrieve Data Menu. CRIS provides four report layouts that will literally require only seconds of your time to set up for your database. A report form and mailing label generator is also provided if you wish to invest the time to design more complex report formats. A facility for getting totals and simple summary statistics on the contents of numeric fields is provided in the *Perform Calculations* option.

TIP: *Display Column Report* prints a tabular report of your data. All you need to do is check off the fields you want to appear on the report and provide an optional title for the report.

TIP: *Display Category Values* prints a report of each unique value in a category (field) that you specify.

TIP: *Display Value Tabulation* prints the same information as *Display Category Values* but adds information on how many records are found in the database for that value. This report can be extremely useful when cleaning up a database that contains misspellings or inconsistent classifications.

TIP: *Print Selected Records* prints the categories (fields) you select in a row layout that corresponds to the presentation of the information on the data entry screen.

TIP: If you have worked with report generators before (or are confident exploring) you'll be able to get to work using CRIS's *Report / Label Generator* knowing the following:

- Choose *Quick Report* from the ALT-Report Menu (press **Alt** to access the ALT Menu). This will fill the page with as many fields as can fit.
- Answer **NO** or uncheck the box any time the program asks you if you want to **Add Alias** or **Save Environment**.
- You can move the fields around by clicking on them with the mouse (or spacebar) and dragging them with the mouse or arrow keys where you want them. Press **Enter** to drop the field in the new location.
- Fields can be sized by Ctrl-clicking and stretching (or shrinking) them by dragging on the end of the field highlight in the desired direction.

Getting Information From Other Programs or to Other Programs

You don't spend all of your time on the computer in one program. Sometimes, you may want to work with your data in a spreadsheet, or you may want to give your data to a colleague who doesn't use CRIS. In the same way, you may already have data in another format. The file format used directly by CRIS is the FoxPro flavor of the popular DBF file format. DBFs are the files created by dBase (now owned by Borland) and all of its clone cousins. The only difference between the FoxPro variety and the more generic DBF is in the Memo fields. If you don't use Memo fields, you can directly open a CRIS database in any program that knows how to use DBF files. You can combine records in two DBF databases into a third database using one of the merge functions found in the Configuration Settings and File Utilities Menu. The difference between *Quick Merge Two Databases with Same Structure* and *Custom Merge Two Databases (Needn't be Same)* is that Custom Merge allows you to map where the data in each field of the merging databases should be placed in the final merged database. If you want to add records to your current database from another file, you can either do so when you first create the database, or you can *Import Database (Optional Different File Type)*. A variety of file types (ASCII, spreadsheets, and other PC databases) are available. If you want to copy your current database to another file, you can use *Export Database (Optional Different File Type)* or *Copy Selected Records to New Database* in the Search & Retrieve Data Menu. The only difference is that Copy Selected Records copies only those records in your search set, while Export Database copies all the records. As with Import Database, several other file types besides DBF are supported.

WARNING: The merge operations only **ADD** records. They do not check to see if you are duplicating records already in your database.

If you are installing CRIS on a Network please read Appendix F, "Network Administrator's Survival Information." This will explain how to control where CRIS places temporary files, where it looks for its support files, and so forth.

5 The User Interface

Basics

Moving Around in the Menus

Monday 01/11/93	Cultural Resources Information System	3:55:29 pm
MAIN MENU		
Selected Database: C:\CRIS\DATA\FPOLK		
Options :		
0. Quit 1. List Directory of Existing Databases 2. Select Existing Database or Create New One 3. Display Data Structure 4. Modify Data Structure 5. Input New Data or Edit Existing Data 6. Input New Codes or Edit Existing Codes 7. Search & Retrieve Data 8. Configuration Settings and File Utilities H. Help (Brief Explanation of These Options)		

CRIS menus are standard bounce-bar menus. Options are selected by cursor movement or by typing the hot key, which is in a different color. The **Home** key will highlight the topmost option, and the **End** key will highlight the bottommost option. Once an option is highlighted, you can select it by pressing **Enter** or by double clicking on it with the left button of the mouse. The options are as follows:

Option 0. The QUIT option exits the CRIS System and returns to DOS.

Option 1. List Directory of Existing Databases contains a listing of the databases in CRIS's data directory. This is standard DOS directory information.

Option 2. Select Database or Create New Database offers the opportunity to pick the database you wish to add data to or interrogate, or to create a whole new database. Only one database can be operated on at a time. The name of the selected database is centered near the upper portion of the screen.

Option 3. Display Data Structure shows the name, type, width, and decimal places of each category in the database.

Option 4. Modify Data Structure allows you to alter the number, type, and width of categories in the existing database. This option is also used to add new categories to the database structure.

Option 5. Input New Data or Edit Existing Data provides you with an easy method to add or change data. If the Input New Data mode is selected, this program creates an input form on the screen, and then you simply fill in the blank form with the option of having repetitive data carried over from one form to the next. If the Edit Existing Data mode is selected, the program first asks, "What record do you wish to edit?" When an existing record is selected (by record number or by picking the record from a picklist), the record form is drawn on the screen with all of the known data filled out on the form. If new information is known, or if old information needs correcting, you simply type onto the form, overwriting the current information.

Option 6. Input New Codes or Edit Existing Codes allows you to enter (and/or modify) the codes and descriptions used in the values of the categories of CRIS. A code word is often shorter than the actual description. For example, MI is a code, Mississippian Site is its description. These codes and descriptions can be popped up in a picklist when you are using Option 5 (Input New Data or Edit Existing Data) to fill in the corresponding category.

Option 7. Search and Retrieve Data allows you to search the existing data by geographic location, category values, and numeric identifiers. This program also provides several options for reporting selected data from the data records. This is the central function of CRIS--providing a means to search, sort, and list all or part of the known data records.

Option 8. Configuration Settings and File Utilities. This option contains a menu of utilities. There is an option to change the configuration settings that you set up when you first installed CRIS (you might need this to specify a different data directory or a different printer port). There are options for backing up, restoring, deleting, and merging database files.

Option H. Help gives you a brief explanation of all these options. After choosing the number of the option and reading the message, press any key to return to the Main Menu.

Yes/No Questions

Yes/No question prompts appear after adding, modifying, or deleting categories or data. You select **Y** or **N** with the arrow keys or click on the left mouse. The **Y** or **N** are enclosed within the default push button « » or standard push button < >. The following are examples of question prompts you will see throughout your CRIS session:

Are you satisfied with this entry?
Are you done selecting categories?
Do you wish to add more data?

Wait Windows

Wait windows are messages that appear in a purple box in the upper right hand corner of the screen. These windows tell you what the computer is doing. You can press any key to clear the window from the screen. If you press **Shift**, you can temporarily hide the window.

Windows

CRIS gives you the option of using windows to display database information or record information in a Memo field of a database. To access the Window Menu, press **Alt** or double click on the right mouse button. Use the mouse or cursor keys to select Window from the ALT Menu. The Window Menu contains options for moving, sizing, scrolling, and closing windows.

Moving Windows

To move a window with the mouse, point to the **window title**, click and drag the window title to the desired location of the screen, and click again. To move a window using the keyboard, select **Move** from the Window Menu. The border will flash. Use the arrow keys, **Page Up**, **Page Down**, **Home**, and **End** keys to move the window to the desired location, then press **Enter**.

Sizing Windows

The **size control** (♦) is located at the bottom right of the window border. Using the mouse, point to the size control and move the window to the desired size. To enlarge the window to full size, click on the window **ZOOM control** (≡) located at the top right of the window. To return the window to original size, click on the **ZOOM control**. To size a window using the keyboard, choose **Size** from the Window Menu. Use the arrow keys to move the window border to the desired size and press **Enter**. To enlarge the window to full size, select **ZOOM↑** from the Window Menu and press **Enter**. To reduce the window to original size, select **ZOOM↓** from the Window Menu and press **Enter**.

Scrolling Windows

The scroll option allows you to look at multiple pages of data, or Memo fields. Scroll arrows appear within the window border when there is more than one page of information. Click on the ▲ up or ▼ down arrow to scroll the text. To scroll the text by page, click on the page up region (◆ to ▲) or page down region (◆ to ▼). You can scroll continuously by clicking and holding the mouse button down in either region. To scroll rapidly, click on the **thumb control** (◆) and move it up or down. You can also scroll windows using the arrow keys, **Page Up**, or **Page Down**.

Closing Windows

When you are finished with a window, you can close it by clicking on the **close box** (■) or by pressing **Esc**.

Controls

CRIS gives you the option of making choices about particular actions during a session using lists, popup windows, check boxes, radio buttons, and push buttons. To scroll a list, click on the up ▲ or down ▼ arrows; if you hold the mouse button down, scrolling will continue to the beginning or end of a list. You can scroll a list from the keyboard by using the arrow keys.

A popup is a menu of information that can be accessed when you choose a popup control. A popup control can be identified by a rectangle with double lines on the right and bottom edges. To access a popup menu with a mouse, point to the popup control and press the mouse button to display the popup menu. Move the mouse to the desired option, then release the mouse button. To access a popup menu using the keyboard, tab to the popup control, then press **Enter** to display the popup menu. Use the arrow keys to select the desired option and press **Enter**.

Check Boxes, Radio Buttons, and Push Buttons

Check boxes [] are brackets that precede text. They are activated by pressing **Enter** or clicking on the mouse button. An [X] will appear in the check box if selected. You can activate more than one check box at a time. To deactivate a check box, select the check box and press **Enter**; the X will disappear.

Radio buttons () are parentheses followed by text. Only one radio button can be selected at a given time. Choose a radio button by selecting the radio button and pressing **Enter**, or click on the radio button. When a radio button is selected a dot will appear within the parentheses (•).

There are two types of **push buttons**, the **default push button** « » and the **standard push button** < >. Any time you activate a push button, the action associated with it occurs immediately. The default can be selected by pressing <Ctrl> <Enter>.

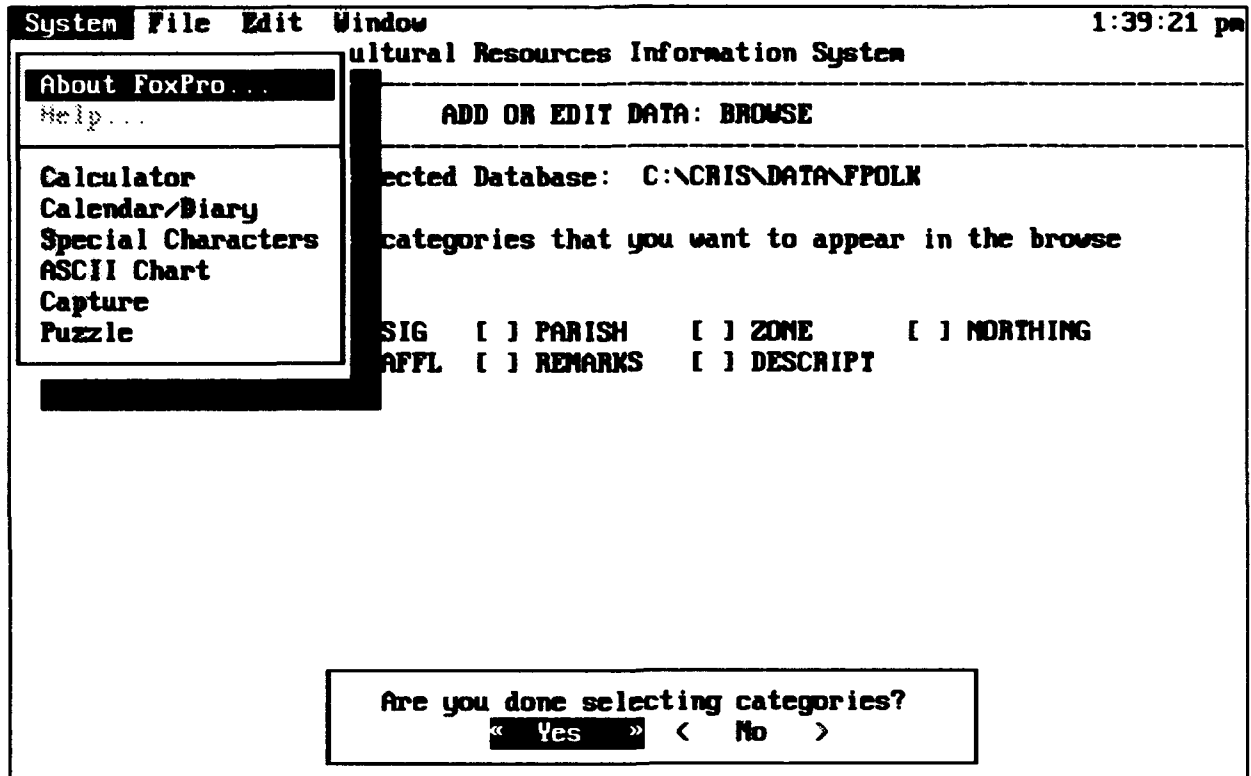
Open File Dialog

The open file dialog that follows can be made to appear when you need to specify a file name by typing a question mark (?) instead of the file name. If the file is in the CRIS data directory, simply move the cursor until the file name is highlighted and press return. To specify another disk drive or directory, use the **Tab** key to move the highlight to the drive or directory box. You may also select these by clicking on them with the mouse. If you change the drive or directory, the configuration setting for your data directory will be changed. In certain places, you will see this dialog if you do not type a valid file name, even if you do not type the question mark to bring it up.

Monday 01/11/93		4:08:40 pm	
Cultural Resources Information System			
DATABASE SELECTION			
To To	Select File		
	[.] [..] FPOLK.DBF	Drive	C:
		Directory	DATA
		< Open >	
		< New... >	
		< Cancel >	
	[] All Files		

The ALT Menu

The ALT Menu that follows is built into any program written in FoxPro. It is called up by pressing **Alt** or double clicking the right mouse button. The menu is deactivated by pressing **Alt** again. Once the menu is visible, you may select an option by typing its hot key or by cursoring to the option and pressing return. Of course, hot keys can be stacked; to select the calculator from the System Menu, press **Alt S C**.



System Menu

The System Menu options inform you about the computer and software the program is running on, and provide access to FoxPro's desk accessories. Most of the options in this menu have no relevance to CRIS, so only a very brief description will be given.

About FoxPro - Displays the runtime's serial number, memory free, and so forth.

Calculator - The calculator is used like a standard pocket calculator. Besides the number keys, the following keys are available:

+ plus - minus * multiplication / division = equals

Q square root (e.g., 64Q)

R MR A M+ S M- Z MC

N change the sign (positive/negative)

The display panel of the calculator is a text editing area. Numbers can be edited, cut, copied, and pasted into your data entry fields.

Calendar/Diary - As this is a nonprinting calendar, it is probably useful only for determining a day's date.

Special Characters - Using this option, you can type foreign punctuation marks, line drawing characters, math symbols, and so forth into the data entry field you are editing. The characters available are the extended ASCII characters.

ASCII Chart - This utility is useful to programmers, and probably no one else.

Capture - This utility stuffs a copy of the screen into the cut-and-paste clipboard. You can select the corners of the area to copy. It probably has no value for users of CRIS.

Puzzle - A computerized alphabet order game.

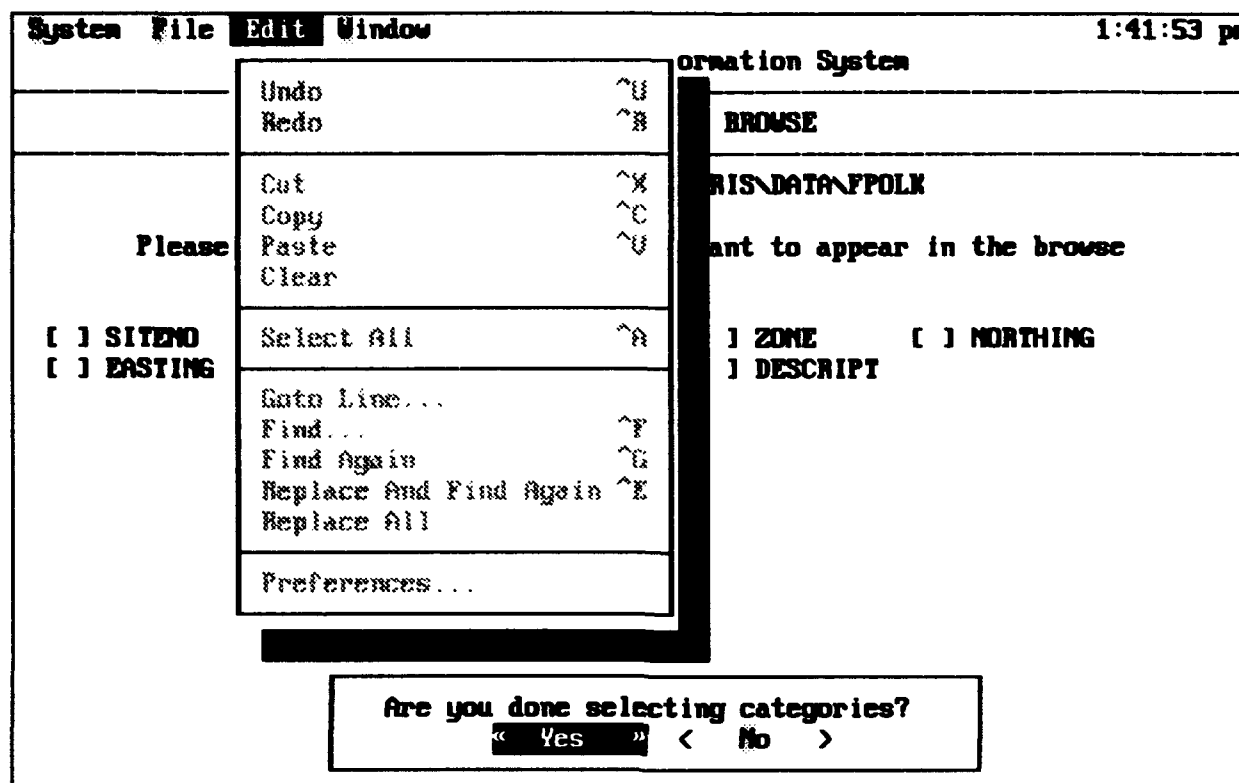
File Menu

The File Menu options are disabled throughout your CRIS session except when editing memos.

System	File	Edit	Window	1:48:45 pm
Cultural Resources Information System				
ADD OR EDIT DATA: BROWSE				
Selected Database: C:\CRIS\DATA\FPOLK				
categories that you want to appear in the browse				
☐ SITENO ☐ OTDESIG ☐ PARISH ☐ ZONE ☐ NORTHING				
☐ EASTING ☐ CULTAFFL ☐ REMARKS ☐ DESCRIPT				
Are you done selecting categories? « Yes » < No >				

Edit Menu

The Edit Menu provides access to all of the word processing functions usable when editing Memo type categories (fields).



Undo - Undo reverses the last action that was performed on text. For example, you can choose Undo repeatedly to reverse actions from the most recent action performed to the least recent while working on a Memo field.

Redo - To reverse an Undo, choose Redo.

Cut - Cut removes selected text and stores it to its clipboard in memory. Use Cut when you want to remove a piece of text from one location and place it in a different location using Paste.

Copy - Copy duplicates the selected text (without removing it) and places the copy on the clipboard.

Paste - Paste inserts a copy of the clipboard contents into the current file or field at the cursor location. If text is selected and you choose Paste from the Edit Menu, the contents of the clipboard replace the selected text. (The previously selected text is deleted, and no copy is retained in the clipboard.)

Clear - Clear permanently removes selected text or data without placing it on the clipboard. If you choose this option when text is selected, it is the same as pressing **Delete** or backspace.

Select All - Select All selects all lines of text in the current editing window. If you choose it while editing Character fields, the entire contents of the field (such

as SITENO) will be selected. If you choose it while editing a memo, the entire contents of the memo will be selected.

Additional key combinations for selecting text are listed in the keyboard template section of this manual. **To summarize the "block operation" editing options:**

To MOVE a block of text, first select the text, then CUT it from the old location, then move your cursor to the new location and choose PASTE.

To COPY a block of text, first select the text, then COPY it from the old location, then move your cursor to the new location and choose PASTE.

To DELETE a block of text, select it and then press backspace or **Delete**.

Goto Line - Goes to a designated line in the memo.

Find - This option is used to set up a find operation and locate the first match. The Find dialog lets you specify a word or phrase that you want to Look For, and optionally lets you specify Replace With text. You don't have to specify Replace With text if you only want to locate text. If you do specify Replace With text, you don't have to use it for every occurrence you find. Once a match has been found, you can use one of the next two options.

Find Again - After locating a match using Find, you can choose Find Again to locate the next occurrence of the string. When FoxPro finds the last match in the text, a "Not found" message appears to let you know that the search is complete.

Replace and Find Again - This operates like Find Again, except that first the contents of the Replace With field are used to replace the previously found text. If you don't want to replace this specific match, choose Find Again instead of Replace and Find Again.

Replace All - This option replaces every occurrence of a matching string of Look For text with the Replace With text that you specified in the Find dialog. It does NOT pause and ask you about replacing the text each time it encounters a match.

Window Menu

The Window Menu contains only four options that have any effect on your CRIS session. They are Move, Size, Zoom Big, and Zoom Small. Ignore the options Hide, Clear, and Cycle, and the cryptic capitalized numbered names in the bottom section of the menu. The Window Menu options are available when you are editing Memo fields.

System File Edit Window		Resources Information System 1:43:03 pm	
Please mark ☐ SITENO ☐ ☐ EASTING ☐		Hide Clear Move ^F7 Size ^F8 Zoom ^F10 Zoom ^F9 Cycle ^F1 0 MSGZUSER 1 GETMASS 2 BROWIND 3 BROWPART 4 MEMOPART 5 REPTSEL •6 YESWIND	IT DATA: BROWSE e: C:\CRIS\DATA\PPOLK at you want to appear in the browse ISH ☐ ZONE ☐ NORTHING ARKS ☐ DESCRIPT
Are you done selecting categories? « Yes » < No >			

Move - This menu option enables you to move the window to another area of the screen. Choose Move, then move the window with the cursor keys, and press **Enter** to fix the window in the new position. With the mouse, if you click and drag on the title you can also move the window around the screen.

Size - This menu option has the same effect as clicking with the mouse on the **size control**, the small dot in the lower right corner of the border. By clicking and dragging on this little dot, you can stretch or shrink the window. With the keyboard, you can use the arrow keys to change the size, then press **Enter** when it is the size you want.

Zoom Big - This menu option has the same effect as clicking with the mouse on the zoom box. The symbol of three horizontal lines in the upper right-hand corner of the picklist is called a **zoom box**. "Zoom" in a graphical user interface context means "expand this window to fill the entire screen."

Zoom Small - This option will shrink the window to a window 1 line tall and 16 characters wide. It has no practical use in CRIS. The parallel mouse action for this menu option is to double click on the top border of the window. The window can be returned to its original size by choosing the same zoom command.

6 The Main Menu Options

CRIS Main Menu

Monday 01/11/93 3:55:29 pm

Cultural Resources Information System

MAIN MENU

Selected Database: C:\CRIS\DATA\PPOLK

Options :

0. Quit

1. List Directory of Existing Databases

2. Select Existing Database or Create New One

3. Display Data Structure

4. Modify Data Structure

5. Input New Data or Edit Existing Data

6. Input New Codes or Edit Existing Codes

7. Search & Retrieve Data

8. Configuration Settings and File Utilities

9. Help (Brief Explanation of These Options)

List Directory of Existing Databases

Choose **Option 1: List Directory of Existing Databases** from the Main Menu and the directory of current databases will appear on the screen. After viewing the list of existing databases, you can press any key to return to the Main Menu.

Tuesday 02/09/93 12:55:06 pm

Cultural Resources Info

DIRECTORY OF DA

Selected Database: C:\CRIS\DATA\PPOLK

Press any key to continue ...

Database File	# Records	Last Update	Size
MEMONE.DBF	0	02/02/93	97
PPOLK.DBF	55	02/04/93	8132

8229 bytes in 2 files.
226246656 bytes remaining on drive.

The next screen is the **Category Definition Options** which enables you to view categories for selection from existing databases or to define your own categories. Use the arrow keys to select your option and press **Enter**, or double click on your selection using the mouse.

Tuesday 02/02/93	Cultural Resources Information System	12:54:53 pm
DATABASE SELECTION		
Selected Database: NEWONE		
Category Definition Options View other database categories Define my own database categories Quit		
Instructions 1. You can now look at the categories of another database and choose whether you would like to have some or all of those categories in the database you are creating. <OR> 2. You can define all the categories yourself.		

If you choose to **view other database categories**, the following screen will prompt you to enter the name of the database you wish to view. In this example the **FPOLK** database is used.

y 03/11/93	Cultural Resources Information System	11:21
DATABASE SELECTION		
Selected Database: NEWONE1		
What database would you like to use categories from?		
Enter Name of Database FPOLK		

You can type a ? and press **Enter** to see a list of existing databases to choose from. Once you have selected the database, the next screen will display database categories from the database you chose to view:

Wednesday 02/17/93		12:59:54 pm
Cultural Resources Info		
DATABASE SELE		Press any key to continue ...
Database Struct		
Structure for database: C:\CRIS\DATA\FPOLK.DBF		
Number of data records: 55		
Date of last update : 02/11/93		
Memo file block size : 64		
Field	Field Name	Type Width Dec Index
1	SITENO	Character 12
2	OTDESIG	Character 30
3	PARISH	Character 2
4	ZONE	Numeric 2
5	NORTHING	Numeric 7
6	EASTING	Numeric 7
7	CULTAFL	Character 16
8	REMARKS	Character 55
9	DESCRIPT	Memo 10
*** Total ***		142

After viewing the screen of database categories, press any key to continue. You can print the screen of categories by selecting Y from the popup window before continuing.

Would you like to print the categories before continuing?

« Yes » < No >

If you choose N, the **Copy Category Options** screen that follows will appear. This screen gives you the option of copying predefined categories. If you choose **copy all categories to new database**, all categories will be copied. If you choose **copy only selected categories**, you can select specific categories for your new database.

Wednesday 02/17/93 Cultural Resources Information System 1:18:58 pm

DATABASE SELECTION

Selected Database: MEMONE2

Category Copying Options

Copy ALL categories to new database

Copy only selected categories

Do not copy categories

If you selected **copy only selected categories**, the following screen will appear:

Thursday 04/22/93 Cultural Resources Information System 10:09:27 am

DATABASE SELECTION

Database Fields:

SITENO	C	12	0
OTDESIG	C	30	0
PANISH	C	2	0
ZONE	N	2	0
NORTHING	N	7	0
EASTING	N	7	0
CULTAPPL	C	16	0
REMARKS	C	55	0

Selected Fields:

< Move >
< Move All >
< Remove >
< Remove All >

Database:

DATABASE

< OK >

< Cancel >

To select categories, use the arrow keys to highlight a category and press **Enter**, or select the **move** or **move all** option. With the mouse, simply point to the category and double click on the left mouse button. You can use the mouse to **move** or **move all** option. Categories can be removed individually or as a group by highlighting the category and selecting the **remove** or **remove all** option, or by double clicking on the option of your choice. When you are done selecting categories to copy, press OK. The following screen displays the categories you have selected:

Thursday 04/22/93
Cultural Resources Information System
10:11:36 am

DATABASE SELECTION

Database Fields:

OTDESIG	C	2	0
PARISH	C	2	0
ZONE	N	2	0
MORNING	N	7	0
EASTING	N	7	0
CULTAPPL	C	10	0
REMARKS	C	50	0
DESCRIFT	N	10	0

< Move >

< Move All >

< Remove >

< Remove All >

Selected Fields:

DATABASE.SITENO
 DATABASE.OTDESIG
 DATABASE.ZONE
 DATABASE.CULTAPPL
 DATABASE.REMARKS
 DATABASE.DESCRIFT

Database:

DATABASE

< OK >

< Cancel >

When you are satisfied with your category selection, press OK. You will be asked if you wish to copy categories from other databases.

Would you like to copy categories from other databases?

< Yes > < No >

If you choose **Y**, you will return to the screen that asks for the name of a database. Follow the previous procedure of selecting categories. If you choose **N**, the next screen will display the list of categories selected on the right side of the screen. The prompt at the bottom of the screen will ask if you want to add categories individually.

Wednesday 02/17/93		1:22:50 pm
Cultural Resources Information System		
DATABASE SELECTION		
Selected Database: NEWONEZ		
Category Number :		
Category Name		SITEID C 12 0
Type of Category		OTDESIG C 30 0
Length of Category		ZONE M 2 0
Decimal Places		CULTAFPL C 16 0
		REMARKS C 55 0
		DESCRIPT M 10 0
Do you want to add some categories individually? ☒ Yes < No >		

If you type Y, you will follow the procedures in the following section on creating categories. If you type N, the next screen will ask you to specify a password to identify the database. You can press **Enter**, which is the default password. Using enter as a password allows different users to access a database without identifying a specific password.

Tuesday 02/02/93		1:51:02 pm
Cultural Resources Information System		
DATABASE SELECTION		
Selected Database: NEWONEZ		
What password do you want to use? XXXXXXXXXX		

After you have entered a password for your database, you will be asked if you want to input data from another file.

Do you want to input the data from another file?
" Yes " < No >

If you want to input data from another file, press Y; a list of available files will appear on the screen.

Tuesday 03/09/93		3:18:14 pm																															
Cultural Resources Information System																																	
DATABASE SELECTION																																	
Selected Database: NEWONE1																																	
What File Type Are You Appending From?		<table border="1"><thead><tr><th colspan="2">Identical Categories CRIS File</th></tr></thead><tbody><tr><td>DEL1</td><td>Delimited ASCII File</td></tr><tr><td>SDF</td><td>Fixed Length Record ASCII File</td></tr><tr><td>WKS</td><td>Lotus 1-2-3 Release 1-A</td></tr><tr><td>WK1</td><td>Lotus 1-2-3 Release 2.x</td></tr><tr><td>WK3</td><td>Lotus 1-2-3 Release 3.x</td></tr><tr><td>WRK</td><td>Symphony Version 1.0 Worksheet</td></tr><tr><td>WR1</td><td>Symphony Ver 1.1/1.2 Worksheet</td></tr><tr><td>XLS</td><td>Microsoft Excel Version 2.0</td></tr><tr><td>SYLK</td><td>Symbolic Link Interchange</td></tr><tr><td>MOD</td><td>Microsoft Multiplan Ver 4.01</td></tr><tr><td>FW2</td><td>Framework II File</td></tr><tr><td>RPD</td><td>RapidFile Version 1.2</td></tr><tr><td>PDOX</td><td>Borland's Paradox Version 3.5</td></tr><tr><td>DIF</td><td>Data Interchange Format</td></tr></tbody></table>		Identical Categories CRIS File		DEL1	Delimited ASCII File	SDF	Fixed Length Record ASCII File	WKS	Lotus 1-2-3 Release 1-A	WK1	Lotus 1-2-3 Release 2.x	WK3	Lotus 1-2-3 Release 3.x	WRK	Symphony Version 1.0 Worksheet	WR1	Symphony Ver 1.1/1.2 Worksheet	XLS	Microsoft Excel Version 2.0	SYLK	Symbolic Link Interchange	MOD	Microsoft Multiplan Ver 4.01	FW2	Framework II File	RPD	RapidFile Version 1.2	PDOX	Borland's Paradox Version 3.5	DIF	Data Interchange Format
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Identical Categories CRIS File																																	

You will be asked to enter the file name and path you are appending from.

Tuesday 03/03/93	Cultural Resources Information System	3:19:20 pm
DATABASE SELECTION		
Selected Database: NEWONE1		
Appending from type Identical Categories CBIS File		
What is the file name and path?		

Creating a Category

After you type Y to create a database, choose **define my own database categories**; if you choose to add categories individually, the following screen is brought up to create a category:

Tuesday 02/02/93	Cultural Resources Information System	12:57:14 pm
DATABASE SELECTION		
Selected Database: NEWONE		
Category Number :		
Category Name		
Type of Category		
Length of Category		
Decimal Places		
Do you want to add some categories individually? " Yes " < No >		

If, for example, you want Category 1 to be the state record number, the word **NUMBER** might be typed in after the Category Name. Because the state record number is normally a combination of both numbers and characters, a **C** for characters would be typed after Type of Category. Length of Category would probably be eight for a record number and an 8 would be typed. Decimal Places would have 0 typed after it because no decimal places are used with characters. The screen would appear like this after typing was completed:

Tuesday 02/02/93		Cultural Resources Information System		1:45:43 pm	
DATABASE SELECTION					
Selected Database: MEMOIR					
Category Number : 1					
Category Name	NUMBER				
Type of Category	3				
Length of Category	3				
Decimal Places	0				
Total Record Length: 8					
Are You Satisfied with this Entry ? (Y or N) :					
« Yes » < No >					

If you are not satisfied with category entries, type N. You will return to the beginning of the the entry process. If you are satisfied with your category selection, type Y; the category information is maintained.

Additional Categories

Typing Y brings up a screen for creating another category and the procedures are repeated, but the heading will be Category Number 2:

Do You Wish to ADD MORE Categories ? (Y or N) :					
« Yes » < No >					

When completed, the screen for Category Number 2 might look like this for a category containing sitesize information:

Tuesday 03/03/93		3:06:38 pm	
Cultural Resources Information System			
DATABASE SELECTION			
Selected Database: MEMONE1 Category Number : 2			
Category Name	SITESIZE		
Type of Category	3		
Length of Category	16		
Decimal Places	0		
Total Record Length: 8			
Numeric may have up to two less than the total length			

When you are finished setting up categories during a session, type an N in reply to "Do you wish to add more categories?" and the operation for setting up categories will end. You will be asked to enter a password as the following screen represents. Press enter as the default password, unless you want to limit access to your database.

Tuesday 02/02/93		1:51:02 pm	
Cultural Resources Information System			
DATABASE SELECTION			
Selected Database: MEMONE			
What password do you want to use?			

After entering a password for your database and pressing **Enter**, the following messages will appear on the screen:

Tuesday 03/09/93 3:12:45 pm

Cultural Resources Info

DATABASE SEL

Selected Database: NEWONE1

THE DATABASE HAS BEEN CREATED.

Press any key to display the structure of your new database. The NEWONE1 database is displayed as an example.

Tuesday 03/09/93 3:14:27 pm

Cultural Resources Info

Database:

Structure for database: C:\CRIS\DATA\NEWONE1.DBF

Number of data records: 0

Date of last update : 03/09/93

Field	Field Name	Type	Width	Dec	Index
1	NUMBER	Numeric	8		
2	SITESIZE	Character	16		
3	ZONE	Character	38		
*** Total ***			55		

CRIS gives you the option of inputting data from another file. Choose **Y** to see a list of files you can input data to and from.

Do you want to input the data from another file?

Yes < **No** >

The following screen displays a list of files you can input data to and from:

Tuesday 03/09/93		3:18:14 pm																															
Cultural Resources Information System																																	
DATABASE SELECTION																																	
Selected Database: NEWONE1																																	
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Identical Categories CRIS File																																	

The next screen will prompt you to enter the file name and path:

Tuesday 03/09/93		3:19:28 pm	
Cultural Resources Information System			
DATABASE SELECTION			
Selected Database: NEWONE1			
Appending from type		Identical Categories CRIS File	
What is the file name and path?			

Display Data Structure

Once categories have been created for a database, you may elect to display these categories (the data structure) by choosing **Option 3: Display Data Structure** from the Main Menu. The next screen prompts you to select a mode for displaying data structure:

Wednesday 02/03/93 10:56:05 am

Cultural Resources Information System

DISPLAY STRUCTURE

Selected Database: C:\CRIS\DATA\NEWONE

Report destination:

☒ Screen

☐ Printer

☐ File

C:\CRIS\DATA\REPORT.TXT

< OK >

< Cancel >

The three categories are listed with their type, width, and decimal places. **Option 3** displays data structure in this composite columnar form.

DATA STRUCTURE FOR NEWONE1				3:22:43 pm
CATEGORY	TYPE	WIDTH	DECIMAL	
NUMBER	N	8	0	
SITESIZE	C	16	0	
ZONE	C	30	0	

Modify Data Structure

To add or modify data structure select **Option 4: Modify Data Structure** from the Main Menu. You can have a maximum of 255 categories in a specified database.

Adding New Categories

After selecting **Option 4: Modify Data Structure** from the Main Menu, the following screen will appear. Use the arrow keys to select **Add New Categories** and press **Enter**, type **A**, or double click on your selection.

Tuesday 82/82/93	Cultural Resources Information System	1:54:12 pm
MODIFY DATA STRUCTURE		
Selected Database: C:\CRIS\DATA\NEWONE		
This Function Sets Up Category Definitions.		
Do You Wish To Add New Categories Modify Existing Categories Quit		

The next screen contains fields for category name, type of category, length of category, and decimal places. In the top right corner of the screen a list of existing categories, types, lengths, and decimal places is displayed. The number of the category you are planning to add is displayed in the center of the screen. In the following example, two categories exist in the NEWONE database: number and sitesize. The category number to be added is number 3.

The cursor can be found in the field **category name**. Type in the name of the category you wish to create and press **Enter**. The category name must begin with a letter and may contain A-Z, 0-9, and the underscore (_). The cursor will move to the **type of category** field. If the category consists of characters, enter a C. If the category is numeric, enter an N. Dates are considered numeric. If the category is numeric and contains decimal places, enter the number of decimal places to be used. The maximum length of a category depends on the category type. The message line on the bottom of the screen will display the maximum length for the category you are modifying.

Tuesday 03/09/93

3:27:10 pm

Cultural Resources Information System

MODIFY DATA STRUCTURE

Selected Database: C:\CRIS\DATA\NEWONE1

Category Number :

NUMBER N 0 0

SITESIZE C 16 0

ZONE C 30 0

Category Name

Type of Category

Length of Category

Decimal Places

Category Name must begin with a letter and may contain A-Z, 0-9, _

When you are finished you will be asked; "Are you satisfied with this entry? (Y or N)." If you select N, you will return to the category name to begin reentering information.

Are You Satisfied with this Entry ? (Y or N) :

☒ Yes ☐ No

If you select Y, all information is accepted and you will be asked, "Do you wish to add more categories? (Y or N)."

Do You Wish to ADD MORE Categories ? (Y or N) :

☒ Yes ☐ No

If you answer **Y**, you will go to the next screen to add categories and follow the same procedure. If you select **N**, you will be asked if you wish to implement changes.

Do You Wish to Implement These Changes ? (Y or N) : « Yes » < No >

Selecting **Y** will add all new categories to your database. Selecting **N** will make no changes to the database.

Modify Existing Categories

To modify data structure, select **Option 4: Modify Data Structure** from the Main Menu. The Modify Data Structure Menu will appear as follows. Type **M** and use the arrow keys or mouse to select Modify Existing Categories.

Tuesday 02/02/93	Cultural Resources Information System	1:57:26 pm
MODIFY DATA STRUCTURE		
Selected Database: C:\CRIS\DATA\NEWONE		
This Function Sets Up Category Definitions.		
Do You Wish To Add New Categories Modify Existing Categories Quit		

The next screen requests the name of the category you wish to modify. Use the arrow keys to select the category you wish to modify and press **Enter**, or double click on your selection.

Tuesday 03/03/93		3:42:47 pm	
Cultural Resources Information System			
MODIFY DATA STRUCTURE			
Selected Database: C:\CNIS\DATA\NEWONE1			
Enter Name of Category:			
NUMBER	SITESIZE	PARISH	LOCATION

NUMBER
 SITESIZE
 ZONE
 PARISH
 LOCATION

An edit screen with the category name, type, length, and decimal information will appear next. The cursor will appear in the Category Name field. You can modify information by simply typing over existing category information. If you are satisfied with a previous entry, press **Enter** to move to the next field.

Tuesday 03/03/93		3:44:24 pm	
Cultural Resources Information System			
MODIFY DATA STRUCTURE			
Selected Database: C:\CNIS\DATA\NEWONE1			
Category Number : 1			
Category Name	NUMBER	NUMBER N 0 0	
Type of Category	1	SITESIZE C 16 0	
Length of Category	8	ZONE C 30 0	
Decimal Places	0	PARISH C 16 0	
		LOCATION C 16 0	
Blank out category name, and leave type and length the same to delete			
Category Name must begin with a letter and may contain A-Z, 0-9, _			

Press **Enter** after modifying category information. A window will appear at the bottom of the screen that asks whether you are satisfied with the changes. If you answer by typing **Y**, all changes are made. If you type **N**, the screen will reappear for additional changes.

Are You Satisfied with this Entry ? (Y or N) :

« Yes »

< No >

You have the option of modifying additional categories by selecting **Y** when the following screen appears:

Do You Wish to CHANGE MORE Categories ? (Y or N) :

« Yes »

< No >

When you are finished modifying categories, select **N** from the previous screen. The next screen will ask if you want to implement changes. Press **Y** to implement changes you have made to categories.

Do You Wish to Implement These Changes ? (Y or N) :

« Yes »

< No >

The following cautions should be observed when modifying a structure:

A Category Name may be changed without losing data previously contained in records. If the Type of Category is changed from C (character) to N (number), all the previous nonnumeric data entered in the records for that category will be erased. Data in numeric form would have to be entered for this category in each record. However, numeric data will not be lost if Category of Type N (number) is changed to C (character) because Type C (character) accommodates both numbers and characters.

If the Category Length is extended, the data will remain the same. Usually, the length is increased to provide more space for input. If the length is decreased, character data entries longer than the modified length would have letters truncated. Similarly, numeric data entries that were longer than a modified category length would lose decimal places.

A change in Decimal Places would not erase data entries; however, you may lose data. Previously entered data would have places dropped with a decrease in Decimal Places; and 0's (zeros) would be added with an increase.

After a category is modified, you are queried about changing other categories. The process may be repeated by typing Y.

Input New Data or Modify Existing Data

Select **Option 5: Input New Data or Modify Existing Data**. The **Add or Edit Data** Menu that follows offers you the options of adding new data, modifying existing data, and browsing data. Select **Add New Data** or type **A** to begin adding data to the database.

Tuesday 01/12/93	Cultural Resources Information System	10:00:19 am
ADD OR EDIT DATA		
Selected Database: C:\CRIS\DATA\FOLK		
This Function Adds New Data and/or Modifies Existing Data.		
Do You Wish To	☒ Add New Data	☐ Modify Existing Data ☐ Browse ☐ Quit

CRIS will ask if you want to have these values carried forward. Type a **Y** to carry contents of the previous record to the new record.

Do You Wish to Have Values Carried Forward ? (Y or N) :
☒ Yes < No >

The following screen is the input-edit screen. This screen displays a list of database categories on the left side of the screen followed by an inverse video bar. The length of each bar constitutes the maximum defined length of a value for that particular category.

Tuesday 01/12/93		11:49:17 am	
Cultural Resources Information System			
Record Number: 53		Page 1	
Selected Database: C:\CRIS\DATA\FPOLK			
SITENO	:	[Inverse Video Bar]	
DTDESIG	:	[Inverse Video Bar]	
PARISH	:	[Inverse Video Bar]	
ZONE	:	0	
NORTHING	:	0	
EASTING	:	0	
CULTAFFL	:	[Inverse Video Bar]	
REMARKS	:	[Inverse Video Bar]	
DESCRIPT	:	[Inverse Video Bar]	
Press (F2) to Edit Memo, (F10) to Save Memo			

Input New Data

You input new site data by typing values for each category within the inverse video bar. Only numbers may be entered as values for numeric fields. The system will accept virtually any character or number for any character field.

NOTE: Multiple category values MUST be separated by a semicolon with no spaces before or after the semicolon. The system will treat it as a delimiter between two separate category values (e.g., bone; ceramic; glass) or a category CULTAFFL (Cultural Affiliation) might contain several values such as MI;CAD;ANTE for a site with Mississippian, Caddoan, and Historic Antebellum components.

Tuesday 01/12/93 11:52:02 am

Cultural Resources Information System

Select Code

(Return) or Right Mouse Selects

ANY	Antebellum
BA	Baytown
CAD	Caddo
CC	Coles Creek
EX	Historic Exploration (1541-1843)
HI	Historic Indian Contact
HU	Historic Unknown

CULTAFL : Hu?

REMARKS :

DESCRIPT : memo

Press (F2) to Edit Memo, (F10) to Save Memo

NOTE: The picklist is accessed by typing a question mark in the field that already has codes defined (Add or Edit Codes, Main Menu #6). Here, the Edit field is **CULTAFL**.

Cursor Movement. Pressing the <Space> bar will overwrite existing values with blanks. Nondestructive movement within a category value may be accomplished by using the left and right arrows on the keyboard. The up arrow moves the cursor up one category; the down arrow moves the cursor down one category. The most efficient way to move around within CRIS is to use the **Tab** key to move forward and **Shift-Tab** to move backward.

Finishing Up. After you input data for the last category on the screen, a prompt will appear at the bottom of the screen: "Are You Satisfied with this Entry? (Y or N)":

Are You Satisfied with this Entry ? (Y or N) :

☒ Yes ☐ No

Type N if you wish to retype information. The cursor will return to the first category on the screen. If you are satisfied with your entry, type Y. The next screen will give you the option of adding more data. Pressing Y will bring up the next record for input. Pressing N will terminate the input session.

Do You Wish to ADD MORE Data ? (Y or N) : « Yes » < No >
--

Multiple Pages of Data. One input screen holds a maximum of 14 categories if all fields are less than 65 characters wide. If more than 14 categories exist, the system will bring up successive screens after you answer that you are satisfied with the current entry.

Changing Site Data After it is Written to Disk. You can change site data by terminating the input session (described before), choosing **Option 5: Input New Data or Edit Existing Data** on CRIS's Main Menu, and pressing **M** when asked if you wish to add or modify data. More about this is described in the next section.

Modifying Data

Existing data may be modified by choosing **Option 5: Input New Data or Edit Existing Data** on CRIS's Main Menu. The Add or Edit Data Menu will appear. Type **M** or select **Modify Existing Data** using the arrow key or mouse.

Wednesday 01/28/93	9:47:22 am
Cultural Resources Information System	
ADD OR EDIT DATA	
Selected Database: C:\CRIS\DATA\FPOLK	
This Function Adds New Data and/or Modifies Existing Data.	
Do You Wish To	Add New Data Modify Existing Data Browse Quit

After selecting **M** you will be asked, "Do you wish to view all categories, even across multiple pages?" This option allows you to move through multiple pages within the database.

Do you wish to view all categories, even across multiple pages?

Yes < No >

The next screen prompts you to enter the number of the record to be edited. The system will then try to locate the desired record. If CRIS cannot find the requested record number, a message to that effect will appear at the bottom of the screen. You will have the opportunity to enter a new number.

Enter the Number of the Record You Wish to Change :

If you are unsure of a specific record number, enter a ?. A browse window will appear as follows that displays all record information. Use the arrow keys to scroll the window for the selected record. Highlight the record and press **Esc**. The record you chose from the window will appear on the screen and is ready to be edited.

This Function Adds New Data and/or Modifies Existing Data.

FPOLK Press Escape When You Have Found The Record					
Siteno	Utdesig	Parish	Zone	Northing	Easting
16UM334	NWR80 - Prehistoric	JU	15	3435	494200
16UM335	NWR81 - Prehistoric	UN	15	3435518	494048
16UM336	NWR82 - Historic	UN	15	3435388	494378
16UM337	NWR83 - Historic	UN	15	3434868	494158
16UM338	NWR84 - Prehistoric & RR Grade	UN	15	3434668	8
16UM339	NWR85 - Prehistoric.	UN	15	3435888	493768
16UM34	PPAS 876-11-38-4	UN	15	3434988	478158

You can use **Ctrl F (find)** to locate a value within the highlighted category/field if there are a lot of records to scroll through. Type in the value, select check box options, and choose find to locate specific record information.

Look For: [REDACTED]

☒ Ignore case
☐ Match words
☐ Wrap around

< Find > < Cancel >

When the system finds the record number, the screen clears again and the category layout appears as follows. The layout consists of the record number at the top, which cannot be changed, and all category names. Each category name is followed by values within inverse video bars. The window at the bottom of the screen displays editing options. Pressing **E** will begin the process for editing the data in this record. Pressing **F** will allow CRIS to go to the next (following) numbered record. Pressing **B** will cause CRIS to go to the preceding numbered record. Pressing **A** will let you choose any other record. Pressing **D** will begin the short process for deleting for the current record shown. Pressing **M** allows you to import ASCII files into the Memo field or export the Memo field to an ASCII file. Pressing **Q** will bring the Main Menu back. Pressing **N** will put the cursor at the first value, ready to be edited. Pressing **Y** will cause a "Help Window" to appear at the bottom of the screen.

Wednesday 01/28/93		12:14:23 pm	
Cultural Resources Information System			
Record Number: 1		Page 1	
Selected Database: C:\CRIS\DATA\TPOLK			
SITENO	: 16UN334		
OTDESIG	: NWNB8 - Prehistoric		
PARISH	: JU		
ZONE	: 15		
NORTHING	: 3435		
EASTING	: 494200		
CULTAPPL	: PU:WAR:MI:IN		
REMARKS	:		
DESCRIPT	: memo		
Edit Forward Back Another Record Delete Record Memo In/Out Quit			

Pressing **E** will begin the process of editing a record. You edit record data by typing over values for each category. Cursor movements are invoked in the same manner as described in the previous section. Pressing the <Space> bar will overwrite existing values with blanks. Nondestructive movement within a category value may be accomplished by using the left and right arrows on the keyboard. The up arrow moves the cursor up one category; the down arrow moves the cursor down one category.

Modifying and Saving Memos. To modify a record memo, press **E** to begin the editing process. Move the cursor to the memo field and press **F2** as suggested at the message line at the bottom of the following edit screen:

Wednesday 01/20/93		12:16:20 pm	
Cultural Resources Information System			
Record Number: 1		Page 1	
Selected Database: C:\CRIS\DATA\FPOLK			
SITENO	:	16UN334	
OTDESIG	:	NWR80 - Prehistoric	
PARISH	:	JU	
ZONE	:	15	
NORTHING	:	3435	
EASTING	:	494200	
CULTAFL	:	PU:WAR:NI:IN	
REMARKS	:		
DESCRIPT	:	memo	
Press {F2} to Edit Memo, {F10} to Save Memo			

After pressing **F2**, the memo window will appear as follows and you can begin adding or modifying information within the window. Refer to **Windows** in the **User Interface** section for window screen controls options.

When you are finished adding or modifying information in the memo window, press **F10**. You will return to the **Modify Data-Edit Screen** to continue modifying records.

Finishing Up. When you are finished modifying data for the last category of a record, a prompt will appear on the bottom of the screen: "Are You Satisfied with this Entry? (Y or N)." If you type **N**, the cursor returns to the first category of the record on the screen. If you type **Y**, you have the option to continue modifying records using **E, F, B, A, D, and M**.

When you are finished modifying records, select **Q** to return to the Main Menu.

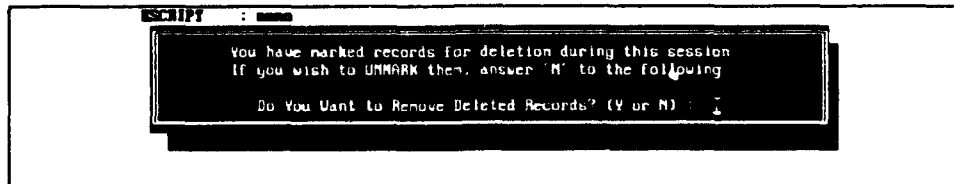
Deleting Records. You can mark a record for deletion by highlighting **Delete Record** at the bottom of the screen as follows and pressing **Enter** or typing **D**.

Thursday 01/28/93		1:38:27 pm	
Cultural Resources Information System			
*** DELETED ***		Record Number: 1	Page 1
Selected Database: C:\CRIS\DATA\FPOLK			
SITENO	: 16UN334		
DTDESIG	: NWR80 - Prehistoric		
PARISH	: JU		
ZONE	: 15		
NORTHING	: 3435		
EASTING	: 494200		
CULTAFFL	: PU:WAR:NI:IN		
REMARKS	:		
DESCRIPT	: NCR0		
Edit Forward Back Another Record Delete Record Memo In/Out Quit			

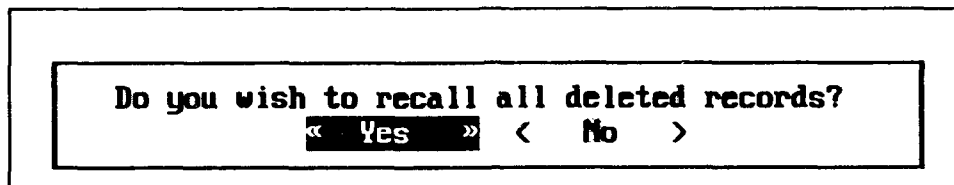
The following window will appear that warns you of selected files for deletion: "This option will permanently **DELETE** this record. Are You **SURE** You Want to Delete? (Y or N)." If you enter **Y**, the record will be marked for deletion. You can continue to edit or delete records using the options at the bottom of the screen.

DESCRIPT : NCR0
This Option Will Permanantly DELETE This Record. Are You SURE You Want to Delete? (Y or N) :

When you exit CRIS by selecting **Quit**, you will be given the option in the following prompt to unmark records that are marked for deletion by selecting **N**. If you choose **Y**, records will be deleted. A popup window will appear at the top right of the screen with the message that deleted records are being removed. After records are deleted you will return to the Main Menu of CRIS.

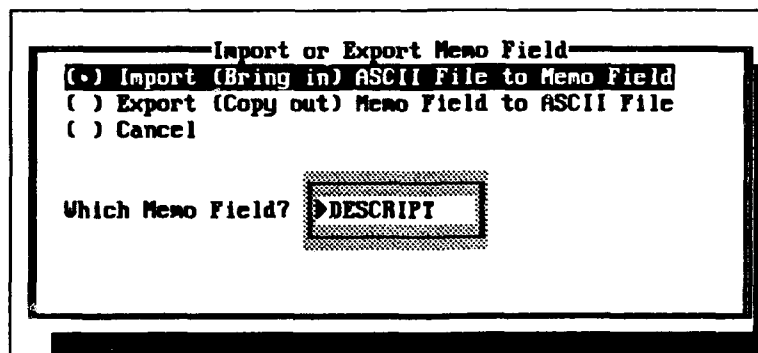


If you chose **N**, the following screen will appear that allows you to recall all deleted records. If you enter **Y**, records marked for deletion will be restored and you will return to the Main Menu of CRIS.



If you don't remove or recall deleted records, they will remain in the database flagged for deletion.

Memo In/Out. CRIS gives you the option of importing and exporting ASCII files by selecting **memo in/out** from the editing options at the bottom of the screen. To import an ASCII file into a Memo field, select the first push button on the screen as shown next. Choose which Memo field you want to import to by pressing **Enter**; a popup list of available fields will appear. If there is only one Memo field to import into, you will not be able to access a popup. The available memo field will be displayed in the box.



The next screen will display the memo field you wish to import to. You will be prompted to enter the name of the file you wish to import.

A screenshot of a 'Select File' dialog box. The title bar reads 'Select File'. Below the title bar, the text 'Import To Memo Field DESCRIPT' is displayed. Below this, the text 'From Which File?' is followed by a black rectangular input field. At the bottom of the dialog box, there are two buttons: '< OK >' and '<Cancel>'.

If you want to see a list of available files to import, type a ? and select OK. A picklist of files will appear as follows. If the file you want to import doesn't have a .TXT extension, select **All Files** from the bottom of the screen to see a scroll list of files. You can locate files in other directories by selecting [..].

A screenshot of an 'Append From File Named:' dialog box. The title bar reads 'Append From File Named:'. Below the title bar, there is a list box containing the following items: '[..]', '[DATA]', 'DESCRIPT.TXT', and 'JUNK.TXT'. To the right of the list box, there are two labels: 'Drive' and 'Directory'. The 'Drive' label is next to a text box containing 'C'. The 'Directory' label is next to a text box containing 'CRIS'. Below these text boxes, there are two buttons: '< Open >' and '< Cancel >'. At the bottom of the dialog box, there is a checkbox labeled '[] All Files'.

Scroll the list to find the directory you wish to access and press **Enter**. If you select a file that is empty, a message will appear on the screen to that effect.

Friday 03/12/93 2:18:55 pm

Cultural Resources Information System

Record Number: 52 Page 1

SITEMO
OTDESIG
PARISH
ZONE
NORTHING
EASTING
CULTAPPL
REMARKS
DESCRIPT

Append From File Named:

[PLAY]
[SCREEN]
[TURBO]
[VIRUS]
[ULINKFB]
[WIN386]
[WINDOWS]
[WPS1]
[XTREE]

[] All Files

Drive

Directory

If you want to export a memo to an ASCII file, choose the second option on the following screen:

Import or Export Memo Field

☒ Import (Bring in) ASCII File to Memo Field
☐ Export (Copy out) Memo Field to ASCII File
☐ Cancel

Which Memo Field? ▶DESCRIPT

69

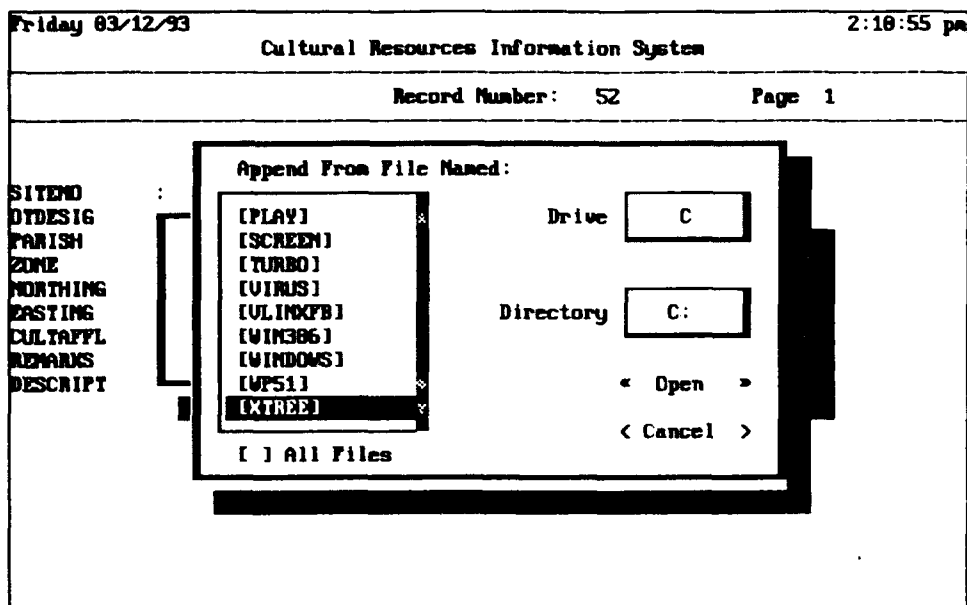
Enter the name of the ASCII file you wish to export the Memo field to. Again, you can access a list of files by typing a ? and selecting OK.

A screenshot of a 'Select File' dialog box. The title bar reads 'Select File'. Inside the box, the text 'Import To Memo Field DESCRIPT' is displayed. Below this, the prompt 'From Which File?' is followed by a blacked-out text field. At the bottom, there are two buttons: '< OK >' and '<Cancel>'.

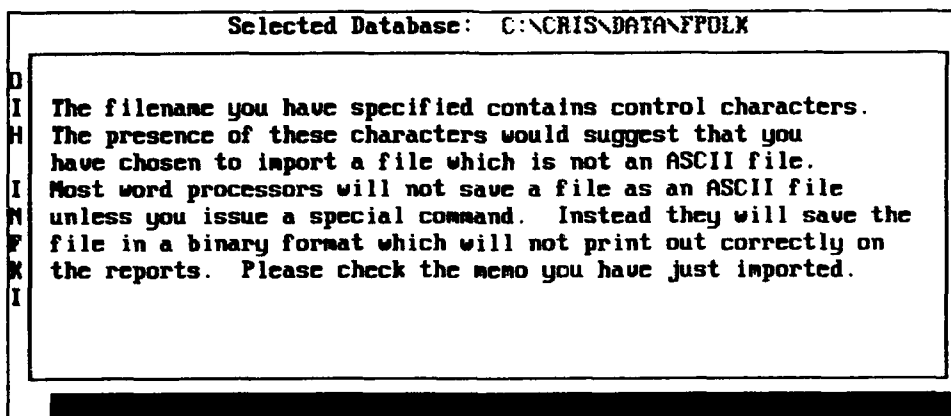
If the file you want to export doesn't have a .TXT extension, select **All Files** from the bottom of the following screen to see a scroll list of files. You can locate files in other directories by selecting [..].

A screenshot of an 'Append From File Named:' dialog box. The title bar reads 'Append From File Named:'. On the left, there is a scrollable list box containing the following items: '[..]', '[DATA]', 'DESCRIPT.TXT', and 'JUNK.TXT'. To the right of the list box, there are two labels with corresponding input fields: 'Drive' with a field containing 'C', and 'Directory' with a field containing 'CRIS'. Below these fields are two buttons: '< Open >' and '< Cancel >'. At the bottom left of the dialog, there is a radio button next to the text '[] All Files'.

Scroll the list to find the directory you wish to access and press **Enter**.



The following is an example of what happens when you import a word processing document that was not saved as an ASCII file. CRIS will save the file in the Memo field and display this screen to warn you that you may have made a mistake.¹⁰



¹⁰ To save a WordPerfect 5.1 file as an ASCII file, press Ctrl F5 and choose a generic word processor.

Browse

Browse can be used to view existing data by selecting **Option 5: Input Data or Edit Existing Data** from the Main Menu. Use the arrow keys to select browse and press **Enter**, type **B**, or use the mouse to highlight your option.

```
Thursday 01/28/93                               1:56:56 pm
Cultural Resources Information System
ADD OR EDIT DATA
Selected Database: C:\CRIS\DATA\PPOLK

This Function Adds New Data and/or Modifies Existing Data.
Do You Wish To  Add New Data  Modify Existing Data  Browse  Quit
```

The following screen allows you to mark categories that you want to appear in the browse window. You can move around on the screen by using the mouse or arrow keys. Mark check boxes by pressing **Enter** or click on the left mouse button. When you are done marking categories, press **Enter** or use the mouse to click on the « **Done** » button located in the top right corner of the screen.

```
Thursday 03/04/93                               12:41:25 pm
Cultural Resources Information System
ADD OR EDIT DATA: BROWSE
Selected Database: C:\CRIS\DATA\PPOLK
DONE

Please mark the categories that you want to appear in the browse

[X] SITEID  [X] OTDESIG  [X] PARISH  [ ] ZONE    [ ] NOTHING
[ ] EASTING  [X] CULTAPPL  [X] REMARKS  [X] DESCRIPT

Are you done selecting categories?
Yes < No >
```

After marking categories, you will be asked, "Are you done selecting categories?" Select **N** if you want to mark or unmark categories before continuing. Select **Y** to continue browse.

Are you done selecting categories?

« **Yes** » < No >

CRIS will ask if you want to display the memo field description in a separate window. If you choose **Y**, you can open a memo field side by side with the browse window.

Display the Memo Field DESCRIPT in a separate window?

« **Yes** » < No >

Once desired categories are marked, you are prompted to select sort categories: "Sort on what category?" A popup of categories appears on the screen as follows. The arrow keys or mouse can be used to highlight the category selected for sort. When you have selected the category, press **Enter** to continue.

Friday 01/29/93
9:05:29 am

Cultural Resources Information System

ADD OR EDIT DATA: BROWSE

Selected Database: C:\CRIS\DATA\FPOLK

Please mark the categories that you want to appear in the browse

☒ SITENO

☐ EASTING

☒ OTDESIG

☒ CULTAPPL

☐ PARISH

☐ REMARKS

☐ ZONE

☒ DESCRIPT

☐ NORTHING

Sort on What Category:

SITENO

OTDESIG

PARISH

ZONE

NORTHING

EASTING

CULTAPPL

REMARKS

After selecting the sort category, you will be asked, "Are you done selecting sort categories?" Enter N if you want to reselect the sort category. Enter Y if you are satisfied with your sort selection.

Are you done selecting sort categories?
☒ Yes ☐ No

You have the option of changing data in browse by selecting Y from the following window prompt. To edit in browse, simply find the areas you want to change and edit.

Do you want to be able to change the data in browse?
☒ Yes ☐ No

The following screen illustrates what a browse window and Memo field window will look like on screen. To close the browse session, click on the () in the top left hand corner of the screen.

Thursday 04/22/93		11:34:27 am	
Cultural Resources Information System			
ADD OR EDIT DATA: BROWSE			
Selected Database: C:\CRIS\DATA\FPOLK			
FPOLK		DATAPAGE.DESCRPT	
Siteno	Dttdesig		
16UN334	NWR80 - Prehistoric		
16UN335	NWR81 - Prehistoric		
16UN336	NWR82 - Historic		
16UN337	NWR83 - Historic		
16UN338	NWR84 - Prehistoric & AR		
16UN339	NWR85 - Prehistoric.		
16UN34	FPAS #76-11-30-4		
16UN35	FPAS #76-11-20-2		
16UN36	FPAS #76-11-21-1		
16UN37			
16UN38	FPAS #76-12-1-3		
16UN39	FPAS #76-12-2-5		

Input New Codes or Edit Existing Codes

Codes are abbreviations for phrases that you want entered consistently in your database. Codes can be used to develop on-line context-sensitive help for the data entry screen. Codes and definitions that have been entered can be modified and new codes and definitions can be added to a category of a database by selecting **Option 6: Input New Codes or Edit Existing Codes** from the Main Menu.

After selecting **Option 6** from the Main Menu, the Set Up Code Definitions Menu will appear. This menu gives you the option to add new codes, modify existing codes, and browse.

Wednesday 03/03/93	Cultural Resources Information System	3:52:50 pm
SET UP CODE DEFINITIONS		
Selected Database: C:\CRIS\DATA\FPOLK		
Do You Wish To	Add New Codes	Modify Existing Codes Browse Quit

Add New Codes

To add new codes, select **Add New Codes** from the Set Up Code Definitions Menu. The next screen will ask you to enter the name of the category you wish to add codes to. Use the arrow keys to select the category and press **Enter** or double click on the desired category using the mouse.

Wednesday 03/03/93		3:54:32 pm	
Cultural Resources Information System			
SET UP CODE DEFINITIONS			
Selected Database: C:\CRIS\DATA\PPOLK			
Enter Name of Category: SITENO OTDESIG PARISH CULTAPFL REMARKS			
SITENO	OTDESIG	CULTAPFL	REMARKS

After selecting the category, you will be prompted to type in the code and description you wish to use and press **Enter**.

Wednesday 03/03/93		3:55:51 pm	
Cultural Resources Information System			
SET UP CODE DEFINITIONS			
Category: SITENO			
Code:			
Description:			
Use asterisks (*) in this field to designate description-only help			

A window will appear at the bottom of the screen that asks if you wish to add more codes. If you select **Y**, repeat the process of adding codes and definitions. If you select **N**, you will return to the Main Menu of CRIS. If you wish to add codes to a different category, you need to begin the process by selecting the desired category.

Wednesday 03/03/93		3:59:29 pm	
Cultural Resources Information System			
SET UP CODE DEFINITIONS			
Category: SITENO			
Code:			
Description:			
Do You Wish to ADD MORE Codes for SITENO? Yes < No >			
Use aster			ly help

Modify Existing Codes

After choosing **Option 6** from the Main Menu of CRIS, use the arrow keys or mouse to select **Modify Existing Codes** from the Set Up Code Definitions Menu.

Thursday 03/04/93		10:43:16 am	
Cultural Resources Information System			
SET UP CODE DEFINITIONS			
Selected Database: C:\CRIS\DATA\FPOLK			
Do You Wish To Add New Codes Modify Existing Codes Browse Quit			

The following screen displays a picklist of categories to choose from to modify codes. Select a category using the arrow keys and press **Enter**, or use the mouse. In this example **SITENO** was selected. The **SITENO** category has no codes. A window on the top right of the screen indicates that no codes exist within this category. Press a key to remove this window.

Thursday 03/04/93 10:45:23 am

Cultural Resource

SET UP CO

There Are NO Codes for this Category

Selected Database: C:\NCRIS\DATA\FPOLK

Enter Name of Category:

SITENO	OTDESIG	CULTAFL	REMARKS
SITENO	OTDESIG		
PARISH			
CULTAFL			
REMARKS			

After selecting the category and pressing **Enter**, a picklist of codes for the selected category will appear. Use the arrow keys to select the code you wish to modify and press **Enter**, or double click on the desired category. In this example the code **ANT** was selected from the category **CULTAFL**.

Friday 03/12/93 9:55:47 am

Cultural Resources Information System

SET UP CODE DEFINITIONS

Selected Database: C:\NCRIS\DATA\FPOLK

Enter Code to Change:

ANT
BA
CAD
CC
EX
HI
HU
IN
IS
MAR
MI
MS
NI

The next screen displays the code and definition you selected. The menu at the bottom of the screen gives you several options for modifying codes and definitions, e.g., **Edit**, **Forward**, **Back**, **Another Record**, **Delete Record**, and **Quit**.

Friday 03/12/93	Cultural Resources Information System	9:57:49 am
SET UP CODE DEFINITIONS		
Category: CULTAFFL		
Code:	ANT	
Description:	Antebellum	
Edit Forward Back Another Record Delete Record Quit		

Use the identified hot keys, arrow keys, or mouse to select edit options. **Edit** moves the cursor to the beginning of the **code** field. Simply type in your revision and press **Enter** to move to the **Description** field. Selecting **Forward** will bring up the next code to modify. **Back** will bring up the preceding code for modification. **Another Record** will prompt you to select the next code to change. **Delete Record** will delete the code and definition that appear on screen. When you are finished modifying codes, select **Quit** to return to the Main Menu of CRIS.

Browse

Browse lets you view existing codes and definitions for specific categories. Select **browse** from the Set Up Codes and Definitions Menu and press **Enter**.

Thursday 03/04/93	Cultural Resources Information System	11:04:43 am
SET UP CODE DEFINITIONS		
Selected Database: C:\CRIS\DATA\PPOLK		
Do You Wish To Add New Codes Modify Existing Codes Browse Quit		

Select the category you wish to browse using the arrow keys or mouse.

Friday 03/12/93	Cultural Resources Information System	10:02:27 am							
SET UP CODE DEFINITIONS									
Selected Database: C:\CRIS\DATA\PPOLK									
Enter Name of Category:									
SITENO	OTDESIG	<table border="1"><tr><td>SITENO</td></tr><tr><td>OTDESIG</td></tr><tr><td>PARISH</td></tr><tr><td>CULTAFFL</td></tr><tr><td>REMARKS</td></tr></table>	SITENO	OTDESIG	PARISH	CULTAFFL	REMARKS	LTAFPL	REMARKS
SITENO									
OTDESIG									
PARISH									
CULTAFFL									
REMARKS									

CRIS gives you the option of changing the data during your browse session. After entering the category you wish to browse, the following popup will appear:

Do you want to be able to change the data in browse?

< >

Choose **Y** to modify codes and definitions during your browse session. Select **N** if you simply want to browse codes and definitions. In the following example, codes for the FPOLK, CULTAFFL Category are displayed:

Friday 03/12/93

10:00:44 am

Cultural Resources Information System

SET UP CODE DEFINITIONS

Selected Database: C:\CRIS\DATA\FPOLK

Codes for FPOLK		
Category	Code	Description
CULTAFFL	ANT	Antebellum
CULTAFFL	BA	Baytown
CULTAFFL	CAD	Caddo
CULTAFFL	CC	Coles Creek
CULTAFFL	EX	Historic Exploration (1541-1843)
CULTAFFL	HI	Historic Indian Contact
CULTAFFL	HU	Historic Unknown
CULTAFFL	IN	Industry-Modern (1890-1940)
CULTAFFL	IS	Issaquena
CULTAFFL	MAR	Marksville
CULTAFFL	MI	Meso-Indian (Archaic)
CULTAFFL	MS	Mississippian
CULTAFFL	NI	Neo-Indian (unknown)

When you are satisfied with your browse session, select the window control at the top left corner to close the window and return to the Main Menu of CRIS.

7 Search and Retrieval Menu

The **Search and Retrieval Program** can be executed by selecting **Option 7: Search and Retrieve Data** from the Main Menu and pressing **Enter**. The Data Search and Retrieval Menu will appear as follows:

Search and Retrieval Menu	
Wednesday 02/03/93	11:14:57 am
Cultural Resources Information System	
DATA SEARCH & RETRIEVAL	
Selected Database: C:\CRIS\DATA\FPOLK	
0 Record(s) Currently Selected.	
Quit	
Begin a New Search	Display Column Report
New Search by Selecting Memos	Display Category Values
New Search using XBase Command	Display Value Tabulation
Continue a Search	Print Selected Records
Search Macros (Save or Restore)	Report/Label Generator
Display Search History	Perform Calculations
Display Data Structure	
View/Edit Selected Records	
Copy Selected Records to New Database	
H. Help	

Searching Concepts

The primary use of the Search and Retrieval Program involves selecting cultural resource records based on desired values and producing output from the results of these selections. CRIS uses a combination of Boolean operators and operator symbols to select desired records. The selection process is called a search. You have five options for a search: **Begin a New Search**, **New Search by Selecting Memos**, **New Search Using XBase Command**, **Continue a Search**, and **Search Macros (Save or Restore)**. If you choose to **begin a new search**, all effects of previous searches are erased. To operate the search options of CRIS, you must first have a basic understanding of Boolean operators and operator symbols. Operator symbols will be discussed first.

Operator Symbols (=, \$, < >, >=, <=)

Operator symbols are used to "compare" the search value that you input with the actual values in the specified database category. The =, < >, >=, <= symbols are used on numeric values, including dates.

The **equal sign** (=) is used in the same manner as in mathematics. It is used primarily on numeric values. Simply put, it tells CRIS to select records where the actual category value matches the "test" value. No data types are logical.

The **dollar sign** (\$) is used to perform a "string" search. It compares the test value with any portion of the actual category value. For example, test values of "stones", "rock", and/or "one" will pull up the actual category value of "rocks and stones". The word one is included in the word stones. String searches are quite useful when multiple values exist in a single category. String searches are only allowed on character values.

The **not equal symbol** (< >) is the opposite of the equal sign. It tells CRIS to select those records that do not match the test value. It is used on numeric values.

The **greater than symbol** (>) is used on numeric values. It tells CRIS to select those records that have a category value numerically greater than the test value.

The **greater than or equal to symbol** (>=) is used on numeric values. It tells CRIS to select those records that have a category value numerically greater than or equal to the test value.

The **less than symbol** (<) is also used on numeric values. It tells CRIS to select those records that have a category value numerically lower than the test value.

The **less than or equal to symbol** (<=) is used on numeric values. It tells CRIS to select those records that have a category value lower or equal to the test value.

Boolean Search Commands ("and", "or", "except")

The Boolean operator **"and"** constricts a search. It selects from previously selected records those that have the specified value in the specified category.

The Boolean operator **"or"** expands a search. It adds to those records already selected all other records with the specified category value.

The **"except"** Boolean operator constricts a search by excluding records that have the value in the specified category from the previously selected records.

Example: If **Begin a New Search** is selected using FPOLK data and the following entries are made, nine records will be selected because each of them had a string (\$) search that matched ANT (antebellum).

Category	CULTAFFL
Operator	\$
Value	ANT
Boolean	< Return > key

Searching UTM Coordinates

Searching UTM coordinates can only be used during **Begin a New Search** and **Continue a Search**. Geographic searches may be performed by choosing **UTM** from the picklist Category prompt. If you are beginning a search, press the <Return> key in response to the Operator, Value, and Boolean prompt. If continuing a search, enter the desired Boolean operator at the Boolean prompt, **UTM** at the Category prompt, and <Return> key at the Value prompt.

You are prompted to enter four values: an upper northing value, a lower northing value, an upper easting value, and a lower easting value. The system then selects all records within those boundary values.

NOTE: A minimum of two UTM categories must be defined as numeric with the names **EASTING** and **NORTHING** to perform a geographic search.

A sample database, **FPOLK**, does have Easting and Northing UTM Coordinates. To perform a sample UTM search, return to the **CRIS Main Menu**, and select the **FPOLK** data base with option 2. Return to the **Retrieval Menu (Option 7)** and select a **UTM Search**. Input the values listed under the **Geographic Search** on the preceding page. **CRIS** will select 10 sites.

Continuing a Search

The above search can be continued by typing an **O** (Continue a Search) which brings up the Boolean options. If the following request using **or** as the Boolean is typed,

Boolean	OR
Category	ZONE
Operator	\$
Value	WEST

the total number of records selected would expand to 50 because these 50 records would either have the cultural affiliation **ANT** in the **CULTAFFL** category or **WEST** in the **ZONE** category, or both.

Search Options

Begin a New Search

Select **Begin a New Search** from the left side of the Data Search and Retrieval Menu using the mouse, arrow keys, or indicated hot key to initiate a search within a specified database.

The following screen will prompt you to select categories to begin a new search. In this example, **select all** will be used. When you are satisfied with your selection, choose the < > (not equal to) option at the bottom of the screen to return to the Data Search and Retrieval Menu to continue.

Wednesday 02/03/93 11:16:22 am

Cultural Resources Information System

BEGIN A SEARCH

Selected Database: C:\CRIS\DATA\FPOLK
0 Record(s) Currently Selected.

Condition # 1
('ALL' for All Records; 'UTH' for U.T.M. Search)

Category : 

Operator: = \$ <> > >= < <=

Value : 

Boolean : <> <AND> <OR> <EXCEPT>

New Search by Selecting Memos

Select **New Search by Selecting Memos** from the Data Search and Retrieval Menu using the arrow keys and pressing **Enter**, typing **m**, or double clicking on your option with the mouse.

The next screen prompts you to select a category for the search. In this example **descript** is the only category available. After selecting the category, enter the value and press **Enter**. You will return to the Data Search and Retrieval Menu when the search is completed.

Thursday 04/22/93 1:27:25 PM

Cultural Resources Information System

BEGIN A SEARCH BY SELECTING MEMOS

Selected Database: C:\CRIS\DATA\FPOLK
0 Record(s) Currently Selected.

Category : Condition # 1

Operator : & (Memo Contains)
Value :
Boolean : <> <AND> <OR> <EXCEPT>

New Search Using XBase Command

This **Begin a New Search** option was included in CRIS to enable advanced users to construct any search that could be done in the XBase language. When you choose **Begin a New Search**, the program helps you construct what is called in XBase terminology a FILTER CONDITION. The XBase command for selecting a group of records is "SET FILTER TO...", so a filter condition is a logical statement that describes the group of records you wish to select. A filter condition must always be constructed so that when a database record is compared to the filter condition, the software can say either "it matches" or "it doesn't match." In other words, the filter condition must evaluate to TRUE or FALSE. This command can also be used to instruct the software in the correct order of operations for evaluating the filter condition statement. The point and click Begin a New Search command may not give the intended search results for very complex conditions.

Some XBase command searches that are useful for Memo fields include:

EMPTY(category) = nothing in the field "category"
.NOT. EMPTY(category) = field (category) is not blank

Category is used to enter a field name such as BUILDNO.

When using **New Search Using XBase Command**, you need to think in mathematical terms. For example, the following calculations can give you two different results depending on what order you do the computations:

$8 + 5 * 10$
 $(8 + 5) * 10$
 $8 + (5 * 10)$

When defining the search command you need to think in mathematical terms. Depending on what results you are trying to achieve, use parentheses to define how the search is evaluated. For example, if you want to perform the search (CULTAFFL = "PU").or.(CULTAFFL="ANT").AND.(NORTHING >=25), this search command will give you all results, unlike the command (CULTAFFL = "PU".or.CULTAFFL="ANT").AND.NORTHING>=25), which will give you results for only empty description for either of the CULTAFFL.

Select **New Search Using XBase Command** from the Data Search and Retrieval Menu using the arrow keys or type **X**. The next screen prompts you to set the filter. In this example, **empty(descript)** is entered as the XBase Command. You can modify a previously executed search command (to make it more efficient) by removing unneeded case insensitivity (UPPER) command or group multiple conditions. If you want to do multiple searches, follow the order of operations. If you want to compare two condition groups, add parentheses. For example, if you want to search for buildings between 1 and 3 and buildings between 9 and 12, use parentheses and saving the search macro, restore the macro, answering **Y** to whether you want to modify the command, copying it to the clip board, and playing with the command in **Begin a New Search using XBase Command**.

You cannot do set filter to deleted () since the program adds AND NOT Deleted to your search condition automatically.

2:04:24 pm

Thursday 04/22/93 Cultural Resources Information System

BEGIN A NEW SEARCH USING XBASE SET FILTER COMMAND

Selected Database: C:\CRIS\DATA\FPOLK
0 Record(s) Currently Selected.

SITEID C 12 0	OTDESIG C 30 0	PARISH C 2 0	ZONE N 2 0
NORTHING N 7 0	EASTING N 7 0	CULTAFFL C 16 0	REMARKS C 55 0
DESCRIPT N 10 0			

SET FILTER TO

Press the TAB key to save command and exit text editing region

Continue a Search

Select **Continue a Search** from the Data Search and Retrieval Menu. This option gives you the opportunity to continue a search process that was already initiated during a session. None of the previous searches are erased.

The following screen allows you to select conditions for your search using **operator symbols** and **Boolean search commands**. In this example, CULTAFFL = PU was selected during the Begin New Search process as Condition #1. NORTHING is selected with >= to 25 as Condition #2.

```

Monday 03/15/93 11:09:56 am
Cultural Resources Information System

CONTINUE A SEARCH

Selected Database: C:\CRIS\DATA\PPOLK
26 Record(s) Currently Selected.

CULTAFFL = pu

Boolean : <> <AND> <OR> <EXCEPT> AND
Category : 
          ZONE
          >NORTHING

Operator: = $ <> > >= < <= Greater or Equal
Value : 100000

```

The next screen displays Condition #1 and #2 for a search and gives you the option of specifying another condition. When you are finished specifying search conditions, select < > to return to the Data Search and Retrieval Menu.

```

Monday 03/15/93 11:12:21 am
Cultural Resources Information System

CONTINUE A SEARCH

Selected Database: C:\CRIS\DATA\PPOLK
22 Record(s) Currently Selected.

CULTAFFL = pu .AND. NORTHING >= 100000

Boolean : <> <AND> <OR> <EXCEPT> AND
Category : 
          EASTING
          CULTAFFL

Operator: = $ <> > >= < <= Greater or Equal
Value : 100000

```

Search Macros (Save or Restore)

CRIS allows you to save or restore current search commands by selecting **Search Macros (Save or Restore)** from the Data Search and Retrieval Menu using the arrow keys or mouse, or typing **a**. Search Macros gives you the ability to save your current search command or restore a command that you saved to disk in a previous session.

The following screen is the Save or Restore Search Command Menu. To begin the process of restoring a search command, highlight the first option on the screen and press **Enter**.

Thursday 04/22/93	Cultural Resources Information System	1:36:46 pm
SAVE OR RESTORE A SEARCH COMMAND		
Selected Database: C:\CRIS\DATA\FPOLK		
This option will give you the ability to save your current search command or restore a command that you saved to disk in a previous session		
Restore a Search Command From Disk Save Current Search Command To Disk Quit back to Search & Retrieval Menu		

The next screen lists search names and commands. Use the arrow keys or mouse to highlight the search of your choice. Press escape to choose the search command you highlighted. In this example test2 is selected.

Friday 10/29/93	Cultural Resources Information System	10:28:21 am
SAVE OR RESTORE A SEARCH COMMAND		
Selected Database: C:\CRIS\DATA\FPOLK		
Press Escape To Choose a Search Command		
Name of Search	Search Command	
test2	(UPPER(CULTAFFL)= "PU") .AND. (NORTHING> 25)	
test	(UPPER(CULTAFFL)= "PU") .AND. (NORTHING)=25)	
test3	(UPPER(CULTAFFL)= "PU") .AND. (NORTHING)=25)	
test1	(UPPER(CULTAFFL)= "PU") .AND. (NORTHING)=25)	
	(UPPER(CULTAFFL)= "PU") .AND. (NORTHING)=25)	

The next screen asks: "Perform the Search 'test2'?" If you choose **no**, the search will end and you will return to the Data Search and Retrieval Menu. If you want to perform the specified search, choose **yes**.

Perform the Search 'test2'?

☒ Yes ☐ No

After selecting **yes**, the next screen gives you the option to edit the command. If you choose **no**, you will return to the Data Search and Retrieval Menu. If you choose **yes**, the text editing screen will appear.

Do you want to be able to edit the command?

☒ Yes ☐ No

When you are done typing in desired changes, press the **Tab** key to save the command and exit the text editing screen. You will then return to the Data Search and Retrieval Menu.

Thursday 04/22/93	1:59:06 pm
Cultural Resources Information System	
SAVE OR RESTORE A SEARCH COMMAND	
Selected Database: C:\CRIS\DATA\FPOLK	
SET FILTER TO	(UPPER(CULTOFFL) "PO") AND (NORTHING > 25)
Press the TAB key to save command and exit text editing region	

CRIS allows you to save a search by selecting **save current search command to disk** from the Save or Restore a Search Command Menu. The next screen displays the current search information and gives you the opportunity to name the command for future reference. After naming the command press F10. Your search command will be saved as a macro and you will return to the Data Search and Retrieval Menu.

Friday 04/23/93 5:36:57 am

Cultura

SAVE Name the Search. Press F10 when you're done.

Selected Database: C:\CRIS\DATA\FOLK

Available Search Commands

Name of Search	Search Command
test2	(UPPER(CULTAFFL)= "PU").AND.(NORTHING>=25)
test	(UPPER(CULTAFFL)= "PU").AND.(NORTHING>=25)
test3	(UPPER(CULTAFFL)= "PU").AND.(NORTHING>=25)
test1	(UPPER(CULTAFFL)= "PU").AND.(NORTHING>=25)
	(UPPER(CULTAFFL)= "PU").AND.(NORTHING>=25)
test4	(UPPER(CULTAFFL)= "PU").AND.(EASTING>=25)
	(UPPER(CULTAFFL)= "PU").AND.(EASTING<=40)

Display Search History

Selecting **Display Search History** from the Data Search and Retrieval Menu allows you to see the results of a search and is useful for keeping track of extended searches. The following screen prompts you to select the report destination to display a search history. You have three options: Screen, Printer, or File. Use the mouse, arrow keys, or press **Enter** to activate the desired radio button to select your option. After selecting the report destination, press **Enter**; the cursor will move to **OK**. Press **Enter** again to generate the report.

Report destination:

☒ Screen

☐ Printer

☐ File

C:\CRIS\DATA\REPORT1.TXT

< OK >

< Cancel >

In this example, the screen was selected for the report destination. You can also choose the printer or file as destinations for your report. If you choose file for your report destination, you must enter the path and name of the file.

The following screen is an example of a search history displayed on screen. When you are finished looking at the results, press any key to return to the Data Search and Retrieval Menu.

Wednesday 04/28/93		18:54:06 am
Cultural Resources Information System		
DISPLAY SEARCH HISTORY		
Selected Database: C:\CRIS\DATA\PPOLK		
Search		Results
1 CULTAPFL = pu		26
2 AND NORTHING > 100000		22
3 AND EASTING > 100000		22
UNDERLYING XBASE SEARCH COMMAND		
(UPPER(CULTAPFL)= "PU").AND.(NORTHING> 100000).AND.		
(EASTING> 100000)		
Press any key to continue ...		

Reporting Options

Display Column Report

Select **Display Column Report** from the Data Search and Retrieval Menu to view specified searches in report form.

After selecting Display Column Report, the following screen appears. You are prompted to mark categories that you want to appear in the report by using the arrow keys and **Enter** or the mouse for selection. You can edit your selection by typing **N** when the popup window asks if you are done selecting categories by following the same process. When you are finished selecting categories, place the mouse on the «Done» button in the top right corner of the screen, and type **Y** or select yes from the popup window at the bottom of the screen.

Tuesday 83/02/93		Cultural Resources Information System		8:58:36 am	
DISPLAY SEARCH RESULTS IN COLUMN REPORT					
Selected Database: C:\CRIS\DATA\FPOLK					
Please mark the categories that you want to appear on the report					
68 Characters Wide					
(X) SITENO	() OTDESIG	(X) PARISH	() ZONE	(X) NORTHING	
(X) EASTING	(X) CULTAFFL	() REMARKS	() DESCRIPT		
Are you done selecting categories?					
☒ Yes < No >					

A popup of sort categories will appear. Select the category you wish to sort on and press **Enter**.

Tuesday 83/02/93		Cultural Resources Information System		9:02:41 am	
DISPLAY SEARCH RESULTS IN COLUMN REPORT					
Selected Database: C:\CRIS\DATA\FPOLK					
Please mark the categories that you want to appear on the report					
88 Characters Wide					
(X) SITENO	() OTDESIG	(X) PARISH	(X) ZONE	() NORTHING	
() EASTING	(X) CULTAFFL	() REMARKS	(X) DESCRIPT		
Sort on What Category:					
SITENO OTDESIG PARISH ZONE NORTHING EASTING CULTAFFL REMARKS					

You can continue selecting categories for sort by selecting **N** when the prompt asks if you are done sorting. In this example, the second sort category is **zone**, which appears next to the Sort on What Category prompt.

Tuesday 03/02/93		9:06:04 am	
Cultural Resources Information System			
DISPLAY SEARCH RESULTS IN COLUMN REPORT			
Selected Database: C:\CRIS\DATA\FPOLK			
Please mark the categories that you want to appear on the report			« DONE »
88 Characters Wide			
[X] SITENO	[] OTDESIG	[X] PARISH	[X] ZONE [] NORTHING
[] EASTING	[X] CULTAFFL	[] REMARKS	[X] DESCRIPT
Sort on What Category: ZONE			
UPPER(SITENO)+STR(ZONE)			
Are you done selecting sort categories?			
« Yes » < No >			

When you are satisfied with your sort selection, choose **Y** when asked if you are done selecting sort categories. The next screen asks if you want to print the record number as well; Enter **Y**, and the record number will be included in the report.

Do you want to print the record number as well?
« Yes » < No >

The next screen will prompt you to enter the title of the report. Type in the title and press **Enter**.

Monday 03/15/93		11:26:31 am	
Cultural Resources Information System			

DISPLAY SEARCH RESULTS IN COLUMN REPORT			

Selected Database: C:\CRIS\DATA\FPOLK			
Please mark the categories that you want to appear on the report			
60 Characters Wide			
☒ SITENO	☐ OTDESIG	☒ PARISH	☐ ZONE ☒ NORTHING
☒ EASTING	☒ CULTAFL	☐ REMARKS	☐ DESCRIPT
Sort on What Category: ZONE			
STR(ZONE)			
Enter Title of Report :			
Title 1			

To display the column report, select the desired option from the report destination screen. A popup window will appear on the top right of the screen that tells you that the report is being generated. The report will manifest on screen, to the printer, or to the designated file.

Display Category Values

Select **Display Category Values** from the Data Search and Retrieval Menu using the arrow keys or mouse, or by typing **V** to display a list of all values in a particular category to the screen, printer, or specified file.

Select the name of the category you wish to use to display all its values for the current records of a search. In the following example, **CULTAFL** is selected:

Monday 03/15/93	Cultural Resources Information System	10:59:58 am
DISPLAY VALUES FOR A CATEGORY		
Selected Database: C:\CRIS\DATA\PPOLK		
Enter Category Name :	SITENO OTDESIG PARISH ZONE NORTHING EASTING (UTM ZONE) REMARKS	

When you are satisfied with your category selection, press **Enter** to select the report destination to display category values. Use the arrow keys, mouse, or **Enter** to activate the radio button for the desired report destination. In the following example, screen is selected. After selecting the report destination, press **Enter**. Select **OK**, and press **Enter** again.

Report destination:

☒ Screen

☐ Printer

☐ File

C:\CRIS\DATA\REPORT.TXT

< OK >

< Cancel >

A popup window that says **generating report** will appear at the top right of the screen. The report will appear, displaying category values for the specified database

Page No. 1
04/28/93

Date:

Time: 11:39:21

VALUES FOR THE CATEGORY:

CULTAFFL

ANT
CAD
HU
IN
MI
MI;NI
MI;NI;PO
MI;PU;PAL
NI
PAL;NI;HI

Display Value Tabulations

Choose **Display Value Tabulations** from the Data Search and Retrieval Menu using the arrow keys or mouse, or by typing **T**. This option performs a tabulation on value occurrences in a category that you choose. Tabulations are useful for performing frequency distributions and cross-tabulations on multiple categories. They may also be used to check on the consistency of data that has been recently inputted. Output of the tabulation report is formatted into 6 columns:

- **Column 1** contains the actual values in the selected category.
- **Column 2** lists the total number of occurrences of each category value among records in the entire database: number in database - A
- **Column 3** lists the occurrence of each category value among records selected from previous searches: number selected - B
- **Column 4** gives the percentage that selected value occurrence represents on the occurrence of that particular category value in the entire database: B/A .

- **Column 5** lists the percentage that selected value occurrence represents on all the values that have been selected.
- **Column 6** lists the percentage that value occurrences represent for the entire database.

Tabulations are performed on values. If delimiters (,) are used, more than one value may exist within the same category in one record. Column 5 takes the number in column 3 and divides it by the total number of value occurrences that have been selected (total of column 3). Column 4 takes the same number in column 3 and divides it by the number of occurrences for that value in column 2. The total number of value occurrences in the category is calculated by adding all numbers in column 2.

Besides obtaining frequency distributions on value occurrences within a category, the tabulation function may be used to do cross-tabulations. This is done by first selecting a group of records through one or more searches and then using **display value tabulations**. The following screen asks you to identify the category name you wish to use. In this example CULTAFFL is selected:

Monday 03/15/93		10:57:30 am	
Cultural Resources Information System			
DISPLAY VALUE TABULATION			
Selected Database: C:\CRIS\DATA\PPOLK			
Enter Category Name :		SITENO OTDESIG PARISH ZONE NORTHING EASTING CULTAFFL REMARKS	

You will be prompted in the next screen to enter the title of the report for displaying value tabulations. Entering a title is optional. You are given enough space to have a two-line title. When you are finished typing in the title, press **Enter**.

Monday 03/15/93	10:59:19 am
Cultural Resources Information System	
DISPLAY VALUE TABULATION	
Selected Database: C:\CRIS\DATA\PPOLK	
Enter Category Name : EULPHEE	
Enter Title of Report :	
Title 1	
Title 2	

The report destination screen will appear next. Select screen, printer, or file, then press **Enter**. Select **OK** and press **Enter** to generate the report to display value tabulations.

Report destination: ☒ Screen ☐ Printer ☐ File C:\CRIS\DATA\REPORT.TXT < OK > < Cancel >

Print Selected Records

Select **Print Selected Records** from the Data Search and Retrieval Menu using the arrow keys or mouse, or by typing **r**.

The following screen allows you to select multiple categories to appear in your report. When you are done selecting categories, use the mouse to select « Done » from the top right on the screen or select **Y** from the popup window at the bottom of the screen.

Wednesday 03/03/93 9:25:36 am

Cultural Resources Information System

PRINT SELECTED RECORDS

Selected Database: C:\CRIS\DATA\PPOLK

Please mark the categories that you want to appear on the report

☒ ALL ☒ SITEID ☐ OTDESIG ☒ PARISH ☐ ZONE
☐ NORTHING ☐ EASTING ☒ CULTAPFL ☒ REMARKS ☒ DESCRIPT

Are you done selecting categories?

Yes < No >

The next screen asks you to identify what categories you want to sort on. After selecting the first category for sort, press **Enter**. The category will appear in a box above the category selections. A popup window at the bottom of the screen asks if you are done selecting sort categories. Choosing **N** gives you the opportunity to continue selecting categories for sort. Repeat the process until you have identified all the categories you want to sort, then select **Y**.

Wednesday 03/03/93 9:27:16 am

Cultural Resources Information System

PRINT SELECTED RECORDS

Selected Database: C:\CRIS\DATA\PPOLK

Please mark the categories that you want to appear on the report

☒ ALL ☒ SITEID ☐ OTDESIG ☒ PARISH ☐ ZONE
☐ NORTHING ☐ EASTING ☒ CULTAPFL ☒ REMARKS ☒ DESCRIPT

Sort on What Category:

SITEID
 OTDESIG
 PARISH
 ZONE
 NORTHING
 EASTING
 CULTAPFL
 REMARKS

After selecting categories, enter the title of the report as follows:

Wednesday 03/03/93	Cultural Resources Information System	9:30:12 am

PRINT SELECTED RECORDS		

Selected Database: C:\CRIS\DATA\FPOLK		
Enter Title of Report:		
FPOLK Database Report		

Choose the report destination you desire. You have two options: printer or file. If you choose printer for your report destination, make sure your printer is hooked up. If you choose file as your report destination, you will have to specify the path and file name you wish the report to go to, as follows:

<table border="1"><tr><td>Report destination:</td></tr><tr><td>() Quit</td></tr><tr><td>() Printer</td></tr><tr><td>(.) File</td></tr><tr><td>C:\CRIS\DATA\REPORT.TXT</td></tr><tr><td>« OK »</td></tr><tr><td>< Cancel ></td></tr></table>	Report destination:	() Quit	() Printer	(.) File	C:\CRIS\DATA\REPORT.TXT	« OK »	< Cancel >
Report destination:							
() Quit							
() Printer							
(.) File							
C:\CRIS\DATA\REPORT.TXT							
« OK »							
< Cancel >							

Report/Label Generator

The report generator displays information from a preselected database in report form. Select Report/Label Generator from the Data Search and Retrieval menu and press **Enter** or type **G**. The next screen prompts you to select the report or label option. Select your option by pressing **Enter** or use the mouse to mark the checkbox. Type in the name of the report and press **Enter**. Do not use spaces between words of a title (DOS filenames do not have spaces). In the following example the title FPOLKREP.FRX is used:

```
Friday 18/29/93                                18:42:17 am
Cultural Resources Information System

PRINT A PREDEFINED REPORT OR LABEL

Selected Database: C:\CRIS\DATA\FPOLK

Please select the report or label that you want to run

( ) Mailing Label
( ) Report Form

Report/Label Name: FPOLK1.FRX
```

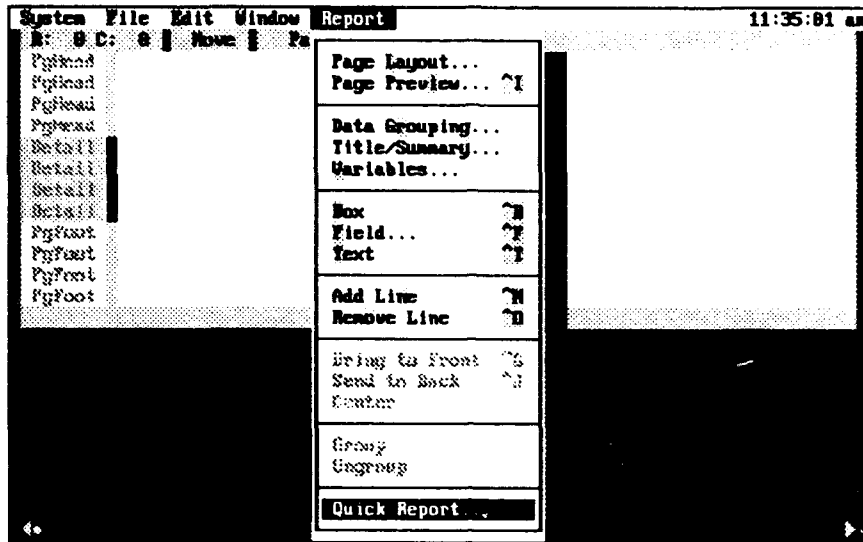
The following report form will appear on the screen. The report form is divided into three sections: PgHead, Detail Band, and PgFoot. The PgHead includes all information you want to appear at the top of each page, e.g., title, date, and page number. The Detail Band includes record information that fits the criteria for a specific report. PgFoot includes all information on the bottom of the report, e.g., page number.

```

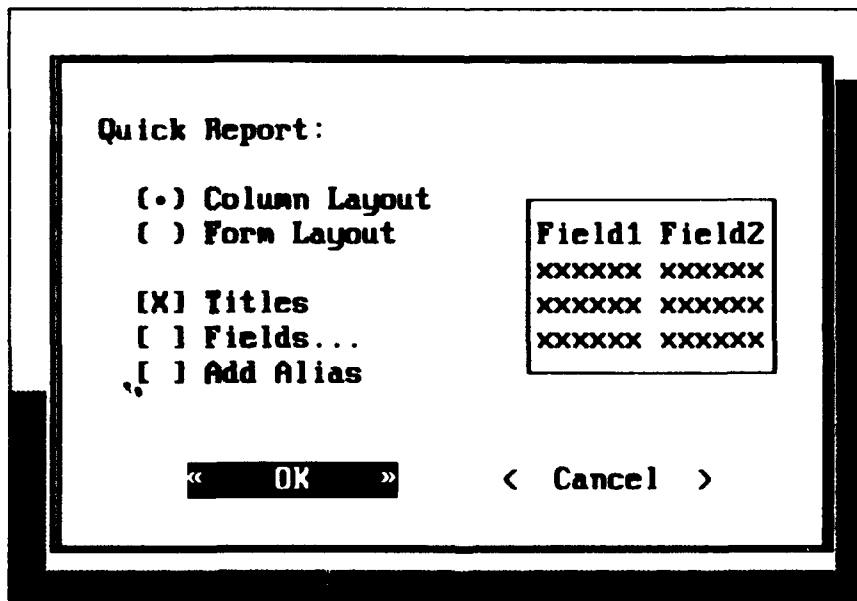
System File Edit Window Report
[ ]: 0 C: 0 [ ] Room [ ] Page Header [ ]
PgHead
PgHead
PgHead
PgHead
Detail
Detail
Detail
Detail
PgFoot
PgFoot
PgFoot
PgFoot

```

Press **Alt** to access the ALT Menu for options. Select **report** from the ALT Menu to access the **quick report** option.



The next screen prompts you to choose the layout for the quick report. In this example **Column Layout** and **Titles** are selected. Uncheck **Add Alias**; CRIS internally renames the database to a different alias than the report generator would add. If **Add Alias** is not unchecked, no data will print on the report.



The next screen displays FPOLKREPORT with all categories included:

```

FPOLKREP.FRM 11:49:09 am
R: 0 C: 0 Move Page Header
PgHead Siteo Otdesig Pa Zo Northin Easting Cultaffl Remarks
PgHead
PgHead
PgHead
Detail siteo otdesig pa zo northin easting cultaffl remarks
PgFoot
PgFoot
PgFoot
PgFoot DATE()

```

Remove Field Headings

If you decide not to include a field heading in your report you can remove the heading by placing the cursor on the field heading, pressing the spacebar to highlight the field, and pressing delete. To remove field headings with the mouse, double click on the field to highlight it and press delete.

Move Field Headings

The **Report Menu** gives you options to move field headings within a report with the keyboard or mouse. Place the cursor on the field heading, then press the space bar to select the field heading to be moved. Move the text with the arrow keys to the desired location and press **Enter**. To move fields using the mouse, point to the field, hold the left mouse button down, move the field heading to the desired location, and release the mouse button.

The following screen illustrates the results of removing the Otdesig field and moving all the fields to the left replacing the space where Otdesig was:

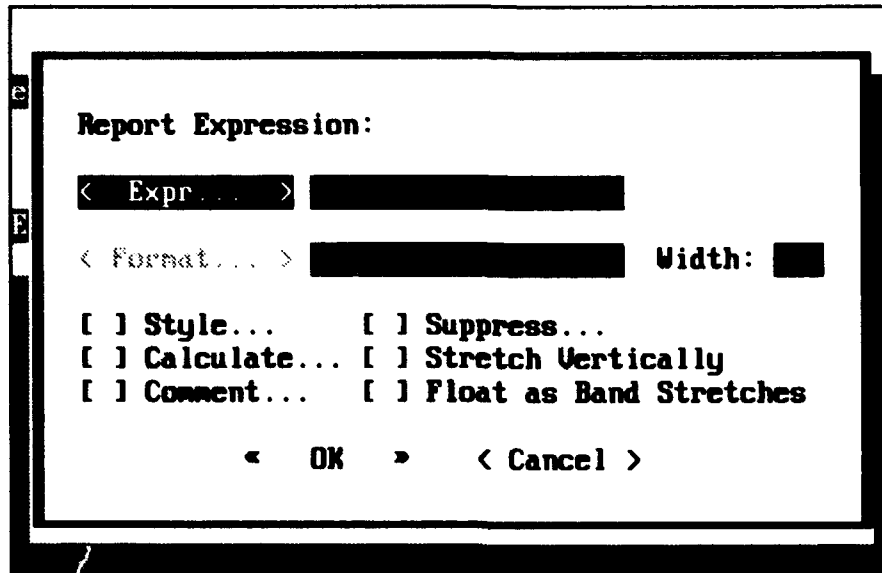
```

FPOLKREP.FRM 1:29:54 pm
R: 4 C: 59 Move Detail
PgHead Siteo Pa Zo Northin Easting Cultaffl Remarks
PgHead
PgHead
PgHead
Detail siteo pa zo northin easting cultaffl remarks
PgFoot
PgFoot
PgFoot
PgFoot DATE()

```

Add Field Headings

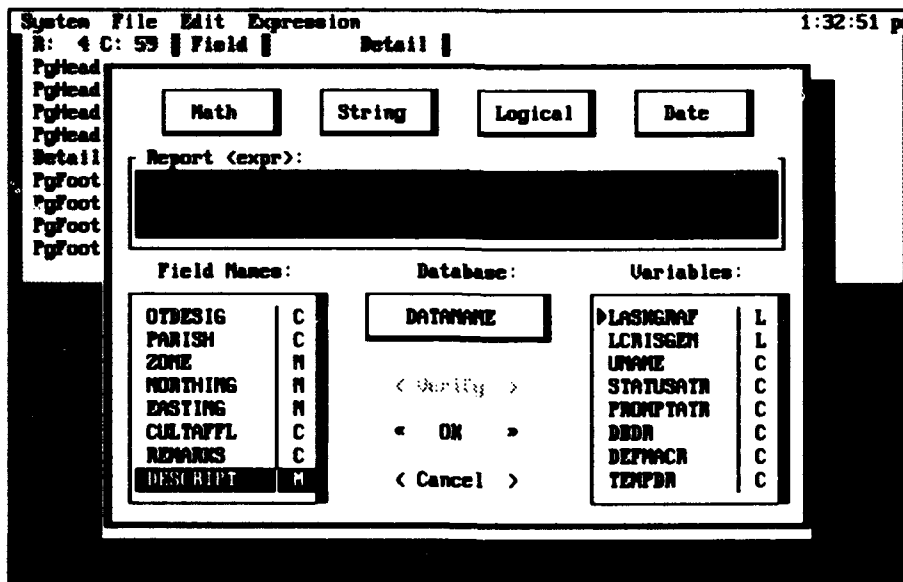
To add a field to your report, choose report from the ALT Menu, select **field**, and press **Enter**. The next screen is the report expression screen which allows you to choose options for the field you wish to add.



The image shows a 'Report Expression' dialog box. It has a title bar with 'E' and 'F' icons. The dialog contains the following elements:

- Report Expression:** (Title)
- < Expr... >**: A button to select an expression.
- < Format... >**: A button to select a format.
- Width:**: A text input field.
- Options:** A list of checkboxes:
 - ☐ Style...
 - ☐ Suppress...
 - ☐ Calculate...
 - ☐ Stretch Vertically
 - ☐ Comment...
 - ☐ Float as Band Stretches
- < OK >** and **< Cancel >**: Buttons at the bottom.

Access a popup of available fields by double clicking on the **Expr** push button or by pressing **Enter**. Use the **Tab** key to move forward through options and **Shift-Tab** to move backward through options on this screen. Move to the list of fields to select your field choice. Use the arrow keys on the right side of the fields box to scroll more fields. Press **Enter** or double click on the mouse to select the field you wish to add and press **Enter**. In the following example **descript** was selected:



The image shows the 'Report Expression' dialog box with a popup window for selecting fields. The popup has a title bar with 'System File Edit Expression' and a clock showing '1:32:51 PM'. It contains the following elements:

- Math**, **String**, **Logical**, **Date**: Buttons at the top.
- Report (expr):**: A text input field.
- Field Names:** A list of fields with their data types:

Field Name	Data Type
OTDESIG	C
PARISH	C
ZONE	N
NORTHING	N
EASTING	N
CULTAPPL	C
REMARKS	C
DESCRIPT	M
- Database:** A list of databases:

Database
DATAMINE
- Variables:** A list of variables with their data types:

Variable	Data Type
PLASNGRAF	L
LCRISGEN	L
UNAME	C
STATUSATR	C
PROMPTATR	C
DEDA	C
DEFMACH	C
TEMPOR	C
- < Verify >**, **< OK >**, and **< Cancel >**: Buttons at the bottom.

After pressing enter you will return to the report expression box. The field you selected in the previous procedure will be displayed. CRIS gives you options for customizing the field you are adding. In the following example **stretch vertically** is marked. Stretch vertically will hold all data in the field descriptor that exceeds the band size. When you have finished selecting options, select OK to go back to the report.

Report Expression:

< Expr... > **descript**

< Format... > Width: **21**

☐ Style... ☐ Suppress...

☐ Calculate... ☒ **Stretch Vertically**

☐ Comment... ☐ Float as Band Stretches

« **OK** » < Cancel >

Add or Remove Lines to Pghead, Detail, and Pgfoot Bands

To add lines to your report, position the cursor on the band you wish to add a line to. Select **report** from the ALT Menu, choose **add line** and press **Enter**. To remove lines, position the cursor on the band you wish to remove, choose **remove line**, and press **Enter**.

Creating and Centering Field Headings

To create field headings, place the cursor at the desired location within the PgHead area. Type the desired heading and press **Enter**. Remember to press **Enter** after each heading is entered so that if you choose to move a heading it will be separate from others. To center headings, place the cursor on the first letter of the title and press the space bar to highlight the heading. Press **Alt** or click on the right mouse button twice to access the **Report Menu**, and choose **center** to center the title.

While you are designing your report layout you may want to see how it looks with the data included. Access the ALT Menu and select **report**, choose **Page Preview** and press **Enter**. The report should appear with information from the specified database. The following screen displays the FPOLK Report. In this example a line was added to the report for the centered title:

2:15:23 pm

Preview

03/16/93

Fort Polk Report

Page 1

Siteno	Pr	Zc	Northin	Easting	Cultaffl	Remarks	Descript
16UN334	JU	15	3435	494200	PU:WAR:NI:I		
16UN335	UN	15	3435510	494040	PU		
16UN336	UN	15	3435300	494370	HU		
16UN337	UN	15	3434860	494150	HU		
16UN338	UN	15	3434660	0	PAL:NI:HI		
16UN339	UN	15	3435000	493760	MI:PU:PAL		
16UN34	UN	15	3434900	478150	MI:NI:PO		
16UN35	UN	15	3437300	477590	NI		
16UN36	UN	15	3437600	478000	UNK	No data.	
16UN37	UN	15	3436800	477575	UNK	No data.	
16UN38	UN	15	3437050	477800	PU:CC:TC:PO		
16UN39	UN	15	3436100	477910	PU		
16UN4	UN	15	0	0	PU		
16UN40	UN	15	3436875	478300	UNK	No data.	
16UN41	UN	15	3437225	478000	HU		

« Done » < More > Column: 0

If you want to continue revising your report, access the ALT Menu and select **Page Layout**.

Grouping Data

To begin the process of grouping data for a report access the ALT Menu, select **Report** and choose **Data Grouping**. The following screen will appear:

The screenshot shows a report titled "Pa Zo Northin Easting Cultaffl" with a "Remarks" column. A menu titled "Group:" is open, displaying a list of group numbers (1 through 8) on the left. On the right side of the menu, there are four options: "< OK >", "< Add >", "< Change >", and "< Delete >". The "< Add >" option is highlighted.

Select **Add** and press **Enter**. The group information screen will appear.

The screenshot shows a report titled "Fort Polk Report". A menu titled "Group Info:" is open, displaying a list of options: "< Group... >", "< OK >", and "< Cancel >". Below the "Options:" section, there is a list of five options: "< New Page", "< Swap Page Header", "< Swap Page Footer", "< Reprint Header", and "< Reset Page Number". At the bottom of the menu, there is a field labeled "# of rows following header:" with the value "0" entered.

Place the cursor on <Group...> and press **Enter** or double click on <Group...> to access a picklist of fields to choose from. In the following example **Parish** is selected. Select OK after choosing the field of your choice.

Math String Logical Date

Break (expr):

Field Names: Database: Variables:

SITENO	C	DATE	L
OTMISIG	C	DATE	L
PARISH	C	DATE	L
ZONE	N	DATE	L
MONTHING	N	DATE	L
EASTING	N	DATE	L
CULTAPPL	C	DATE	L
REPARKS	C	DATE	L

< Verify > OK < Cancel >

The next screen will display **parish**. Select OK to continue.

Fort Polk Report

Group Info:

< Group... > parish

Options:

[] New Page

[] Swap Page Header

[] Swap Page Footer

[] Reprint Header

[] Reset Page Number

< OK > < Cancel >

of rows following header: 0

When you are finished you will return to the FPOLK Report. Move the cursor to the Pghead you just added and type **Parish**, then highlight the field and press **Enter**.

Create Summary Band and Total Field

Access the ALT Menu, choose **Report**, and select **Title/Summary**. The next screen will prompt you to select title/summary bands. The **New Page** option will print the title/summary band on a separate page. In the following example the **summary band** check box is marked and **new page** is unmarked. A new summary band will be created and it will remain on the same page as the report information.

Report Title:

☐ Title Band
☐ New Page

< OK >

Report Summary:

☒ Summary Band
☐ New Page

< Cancel >

Add a line in the first summary band to divide the total by placing the cursor on the first summary band and selecting **box** from the ALT Menu-Report. In this example, the cursor is placed on the Northing summary band. Select field from Report (ALT). Type in the expression Northing, mark the check box **calculate**, and select OK.

Report Expression:

< Expr... > Northing

< Format... > Width: 7

☐ Style... ☐ Suppress...

☐ Calculate...

☐ Comment...

< OK > < Cancel >

Select **sum** from the next screen and choose OK.

Reset:	End of Report	
Calculate:	☐ Nothing ☐ Count ☒ Sum ☐ Average ☐ Lowest ☐ Highest ☐ Std. Deviation ☐ Variance	< OK > < Cancel >

The report expression screen will reappear. Choose OK to continue. The following screen displays the report with the summary band and total line:

N: 13 C: 19 Move Summary
 PgHead 001E0 Fort Polk Report
 PgHead
 PgHead Siteno Pa Zo Northin Easting Cultaffl Remarks Descript
 PgHead
 PgHead
 ri-paris Parish: Pa
 Detail siteno pa zo northin easting cultaffl remarks descript
 ri-paris
 PgFoot
 PgFoot
 PgFoot
 PgFoot
 Summary
 Summary northin

To view your report, access the ALT Menu, select report, and choose page preview. The following screens (pages 1 and 3) illustrate additions and changes you have made to customize your report:

3:36:45 pm

Preview

03/16/93 Port Folk Report Page 1

Site no	Pa	2o	Northin	Eastng	Cultaffl	Remarks	Descript
Parish: JU							
16UN334	JU	15	3435	494288	PU:WAR:NI:I		
Parish: UN							
16UN335	UN	15	3435518	494848	PU		
16UN336	UN	15	3435388	494378	HU		
16UN337	UN	15	3434868	494158	HU		
16UN338	UN	15	3434668	0	PAL:NI:HI		
16UN339	UN	15	3435888	493768	NI:PU:PAL		
16UN34	UN	15	3434988	478158	NI:NI:PO		
16UN35	UN	15	3437388	477598	NI		
16UN36	UN	15	3437688	478888	UNK	No data.	
16UN37	UN	15	3436888	477575	UNK	No data.	
16UN38	UN	15	3437858	477888	PU:CC:TC:PO		
16UN39	UN	15	3436188	477918	PU		
16UN4	UN	15	0	0	PU		
Done > < More > Column: 0							

3:37:59 pm

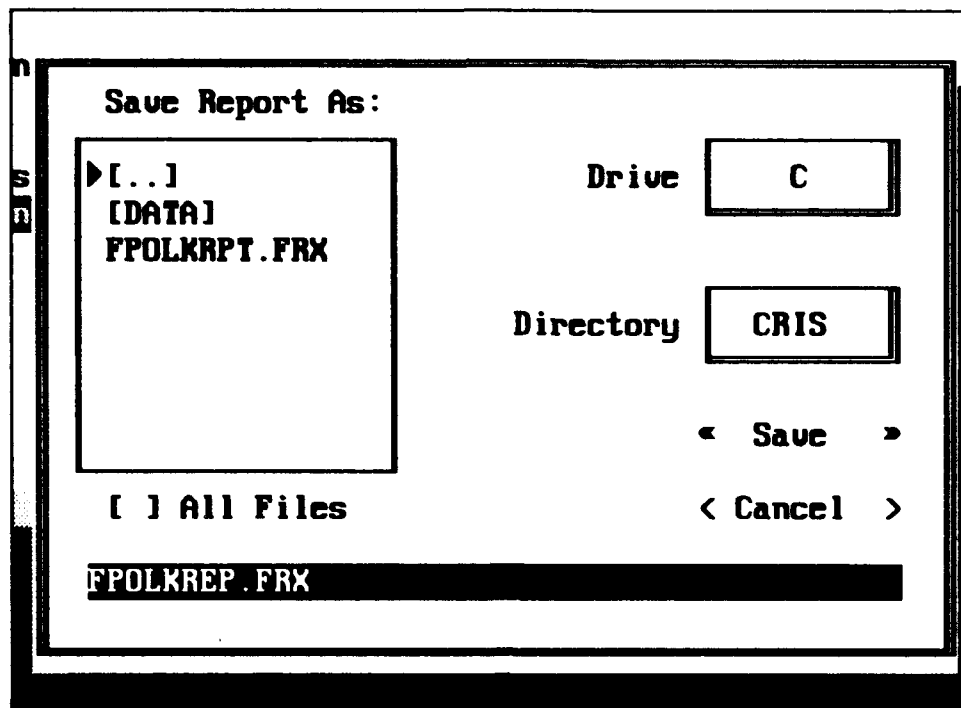
Preview

16UN6

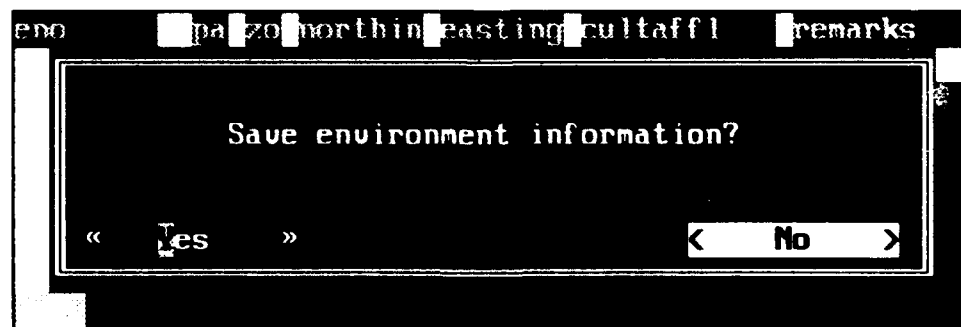
16UN6	UN	15	0	0	NI:NI		
16UN68	UN	15	3436618	486988	PU:HU		
16UN61	UN	15	3468788	476658	NI		
16UN62	UN	15	3435498	486358	PU		
16UN63	UN	15	3435525	485799	PU		
16UN64	UN	15	3435898	485918	NI:NI		
16UN65	UN	15	3436828	486118	IN	1988-era.	
16UN66	UN	15	3436875	486175	PU		
16UN67	UN	15	0	0	PU		
16UN68	UN	15	3436158	484918	PU		
16UN69	UN	15	0	0	CAD		
16UN7	UN	15	0	0	UNK	No data.	
16UN78	UN	15	3433998	482218	NI	Possible	
16UN71	UN	15	3434185	482255	PU		
16UN72	UN	15	3434488	482518	PU		
16UN72	UN	15	3434488	482518	PU		
16UN72	UN	15	3434488	482518	PU		
Parish:							
			0	0	0		
					.14E+9		
Done > < More > Column: 0							

When you are satisfied with the report layout, exit by selecting Done or window control.

You will be asked if you want to save changes to the specified report; select **Save** to save the changes or **Cancel** to exit.



You will be asked if you want to save the environment. Select **No**; if you save the environment, you won't be able to print.



Next, you will be prompted to select a category for sort. Choose a category for sort by using the arrow keys or mouse, then press **Enter**. Select additional categories for sort by selecting **N** when asked if you are done selecting categories for sort. When you are satisfied with your sort selection, select **Y** to continue with your quick report.

Friday 10/29/93	Cultural Resources Information System	11:07:43 am							
PRINT A PREDEFINED REPORT OR LABEL									
Selected Database: C:\NCRIS\DATA\FPOLM									
Please select the report or label that you want to run									
☐ Mailing Label ☒ Report Form									
Report/Label Name: C:\NCRIS\DATA\FPOLM1									
Sort on What Category:									
<table border="1"><tr><td>SITENO</td></tr><tr><td>OTDESIG</td></tr><tr><td>PARISH</td></tr><tr><td>ZONE</td></tr><tr><td>NORTHING</td></tr><tr><td>EASTING</td></tr><tr><td>CULTNFTL</td></tr></table>			SITENO	OTDESIG	PARISH	ZONE	NORTHING	EASTING	CULTNFTL
SITENO									
OTDESIG									
PARISH									
ZONE									
NORTHING									
EASTING									
CULTNFTL									

The next screen will prompt you to select an output destination for your report. Use the mouse or arrow keys to select your output destination option and press **Enter**.

Report destination:	
☒ Screen	
☐ Printer	
☐ File	
C:\NCRIS\DATA\REPORT.TXT	
< OK >	
< Cancel >	

Perform Calculations

CRIS allows you to perform calculations on numerical information within multiple fields within a category. In this example, Northing >100000 was selected during the process of Begin New Search. Select Perform Calculations from the Data Search and Retrieval Menu. The next screen prompts you to Enter the category name:

Thursday 04/01/93	1:31:45 pm
Cultural Resources Information System	
PERFORM CALCULATIONS	
Selected Database: C:\CRIS\DATA\FPOLK	
Enter Category Name :	ZONING NORTHING EASTING

Use the mouse or arrow keys to select the category for calculations and press **Enter**. The next screen will ask if you want to modify the field name. If you select **Y**, the cursor will appear at the beginning of the old name. Simply type in the new field name and press **Enter**. If you choose not to modify the field name, select **N**.

Thursday 04/01/93	1:34:15 pm
Cultural Resources Information System	
PERFORM CALCULATIONS	
Selected Database: C:\CRIS\DATA\FPOLK	
Enter Category Name :	NORTHING
Do you want to modify the field name? Yes < No >	

A list for calculation options will appear after accepting the field name. In the following example **ALL** is selected. You will need to move through to the end of the list before pressing **Enter**. A box will appear on the bottom of the screen and you will be prompted to enter the title of the report. Type in the title and press **Enter**.

Thursday 04/01/93	2:33:22 pm
Cultural Resources Information System	
PERFORM CALCULATIONS	
Selected Database: C:\CRIS\DATA\FPOLK	
Enter Category Name : NORTHING	
☒ ALL ☐ Average ☐ Count ☐ Maximum ☐ Minimum ☐ Standard Deviation ☐ Sum ☐ Variance	
Enter Title of Report :	
polkreport	

The next screen prompts you to choose your report destination. In this example the screen was selected:

Report destination: ☒ Screen ☐ Printer ☐ File C:\CRIS\DATA\EXPORT.TXT
< OK >
< Cancel >

The output of the report should look something like this:

Thursday 04/01/93		2:39:04 pm	
Cultural Resources Information System			
PERFORM CALCULATIONS			
Selected Database: C:\CRIS\DATA\PPOLK			
Page No.	1	Date: 04/01/93	Time: 14:38:54
polkreport			
AVERAGE:	3436923.95		
COUNT:	43		
MAXIMUM:	3468700		
MINIMUM:	3433990		
STANDARD DEVIATION:	5010.93		
SUM:	117707730		
VARIANCE:	25109451.01		

Display Data Structure

Display Data Structure is the same as Option 3: Display Data Structure on the Main Menu of CRIS. It displays the name, type, width, and decimal places of each category in the database on the screen. It allows you to quickly access the name and type of each category when performing searches.

Select Display Data Structure using the mouse or arrow keys, or by typing **D**. You will be asked as in the following example to select a report destination to display the data structure. Select your option and press **Enter**. Select OK and press **Enter** again.

Report destination:	
☒	Screen
☐	Printer
☐	File
C:\CRIS\DATA\REPORT.TXT	
< OK >	
< Cancel >	

The next screen will display the data structure:

DATA STRUCTURE FOR FPOLK				9:00:01 am
CATEGORY	TYPE	WIDTH	DECIMAL	
SITENO	C	12	0	
DTDESIG	C	30	0	
PARISH	C	2	0	
ZONE	N	2	0	
NORTHING	N	7	0	
EASTING	N	7	0	
CULTAPPL	C	16	0	
REMARKS	C	55	0	
DESCRIPT	N	10	0	

View/Edit Selected Records

Records in a database may be viewed on the screen by selecting View/Edit Selected Records from the Data Search and Retrieval Menu. This option is similar to Option 5: Input New Data or Edit Existing Data on CRIS' Main Menu, except that this option allows you to select specific records to be viewed or edited.

You will be asked to Begin a New Search if you haven't done so. The following screen will ask if you want to view by **edit screen** or **browse**:

Wednesday 04/07/93	Cultural Resources Information System	9:19:36 am
VIEW RECORD DATA		
Selected Database: C:\CRIS\DATA\FPOLK		
Do You Wish To View By <input checked="" type="button" value="Edit Screen"/> Browse Quit		

You will be asked if you want to view all categories, even across multiple pages. Type **Y** if you want to view categories across multiple pages, **N** if you don't.

Do you wish to view all categories, even across multiple pages?

Y < **N** >

The view/edit screen will appear. The layout consists of the record number at the top, which cannot be changed, and all category names. Each category name is followed by values within inverse video bars. Edit options appear at the bottom of the screen. The options allow you to view/edit records within the database. Typing **E** for (E)dit will begin the process for editing the data. By typing **F** for (F)orward, the next record will appear on the screen. Typing **B** for (B)ack will cause CRIS to go to the previous record number. If **A** is typed for (A)nother Site Record, you can choose any other record in the database. Typing **D** for (D)eleate will begin the process of marking the current record for deletion. Typing **M** for (M)emo In/Out allows you to import ASCII files into the memo field or export the memo field to an ASCII file. Typing **Q** for (Q)uit will bring you back to the Main Menu of CRIS. Typing **N** will put the cursor at the first value to be edited. Pressing **Y** will cause a "Help Window" to appear at the bottom half of the screen.

Wednesday 01/28/93		12:14:23 pm
Cultural Resources Information System		
Record Number: 1		Page 1
Selected Database: C:\CRIS\DATA\FPOLK		
SITEID	: 16W1334	
DTDESIG	: NUM89 - Prehistoric	
PARISH	: JU	
ZONE	: 15	
NORTHING	: 3435	
EASTING	: 494280	
CULTAPPL	: PU:WAR:HI:IN	
REMAIDS	:	
DESCRPT	: none	
EDIT Forward Back Another Record Delete Record Memo In/Out Quit		

Edit record data by simply typing over values for each category. When editing, pressing the <Space> bar will overwrite existing values with blanks. You can move through category values by using the **Tab** key to move forward and the **Shift-Tab** key to move backward.

Copy Selected Records to New Database

This option provides a method of creating a new, smaller database with only selected records, without destroying the results of the search in the present database. You may also choose the categories from the currently selected database that you want included in the new database. Once this option is executed, the NEW database is automatically selected. This option is very useful when you use a large database.

Select Copy Selected Records to New Database from the Data Search and Retrieval Menu with the mouse or arrow keys, or type N. You will be prompted to mark categories you wish to copy to the new database by using the mouse or pressing **Enter** to check boxes for desired categories. When you are finished marking categories, use the mouse to activate the <Done> button or press Enter to access the popup window that asks if you are done marking categories, as follows:

Wednesday 04/07/93		9:27:31 am		
Cultural Resources Information System				
COPY SELECTED RECORDS TO NEW DATABASE				
Selected Database: C:\CRIS\DATA\PTOLK				
<DONE>				
Please mark the categories that you want to include in the new database				
☒ ALL	☐ SITENO	☐ DTDESIG	☐ PARISH	☐ ZONE
☐ NORTHING	☐ EASTING	☐ CULTAPPL	☐ REMARKS	☐ DESCRIPT
Are you done selecting categories?				
☒ Yes < No >				

After typing Y or activating the <<Done>> button, you will be prompted to choose a category for sort. In this example, CULTAFFL was selected as the category for sort and is displayed on the screen as such.

Wednesday 04/07/93		Cultural Resources Information System		9:29:10 am	
COPY SELECTED RECORDS TO NEW DATABASE					
Selected Database: C:\CRIS\DATA\PPOLK					
Please mark the categories that you want to include in the new database					
☒ ALL	☐ SITENO	☐ OTDESIG	☐ PARISH	☐ ZONE	
☐ NORTHING	☐ EASTING	☐ CULTAPFL	☐ REMARKS	☐ DESCRIPT	
Sort on What Category:		SITENO OTDESIG PARISH ZONE NORTHING EASTING CULTAPFL REMARKS			

You can select multiple categories for sort by typing N when asked if you are done selecting categories for sort.

Wednesday 04/07/93		Cultural Resources Information System		9:30:15 am	
COPY SELECTED RECORDS TO NEW DATABASE					
Selected Database: C:\CRIS\DATA\PPOLK					
Please mark the categories that you want to include in the new database					
☒ ALL	☐ SITENO	☐ OTDESIG	☐ PARISH	☐ ZONE	
☐ NORTHING	☐ EASTING	☐ CULTAPFL	☐ REMARKS	☐ DESCRIPT	
Sort on What Category:		CULTAPFL			
UPPER(CULTAPFL)					
Are you done selecting sort categories? ☒ Yes < No >					

When you are done selecting categories for sort, type **Y** to continue. The next screen asks you to Enter the name of the new database. If the database already exists, a popup window will appear giving you the option to overwrite it.

Wednesday 04/07/93	Cultural Resources Information System	9:31:36 am
COPY SELECTED RECORDS TO NEW DATABASE		
Selected Database: C:\CRIS\DATA\PPOLK		
Enter the Name of the New Database		

The next screen displays the new database and number of records listed. The window at the bottom of the screen gives you the option of copying data to another file format.

Wednesday 04/07/93	Cultural Resources Information System	9:36:56 am
COPY SELECTED RECORDS TO NEW DATABASE		
Selected Database: C:\CRIS\DATA\PPOLK		
Enter the Name of the New Database NEWONE		
Database C:\CRIS\DATA\NEWONE.DBF is created It has 52 records		
Do you want to copy the data to another file format? « Yes » < No >		

If you choose to copy the database to a different file format, type Y. The following screen displays file format options to choose from:

Wednesday 04/07/93		9:39:18 am	
Cultural Resources Information System			
COPY SELECTED RECORDS TO NEW DATABASE			
Selected Database: C:\CRIS\DATA\FPOLK			
What File Type Are You Copying To?		DELI Delimited ASCII File SDF Fixed Length Record ASCII File WKS Lotus 1-2-3 Release 1-A WK1 Lotus 1-2-3 Release 2.x WK1 Symphony Version 1.0 Worksheet WK1 Symphony Ver 1.1/1.2 Worksheet XLS Microsoft Excel Version 2.0 SYLK Symbolic Link Interchange MCD Microsoft Multiplan Ver 4.01 DIP Data Interchange Format SMT WordPerfect Secondary Merge DBF DBF with dBase/FoxBase Menus	

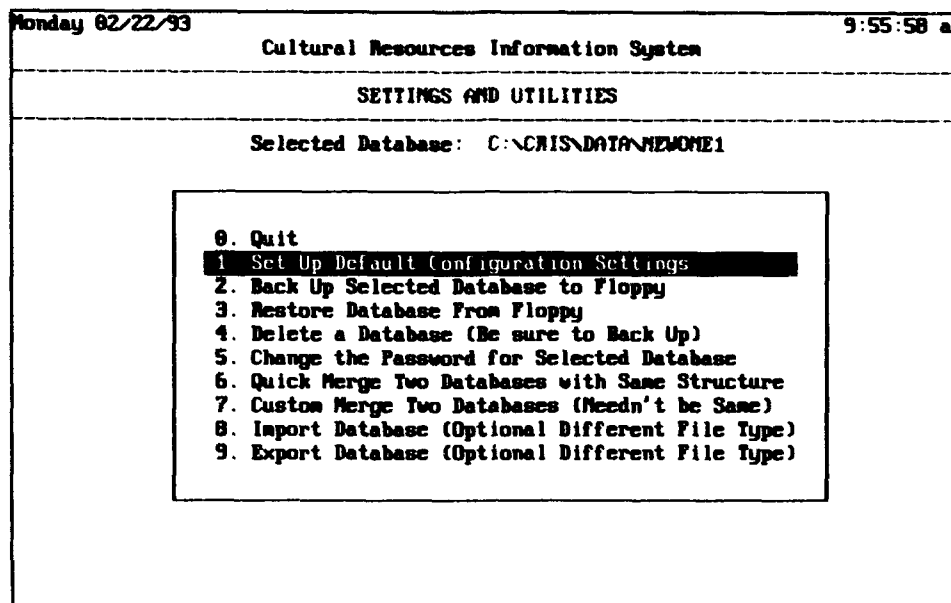
Help

You can access help by selecting **Help** from the Data Search and Retrieval Menu. You will be asked to enter the number of the topic you want additional help with. The Data Search and Retrieval Menu has hot keys instead of numbers. Enter the hot key for additional help.

H. Help	
Enter the Option Number on which You Want Help :	

8 Configuration Menu

Select **Option 8: Configuration Settings and File Utilities** from the Main Menu. The Configuration Menu provides utility options to assist you in configuring CRIS; performing DOS commands (Copy, Delete); and combining, importing, and exporting databases (connectivity including other file types). The **Settings and Utilities Menu** will appear as follows:



Set Up Default Configuration Settings

Option 1: Set Up Default Configuration Settings allows you to redefine the directory structure of your CRIS program. The suggested values for the "Disk Drive with Program" and "Path of Directory with Program" will be the drive and directory from which you started CRIS. These values should not be changed from the location where CRIS.EXE has been copied.

The suggested values for the "Disk Drive with Data" and "Path of Directory with Data" will be a subdirectory of the program directory called "Data."¹¹ If your databases are located elsewhere, fill in the location of the databases.¹²

¹¹ See Network Administrator's Survival Information (Appendix F) to manipulate suggested directories.

¹² If you are using the program IBIS (Integrated Building Inventory System) to create the databases, the data path might be "\IBIS\DATA\."

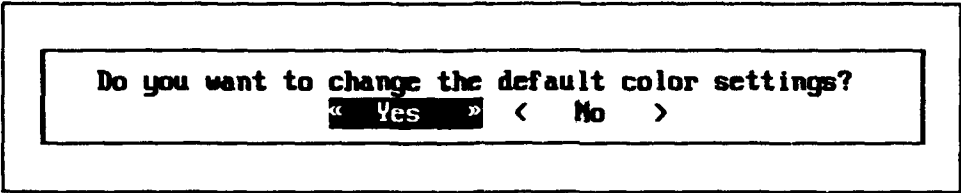
You can move through the following screen by pressing **Enter** after each entry:

Monday 02/22/93	Cultural Resources Information System	9:57:28 am
SET UP DEFAULT SETTINGS		
Enter Letter of Disk Drive with Program: C		
Enter Path of Directory with Program: C:\CRIS\		
Enter Letter of Disk Drive with Data: C		
Enter Path of Directory with Data: C:\CRIS\DATA\		
Do You Have a (C)olor or (M)onochrome Screen? C		
Enter Name of Printer Port: LPT1		
Use the SPACEBAR to Toggle Between Ports		

The next screen lists the selected default settings. A window will appear at the bottom of the screen that asks, "Are You Satisfied with this Setup?"

Monday 02/22/93	Cultural Resources Information System	9:58:39 am
SET UP DEFAULT SETTINGS		
C:\CRIS\ is now designated for the CRIS PROGRAMS		
C:\CRIS\DATA\ is now designated for the CRIS DATA		
Screen is set for Color.		
Printer Port is set for LPT1		
Are You Satisfied with this Set-Up? (Y or N)		
Y Yes < No >		

If you select **N**, you will return to the top of the screen to reenter information. If you select **Y**, the next screen will ask you if you want to change default color settings:

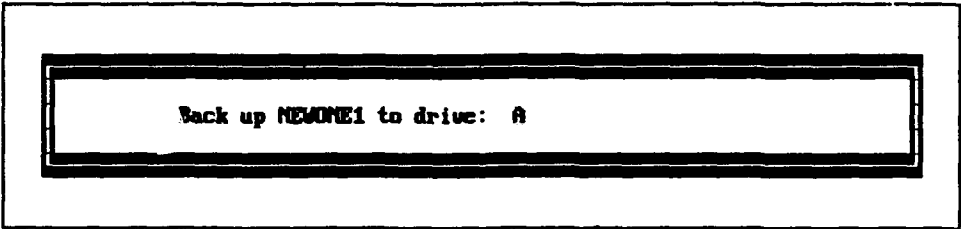


Do you want to change the default color settings?
« Yes » < No >

CRIS gives you the option of changing screen colors by choosing from a list of predefined color sets.¹³ After selecting **Y**, the first color set appears. The title of the color set will be used to initiate a color set change after viewing available color set options. Press any key to continue through the color selections. You can view all of the color sets or press escape to go immediately to the selection list. At the end of the color display sequence you will be asked if you want to choose a different color set. Press **Y**, and a list of color set titles will appear. Use the arrow keys or mouse to select a different color set by title, then select **OK**.

Back Up Selected Database to Floppy

You can back up a selected database to a floppy disk by selecting **Option 2** from the Settings and Utilities Menu. After selecting **Option 2**, the next screen will appear. You will be asked to enter the drive you will use to back up your database. In this example the database **NEWONE1** will be backed up on Drive A:



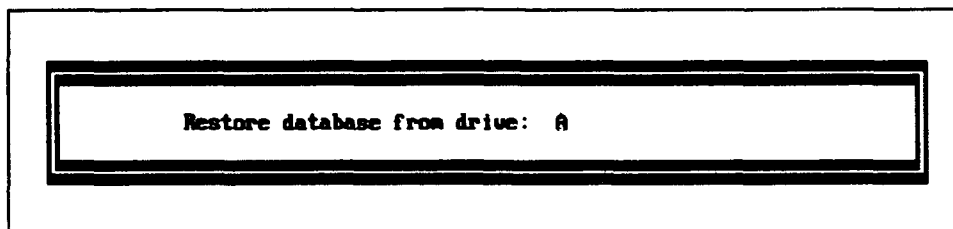
Back up NEWONE1 to drive: A

Press **Enter** to back up your database. When the backup is completed, you will see a message on screen, "**Backup Completed.**"

¹³ See Appendix H for information about using the color set creator.

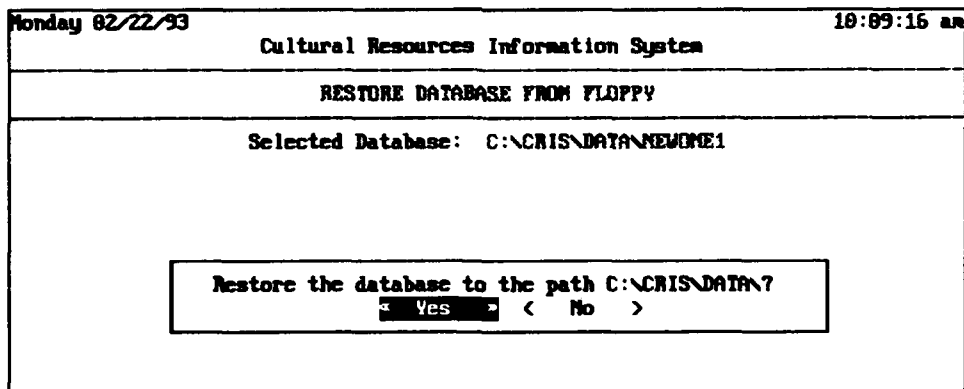
Restore Database From Floppy

Option 3 allows you to restore a copy of a database on disk to the hard drive. After selecting **Option 3** from the Settings and Utilities Menu, the following screen will ask you to enter the drive you wish to restore the database from and press **Enter**. **Warning:** Overwrites database already on hard drive if one exists with that name.



A screenshot of a text-based interface. It features a rectangular box with a double-line border. Inside the box, the text "Restore database from drive: A" is displayed in a monospaced font.

The next screen displays the path you wish to restore to. If the specified path is incorrect, choose **N**; a message will appear that says you will need to change your configuration settings. If the path is accurate, choose **Y**; the database will be restored to the specified path.



A screenshot of a text-based interface. At the top left, it shows "Monday 02/22/93". At the top right, it shows "10:09:16 am". The title "Cultural Resources Information System" is centered. Below the title, the text "RESTORE DATABASE FROM FLOPPY" is centered. Underneath, "Selected Database: C:\CRIS\DATA\NEWONE1" is displayed. At the bottom, there is a rectangular box containing the text "Restore the database to the path C:\CRIS\DATA\?". Below this text, the word "Yes" is highlighted with a black background, followed by "< No >".

Delete a Database

You can delete a database by selecting **Option 4** from the Settings and Utilities Menu. It is a good idea to make a backup of the database before you delete in case you need information later. The following screen will ask you if the database you want to delete is in the specified path. If the database is in the specified path, select **Y**.

Monday 02/22/93	Cultural Resources Information System	10:12:31 am
DELETE FILE UTILITY		
Selected Database: C:\CRIS\DATA\NEWONE1		
Is the database in the path C:\CRIS\DATA\? Yes < No >		

The next screen will prompt you to enter the name of the database you want to delete. If you know the name of the database, simply type in the name and press **Enter**. You can see a list of databases by typing a **?** in the box and pressing **Enter**. If you want to delete the database you are currently in, you need to select a different database by selecting **Option 2: Select Existing Database or Create New One** from CRIS's Main Menu before you can delete the database.

Monday 02/22/93	Cultural Resources Information System	10:14:19 am
DELETE FILE UTILITY		
Selected Database: C:\CRIS\DATA\NEWONE1		
What database do you want to delete?		
Leave blank to quit		

If you select N, you will be asked to enter the name of the database and specified path for deletion.

Monday 02/22/93	Cultural Resources Information System	10:16:43 am
DELETE FILE UTILITY		
Selected Database: C:\CRIS\DATA\NEUM01		
Delete which database (with path)?		
Leave blank to quit		

Change the Password

To change the password for a database, select **Option 5** from the Settings and Utilities Menu. You can change only the password of the current database. After selecting **Option 5**, the following screen will appear. Enter the current password of the database.

Monday 02/22/93	Cultural Resources Information System	10:19:42 am
CHANGE THE PASSWORD FOR SELECTED DATABASE		
Selected Database: C:\CRIS\DATA\NEUM01		
Enter the password for the database NEUM01 What is the password?		

The next screen asks you to type the new password for the database. You will be prompted to type the password again to make sure it is entered correctly.

Monday 02/22/93	Cultural Resources Information System	10:21:21 am
CHANGE THE PASSWORD FOR SELECTED DATABASE		
Selected Database: C:\CRIS\DATA\NEWONE1		
What password do you want to use?		

Quick Merge Two Databases With Same Structure

CRIS gives you the option of merging two databases with the same or similar data structures. Select **Option 6: Quick Merge Two Databases with Same Structure** from the Settings and Utilities Menu. The first screen will ask you if both databases are in the specified path.

Monday 02/22/93	Cultural Resources Information System	10:24:14 am
QUICK MERGE UTILITY		
Selected Database: C:\CRIS\DATA\NEWONE1		
Are both databases in the path C:\CRIS\DATA\? ☐ Yes ☐ No		

If the databases are in a different path, type N. You will be asked to specify which path the databases can be located in.

Wednesday 02/24/93	Cultural Resources Information System	9:32:12 am
QUICK MERGE UTILITY		
Selected Database: C:\CRIS\DATA\NEWONE1		
What is the first database (with path)? What is the second database (with path)?		
Leave blank to quit		

If they are in the same path, type Y to continue. The next screen will ask you to enter the names of the databases you wish to use in the quick merge.

Monday 02/22/93	Cultural Resources Information System	10:27:00 am
QUICK MERGE UTILITY		
Selected Database: C:\CRIS\DATA\NEWONE1		
What is the first database name? FPOLK What is the second database name? NEWONE		
Leave blank to quit		

If the databases you identified are not exactly the same, the **Not an exact match dialog** will appear. You will be given three options: Merge Anyhow, View Structures, and Cancel Merge.

Monday 02/22/93	Cultural Resources Information System	10:28:46 am
QUICK MERGE UTILITY		
Selected Database: C:\CRIS\DATA\NEVONE1		
NOT AN EXACT MATCH		
The two databases you have specified do not match exactly. They may not have the same number of categories, or the categories may be in a different order. If you prefer, you can override this determination now, and the program will use the structure of the second database for the merge database, and only categories with the same name and type from the first database will be brought in.		
< Merge Anyhow > < View Structures > < Cancel Merge >		
DO YOU WISH TO MERGE ANYHOW?		
Leave blank to quit		

If you select **merge anyhow**, the program will use the structure of the second database for the merge database, and only categories with the same name and type from the first database will be brought in. The following screen will ask you to identify what database you want to merge into:

Monday 02/22/93	Cultural Resources Information System	10:32:49 am
QUICK MERGE UTILITY		
Selected Database: C:\CRIS\DATA\NEVONE1		
What database do you want to merge into?		
Leave blank to quit without performing the merge		

If you select **view structures**, the following screen will display the file structure of the two databases. Press any key to continue the process. Now you can merge anyhow or cancel merge.

Monday 02/22/93 10:39:31 am

Cultural Resources Info

Press any key to continue ...

QUICK MERGE UT

Selected Database: C:\CRIS\DATA\NEWONE1

NOT AN EXACT MATCH

The two
They may
categori
can over
use the
and only
database:

< Merge

File Structures

SITENO	C	12	0	NUMBER	C	0	0
OTDESIG	C	30	0	SITE	C	16	0
PARISH	C	2	0	LOCATION	C	00	0
ZONE	N	2	0				
NORTHING	N	7	0				
EASTING	N	7	0				
CULTAPPL	C	16	0				
REMARKS	C	55	0				
DESCRIPT	N	10	0				

base,
first

Leave blank to quit

If you select **cancel merge**, you will go back to the Settings and Utilities Menu. You can quit without merging by simply pressing **Enter**.

Custom Merge Two Databases (Needn't be the Same)

Select **Option 7** from the Settings and Utilities Menu to activate a custom merge of databases with different structures. You will be asked if both databases are in the specified path.

Monday 02/22/93 10:24:14 am

Cultural Resources Information System

QUICK MERGE UTILITY

Selected Database: C:\CRIS\DATA\NEWONE1

Are both databases in the path C:\CRIS\DATA\?

☒ Yes ☐ No

Select N if the databases are in another path. You will be prompted to enter the path of the databases you wish to merge.

Wednesday 02/24/93	9:32:12 am
Cultural Resources Information System	
QUICK MERGE UTILITY	
Selected Database: C:\CHRIS\DATA\NEUMONE1	
What is the first database (with path)?	
What is the second database (with path)?	
Leave blank to quit	

If the databases are in the specified path, select Y to continue. The next screen will prompt you to enter the names of the databases you wish to merge.

Monday 02/22/93	10:27:00 am
Cultural Resources Information System	
QUICK MERGE UTILITY	
Selected Database: C:\CHRIS\DATA\NEUMONE1	
What is the first database name? FPOLK	
What is the second database name? NEUMONE	
Leave blank to quit	

After entering the names of databases for custom merge, the following screen will ask you how many fields you wish to use. CRIS will accept characters, as long as the number of fields is less than or equal to the specified field number. Type in the number and press **Enter**.

```

Wednesday 02/24/93                               9:43:28 am
Cultural Resources Information System

CUSTOM MERGE UTILITY

Selected Database: C:\CRIS\DATA\FPOLK

What database do you want to merge into? NEWONE
How many fields will be in C:\CRIS\DATA\NEWONE2.DBF? 9

```

The next screen displays a list of fields from the selected databases. The cursor will be on the right side of the screen in the first field. Define fields by entering the field name, type, and length, and specify decimal spaces.

```

10:10:13 am
SOURCE DATABASES                                TO Field Name TY LEN DEC
SITENO    C 12 0    NUMBER    C  8 0    NUMBER    N  12 0
OTDESIG   C 30 0    SITE      C 16 0    SITE      C  16 0
PARISH    C  2 0    LOCATION  C 80 0    ZONE      N   2 0
ZONE      N   2 0    CULTAFL  C 16 0    CULTAFL   C  16 0
NORTHING  N   7 0    REMARKS  C 55 0    REMARKS   C  55 0
EASTING   N   7 0    DESCRIPT C 10 0    DESCRIPT  C  10 0
CULTAFL   C 16 0    PARISH   C   2 0    PARISH    C   2 0
REMARKS   C 55 0    OTDESIGN C 30 0    OTDESIGN  C  30 0
DESCRIPT  N   1 0
Are you done defining the structure?
  Yes  <  No  >

```

When you have completed your entries, the prompt at the bottom of the screen will appear. If you want to redefine fields, type **N**, and the cursor will go back to the first field. If you are satisfied with the fields, type **Y**.

After defining fields, the databases are merged (makes a new database with merge database structure and copies all records of source databases 1 and 2).

Import Database (Optional Different File Type)

Select **Option 8** from the Settings and Utilities Menu to import a database with a different file type. The next screen will prompt you to select the file type you are appending from. In this example Lotus 1-2-3 is highlighted:

Monday 04/12/93		8:02:12 am	
Cultural Resources Information System			
IMPORT DATABASE			
Selected Database: C:\CRIS\DATA\PPOLK			
What File Type Are You Appending From?			
		- Identical Categories CRIS File - DEL1 Delimited ASCII File - SDF Fixed Length Record ASCII File - WK3 Lotus 1-2-3 Release 1-A - WK1 Lotus 1-2-3 Release 2.x WK3 Lotus 1-2-3 Release 3.x - WRK Symphony Version 1.0 Worksheet - WR1 Symphony Ver 1.1/1.2 Worksheet - XLS Microsoft Excel Version 2.0 - SYLK Symbolic Link Interchange - MOD Microsoft Multiplan Ver 4.01 - FW2 Framework II File - RFD RapidFile Version 1.2 - PDOX Borland's Paradox Version 3.5 - DIF Data Interchange Format	
WK3 Lotus 1-2-3 Release 3.x			

After selecting the file type you wish to append from you will be asked to enter the file name and path you wish to import.

Monday 04/12/93		8:03:47 am	
Cultural Resources Information System			
IMPORT DATABASE			
Selected Database: C:\CRIS\DATA\PPOLK			
Appending from type WK3 Lotus 1-2-3 Release 3.x			
What is the file name and path?			

Export Database (Optional Different File Type)

Select **Option 9** from the Settings and Utilities Menu to export a database to a different file type. The following screen allows you to mark categories for the new database. When you are finished marking categories, double click on the mouse or select **Y** when the prompt window at the bottom of the screen asks, "Are you done selecting categories?"

Monday 04/12/93 Cultural Resources Information System 8:09:45 am

EXPORT DATABASE

Selected Database: C:\CRIS\DATA\FPOLK **DONE**

Please mark the categories that you want to include in the new database

☒ ALL ☐ SITENO ☐ OTDESIG ☐ PARISH ☐ ZONE
☐ NORTHING ☐ EASTING ☐ CULTAPFL ☐ REMARKS ☐ DESCRIPT

Are you done selecting categories?
☒ Yes < No >

The next screen prompts you to select categories for sort. In this example CULTAPFL is selected. If you are finished selecting categories for sort, type **Y** when you are asked.

Monday 04/12/93 Cultural Resources Information System 8:11:48 am

EXPORT DATABASE

Selected Database: C:\CRIS\DATA\FPOLK

Please mark the categories that you want to include in the new database

☒ ALL ☐ SITENO ☐ OTDESIG ☐ PARISH ☐ ZONE
☐ NORTHING ☐ EASTING ☐ CULTAPFL ☐ REMARKS ☐ DESCRIPT

Sort on What Category:

UPPER(CULTAPFL)

SITENO
OTDESIG
PARISH
ZONE
NORTHING
EASTING
CULTAPFL
REMARKS

The next screen prompts you to enter the name of the new database. Type in the name of the database and press **Enter**. The information you selected for marking and sorting categories is now integrated into the new database.

Monday 04/12/93	Cultural Resources Information System	8:13:11 am
EXPORT DATABASE		
Selected Database: C:\CRIS\DATA\PPOLK		
Enter the Name of the New Database		

Appendix A: Menu Tree

- 0. Quit
- 1. List Directory of Existing Databases
- 2. Select Existing Database or Create New One
- 3. Display Data Structure
- 4. Modify Data Structure
- 5. Input New Data or Edit Existing Data
- 6. Input New Codes or Edit Existing Codes
- 7. Search and Retrieve Data
 - Begin a New Search
 - New Search by Selecting Memos
 - New Search Using XBase Command
 - Continue a Search
 - Search Macros (Save or Restore)
 - Display Search History
 - Display Column Report
 - Display Category Values
 - Display Value Tabulation
 - Print Selected Records
 - Report/Label Generator
 - Perform Calculations
 - View/Edit Selected Records
 - Copy Selected Records to New Database
 - Help
 - Graph Data on Screen (only if VGA and driver are loaded)
 - Pie Chart
 - Line Graph
 - Scatter Graph
 - Vertical Bar Graph
 - Clustered Bar Graph
 - Stacked Bar Graph
 - Positive-Negative Bar Graph
 - Quit, No Graph

8. Configuration Settings and File Utilities

Set Up Default Configuration Settings

Back Up Selected Database to Floppy

Restore Selected Database From Floppy

Delete a Database (Be Sure to Back Up)

Change Password for Selected Database

Quick Merge Two Databases With Same Structure

Custom Merge Two Databases (Needn't Be Same)

Import Database (Optional Different File Type)

Export Database (Optional Different File Type)

H. Help

Appendix B: Structure of the Various Databases

This section discusses the database structures of the support databases used by CRIS. This information is provided so that other programs you may write in an XBase product can make use of the support databases used by CRIS. Do not insert fields before or within the structures, but you may add fields at the end for your own purposes. FoxPro is the only XBase product that will be able to use the Resource File (FREDUSER) because it contains memo fields.

The first two databases contain various configuration settings. A set will be created for each user name known to the system. For this example, the user name is "FRED". FOXPRO CREATED RESOURCE FILE: FREDUSER.DBF and FREDUSER.FPT. This file contains color sets, edit preferences, and so on.

Field	Field Name	Type	Width
1	TYPE	Character	12
2	ID	Character	12
3	NAME	Character	24
4	READONLY	Logical	1
5	CKVAL	Numeric	6
6	DATA	Memo	10
7	UPDATED	Date	8

CRIS's CONFIGURATION SETTINGS FILE: CSYSFRED.DBF

Field	Field Name	Type	Width	
1	CMDDR	Character	1	Command Drive (Drive where CRIS.EXE is found)
2	DATADR	Character	1	Data Drive (Drive where database is found)
3	PATH	Character	30	Command Path (Directory path of CRIS.EXE)
4	DATAPATH	Character	30	Data Path (Directory path of database)
5	DATABASE	Character	7	Database name last used
6	SCREEN	Character	1	"C" for color, "M" for monochrome
7	PRTPORT	Character	4	Printer port selected

The remainder of the databases are support files for the CRIS database. A set is created for each database known to CRIS. For this example, the name of the CRIS database is BOAS. The name created is always 8 characters long, padded with Xs at the end if necessary. It is for the maintenance of these support databases that CRIS databases must have names less than or equal to 7 characters in length. In addition to the databases discussed here, three additional databases are created. Their contents do not remain constant from session to session; only the structure must remain the same. These three databases are BOASPXXX, BOASHXXX, and BOASSXXX.

BOASFXXX.DBF: Field Definition Database (Data Dictionary)

Field	Field Name	Type	Width	
1	FIELD_NAME	Character	10	Field Name
2	FIELD_TYPE	Character	1	Field Type (C, N, L, D, M) Types P, F, G reserved
3	FIELD_LEN	Numeric	3	Field Length (including decimal places)
4	FIELD_DEC	Numeric	3	Field Decimal (number of decimal places)
5	PICT	Character	254	Picture Clause (for @SAY...GET)
6	CDE	Logical	1	Are there any picklist codes defined?
7	SOFTTABLE	Logical	1	Is the picklist a soft table?
8	PICKLIST	Logical	1	Are codes displayed in a choosable picklist?
9	SUGGSTONLY	Logical	1	Is the picklist for suggesting values or validation?

BOASCXXX.DBF: Codes Database (Contents of Picklists)

Field	Field Name	Type	Width	
1	CATEGORY	Character	10	Field Name this code applies to
2	CODE	Character	30	Code Assigned (* means help text only)
3	DESCRIPT	Character	50	Code Description

BOASMXXX.DBF: Search Macro Database

Field	Field Name	Type	Width	
1	USERNAME	Character	20	Name assigned by user for this search
2	FILTCOND	Character	239	SET FILTER TO condition for the search

Appendix C: Troubleshooting

Every effort has been made to find and remove errors (bugs) in CRIS. However, it is still possible that you could run across an error that we did not find. This section and the next (Error Messages) will attempt to help you deal with these situations. If the error is listed in the Error Messages section as "Call CRIS POC," you have probably found a genuine bug; we would like to know about it so we can fix it and send you a fixed version. In this case, call the ECC team, 1-800-USA-CERL or (217)352-6511 extension 7566. In other cases, if you can't solve the problem yourself, call the Technical Assistance Center at (217)864-4733 or (outside Illinois) 1-800-864-4733.

Please write down what error you received, and make a print screen of the screen as it appeared when the error occurred. Frequently, an error arises because of something that happened before the task that reported the error, so write down everything you can remember you did before the error occurred. You should also be able to explain what is in your AUTOEXEC.BAT file, what is in your CONFIG.SYS file, whether you were logged into a network at the time of the error, and how much free memory was available before you started CRIS. If it is possible, have your telephone close enough to your computer so that you can try commands on the computer while you are on the phone with the support person.

How Errors are Reported to You

You should be able to distinguish between CRIS errors and DOS errors because these are reported differently. A CRIS error is reported in a window that is the same color as the password window (red in the default color set). The box will have the choices <Cancel> and <Ignore>. For most CRIS errors, <Cancel> is the best choice because it will properly close all the data files and quit to DOS. If you choose to <Ignore> an error and continue the procedure, the program can get very confused. Look up the error in the Error Messages section. Advice will be provided about the best choice for that case. A DOS error is one that CRIS doesn't know about; for example, not having a disk in the floppy drive during a backup, or other situations beyond the control of CRIS. When a DOS error is reported, it will distort the screen and will not be reported in an error window. DOS errors typically have the options "Abort, Retry, Ignore, Fail?" Abort is usually the best choice.

Printer Problems

If your report simply does not print, or you are getting "Printer Not Ready" errors, first check that the printer is online and the cables are firmly attached. Then double-check that you have selected the correct printer port. This information can be found in the option "Configuration Settings and File Utilities: Set Up Default Configuration Settings." If this information is correct, and you are printing to a laser printer, especially if the printer is shared among several users with a spooler device, you may need to issue a DOS MODE command before starting CRIS. If the laser

printer is attached to your parallel port, issue the command (assuming the port is LPT1) **MODE LPT1:,,P**. If the printer is attached to your serial port, issue the command (assuming the port is COM1) **MODE COM1:=9600,N,8,1,P**.

You can also reassign the COM1 port to the LPT1 port and make the computer think that the laser printer is on your parallel port. To do this, after the **MODE COM1** command, issue the command **MODE LPT1:=COM1**.

To work with any printer, CRIS sends no printer commands to the printer, so if your report is printing in landscape mode on a laser printer or in a font you don't like, you must remedy this using the menu panel on the printer itself.

Memory and File Handle Problems

Several errors, such as "Window is Not Defined," are signs that you are close to not having sufficient free memory available for CRIS to run properly. CRIS can also report "Insufficient Memory" errors. This situation is relatively common in network environments, since many network shells use more than a fifth of the low memory space (i.e., space below 640K). To free up more space, make sure that DOS is loaded into high memory (if you have DOS 5), and load the network shell high if that is possible. Frequently, getting just another few thousand bytes of low memory will make the "Window is Not Defined" error go away.

Other errors of the "Too many files open" type indicate that you need to increase the number in the "FILES=xx" command in your CONFIG.SYS file. Remember, you must reboot your computer after making any change in CONFIG.SYS for the change to take effect.

You can check CONFIG.SYS and memory settings in the "About FoxPro" option of the Alt System menu. You can also run the DOS **MEM** command to find out how much memory is available before running CRIS.

Disk Organization Problems

Disk caching can sometimes cause problems. If you experience problems that might be related to disk caching, turn it off and try duplicating the problem. You should be aware that the DOS **FASTOPEN** command can be especially problematic, and this command should not be run if it can be avoided.

Like any database, CRIS will eventually cause disk fragmentation. If you reboot rather than quit CRIS properly, it is virtually guaranteed that unallocated file clusters will result from temporary files that did not get closed. The DOS program **CHKDSK/F** should be run periodically to remove unallocated file clusters. Disk fragmentation should be remedied periodically with a disk optimization program, such as Norton Utilities' **SPEEDISK** or PC Tools' **COMPRESS**. Be sure that you back up the hard drive before running such a program the first time.

Appendix D: Error Messages

"<field>" is not related to the current work area. (1165)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

"<file>" is not a FoxPro EXE file. (1196)

This error is either a programming bug or the EXE file has been corrupted. Try to reinstall the EXE file from your distribution disk. If this doesn't help, call the CRIS POC to report this so that a bug fix can be provided.

"<file>" is not an object file. (1309)

This error probably indicates that a compiled object file has been corrupted and doesn't have the proper header. Try to reinstall CRIS. If that doesn't help, call the CRIS POC.

"<name>" is not a file variable. (226)

"<name>" must be a file variable. (1226)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

"<name>" is not a memory variable. (225)

"<name>" must be a memory variable. (1225)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

"<name>" is not an array. (232)

"<name>" must be an array. (1232)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

**** or ^ domain error. (78)**

This error indicates that exponentiation was attempted on a negative number. This is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

ACOS() : Out of Range. (293)

The expression used with the arc cosine function has a value that is out of the range of -1.0 to +1.0. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

ALIAS name already in use. (24)

The program attempted to open a database with an alias name that was already in use for another database that was already open. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

ALIAS ['<alias>'] not found. (13)

The program attempted to select a database work area that was incorrect. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

All work areas in use. (1721)

The program attempted to open a database in a new work area when all the work areas were in use. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Area cannot contain handle. (1011)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Area size exceeded during compaction. (1010)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

ASIN() : Out of Range. (291)

The expression used with the arc sine function has a value that is out of the range of -1.0 to +1.0. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Attempt to move file to different device. (1153)

The rename command was specified to move a file to a different device (disk) which is not an allowable operation. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Attempt to use FoxPro function as an array. (1652)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Bad array dimensions. (230) or (1631)

Either an illegal value (such as zero) has been entered during the declaration of an array, or an array has been declared that exceeds 3,600 elements. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

bad date

The date expression used is invalid or outside the range of valid dates. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Bad drive specifier. (1907)

An invalid drive name was specified in a DIR command. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Bad width or decimal place argument. (1908)

Either the length or decimal argument was invalid in the STR() function. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Bar position must be a positive number. (167)

This error is most likely a programming bug related to setting up a popup or menu. Call the CRIS POC to report this so that a bug fix can be provided.

Beginning of file encountered. (38)

This error is most likely a programming bug. CRIS did not prevent you from attempting to move backward in the file beyond the first record. Call the CRIS POC to report this so that a bug fix can be provided.

Beyond string. (62)

This error is most likely a programming bug related to attempting to read characters beyond the last byte of a character string. Call the CRIS POC to report this so that a bug fix can be provided.

Browse database closed. (1163)

A Browse window's database was closed by a Browse validation routine. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Browse structure changed. (1164)

The structure of a Browse window was changed by a Browse validation routine. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

CANCEL/SUSPEND is not allowed. (1651)

You have specified a report or label file that was created in dBASE IV. This file uses the command CANCEL or SUSPEND, which are not supported. The report or label will have to be fixed in dBASE IV to remove this command.

Cannot access selected database. (1152)

The program attempted to make current (select) a database in a nonexistent work area or one that was not open. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Cannot allocate screen map.

There was insufficient memory to load the program that runs CRIS. You will need more RAM memory.

Cannot append from password protected file. (1672)

The file you are attempting to import is encrypted or password protected. You will need to unencrypt it in the program that created the file.

Cannot clear menu in use. (176)

This error is most likely a programming bug related to trying to close a menu that had not been deactivated. Call the CRIS POC to report this so that a bug fix can be provided. You can probably choose ignore from the error menu.

Cannot clear popup in use. (177)

This error is most likely a programming bug related to trying to close a popup that had not been deactivated. Call the CRIS POC to report this so that a bug fix can be provided. You can probably choose ignore from the error menu.

Cannot convert Memo file for a read-only database file. (1659)

This message appears when you try to perform a read-only operation on a dBASE IV style memo because FoxPro cannot convert a memo in a read-only operation. Change the DOS attribute for the file from read-only or adjust the network rights.

Cannot create file. (1102)

Cannot create file "<file>". (102)

DOS has told the program that it cannot create a file. There are several reasons why this might be the case. The most likely reason is that you have run out of space on the disk (or directory space on a LAN). You could also have specified an invalid file name, such as a name that contains spaces or punctuation marks, or is longer than eight characters before the extension. If you are running CRIS from a network, you might not have the correct LAN authorization rights to create a file. Finally, a hardware error could have caused an inability to write to the disk.

Cannot create program workspace.

The program that runs CRIS was not able to create enough workspace upon startup. This may be due to insufficient rights to the directory or not enough disk space.

Can't find ESO file.

CRIS needs the files FOXPRO.ESO and FOXPRO.ESL to run. This error indicates that the file FOXPRO.ESO cannot be found in the directory containing CRIS.EXE. It could be that you have not run the self-extracting archive RUNTIME.EXE to uncompress these files.

Cannot GROUP by aggregate field. (1846) or (846)

There has been an attempt to GROUP by one of the aggregate functions MIN(), MAX(), SUM(), AVG(), COUNT(), NPV(), STD() or VAR(). This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Cannot import from password protected file. (1671)

The file you are attempting to import is encrypted or password protected. You will need to unencrypt it in the program that created the file.

Cannot locate COMSPEC environment variable. (1412) or (412)

An environment variable needed by the program which runs CRIS cannot be found. This error usually occurs when you try to run the program from within another program and the other program doesn't properly pass DOS environment variables. Try running CRIS straight from DOS instead.

Cannot open configuration file.

The program which runs CRIS found a CONFIG.FP file but did not have the proper rights to open it. Call your network administrator to check that you have proper rights on the LAN.

Cannot open file "<file>". (101) or (1101)

The operating system has returned an error indicating that the file cannot be opened. If the path of the file is correct and the file name is spelled correctly, and the file name is a legal DOS file name, this error is most likely caused by not having appropriate LAN rights. Please call your network administrator to check that you have proper rights on the LAN.

Cannot redefine menu in use. (174)

This error is most likely a programming bug related to trying to define a menu that had not been deactivated. Call the CRIS POC to report this so that a bug fix can be provided. You can probably choose ignore from the error menu.

Cannot redefine popup in use. (175)

This error is most likely a programming bug related to trying to define a popup that has not been deactivated. Call the CRIS POC to report this so that a bug fix can be provided. You can probably choose ignore from the error menu.

Cannot run on DOS before version 3.0.

CRIS cannot run under DOS version 3.0 or earlier. You will need to upgrade your operating system to run CRIS.

Cannot SET FORMAT while in a READ with a FORMAT file. (1720)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Cannot update file. (1157)

This error is very unusual. It appears only if a critical problem occurs when writing to disk, such as space exhausted, total disk failure, and so forth. It is possible that you have specified an invalid file name, such as a name that contains spaces or punctuation marks, or is longer than eight characters before the extension. If you are running CRIS from a network, you might not have the correct LAN authorization rights to create a file.

Cannot write to a read-only file. (111)

An attempt was made to write to a file that was created or accessed for read-only purposes. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

COLORSET resource not found. (1642)

An attempt has been made to SET COLOR SET TO a color set not found in the resource file. What probably happened is that your resource file, FREDUSER.DBF, was not found and a new one was created from scratch without the color set you used last. This error is harmless, and you can choose ignore from the error menu with no ill effects. You should probably go into the "Set Up Default Configuration Settings" option and choose a color set that exists to prevent the error from recurring.

Column number must be between 0 and 255. (223)

The printer column number specified is off the page. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Column number must be between 0 and right margin. (1657)

There was an attempt to set the printer column number to an invalid number. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

COLUMN/FORM/ALIAS/NOOVERWRITE/WIDTH allowed only with FROM clause. (1695)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Compiled code for this line too long. (1252)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

CONTINUE without LOCATE. (42)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

CPU exhibits 32 bit multiply problem.

You are using an early version of INTEL 386. Please check with your hardware vendor before continuing, as the microprocessor chip exhibits this bug.

Cyclic relation. (44)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Data type mismatch. (9)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Database is not ordered. (26)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Database operation invalid while indexing. (1690)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Database record is trashed. (1115)

The database header contains invalid information. Restore from your backup copy of the database. Some utility programs, such as Norton Utilities, may be able to fix the file. Call your computer support personnel for assistance.

Descending not permitted on IDX files. (1706)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Display mode not available. (216)

An attempt was made to select an unavailable display mode, such as VGA 50 row on a non-VGA screen. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Division by 0. (1307)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

DO nesting too deep. (103)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Duplicate field names. (1156)

This error is most likely a programming bug. CRIS should not allow you to specify a field (category) name more than once when you select fields to sort on, report on, or copy to a new database. Call the CRIS POC to report this so that a bug fix can be provided.

End of file encountered. (4)

This error is most likely a programming bug. CRIS did not prevent you from attempting to move forward in the file beyond the last record. Call the CRIS POC to report this so that a bug fix can be provided.

Endtext without text. (1214)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Error in label field definition. (1245)

The mailing label format file you are attempting to use contains an invalid expression. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the label against, or the label format file could have become corrupted. You will probably need to create a new label format file.

ESL and ESO file do not match.

The time and date of your ESL and ESO files do not match. Reinstall the runtime files FOXPRO.ESO and FOXPRO.ESL from your distribution disk.

Exclusive open of file is required. (110)

An attempt was made to perform an operation that requires exclusive (nonshared) use of the database. This error is most likely a programming bug since CRIS should be preventing you from doing this operation if someone else is using the database. Call the CRIS POC to report this so that a bug fix can be provided.

Expression evaluator fault. (67)

The program which runs CRIS (FoxPro) has detected corruption in the CRIS program file. Try reinstalling CRIS.

Fatal error <expN> reporting error <expN>.

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Feature not available. (1001)

A feature that is only available in the developer version of FoxPro has been requested. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Field must be a Memo field. (350)

An attempt has been made to run the import or export Memo field code on a field which is not a Memo field. This error is most likely a programming bug since CRIS should not be allowing a non-Memo field to be specified here. Call the CRIS POC to report this so that a bug fix can be provided.

'Field' phrase not found. (1130)

This error is most likely a programming bug related to creating a picklist of field contents for a field that does not exist in this database. Call the CRIS POC to report this so that a bug fix can be provided.

File access denied. (1705)

The program has been prevented by the operating system from writing to a file that is read only. This could be caused by the file being protected by the DOS ATTRIB command, or LAN network rights may have been specified only for reading the file but not writing it back to disk. The network operating system may have changed the attribute byte for the file to read only (perhaps by an add-on utility or menu). Some networks erroneously report this error when the file is being used in nonshare (exclusive) mode by another user. Consult your network administrator.

File already exists. (7)

The file name you are giving your file already exists in the chosen directory. Try a different file name.

File close error. (1112)

The operating system returned an error while the program that runs CRIS was attempting to close a file. This could be a transient "hiccup" by the operating system, or it could indicate an underlying hardware problem. Try the operation that gave this error again. If it still doesn't succeed, consult your computer support personnel.

File ['<file>'] does not exist. (1)

The file you have specified does not exist. Check the directory (DOS DIR) to find the correct file name. Consult your computer support personnel for more help. If this error occurs when you have not specified a file to use, then it is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

File is in use by another. (108)

CRIS attempted to open, delete, or rename a file that is being used by another user on the network. Since CRIS attempts to check for this possibility, please call the CRIS POC to report this so that additional checking can be done by the software in this area.

File is in use. (3)

This error is most likely a programming bug related to trying to open, delete, or rename a file that is already open in another work area. Call the CRIS POC to report this so that a bug fix can be provided.

File is open in another work area. (1708)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

File is read only. (1718)

An attempt was made to write to a read-only file. Call your network administrator to verify that you have sufficient LAN network rights to write to the file. Also check that the DOS ATTRIB command does not specify the file as read only.

File must be opened exclusively to convert Memo file. (1637)

The database you are using has non-FoxPro style Memo fields (it was created by dBase IV or another clone), and the database has been opened in shared mode on the network.

File not open. (1113)

This error is most likely a programming bug related to trying to read from or write to a file that is not open. Call the CRIS POC to report this so that a bug fix can be provided.

File read error. (1104)

The operating system returned an error while the program that runs CRIS was attempting to read a file. This could be a transient "hiccup" by the operating system, or it could indicate an underlying hardware problem with the disk, controller, or LAN connection. Try the operation that gave this error again. If it still doesn't succeed, consult your computer support personnel.

File was not LOADed. (91)

This error indicates an attempt to perform an operation with an optional library module, such as the graphing support library, which requires EGA/VGA video. This error is most likely a programming bug since CRIS attempts to check that the library loaded successfully before trying any operations on it. Call the CRIS POC to report this so that a bug fix can be provided.

File write error. (1105)

The operating system returned an error while the program that runs CRIS was attempting to write to a file. This is usually caused by the disk being write-protected or having incorrect rights to a LAN network subdirectory. It could also indicate an underlying hardware problem, or a problem with the operating system, hard disk, controller, or LAN connections. Consult your network administrator if you are unable to determine what caused the error.

FILTER expression too long. (1140)

This error is most likely a programming bug related to running a search command that is too long (complex). The search command string cannot be longer than 160 characters, but CRIS should be checking to prevent the string from getting to large. Call the CRIS POC to report this so that a bug fix can be provided.

FILTER requires a logical expression. (37)

This error is most likely a programming bug related to running a search command that is incorrectly specified. If this error occurs anywhere but in "Begin a New Search Using XBase Command," CRIS should be checking that the command is valid. Call the CRIS POC to report this so that a bug fix can be provided. If this error occurs in "Begin a New Search Using XBase Command," you have specified a command that does not evaluate to a logical expression. Call Technical Support if you do not understand what was wrong with the command you entered.

For/while need logical expressions. (1127)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Foreign node found during compaction. (1008)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

FOXUSER file is invalid. (1294)

Your resource file has been corrupted. Assuming the user name you log in with is "FRED", delete the files FREDUSER.DBF and FREDUSER.FPT so that CRIS can create new files. If the error occurs before you log in, delete the files FOXUSER.DBF and FOXUSER.FPT. If this still doesn't help, reinstall the model

resource files CRISUSER.DBF and CRISUSER.FPT from your original distribution disk.

Free handle not found. (1003)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Function not implemented. (1999)

A command that is available only in the developer version of FoxPro has been requested. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

If/else/endif mismatch. (1211)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Illegal operation for MEMO field. (34)

This error is most likely a programming bug related to attempting to sort on (INDEX) a memo type field. CRIS should be preventing you from specifying a memo field here. Call the CRIS POC to report this so that a bug fix can be provided.

Illegal printer driver recursion. (1910)

Your printer driver program calls upon the printer driver. Printer drivers are not supported in this version of CRIS, so you should never see this error.

Illegal seek offset. (1103)

This is an error that is internal to the program CRIS was written in. Call the CRIS POC so that this error can be reported to the manufacturer.

Illegal value. (46)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Import only Worksheet A for Lotus 1-2-3 version 3.0 files. (1679)

Worksheets B and C cannot be imported into FoxPro because a database is two-dimensional.

Improper data type in field expression. (1647)

The report generator format file you are attempting to use contains a picture data type. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Improper data type in group expression. (1241)

The report generator format file you are attempting to use contains a picture data type. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Incorrect handle found during compaction. (1009)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Index does not match database file. Recreate Index. (114)

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Index expression is too big. (23)

This error is most likely a programming bug because CRIS should be checking that your SORT ON clause is shorter than the maximum length of 220 bytes. Call the CRIS POC to report this so that a bug fix can be provided.

Index file does not match database. (19)

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Index tag not found. (1683)

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Index tag or file name must be specified.

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Insufficient memory. (1282) or (43)

You do not have enough free RAM memory to do the operation you have requested. Frequently, this can be remedied by loading DOS in high memory if you have version 5.0 of DOS. Consult your computer support personnel for assistance in increasing the amount of memory available.

Insufficient stack space. (1308)

This error is most likely a programming bug related to CRIS trying to do too many things at once. Call the CRIS POC to report this so that a bug fix can be provided. You should return to DOS and start CRIS over again if you get this error.

Internal consistency error.

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Internal error: Too many characters in report. (1243)

The report generator format file you are attempting to use is too complex to be run. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Invalid buffdirty call. (1155)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Invalid buffpoint call. (1154)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Invalid box dimensions. (227)

Row 2, column 2 must be larger than row 1, column 1 when using the @ ... BOX command in the report generator report format file. You must correct the report generator format file.

Invalid character in command. (1220)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid compact EXE file. Rebuild EXE.

This error is either a programming bug or the EXE file has been corrupted. Try to reinstall the EXE file from your distribution disk. If this doesn't help, call the CRIS POC to report this so that a bug fix can be provided.

Invalid database number. (17)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid DIF file header. (115)

The DIF file you are attempting to import has a bad header. This could be because the file is not really in the DIF file format, the DIF file could have become corrupted, or the data fields in the DIF file do not match the database you are trying to import into.

Invalid DIF type indicator. (117)

The DIF file you are attempting to import has a bad data type indicator. This could be because the file is not really in the DIF file format, the DIF file could have become corrupted, or the data fields in the DIF file do not match the database you are trying to import into.

Invalid DIF vector -- DBF field mismatch. (116)

The DIF file you are attempting to import has an internal conflict between its header and its data. This could be because the file is not really in the DIF file format, the DIF file could have become corrupted, or the data fields in the DIF file do not match the database you are trying to import into.

Invalid Excel version 2.0 file format. (1661)

The Excel file you are attempting to import either is not version 2.0 or has been corrupted. If you are using a later version of Excel, you must choose Save As (to a new name) to change the file type when you save your Excel worksheet.

Invalid field width or number of decimal places. (1713)

This error is most likely a programming bug, since CRIS should be checking that you do not define fields (categories) for a database with a field length that is insufficient to handle the number of decimal places indicated. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid file descriptor. (1111)

This is an error that is internal to the program CRIS was written in. That program was unable to open a file. Call the CRIS POC so that this error can be reported to the manufacturer.

Invalid function argument value, type, or count. (11)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid index number. (1141)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid keyboard macro file format. (356)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid key length. (112)

This error is most likely a programming bug because CRIS should be checking that your SORT ON clause creates an index key shorter than 100 characters. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid Lotus 1-2-3 version 1.0 file format. (1662)

The Lotus 1-2-3 file you are attempting to import either is not version 1.0 or has been corrupted.

Invalid Lotus 1-2-3 version 2.0 file format. (297)

The Lotus 1-2-3 file you are attempting to import is not version 2.0. Use the Lotus conversion utility to convert the file to version 2.0 before attempting to import it.

Invalid Lotus 1-2-3 version 3.0 file format. (1678)

The Lotus 1-2-3 file you are attempting to import either is not version 3.0 or has been corrupted.

Invalid Multiplan version 4.0 file format. (1670)

The Multiplan file you are attempting to import either is not version 4.0 or has been corrupted.

Invalid or duplicate field name. (1712)

You have attempted to create a field in a database that already has that name, or have used the characters ., ", /, \, [,], :, |, <, >, +, =, ;, *, or ?, or a blank or a space in a field name. This error is most likely a programming bug because CRIS should be preventing you from creating a bad field name. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid or missing EXE file.

The CRIS.EXE file is either corrupted or you do not have the proper LAN network rights to use it. Try reinstalling CRIS.EXE from the distribution disk or check with your network administrator to determine if you have the proper rights on your network.

Invalid Paradox version 3.5 file format. (1688)

The Paradox file you are attempting to import either is not version 3.5 or has been corrupted.

Invalid path or file name. (202)

You've attempted to execute a command that contains an invalid path or file name. This error is most likely a programming bug because CRIS attempts to check that you have specified legal DOS names for files and paths. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid printer redirection. (124)

This normally occurs when attempts are made to share a nonsharable printer on a LAN, or the path to the print device has not been properly defined.

Invalid SET expression. (231)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid Symphony version 1.0 file format. (1673)

The Symphony file you are attempting to import either is not version 1.0 or has been corrupted.

Invalid Symphony version 1.1 file format. (1674)

The Symphony file you are attempting to import either is not version 1.1 or has been corrupted.

Invalid subscript reference. (31)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid SYLK file dimension bounds. (120)

The Multiplan SYLK file you are attempting to import is indicating invalid rows or columns -- it is out of bounds. It could be that the SYLK file is corrupted, or perhaps the file is actually a Multiplan 4.01 file which uses the MOD file structure rather than SYLK.

Invalid SYLK file format. (121)

The Multiplan file you are attempting to import is not in a valid SYLK file format. It could be that the SYLK file is corrupted, or perhaps the file is actually a Multiplan 4.01 file that uses the MOD file structure rather than SYLK.

Invalid SYLK file header. (119)

The file header of the Multiplan file you are attempting to import has an incorrect SYLK file header. It could be that the SYLK file is corrupted, or perhaps the file is actually a Multiplan 4.01 file that uses the MOD file structure rather than SYLK.

Invalid variable reference. (1223)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Invalid WINDOW file format. (1632)

The window save file (.WIN) being restored contains invalid data. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

I/O operation failure. (1002)

DOS is unable to perform a file or hardware operation. Call your computer support personnel if you can't determine the cause of the problem.

Key label ['<label>'] is invalid. (1255)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Key string too long. (1257)

This error is most likely a programming bug because the picklist should not be returning a value that is excessively large for the program to handle. Call the CRIS POC to report this so that a bug fix can be provided.

Key too big. (1124)

This error is most likely a programming bug because CRIS should be checking that your SORT ON clause creates an index key that does not exceed 150 bytes compiled. Call the CRIS POC to report this so that a bug fix can be provided.

Label file invalid. (54)

The mailing label format file you are attempting to use is not recognized as being such. Either it was not created by the report/label generator or it has become corrupted. You will probably need to create a new label format file.

Label nesting error. (1653)

The mailing label format file you are attempting to use contains a call to LABEL FORM. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the label against, or the label format file could have become corrupted. You will probably need to create a new label format file.

Left margin plus indent must be less than right margin. (221)

The sum of the specified left margin and paragraph indent exceeds the right margin.

Library file is invalid. (1691) or (691)

This error indicates an attempt to perform an operation with an optional library module, such as the graphing support library, which requires EGA/VGA video. This error usually indicates that something is wrong with the library file. Try reinstalling from the distribution disk.

Line number must be less than page length. (222)

The line number used falls beyond the page length memory variable. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Line too long. (18)

The maximum length for a command line (2048 bytes) has been exceeded. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Localized product required for this environment.

There was an attempt to use a US version of FoxPro with a non-US system.

LOG() : Zero or negative. (58)

A zero or a negative number has been used as the argument of the natural log function. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

LOG10() : Zero or negative. (292)

A zero or a negative number has been used as the argument for a base-10 logarithm. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Logical expression required.

The expression provided in the Expression Builder must be of logical type in this instance.

Macro not defined. (355)

An attempt has been made to play a macro that does not exist.

Maximum allowable menu items (128) exceeded. (1607) or (607)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Maximum allowable menus (25) exceeded. (1608) or (608)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Maximum record length exceeded in import file. (392)

The file you are attempting to import has a record length greater than 4,001 bytes.

MEMO file is missing/invalid. (41)

An attempt was made to use a database file whose associated memo file (.DBT or .FPT) has been deleted, removed, or cannot be found. It could also be that the memo file has become corrupted and does not match the .DBF file. Restore the database from your backup disk. You cannot open a database that has a bad memo file, even if you don't plan to edit memos this session. Both files must be present and uncorrupted.

Memory Variable file is invalid. (55)

The attempt to read your color set choice from the memory file FREDCOLO.MEM (for the user FRED) failed. The file had probably become corrupted. Delete the .MEM file and it will be created from scratch.

Menu file invalid. (1687)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu has not been activated. (178)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu has not been defined. (168)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu is already in use. (181)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu item cannot be defined. (169)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu item cannot be released. (170)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu items/titles must be type CHARACTER. (1611) or (611)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Menu/Popup was not pushed. (279)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Mismatched braces in key label. (1256)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Mismatched case structure. (1213)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Missing ((1304)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Missing) (1300)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Missing , (1306)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Missing expression. (152)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Missing operand. (1231)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

MULTISELECT/MOVERS not supported for PROMPT style popup. (1710)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Must be an array definition. (1232)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Must be a character, date, or numeric key field. (1145)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Must be a file variable. (1226)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Must be a memory variable. (1225)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Nested aggregation not allowed. (1844) or (844)

Nesting of the aggregate functions MIN(), MAX(), SUM(), AVG(), COUNT(), NPV(), STD(), or VAR() is not allowed in FoxPro 2.0. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Nesting error. (96)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Nested key labels are invalid. (1254)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No bars have been defined for this popup. (166)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No database is in USE. (52)

A database was not in use at the time an attempt was made to execute a database command. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No fields to process. (47)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No fields were found to copy. (138)

This error is most likely a programming bug. If you do not specify fields to copy to a new database, CRIS should be cancelling the copy procedure. Call the CRIS POC to report this so that a bug fix can be provided.

No memory for buffer. (1149)

It has proven impossible to allocate memory for a buffer. This message is very unusual and will occur only in situations where available RAM memory is extremely limited. You should consider adding memory or removing some memory resident

programs to give FoxPro more working memory.

No memory for file map. (1150)

It has proven impossible to allocate memory for an internal resource. This message is very unusual and will occur only in situations where available RAM memory is extremely limited. You should consider adding memory or removing some memory resident programs to give FoxPro more working memory.

No memory for file name. (1151)

It has proven impossible to allocate memory for an internal resource. This message is very unusual and will occur only in situations where available RAM memory is extremely limited. You should consider adding memory or removing some memory resident programs to give FoxPro more working memory.

No menu bar defined. (1604)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No pads defined for this menu. (1621)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No PARAMETER statement found. (1238)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No popup menu defined. (1605)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No previous printjob to match this command. (1649)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

No such menu/item is defined. (1612) or (612)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Not a character expression. (45)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Not a database file. (15)

The database header contains invalid information. It could be that you've tried to open a file that is not in fact a .DBF type file. If the file you tried to open is one you created in CRIS, restore from your backup copy of the database. Some utility programs, such as Norton Utilities, may be able to fix the file. Call your computer support personnel for assistance.

Not a numeric expression. (27)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Not a user-defined window. (1682)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Not a valid Framework II database/spreadsheet. (256)

The file you are attempting to import is not a valid Framework II file format.

Not a valid RapidFile database. (255)

The file you are attempting to import is not a valid RapidFile file format.

Not enough disk space. (56)

The operating system has returned an error indicating that there is no room on the disk to contain the data from the latest WRITE command.

Not enough disk space for "<file name>". (1160)

The operating system has returned an error indicating that there is no room on the disk to contain the data from the latest WRITE command. This is also erroneously returned under certain versions of Novell when you try to extend a file that has no owner.

Not enough memory to USE database. (1600)

There was not enough RAM memory to open an additional database. Remove memory resident programs, load DOS into high memory, or add additional RAM to the computer.

Not suspended. (101)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

NOWAIT/SAVE/NOENVIRONMENT/IN/WINDOW clauses not allowed with FROM. (1696)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Numeric overflow (data was lost). (39)

A mathematical operation resulted in a number that was too large to be stored in the field or variable in which it was placed.

Operator/operand type mismatch. (107)

An arithmetic, string, or logical operator or function is being used with an invalid data type. This error would occur, for example, if you were to attempt to add two logical values. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

OS memory error. (1012)

Your DOS free memory chain has become scrambled. Return to DOS and reboot the computer. If the problem persists, the EMS memory manager is probably the culprit. Consult your computer support personnel to help you determine which programs you are running that might be conflicting with each other.

PAD has not been defined. (164)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Picture error in GET statement. (1217)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

POPUP has not been activated. (179)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

POPUP has not been defined. (165)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

POPUP is already in use. (182)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

POPUP is too small. (287)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Popup too big, first <expN> entries shown.

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Position is off the screen. (30)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided. If you got this error because you turned the printer off in the middle of printing a report, keep choosing ignore until you get back to the menu.

PREVIEW clause not allowed with OFF/NOCONSOLE or TO PRINT/FILE. (1681)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Printer driver is corrupted. (1643)

An attempt has been made to load a printer driver that is corrupted. You should not be getting this error since CRIS does not make use of printer drivers in this version.

Printer driver not found. (1644)

The specified printer driver could not be located. You should not be getting this error since CRIS does not make use of printer drivers in this version.

Printer not ready. (125)

Either the printer device specified is currently not accessible or the printer is timing out. Check that the printer is plugged in and turned on, that the cables between your computer and the printer are firmly attached, that any switch boxes that enable you to share the printer with another user are set to give your computer use of the printer and that the printer is on-line. Check that the printer is not out of paper, and that a printer jam has not occurred. If you are getting this error and everything is physically correct with the printer, the printer may be timing out. You can try to add the line TIME=10000000 to the CONFIG.FP file, or setting DOS for infinite retry of the printer using the DOS MODE command MODE LPT1,,p

Printjobs cannot be nested. (1337)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Procedure "<procedure>" not found. (1162)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Program too large. (1202)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Project file is invalid. (1685)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

PROMPTS for this popup have already been defined. (279)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Queue "<queue>" not found. (1716)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Record is in use by another. (109)

This error is most likely a programming bug because CRIS should be checking that you can have access to a record before allowing you to make any changes to the record. Call the CRIS POC to report this so that a bug fix can be provided.

Record is in use: Cannot write. (1502)

This error is most likely a programming bug, since CRIS should be checking that you can have access to a record before allowing you to make any changes to the record. Call the CRIS POC to report this so that a bug fix can be provided.

Record is not in index. (20)

This error is most likely a programming bug, since CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Record is not locked. (130)

This error is most likely a programming bug, since CRIS should be locking a record before allowing you to make any changes to the record. Call the CRIS POC to report this so that a bug fix can be provided.

Record is out of range. (5)

This error is most likely a programming bug, since CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Record too long. (1126)

While attempting to create a database file, the maximum length for the data portion of a record (4,000 bytes) was exceeded. The length of the data portion of a record is equal to the sum of the lengths of the individual record fields. This error is most likely a programming bug, since CRIS should be preventing you from modifying a database structure in such a way that the record is too long. Call the CRIS POC to report this so that a bug fix can be provided.

Recursive macro definition. (1206)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Relational expression too long. (1108)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Report file invalid. (50)

The report generator format file you are attempting to use contains an error. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Report nesting error. (1645)

The report generator format file you are attempting to use contains an error. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Required clause not present in command. (1221)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

RUN! command failed. (1405)

The operating system has returned an error indicating that it cannot create a process to execute a RUN command. Most often, this error is the result of the inability to find the shell program to be executed, or insufficient free memory to load the shell program into memory. Make sure the COMMAND.COM is accessible via the DOS environment variable COMSPEC.

RUN! command string too long. (1411) or (411)

This error is most likely a programming bug, since CRIS should not be allowing any shells to DOS without checking that the command string is less than 240 characters. Call the CRIS POC to report this so that a bug fix can be provided.

Server "<server>" not found. (1715)

The server specified with the SET PRINTER TO command could not be found.

SQRT domain error. (61)

The SQRT argument must not be negative.

Stack overflow-expression too complex. (1308)

This error is most likely a programming bug related to CRIS trying to do too

many things at once. Call the CRIS POC to report this so that a bug fix can be provided. You should return to DOS and start CRIS over again if you get this error.

String memory variable area overflow. (21)

This error is most likely a programming bug related to CRIS trying to do too many things at once. It could be that you do not have sufficient memory for CRIS to define all the memory variables it needs to define. Call the CRIS POC to report this so that a bug fix can be provided. You should return to DOS and start CRIS over again if you get this error.

String too long to fit. (1903)

The allowable string length was exceeded. The SORT ON or number of fields chosen (to browse or report on) made the command too long to execute. Choose Ignore through the rest of the errors to get back to the menu. Then call CRIS POC to inform us where this error occurred so that it can be trapped for the future.

Structural CDX file not found. (1707)

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Structural CDX file reference removed. (1107)

This error is most likely a programming bug because CRIS should be creating any indexes used from scratch. Call the CRIS POC to report this so that a bug fix can be provided.

Structure invalid. (1235)

In CREATE FROM, a database was specified whose structure does not match the STRUCTURE EXTENDED format. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Structure nesting too deep. (1212)

The maximum structured programming command nesting of 64 levels has been exceeded. This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Subscript out of bounds. (1234)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Syntax error. (10)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Tab stops must be in ascending order. (228) or (226)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Target is already engaged in relation. (1147)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too few arguments. (1229)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too many arguments. (1230)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too many extensions specified. (1694) or (694)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too many files open. (6)

FoxPro has attempted to open more than its internal limit of files (99). This may possibly be caused by the CONFIG.SYS file setting not being set high enough. CONFIG.SYS must include the FILES= statement. Increase the number in this statement. If CRIS is running on a LAN, the LAN operating system may require that the work node have a FILE HANDLES statement. For example, Novell will default to 40 file handles if it is not instructed otherwise, and this is usually too small a number. The FILE HANDLES setting might also need to be adjusted upward on the server because the server setting takes precedence over the work node setting. Consult your computer support personnel or network administrator for assistance.

Too many memory variables. (22)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too many PICTURE characters specified. (1310)

The amount of characters permitted in a PICTURE clause is limited by memory. You may need to increase the amount of RAM memory available for CRIS. Consult your computer support personnel for more assistance.

Too many PROCEDURES. (1250)

The number of procedures is limited by the amount of memory you have. You may need to increase the amount of RAM memory available for CRIS. Consult your computer support personnel for more assistance.

Too many READs in effect. (1249)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Too many names used. (1201)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided. You should return to DOS and start CRIS over if you get this error.

Too many relationships. (1148)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Total field type must be numeric. (1646)

A report expression that includes a total specification is not numeric type. The report generator format file you are attempting to use contains an error. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the report against, or the report format file could have become corrupted. You will probably need to create a new report format file.

Total label width exceeds maximum allowable size. (1246)

The LABEL command detected a condition where the sum of the individual label widths plus separating spaces is greater than the maximum width allowed. The mailing label format file you are attempting to use contains an error. It could be a syntax error, specification of a field that does not exist in the database you are attempting to run the label against, or the label format file could have become corrupted. You will probably need to create a new label format file if you can't modify this one to fix the error.

Transgressed node found during compaction. (1007)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Unable to create temporary work file(s). (1410)

DOS has told the program that it cannot create a temporary file needed to sort/index your database. There are several reasons why this might be the case. The most likely reason is that you have run out of space on the disk (or directory space on a LAN). You could also have specified an invalid file name, such as a name that contains spaces or punctuation marks, or one that is longer than eight characters before the extension. If you are running CRIS from a network, you might not have the correct LAN authorization rights to create a file. Finally, a hardware error could have caused an inability to write to the disk.

Unable to generate printer driver. (1717)

You have not specified a printer driver through _GENPD and tried to use the command SET PDSETUP. You should not be getting this error because CRIS does not make use of printer drivers in this version.

Unable to locate desired version of FoxPro.

The version of FoxPro (the program that runs CRIS) requested is not on the designated path. Make sure that FOXPRO.ESO and FOXPRO.ESL are in the same directory as CRIS.EXE.

Unable to process error.

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Unknown error code <expN>.

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Unknown function key. (104)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Unrecognized command verb. (16)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Unrecognized phrase/keyword in command. (36)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Unresolvable REGIONAL name conflict. (1692)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Use of invalid handle. (1004)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Use of unallocated handle. (1005)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that

this error can be reported to the manufacturer.

Use of transgressed handle. (1006)

This is an error that is internal to the program CRIS was written in. All open files will be closed, and you will then be returned to DOS. Call the CRIS POC so that this error can be reported to the manufacturer.

Variable must be in selected database. (1134)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Variable ["<variable>"] not found. (12)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

View file invalid. (127)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

WINDOW coordinates are invalid. (332)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

WINDOW has not been activated. (215)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

WINDOW ["<window name>"] has not been defined. (214)

An attempt has been made to activate a window that has not been defined. Frequently, this error indicates that you are running low on available RAM memory, and will occur a few operations before an Insufficient Memory error. Consult your computer support personnel for assistance in freeing up more RAM memory or installing additional RAM chips in your computer.

Worksheet A for Lotus 1-2-3 version 3.0 file is hidden. (1680)

The program cannot import a worksheet that has been hidden.

Wrong length key. (1117)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Wrong number of parameters. (94)

This error is most likely a programming bug. Call the CRIS POC to report this so that a bug fix can be provided.

Appendix E: File List

CRISG.BAT	Batch File for Optional Graphing Module
SETDGE.BAT	Batch File for Optional Graphing Module
DGE.BIN	Library File for Optional Graphing Module
DGEOEGA.CHR	Font File for Optional Graphing Module
DGE1EGA.CHR	Font File for Optional Graphing Module
DGEVGA.COM	Video Driver for Optional Graphing Module
TESTVID.COM	Required Video Tester for Optional Graphing Module
CRISUSER.BBF	Model Resource File. Required for CRIS.
CRISUSER.FPT	Model Resource File (Memo). Required for CRIS.
FOXUSER.DBF	Initial Resource File. Required for CRIS.
FOXUSER.FPT	Initial Resource File (Memo). Required for CRIS.
FOXPRO.ESL	FoxPro Runtime Library File. Required for CRIS.
FOXPRO.ESO	FoxPro Runtime Overlay File. Required for CRIS.
CRIS.EXE	CRIS Executable File. Required for CRIS.
CRSCOLOR.EXE	Optional Color Set Creator Executable
CONFIG.FP	ASCII Text File for CRIS Configuration
RMN2828.STX	Font File for Optional Graphing Module
RMN3828.STX	Font File for Optional Graphing Module
HEADER.WP	WordPerfect Header File. Required to Export Secondary Merge File.

Appendix F: Network Administrator's Survival Information

CRIS is sensitive to the values stored in certain DOS environmental variables. You have the option of setting up any combination of these variables, and you have the option of setting these variables in the user's AUTOEXEC.BAT file or from within the network login script/user profile script. Since CRIS is probably not the only program asking you to define environmental variables to control its behavior on the network, you may run out of environment space. To expand the DOS environment, place a SHELL command in the CONFIG.SYS file and reboot the computer. The syntax of SHELL differs from version to version of DOS, but the command should look something like:

```
SHELL=COMMAND.COM /P /E:1024
```

A sample showing how these variables are set appears on the next page.

CRUSR is where CRIS will put all of its support databases, resource files, indexes, and so on. This leaves the program directory uncluttered. For a shared database, this directory should be specified the same for all users; thus, it should be located on the server. It is advantageous to set this variable in the user's login script (so you could make a group login script for users of a certain set of databases).

CRHOM is where the data files should be stored. This value is used whenever a new user name is added to have an initial value for CRIS's data directory. After installation, the path settings stored in the CSYSUSER.DBF file are used. If it is not specified in the DOS environment, then a subdirectory of the directory where CRIS is installed, called "DATA," will be used. For a shared database, this directory should be the same for all users of that database; thus, it should be located on the server. It is advantageous to set this variable in the user's login script (so you could make a group login script for users of a certain set of databases).

CRTMP is where temporary files are opened. If this variable is specified in the DOS environment, then anything in the CRTMP directory can be deleted after returning to DOS. If it is not specified in the DOS environment, then the directory where CRIS is installed will be used. For best performance, this should be located on the user's local hard drive (or a large RAM drive, if used). It is advantageous to set this variable in the user's AUTOEXEC.BAT

FOXPROCFG is the location of a configuration file called CONFIG.FP. This file controls the behavior of the FoxPro runtime. When FoxPro loads, it will read information from an ASCII file, CONFIG.FP, and a resource database with memo fields FOXUSER.DBF and FOXUSER.FPT. If the FOXUSER files are not found, they will be created in the directory from which CRIS was executed. FoxPro selects a CONFIG.FP file to read depending on the value stored in the DOS environmental

variable FOXPROCFG. If that variable is not set, FoxPro will read the CONFIG.FP located in the directory from which it is started (the directory containing CRIS.EXE). It is advantageous to set this variable pointing to a copy of CONFIG.FP located in the user's DOS directory, since all users of CRIS will have a DOS directory and users are unlikely to delete the contents of that directory inadvertently.

A sample of the commands to set up environmental variables follows. This example shows instructions on how to put temporary files and read the CONFIG.FP on the workstation hard drive, and provides pointers to data and support files on separate server directories.

```
set crttmp=c:\tempfile  
set crhom=x:\cris\data  
set crusr=x:\cris\userfile  
set foxprocfg=c:\dos\config.fp
```

Sample AUTOEXEC.BAT or Login Script Commands

```
set crttmp=c:\cris\tempfile  
set crhom=c:\cris\data  
set crusr=c:\cris\userfile
```

Sample AUTOEXEC.BAT Commands for Single User

The CONFIG.FP file is similar to a CONFIG.SYS file. The commands we are interested in that can be put in it are the pointers to temporary file directories that will be used by FoxPro. In the following example, temporary files are directed to a directory on the user's workstation:

```
EDITWORK=c:\tempfile  
SORTWORK=c:\tempfile  
PROGWORK=c:\tempfile  
TMPFILES=c:\tempfile  
OVERLAY=c:\tempfile OVERWRITE
```

Sample CONFIG.FP

The overlay file will be copied automatically to the directory specified in `OVERLAY` if that command is included in `CONFIG.FP`. Having this information read from the user's workstation rather than from the network server will improve performance. If a RAM drive is big enough, this is a good category to have a file copied to. `OVERLAY` should point to the fastest available storage device that has enough room to contain it.

The categories of temporary files controlled in the `CONFIG.FP` are:

- Program Cache (controlled by `PROGWORK`). Typically the size of this file will be about 256K, but it could be larger.
- Text Editor Work Files (controlled by `EDITWORK`). Anytime a report is printed to screen or a memo is edited, this type of temporary file will be created. The size of the file depends on the database being edited.
- Sort and Index Work Files (controlled by `SORTWORK`). This can require space up to twice the size of the file being sorted or indexed.

If you set up all the environmental variables and `CONFIG.FP` directives described above, then the `CRIS` directory itself can be made read-only, as a network administrator might want to do. Of course, the support, data, and temporary file directories will require user rights for `CREATE`, `UPDATE`, `DELETE`, `READ`, and so on.

Don't forget to make the changes to `CONFIG.SYS` relating to the `BUFFERS` and `FILES` commands. The `BUFFERS=nn` command controls the number of disk buffers (or blocks of memory set aside to hold data when reading and writing from disk) that are set aside in memory when the computer is booted. The best setting of buffers is between 20 and 40. The `FILES=nn` command controls how many files the operating system can open and access at one time. If it is too low, you will get "TOO MANY FILES OPEN" errors. This should not be lower than 60 for `CRIS`. Most networks also have a configuration file similar to `CONFIG.SYS`. Frequently, there is another network file handles command that you will also need to increase. If your user's workstation `CONFIG.SYS` has, for example, `FILES=99` and the user is getting "TOO MANY FILES OPEN" errors, investigate the network configuration files to be sure that the `FILE HANDLES` setting there is appropriate.

Disk caching can sometimes cause problems. If you experience problems that might be related to disk caching, turn it off and try duplicating the problem. The FoxPro documentation mentions specifically that the `DOS FASTOPEN` command should be avoided if at all possible.

Like any database, `CRIS` will eventually cause disk fragmentation. If a user reboots rather than quits `CRIS` properly, it is virtually guaranteed that unallocated file clusters will result from temporary files that did not get closed. The `DOS` program `CHKDSK/F` program should be run periodically to remove unallocated file clusters. Disk fragmentation should be remedied periodically with a disk optimization program.

Files Created by CRIS

The example shown in this table assumes that the user's login name is FRED and that the database name is FPOLK (which has a Memo field). A report named MYREPORT and a label named MYLABEL have been created. The user has rebooted the machine rather than quitting CRIS properly, leaving temporary files behind.

Where CRIS is installed	CRUSR (Support Files)	CRHOM (Data Files)	CRTMP (Temporary Files)
CRIS.EXE (executable)	FREDUSER.DBF (resource file)	FPOLK.DBF	01937572.TMP
FOXPRO.ESO (runtime overlay)	FREDUSER.FPT (resource memo)	FPOLK.FPT	93746285.TMP
FOXPRO.ESL (runtime library)	CSYSFRED.DBF (configuration file)	MYREPORT.FRX	92756872.TMP
CONFIG.FP (configuration file) This could be located in another directory if FOXPROCFG is set.	FREDCOLO.MEM (Fred's color selection)	MYREPORT.FRT	97561937.DBF
FOXUSER.DBF (resource file)	FPOLKFXX.DBF	MYLABEL.LBX	28758167.FPT
FOXUSER.FPT (resource memo)	FPOLKCXX.DBF	MYLABEL.LBT	28571983.IDX
CRISUSER.DBF (FREDUSER is copied from this)	FPOLKPXX.DBF		JUNK.TXT
CRISUSER.FPT (FREDUSER is copied from this)	FPOLKHXX.DBF		DESCRIPT.TXT (one such file for each memo field)
	FPOLKSXX.DBF		
	FPOLKMXX.DBF		
	FPOLKCXX.IDX		

Appendix G: Optional Graphing Module

The optional graphing feature in CRIS was implemented using the dGE graphing library. dGE is a trademark of Bits Per Second Ltd., and is currently owned by Pinnacle Publishing, Inc. However, if you require technical support for the graphing feature, you must call the CRIS POC, not Pinnacle Publishing.

To use the graphing feature in CRIS, you must:

1. Have an EGA, MCGA, or VGA monitor;
2. Have the following files in the same directory as CRIS.EXE:

CRISG.BAT	75 bytes
SETDGE.BAT	564 bytes
DGE.BIN	184 bytes
DGE0EGA.CHR	4224 bytes
DGE1EGA.CHR	4224 bytes
DGEVGA.COM	61435 bytes
TESTVID.COM	172 bytes
RMN2828.STX	10880 bytes
RMN3828.STX	14720 bytes

3. Have loaded the TSR (memory resident) driver. The CRISG.BAT will load the driver and then start CRIS. You should still have 460K of free (low) RAM memory after loading this driver for all the features in CRIS to work. This may mean that graphing and network use are not compatible (since a network shell takes so much memory); this is why the graphing feature is optional.

When CRIS starts, it will check the computer's memory for the existence of the graphing driver. If the driver has been properly loaded into memory, graphing will become available in two places:

1. As option Z. of the Search and Retrieval menu Graph Data on Screen
2. After printing the report in Display Value Tabulation, CRIS will ask if you wish to see a graph.

If you choose to create a graph (in either case), a radio button menu will appear with the following options:

- Pie Chart
- Line Graph
- Scatter Graph
- Vertical Bar Graph
- Clustered Bar Graph (At least 2 data fields)
- Stacked Bar Graph (At least 2 data fields)
- Positive-Negative Bar Graph
- Quit, No Graph

Choose the type of graph you wish to see. You will then be presented with a dialog requesting the title of the graph (leave blank if you prefer), the field(s) containing data (which must be of numeric type), and the field containing explanatory labels for the data points. If you entered the graphing feature from the Display Value Tabulation option, the fields in the database that you will be graphing are:

Name - C - 40	(The value of the field that was tabulated)
Valcnt - N - 8	(The number of records matching NAME in the entire database)
Selcnt - N - 8	(The number of records matching NAME in the selected search set)

Otherwise, the graph will be built directly from the selected CRIS database, and all records in the current selected search set will be graphed. If too many records are graphed, however, each datapoint will begin at a horizontal position that is less than one character width from the previous datapoint. This will result in the X Label line being virtually unreadable.

After you have provided the title, data, and label fields, a graph will be drawn on the screen. Press any key to clear the screen. A new options dialog will be presented. You will have the options of:

- Returning to the Graph Menu
- Adjusting Graphing Options
- Printing the Graph (and changing printer setup if needed)

Printing the Graph

If you wish to print the graph, select that option. Check that the displayed printer type is correct. If it is not, choose the Printer Setup button. Within the printer setup option, you can change the printer port, printer type (including File to make a PCX file), and set plotter options. When you have finished making changes to that screen, the graph will be redisplayed and then will print to the selected printer. You will again get the options dialog.

Adjusting Graphing Options

The graphing option dialogs give you a great deal of control over the appearance of the resulting graph. The remainder of this discussion will focus on the items appearing on these dialogs.

Show on Screen

Draw Best Fit Line? (for line graph or scatter graph)

Do you want to draw a linear best-fit line (least squares regression of Y on X) through the data set?

Draw Min and Max Lines? (for line graph or scatter graph)

Do you want to draw lines representing the minimum and maximum data points?

Draw Statistical Lines? (for line graph or scatter graph)

Do you want to draw mean or mean and standard deviation lines on the graph? The choice of whether to draw the standard deviation line is specified in the option Statistics Mode.

Stagger X Labels? (for all of the bar graphs)

CRIS will attempt to determine whether the individual x axis labels should be staggered (because otherwise they would overwrite each other), but if you wish to force staggering, you can check this box.

(X) Label Length: (for all of the bar graphs and the pie graph)

CRIS will take as the label length the maximum length of any label in the data set. If the labels still do not fit on the screen without overlapping, you can instruct CRIS to truncate (cut off) the label at a certain length. All labels must be the same length.

Show X Labels on Screen? (for all of the bar graphs)

If you cannot get the x axis labels to fit properly, you may choose to simply stop displaying them. To do so, uncheck this box.

X Axis Title? (for stacked or clustered bar graphs)

Do you want the X Axis Title to be displayed below the graph?

Legends? (for stacked or clustered bar graphs)

Do you want the legend (which appears in the upper right corner of the graph) to appear?

Note that if you will want legends for the pie chart (because you want the wedges labelled with percentages), you must choose a small size pie and percent mode labels. You must also select up to 8 data points in the second options screen to be given legends.

Color Options

All the color options are specified using a numeric color code. On the right side of the screen is a key to which color corresponds to which number code.

Title (all graphs): controls the color of the graph title.

X Axis Title (clustered and stacked bar graphs):

controls the color of the secondary title appearing beneath the graph.

XY Axes (all graphs except pie chart):

controls the color of the X and Y axis lines.

X Labels (all graphs except pie chart):

controls the color of the X axis labels. These are the labels that come from the database being graphed.

Y Labels (all graphs except pie chart):

controls the color of the Y axis labels. These are the numeric labels that show the scale of the data being graphed.

Graph Lines (line and scatter graphs):

controls the color of the data points or connecting lines of the data being graphed.

Bars on Graph (vertical and positive-negative bar graphs):

controls the color of the data bars on the graph. For clustered and stacked bar graphs, each bar color is specified separately on a subsequent browse screen.

Best Fit (line and scatter graphs):

controls the color of the regression line.

Min and Max (line and scatter graphs):

controls the color of the minimum and maximum lines.

Statistics (line and scatter graphs):

controls the color of the mean line. The standard deviation line will appear in a color that has a code one greater than that of the mean line.

Locations

The graph is laid out on a screen that is specified by coordinates. The coordinates of the upper left corner are $X=0$, $Y=1000$. The coordinates of the lower left corner are $X=0$, $Y=0$. The coordinates of the lower right corner are $X=1350$, $Y=0$. The coordinates of the upper right corner are $X=1350$, $Y=1000$. The locations of titles are also affected by the title's mode. By default, the title location specifies the CENTER of the title, since the Title Mode specifies to center the title.

Title X (all graphs):

The x coordinate location of the title (by default, the center of the title)

Title Y (all graphs):

The y coordinate location of the title (by default, the center of the title)

X Title X (stacked and clustered bar graphs):

The x coordinate of the title that appears beneath the graph.

X Title Y (stacked and clustered bar graphs):

The y coordinate of the title that appears beneath the graph.

Label Xoff (pie chart):

How far, horizontally, from the corresponding wedge to write the label.

Label Radius (pie chart):

How far from the center of the pie to write the label.

Pie Radius (pie chart):

How big to make the pie chart itself. Remember that this radius should be smaller than the label radius.

Pie Y (pie chart):

Where to place the center of the pie chart on the top/bottom axis of the screen.

Box X (stacked and clustered bar graphs):

Where to place the legend boxes on the horizontal axis of the screen.

Box Height (stacked and clustered bar graphs):

How tall to make the boxes for the legends.

Box Width (stacked and clustered bar graphs):

How wide to make the boxes for the legends.

Styles and Patterns

Patterns (the types of crosshatching) are specified by a code between 0 and 15, where 0 is solid. They can be modified for each bar of a stacked or clustered bar graph on the second (browse) option screen. They can be individually specified for each wedge of a pie chart on the second (browse) option screen for pie charts. In addition to pattern and color (discussed above), for pie charts the following options appear on this second (browse) screen to control the appearance of each wedge:

Explode: Explode this pie segment? If the value is 0, the wedge will not be exploded. If it is 1, it will be exploded.

Label: This is the label that is displayed next to the wedge if the label mode chosen is Text. It is the text of the legend if the legend option is available (see Legend, following). One way to compensate for overlapping labels because of extremely small wedges is to delete the text of the label for any that overlapped, and make the bottommost label of the overlapping group read "Others".

Legend: You will not be able to change anything in this field unless you have chosen Small pie size and Percent label format. To select a wedge to receive a legend below the pie chart, type T (for true) in this field. A blank field is the same as F (false). The program will only make the first eight legends selected. It will take the text of the legend from the first seven (7) characters in the label field. The color and pattern of the legend will match those of the associated pie wedge.

Data: This field is read-only (i.e., you can't change it). It is provided for your reference. It contains the scaled value of the data, which only under the rarest circumstance would be the same as the original data in your database. In addition to pattern and color for stacked or clustered bar graphs, the browse screen will also provide access to:

Datafld: This field contains the name of the data field for that set of bars of the graph.

Boxlegy: This field allows you to specify the Y coordinate location for placing the legend box. You can increase the numbers shown here to move the legend higher on the screen if the bars on the graph are overwriting the legend.

Legend: This field contains the text string that labels the crosshatch box in the legend.

Styles specify the appearance of data points or lines in the line and scatter type graphs. If the graph displays symbols for data points, the style number corresponds to an icon code, where:

0 = + 1 = x 2 = Δ 3 = ▲ 4 = ▽ 5 = ▼ 6 = □ 7 = ■ 8 = ◇ 9 = ◆

If the Graph Mode indicates lines rather than symbols, then the style number corresponds to

0 = solid, 1 = broken with interval of 1 pixel, 2 = interval of 2 pixels, and so on. In other words, it controls just how dotted the line is.

Data Points (line and scatter graph): line or symbol style for data points/lines in the graph.

Best Fit (line and scatter graph): line style (how dotted) for the regression line.

Min/Max (line and scatter graph): line style (how dotted) for the minimum and maximum lines.

Stats (line and scatter graph): line style (how dotted) for the mean and standard deviation lines.

Modes

Title (all graphs)

X Title (stacked and clustered bar graphs)

Legend (stacked and clustered bar graphs)

X Label (all graphs but pie chart)

Y Label (line and scatter graphs)

As these are all horizontal strings of text, the following codes can be used:

0 = Position text from the left edge of the string

8 = Position text from the center of the string

16 = Position text from the right edge of the string

Whether or not to stagger X Labels (for X Label only) is figured into this number, thus:

256 = Stagger X Labels, and position from the left

264 = Stagger X Labels, and position from the center

272 = Stagger X Labels, and position from the right

To vertically position text, the following codes would be used:

1 = Position text from the bottom of the string

65 = Position text from the center of the string

129 = Position text from the top of the string

Pie Label (pie chart)

If you want text labels

0 = text labels, with connecting lines

2 = text labels, with connecting lines, superimpose if necessary

8 = text labels, without connecting lines

10 = text labels, without connecting lines, superimpose if necessary

If you want percent labels

4 = percent labels (numeric format), with connecting lines

6 = percent labels, with connecting lines, superimpose if necessary

12 = percent labels, without connecting lines

14 = percent labels, without connecting lines, superimpose if necessary

XY Axes (all graphs but pie chart):

The default mode is 0, just the X and Y arms. To draw grids or put a box around the chart, sum the options from the list below that you wish to activate:

- +4 Draw Solid Y Grids
- +8 Draw Dotted Y Grids
- +12 Draw Dashed Y Grids
- +16 Draw Solid X Grids
- +32 Draw Dotted X Grids
- +48 Draw Dashed X Grids
- +64 Draw a Box Around the Exterior of the Graph.

For example, to get dotted x and y grids with a box around the outside, fill in the number 104 (8+32+64).

Bar Graph (all bar graphs)

- 0 = Simple Bar Graph (only one data field)
- 1 = Stacked Bar Graph
- 2 = Clustered Bar Graph
- +8 = Eliminate the spacer between adjacent bars
- +16 = Draw 3-D bars, outline top and sides only
- +32 = Draw 3-D bars, filled top and sides

Graph (line and scatter graphs)

- 0 = Chained Lines
- 1 = Symbols (Icons)
- 2 = Chained Lines+Symbols (Icons)
- 3 = Vertical Sticks

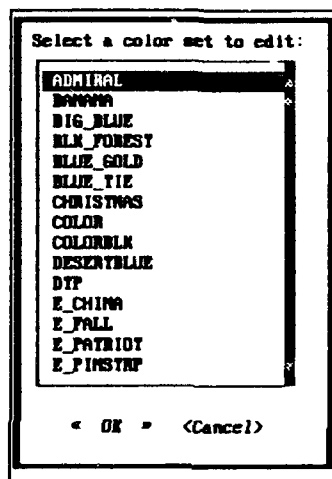
Statistics (line and scatter graphs)

- 0 = Mean line only
- 1 = Mean and standard deviation

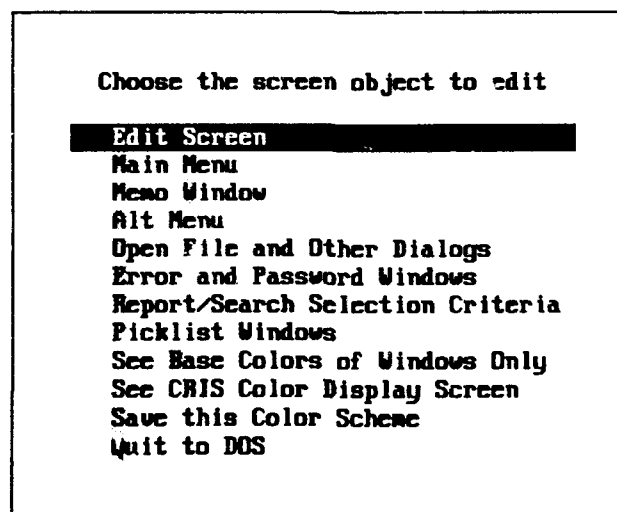
Appendix H: Color Set Creator

CRIS gives you option of designing your own screen colors. To begin the process of changing screen colors, type CRSCOLOR. The first screen will ask you to enter your login name. Type in your login name and press enter to continue. You must create this login name in CRIS itself to have a color set database to change.

The next screen displays a list of color sets to edit. Use the arrow keys, enter, or mouse to select the option of your choice, then select OK. In this example DTP was selected:



The next screen displays a list of screen objects to edit. Use the arrow keys to select your choice and press enter, or double click on your choice using the mouse. In this example Main Menu was selected:



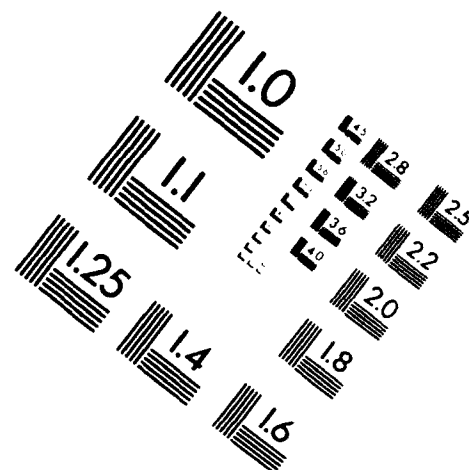
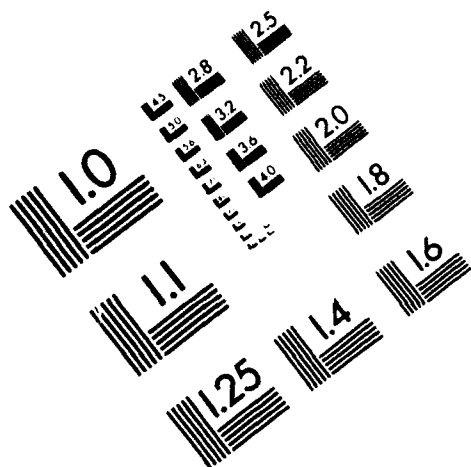


AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910

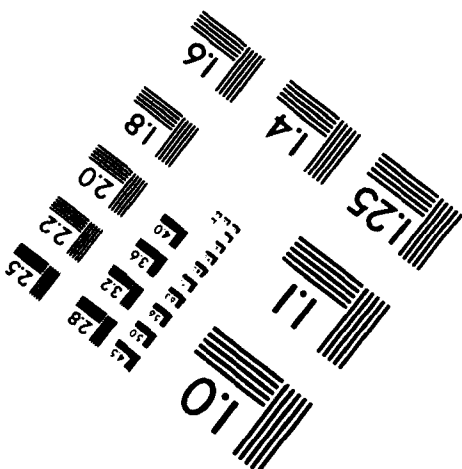
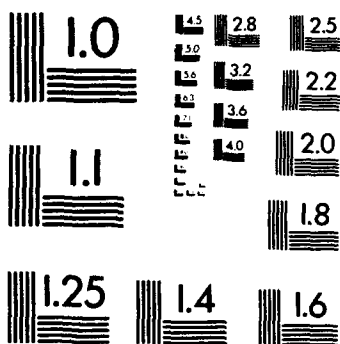
301/587-8202



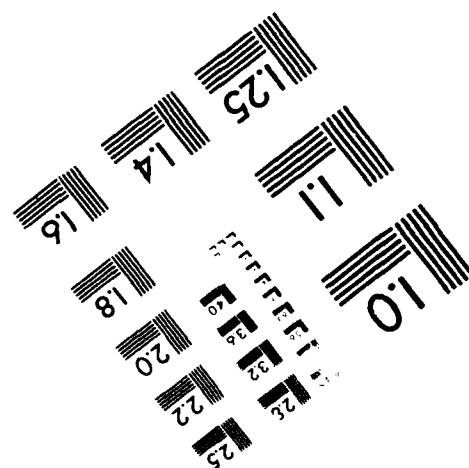
Centimeter



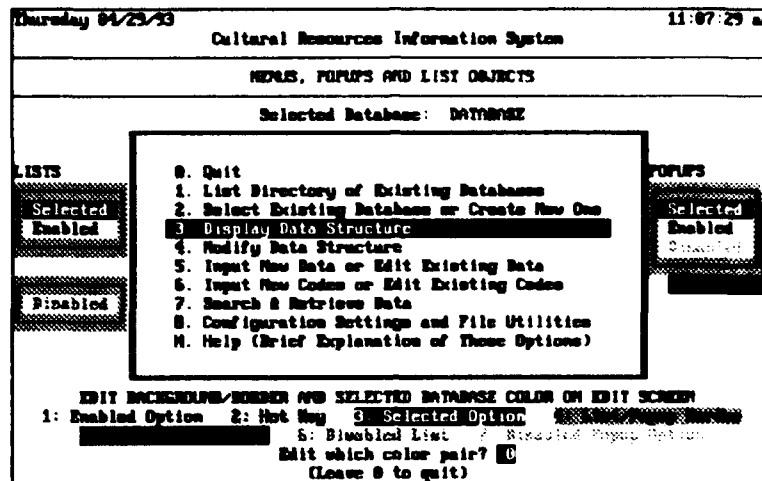
Inches



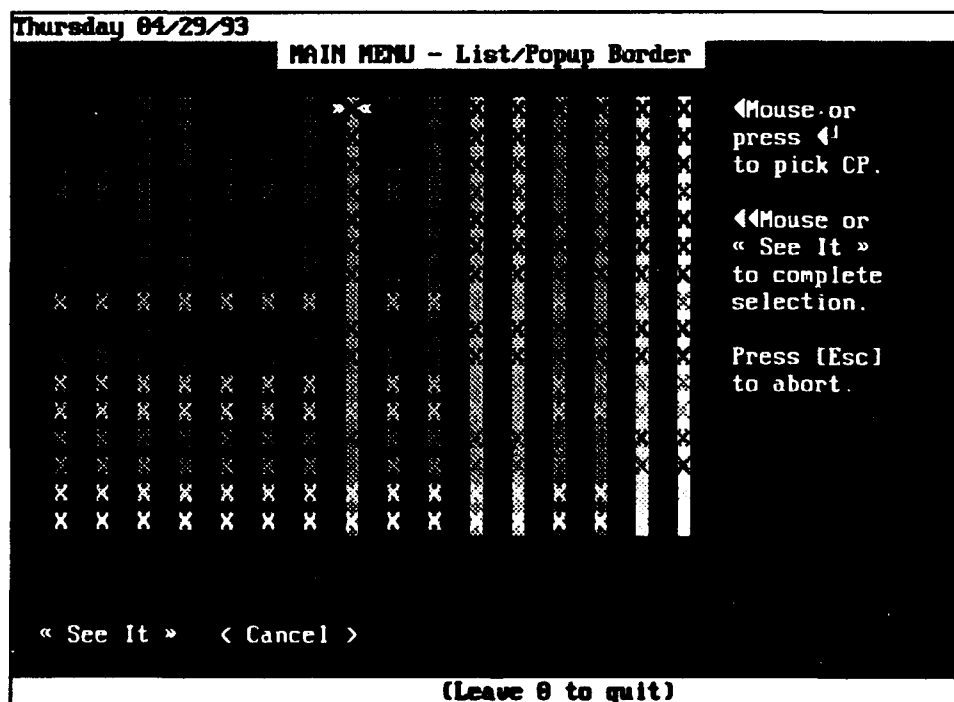
MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.



The next screen displays menus, popups, and lists that can be modified. Enter the number of the color pair you wish to modify at the prompt: Edit which color pair?



The next screen displays your selection of colors. Use the arrow keys to select your color option, then press enter to view your color selection changes. With the mouse, click on your selection then click on **see it** to view changes. Press ESC to abort your session or select **cancel** using the mouse.



Appendix I: Tie In With IBIS

IBIS is a customized documentation tool for producing HABS/HAER Level IV/Level III documentation. IBIS can be used alone or in conjunction with CRIS (as a special module of the CRIS product). Like CRIS, it is a multi-user product that can run on a local area network. IBIS provides a consistent documentation in baseline building inventory surveys and it produces databases that form the basis of a complete CRIS database for Cultural Resources Management needs. IBIS allows you to update directly to installation databases. You can read in WordPerfect files that have been saved in generic word processor format. IBIS is extremely efficient in the production of the textual information required in the building survey report.

Since IBIS creates DBF type databases, these databases can be used directly by the Cultural Resources Information System database engine. We consider IBIS to be a module of CRIS, designed merely to create the information for CRIS and print survey reports. CRIS provides additional edit modes, such as editing while in Browse, and allows you to create other types of reports. The database that IBIS can create a report for must be of the structure

FIELD	FIELD NAME	TYPE	WIDTH	MEANING
1	BUILDNO	Character	10	Building Number
2	HABSNO	Character	15	HABS Number
3	STRUNAME	Character	75	Name of Structure
4	LOCATION	Character	75	Location
5	CONSDATE	Character	10	Date of Construction
6	USE	Character	53	Use: Original/Current
7	RATING	Character	5	Rating
8	CONDITION	Character	80	Condition
9	DESCRIPT	Memo	10	Description
10	HISTDATA	Memo	10	Historical Data
11	SIGNIFIC	Memo	10	Significance
12	SOURCES	Memo	10	Sources
13	INVENBY	Character	70	Inventoried By
14	AFFILIATE	Character	40	Affiliation
15	FILEDATE	Character	20	Inventory Date
16	ROLLNO	Character	3	Roll Number
17	FRAMENO	Character	60	Frame Numbers
18	PHOTOLOG	Memo	10	Level III Survey Photograph Log

Appendix J: Search Command Syntax

This section will help you understand the technical aspects of the condition phrases constructed by the condition builder if you want to construct your own searches in Begin a New Search using Xbase Command. Skipping this section will not impede the user's profitable use of the CRIS software.

You may wish to have the search condition treat a character field as being of numeric type. For this purpose transformation functions are used. These functions are listed in the upcoming section "Functions Usable in the Condition Expression". The records included when processed through the condition you build will be those that result in a final value of TRUE. In the simple condition of `RATING = 4`, this is easy to understand. When dealing with long expressions, an understanding of Boolean algebra is helpful.

Operators

The relational operators listed in the condition builder result in the following symbols:

- < Less Than
- > Greater Than
- = Equal To
- <> or # or != Not Equal To
- <= Less Than or Equal To
- >= Greater Than or Equal To
- \$ Contains/Is Contained In. Returns true if a character expression is contained in another character expression. SYNTAX: **<search string> \$ <string to be searched>**. If <search string> is found in <string to be searched>, the condition will be true.

Connectors and Logical Expression Operators

() - Parentheses are used to group expressions. In the case of nested parenthetical statements, everything inside the innermost set of parentheses will be evaluated first. Then, the group closest to that will be evaluated. For example, $10/2+3=8$, but $10/(2+3)=2$. When in doubt about whether you need to put parentheses around an expression to force it to be evaluated together, use another set of parentheses.

.NOT. or ! - This is the logical negative. It is used to negate the condition that comes after it. For example, if the color red is true, then comparing blue to red will result in false, but comparing .NOT. blue to red will result in true. It is a good idea to use parentheses around the part of the expression you are trying to negate to be sure that the correct order of operations will be performed. For example, if you want records where the field RATING is 4 but the word "hospital" is not found in the STRUCTURE

NAME, you would use the expression:

(RATING = 4) .AND. (.NOT. "HOSPITAL" \$ UPPER(STRUNAME))

.AND. - This is the logical AND. It connects two statements. For a condition with two statements connected by AND to be true, both parts must be true.

.OR. - This is the logical OR. It connects two statements. For a condition with two statements connected by OR to be true, either part may be true or both parts may be true.

Functions Usable in the Condition Expression:

<string> indicates a character string that could be either a field name (e.g., **buildno**) or a quoted constant (e.g., **"Virginia"**).

ALLTRIM() - Removes leading and trailing blanks from a character string. The syntax is **ALLTRIM(<string>)**. For example, use **ALLTRIM(struname)** to trim spaces before and after the contents of the field struname.

AT() - Returns the position (as an integer) of the first occurrence of a character expression within another character expression or memo field. It is case sensitive. This function is useful when combined with **SUBSTR()**. The syntax is

AT(<string to search for>,<string to be searched>,<number indicating which occurrence of the string>). For example, to examine only the portion of the field location that occurs prior to the first comma, use **AT(",",location,1)**.

BETWEEN() - Determines if a character expression lies between two other character expressions. "Lower" and "Higher" values are determined by the ASCII value of the characters when this function is performed on character fields. Therefore, you would want to pad a field like building number with spaces in front (using **PADL()**) or transform it into a number (using **VAL()**) to get sensible results. The syntax is

BETWEEN(<string to be searched>,<low string>,<high string>).

Examples:

BETWEEN(LEFT(struname,1),"M","O")

First letter of the field struname between M and O.

BETWEEN(PADL(TRIM(buildno),10)," 101"," 201")

BETWEEN(VAL(buildno),101,201)

Building numbers between 101 and 201 (buildno is a length 10 character field).

DIFFERENCE() - Returns a number representing a relative phonetic difference between two character strings. If two character strings are very similar, it will return a value of 4. If two character strings are very dissimilar, it will return a value of 0. The value returned could be any number between 0 and 4. The syntax is

DIFFERENCE(<string>,<string>). For example,
DIFFERENCE("Smith","Smythe") will return 4, and
DIFFERENCE("Smith","Apple") will return 1. You could make a condition such as **DIFFERENCE(affiliat,"Organization Name") > 3** to find records in which the contents of the field **affiliat** is similar to "Organization Name".

EMPTY() - Determines if an expression is "blank". This can be especially helpful in determining which records do not have any contents in a specific memo field. For example, **EMPTY(descript)** will include all records where the description memo is empty.

INLIST() - Determines if a character expression is contained in a series of character expressions. The syntax is **INLIST(<string to search for>,<first match>,<second match>)**. You could have several <nth match> strings, separated by commas, not just two.

INLIST(PADL(TRIM(buildno),10),"101","201")

INLIST(VAL(buildno),101,201)

Building numbers 101 or 201.

LEFT() - Returns a specified number of characters, starting with the leftmost character in a character string. The syntax is **LEFT(<string>,<number of characters>)**. For example, to select only the first three letters of structure name, use **LEFT(struname,3)**.

LIKE() - Allows you to compare a character string containing wild card characters to another character string. The syntax is **LIKE(<character pattern>,<character string to search>)**. For example, to get records with the field condition containing "Good," and "alteration", use **LIKE("GOOD,*ALTERATION*",UPPER(condition))**. This will return records such as "Good, no apparent alterations" and "Good, minor alterations".

LOWER() - Converts all characters in a string to their lower-case equivalent. The syntax is **LOWER(<string>)**. You can use it in a condition in the following way: **LOWER(affiliat)="usacerl"**.

LTRIM() - Removes the leading blanks from a specified character string. The syntax is **LTRIM(<string>)**. **LTRIM(" Alice")** will return "Alice".

MEMLINES() - Returns the number of lines in a memo field. The syntax is **MEMLINES(<memo field name>)**. This can be useful for finding records with very long memo fields. For example, to select records in which the description memo field is longer than 40 lines, use **MEMLINES(descript) > 40**.

PADL() - Pads a character string on the left with a specified character. The syntax is **PADL(<string to pad>,<length after padding>[,<character to use as padding>]**. If you do not specify a character to use as padding, the space character will be used. This is generally used to pad building number so that building number 101 will sort AFTER building number 2 ("101" is LESS THAN "2", but "101" is greater than " 2"). This is the meaning of the instruction **PADL (TRIM(buildno),10)**.

PADR() - Pads a character string on the right with a specified character. In syntax it is just like **PADL()**.

RAT() - (Reverse AT) Searches a character string or memo field for the last occurrence of another character string and returns as an integer the position where it was found. It is case sensitive. This function is useful when combined with **SUBSTR**. The syntax is **RAT(<string to search for>,<string to be searched>,<number indicating which occurrence of the string>)**. For example, if the state is always found after a comma in the field location, the position of the comma can be found with the expression **RAT(",location,1)**.

RECNO() - Returns the record number. To select only a specific record number, use the syntax **RECNO() = number** (e.g. **RECNO() = 2**). To select every fifth record, use the syntax **MOD(RECNO(),5) = 0** (this means "a remainder of zero when dividing the record number by five"). You might wish to do this just to get a sample of your records.

RIGHT() - Returns the rightmost portion of a character string. The syntax is **RIGHT(<string>,<number of characters>)**. For example, to select only the last three letters of structure name, use **RIGHT(struname,3)**. **RTRIM()** - Removes all trailing blanks from the specified character string. The syntax is **RTRIM(<string>)**. **RTRIM("Alice ")** will return "Alice".

SOUNDEX() - Returns a phonetic representation of a character expression. The syntax is **SOUNDEX(<string>)**. For example, to find records where structure name contains a word that is phonetically the same as "Myer", you would use **SOUNDEX("Myer") \$ SOUNDEX(struname)** which means a word sounding like "Myer" is contained in the structure name field.

SUBSTR() - Returns a specified number of characters from the given expression or memo field. The syntax is **SUBSTR(<string from which characters are extracted>,<numeric position in the string to begin extracting characters>[,<number of characters to extract>])** or **SUBSTR(string,#,#)**. If you do not specify the third expression (number of characters to extract), everything to the end will be extracted. This function is useful in conjunction with **AT()** and **RAT()**. For example, if the state is always found after a comma in the field location, the position of the comma can be found with the expression **RAT(",",location,1)**. Thus, to get only states matching "Virginia", you would use the compound expression

ALLTRIM(SUBSTR(location,RAT(",",location,1)+1)) = "Virginia". In this example, characters are extracted beginning at the position AFTER the comma (thus **RAT()+1**). Since we want all characters after the comma, the number of characters to extract is not specified.

TRIM() - Removes all trailing blanks from the specified character string. This is the same as **RTRIM()**.

UPPER() - Converts all characters in a string to their uppercase equivalents. The syntax is **UPPER(<string>)**. You can use it in a condition in the following way: **UPPER(affiliat)="USACERL"**.

VAL() - Converts a string of numeral characters to a numeric value. The syntax is **VAL(<string>)**. You will need to use **VAL()** to compare a field such as building number to a numeric constant. For example, **VAL(buildno) > 500**.