

R&R Report Librarian<sup>™</sup>

User Manual

R&R Report Writer<sup>®</sup> V10.0

September, 2002

# Table of Contents

|                                                    |    |
|----------------------------------------------------|----|
| Introduction .....                                 | 3  |
| Getting Started with Librarian.....                | 5  |
| Librarian Main Menu.....                           | 6  |
| Maintenance Menu .....                             | 8  |
| Report Catalog.....                                | 18 |
| Related Tables .....                               | 27 |
| Report Fields.....                                 | 37 |
| Internal Reports .....                             | 43 |
| Technical Information, Maintenance and Errors..... | 46 |
| Installation                                       |    |
| Reinstallation and Backing Up                      |    |
| Future Upgrades                                    |    |
| Deactivation                                       |    |
| Accessing from Other Programs                      |    |
| Changing Librarian's Data Structure                |    |
| Errors                                             |    |
| Librarian Data Dictionary.....                     | 51 |

*(c) 2002, Liveware Publishing, Inc. All rights reserved.*

*“R&R Report Writer” is a registered trademark of Liveware Publishing, Inc.*

*Computer screen images presented in this document are the property of Liveware Publishing, Inc. and are covered under copyright. Liveware Publishing, Inc. carries no warranty, either express or implied, for any use or misuse of the information in this document.*

*‘Windows’ is a trademark of Microsoft Corporation. Other software products’ names mentioned in this volume may be trademarks held by these products’ publishers and are referred to for indication purposes only.*

## Introduction

As anyone who builds many reports -- or designs reporting systems for others -- knows, keeping track of those reports is difficult. Reports multiply quickly as end-users take a report, make changes, then resave them under a new name.

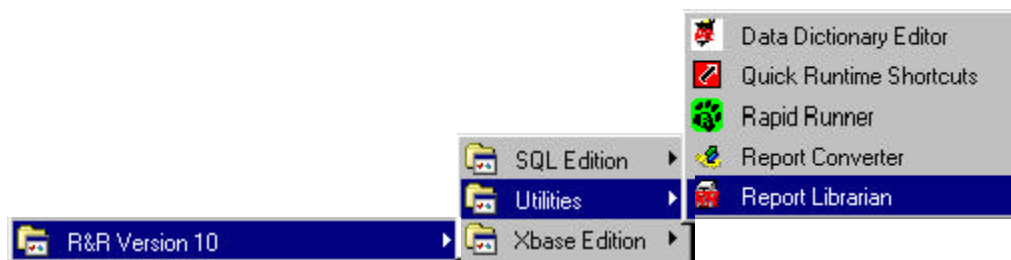
Reports are files that can be stored anywhere on the user's computer or network drives. Maintaining organization and references on all of these files becomes increasingly cumbersome. After a while, remembering where to find a report, and what it was used for, becomes a burden. Therefore, in R&R Report Writer V9.0 Liveware Publishing introduced R&R Report Librarian, using as a model an electronic card catalog one would find as they entered a public library. This feature is continued in R&R V10.0 with some additional features, but primary in combining both xBase and SQL editions of Report Librarian into a single edition for V10.0.

R&R Report Librarian is comprised of three primary components, all working in conjunction with R&R Report Writer. The first of these is to act as the new, primary, entry point for reaching the R&R Report Designer. The second is to organize the reports created by and for each end-user to allow thumbnail access to find, review and launch these reports. The third is to catalog the report's contents for easy reference and to thereby document how the data items from your application are manipulated via reports.

## Report Librarian as the R&R Point of Embarkation

Librarian is the natural entry point for R&R. Each user logs in with a password (with rights controls), then can launch the R&R Report Designer from the main menu. Then R&R knows who is using it and assigns the correct ownership for any reports the user creates or modifies. If a shared report is modified by one user, the other user's references to that report are updated automatically.

Librarian has been added to the R&R Program Group from the Windows 'Start' button, and one can create a shortcut on the desktop to start it. Librarian is always installed in the 'RL' directory immediately below the R&R directory and will activate the RRW.EXE (xBase Report Designer) or RSW.EXE (SQL Report Designer) programs in the directory above it. For shared,



network R&R installations, Librarian is also shared. For a private Librarian installation, install an R&R license on the workstation.

### **Librarian as the Organizer of Reports**

Without any intervention from the end-user, R&R V10.0 will have Librarian automatically catalog any reports created or modified by anyone using the Report Designer. Any reports created or modified without going through Librarian are assigned the administrator ID for future reassignment to one more end-users, or simply cataloged for the Librarian administrator to deal with later. R&R does so in the background any time a report is saved and assigns a unique serial number to each report. When that report is resaved, Librarian will update the catalog entry for that unique report with an entry for the user who saved it. Librarian users can thereby see a list of all of their reports (and 'GLOBAL' reports) or all reports in the catalog, depending on the rights the Librarian administrator grants to them.

To assist end-users in finding and determining if they have selected the correct report, they -- or the administrator -- can add descriptive text, notes, version numbers etc., to the catalog entries. Librarian users can scan the catalog listing for the correct report and re-sort the listing in five different ways.

### **Librarian as the Abstractor of Reports**

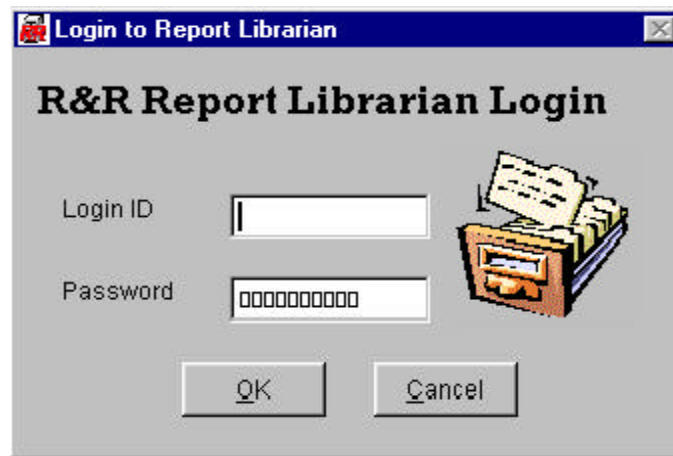
Again, with no end-user intervention, Librarian will summarize a report's contents into a database that allows administrators and end-users alike to quickly find the report with certain contents. This feature significantly augments R&R's Data Dictionary component -- which has been totally redesigned in V10 -- since one can determine how (and, more importantly, why) tables have been joined, calculation formulas defined, sorting orders specified, and so on.

This feature also enhances the 'Report Specification' output option to allow for comparisons across reports and a more structured documentation of the report's elements. The main catalog entry also includes a number of fields that summarize some of the report's specifications, including the master table and index, printing controls, and page layout.

Although Librarian includes a number of standard reports to summarize its database, one can also use R&R to develop reports on those databases. A data dictionary for Librarian is included in the back of this User Manual.

## Getting Started with Librarian

Upon entry into Librarian, each user must login and supply a password.



Librarian installs with just one 'Login ID' -- **ADMIN** -- with no password assigned. There will also be no entries in the Catalog as Librarian will not create any until a report is saved with R&R Report Designer in V10.0 and gets assigned a password. All IDs are capital letters, although digits and certain other special characters are allowed. Passwords can also be entered without concern over letter case.

**Note: If you wish to re-install R&R and Report Librarian, but not lose any of your Catalog, User or contents data, save the files listed in the Data Dictionary and replace them after you reinstall.**

As you enter the password, Librarian will not show the characters being typed, but the cursor will move across the boxes to show how many characters you have typed. Click 'OK' to start Librarian and take you to the Main Menu, while 'Cancel' will exit Librarian. Once logged in, any time you launch R&R Report Designer, the ID will be passed to it for use with the catalog engine.

The first time using Librarian, it is a good idea to load key reports into Report Designer (built with R&R V8.1 and prior) then immediately resave them to assign serial numbers and to allow Librarian to catalog them. If you had R&R V9.0 and built Librarian records, Librarian in V10.0 has a new utility to allow transfer of those cataloged reports from xBase and SQL editions into the consolidated V10.0 Librarian. Either method will populate Librarian's databases enough to let end-users -- and administrators -- get familiar with how it works and where to locate key elements of reports as cataloged.

The Librarian administrator should also assign a password to the **ADMIN** User ID, and create User ID records with appropriate rights for key end-users. (See the section on adding and changing User IDs under the 'Maintenance Menu' section of this manual.) If catalog records from R&R V9.0 are loaded using the utility, so are the User IDs created under that Librarian.

## Librarian Main Menu

Upon the acceptance of the User ID login, Librarian will present its Main Menu. This is the control center for Librarian and gives access to all of its functions.



### Main Menu Buttons

#### Catalog

Click this button to enter the Librarian Catalog database. Use it to find a report, gather information about the report's settings and contents, and launch the report to R&R Report Designer, based on the type of report: xBase or SQL.

#### Launch R&R

Click this button to launch R&R Report Designer with the Login User ID so when reports are created or saved, Librarian assigns the correct User ID to the catalog entry. No report is loaded when R&R is launched. New in V10.0 is the window shown below:



R&R also holds the User ID who launched R&R so that any saved changes to any reports during that session are automatically assigned ownership to that User in the Catalog, and other reports sharing the same Report ID (serial #) are also updated.

## Reports

Click this button to select a standard report based on the Librarian catalog information. R&R Parameter fields will prompt for specific inputs for particular reports. These are all R&R runtime reports and are linked, where appropriate, to the limitation placed on the USER ID for accessing other's catalog entries. See the section on 'Internal Reports' for more information.

## Maintenance

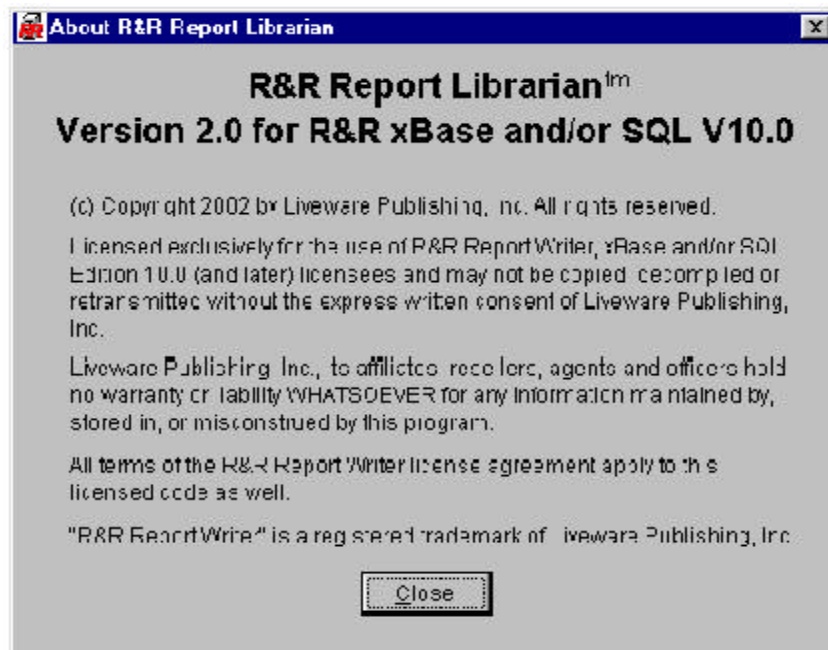
Click this button to access the Maintenance Menu where authorized User IDs may change user access rights, assign or change passwords (always allowed for the active User ID), and perform some database maintenance.

## Login

New in V10.0, click this button to return to the Login screen to enter Librarian under a different User ID. Note that open Report Designer sessions continue under the prior User ID.

## About

Click this button for copyright, version and other information as shown below.



## Quit

Click this button to exit Librarian.

## Librarian Maintenance Menu

Clicking the 'Maintenance' button from the Main Menu will present the Maintenance Menu. This menu is used to access special functions of Librarian, including the creation and editing of User IDs, removal and reindexing of Librarian's database, and reassignment of Catalog entry 'Owners'.



### Maintenance Menu Buttons

#### Edit User Detail

Click this button to modify rights and assign/change passwords for User IDs. The active User ID can always change the password. Only User IDs with administrative rights can make changes for all Users IDs.

#### Add New User

Click this button to create a new User ID and assign its privileges. This is only available for User IDs with Administrative rights.

#### Clean Database

Click this button to pack and reform indexes for the Librarian data tables. All users must exit Librarian, except the current user who wishes to execute the process. The current user must have Administrative rights to access this button.

#### Change Owners

Click this button to access the full catalog and change the OWNER for any catalog entry. This is helpful for GLOBAL assigned entries that should belong to just an individual, and for ADMIN assigned entries built when R&R was launched without going through Librarian. The current user must have this right granted to them or the button is disabled.



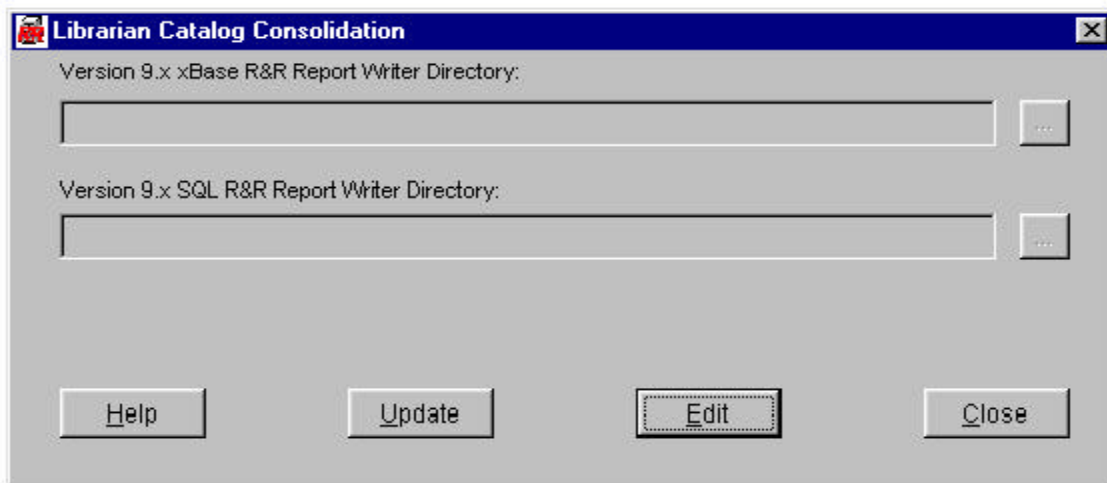
## V9 Load

Click this button to enter the utility to load R&R V9.0 Librarian catalog and User ID entries into the V10.0 Librarian. This utility will also perform data updates on those catalog entries to meet V10.0 requirements.

## Close

Click this button to return to the Main Menu.

## Librarian Catalog Consolidation Screen



This utility program allows you to specify the folders for R&R V9.0 Librarian installations. The folder locator buttons will allow you to search your Windows directory for the previous R&R installations.

Only those catalog records that are *not* already present within the R&R V10.0 Librarian catalog are appended. Therefore, this utility may be run multiple times without concern about the creation of redundant catalog records.

### Controls for Edit User Detail Screen

The window may not be moved.

The window must be closed to view any former window or menu.

While NOT editing:

**Update** — This button launches the utility that actually appends records from the R&R V9.0 Librarians. Prior to doing so, R&R will verify that the necessary data files exist in the specified folder(s). If only a folder for xBase or SQL is specified, just that folder's catalog entries will be appended. Update will not proceed unless a valid folder is specified.

*Edit*— This button will deactivate the Update button and change the legends to 'Save' and 'Revert' for the Edit and Close buttons. Also activated will be all data elements for editing and the folder locator buttons.

*Close* — This button will exit the screen and return to the Maintenance Menu grid.

While NOT editing:

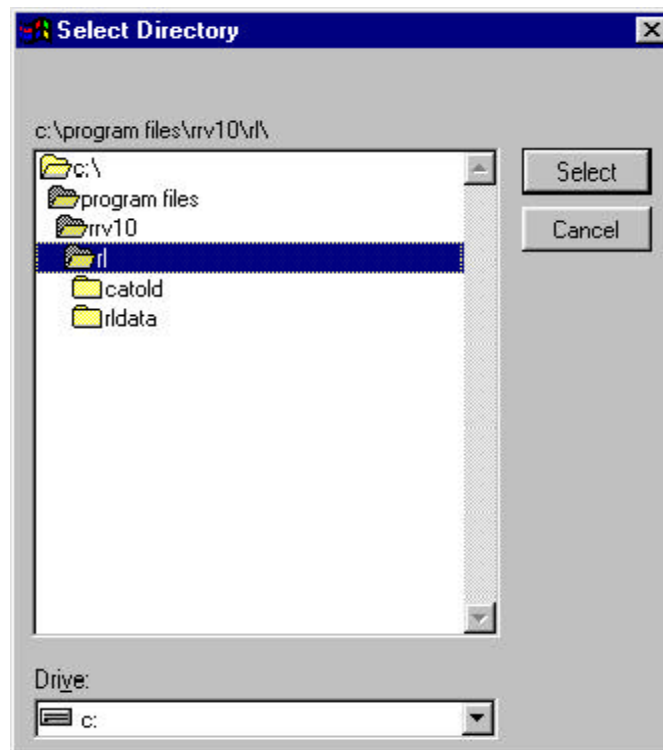
*Save* — This button will store the changes made to the V9 Librarian folder locations.

*Revert* — This button will leave the V9 Librarian folder locations unchanged.

### **Data Elements**

*Version 9.x xBase R&R Report Writer Directory* -- Full directory path for the folder that contain Librarian catalog entries created by R&R V9.0 xBase Edition. This path should always end in '\RL'. You can either type the path, or use the folder locator button which will populate the field. Once populated, you can manually edit the contents.

*Version 9.x SQL R&R Report Writer Directory* -- Full directory path for the folder that contain Librarian catalog entries created by R&R V9.0 SQL Edition. This path should always end in '\RL'. You can either type the path, or use the folder locator button which will populate the field. Once populated, you can manually edit the contents.



## Add New User

**Add Librarian User**

User ID:  Password:

First Middle Last

User Name:

Default Report Order: 

|   |                                  |
|---|----------------------------------|
| A | Alpha by Report name             |
| D | Date last modified - Report name |
| I | Report ID                        |
| O | Owner ID - Report name           |
| M | Master table name - Report name  |

Default Drive Letter:

Change owner of catalog entries

View others' catalog entries

User ID has 'Administrator' rights

### Controls for New User ID Screen

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

This process uses the single-record file OWNERTMP to process entries. Therefore, only one person within Librarian may add a new user at any time.

**Save** — This button will add the specified User ID and related information to the OWNERS.DBF table.

**Cancel** — This button will abort the addition of a new User ID.

Either choice will ask for verification of the selection prior to exiting.

### Data Elements

**User ID** — Defaults to capital letters and accepts Alphanumeric values. The entry is validated against existing User IDs to prevent a duplicate entry. 'GLOBAL' is also invalid. Messaging indicates any errors in the entry.

**Password** — Displays the actual alphanumeric entries, with conversion to capital letters, but saves the entries stores the values in OWNERS.DBF using an encryption algorithm. Entry on Login is masked so as not to show the actual entries.

*First, Middle, Last Name*— Used as reference in reports and on certain screens to identify the User. One can also assign non-name values, such as “Finance Department”.

*Default Report Order*— Upon entry to the Report Catalog grid screen, the specified User ID will have their Catalog entries sorted based on the choice selected here. Click on the grid to highlight the selected default order.

*Default Drive Letter* — If R&R is unable to find a Catalog entry’s report using the drive letter saved in the catalog, it will also look in the same directory for the drive letter specified here. This is a single character entry. See the Report Catalog grid screen help for more information.

*‘Change owner’ right* — Check the box to allow the User ID access to the Maintenance Menu option to Change Owners of Catalog entries.

*‘View others’ catalog entries’ right*— Check the box to allow the User ID to see all of the Catalog entries in the Catalog grid. If unchecked, only the entries assigned ownership to that User ID, and ‘GLOBAL’ entries will be included in the Report Catalog grid.

*‘Administrator’ right*— Check the box to allow the User ID full access to all parts of the system, including the ability to add new User IDs, change User ID rights, Clean Databases etc.

## Edit User Detail

Every user has access to this Maintenance Menu option, but non-administrators can access only their own User ID. Only administrators have rights to change users’ rights.

**Librarian User Detail**

User ID:  Password:

First:  Middle:  Last:

User Name:

Default Report Order:

Default Drive Letter:

Change owner of catalog entries

View others' catalog entries

User ID has 'Administrator' rights

## **Controls for Edit User Detail Screen**

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

In every case, the detail screen first presented is for the current User ID.

While NOT editing:

*Next/Previous* — These buttons will take you to the next or previous User ID in alphabetical order by User ID. Buttons will go gray when the first or last record in the list is reached. For User IDs without 'Administator rights', these buttons are disabled.

*Remove* — This button will delete the record for the User ID on the screen and ask for verification prior to completing the process. The user's Catalog entries are not removed, but can be using an Administrator's rights through the Report Catalog, or have the owner reassigned through the Maintenance Menu option.

This button is disabled for non-Adminstrators and for the current User ID (a user may not remove itself) and for the pre-defined User ID 'ADMIN'. There is no initial password for this User ID 'ADMIN'. See full documentation for more information.

*Edit* — This button will deactivate the Next/Previous/Remove buttons and change the legends to 'Save' and 'Revert' for the Edit and Close buttons. Also activated will be all data elements for editing, except the User ID.

*Close* — This button will exit the screen and return to the Maintenance Menu grid.

While NOT editing:

*Save* — This button will store the changes made to the User ID. A message will indicate that the changes will not take effect until that User logs in again.

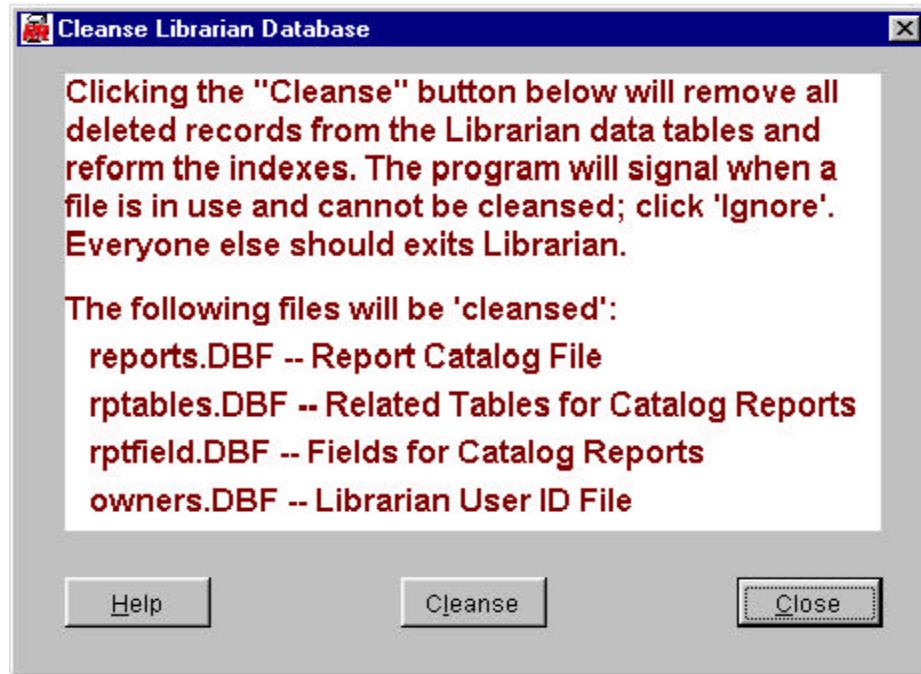
*Revert* — This button will leave the User ID assignments unchanged.

### **Data Elements**

All data elements are the same as the screen for adding a new User ID.

## Cleanse Database Controls

Only administrators have rights to the Cleanse Database option. Cleansing means that the data tables will be packed (deleted records removed) and reindex. Only the administrator performing this operation can be in Librarian at the time this option is run. Otherwise, the operation will fail and return a message that the data files are in use.



### **Controls for Cleaning the Librarian Database**

The window must be closed to view any former window or menu.

*Cleanse* — This button will start the process to pack and reindex each Librarian data table. If any of them are in use, which most will be when ANYONE else is in Librarian or currently attempting to update a Catalog entry, the process will stop and announce that the packing and reindexing of that table cannot continue.

The process should run very fast, unless the catalog has become very large (~1000 entries). A notice screen will appear when the process is running. Click the appropriate button when it completes.

*Close* — This button will exit the screen and return to the Maintenance Menu.



headings. 'Report Name', 'Report ID', 'Owner', 'Last Modified' and 'Master Table' will resort the grid alphabetically (date order for 'Last Modified') for that column's values. The selected record remains the focus of the resorted grid. Column order (left to right) is also adjusted for more appropriate contextual searching.

*Details* — Click this button to present the Change Owner screen for the Catalog entry selected in the grid. If no entries are in the Catalog, it will be gray.

*Close* — Click this button to exit the screen and return to the Maintenance Menu.

### **Controls for Changing Ownership of Catalog Entries**

While NOT editing:

*Next/Previous* — These buttons will take you to the next or previous report in alphabetical order by report name (or whatever order specified on the grid from the prior screen). Buttons will go gray when the first or last record in the list is reached.

*Edit* — This button will deactivate the Next/Previous buttons and change the legends to 'Save' and 'Revert' for the Edit and Close buttons. Also activated will be the controls to reassign the ownership of the current Catalog record.

*Close* — This button will exit the screen and return to the Full Catalog Entries grid.

While editing:

*Save* — This button will store the changes made to the owner. Owner assignment



controls will disappear and the newly assigned owner will appear in the designated box.

*Revert* — This button will leave the owner assignment unchanged.

*Assign to GLOBAL* — Checking the box will gray the list of User IDs and change the Catalog entry owner to 'GLOBAL', which is not a valid User ID. Unchecking the box will reactivate the User ID list box. If the owner assigned to the Catalog entry is 'GLOBAL', the box is checked as the default and must be unchecked to assign it to another user.

*User ID List Box* — Click the tab on the right to select from a list of User IDs to reassign ownership of the current Catalog entry. Initially enabled if the owner is anything except 'GLOBAL'. Also displayed will be the first and last name assigned to the User ID for easier identification.

While it is valid to assign a Catalog entry for a report to a User ID for which the Catalog already holds an entry for the same report, it is not recommended as any attempt to then remove the entry can create some internal confusion for Librarian. It will not know which entry to remove.



Click on the record line of the grid to select that Catalog entry. Then click the 'Detail' button to access the user-editable items and additional information about the catalog entry.

The order of the Catalog entries may be adjusted by clicking selected column headings. 'Report Name', 'Report ID', 'Owner', 'Last Modified' and 'Master Table' will resort the grid alphabetically (date order for 'Last Modified') for that column's values. The selected record remains the focus of the resorted grid. You can also click the 'Platform' heading to group the xBase and SQL reports. Column order (left to right) is also adjusted for more appropriate contextual searching.

*Profile* — Click this button to generate an R&R print-preview window for a report that summarizes all of the information for the selected Catalog entry. This is an R&R Runtime report that updates a record in RLSTD.DBF with the unique Catalog ID (RLID) to specify the Scope for the runtime report. Therefore, if two users attempt the profile at a simultaneous moment, one may be locked out.

The Report Profile report is launched to a separate Window from Librarian and one can move freely between the two. You may also have more than one Report Profile active, in separate R&R Runtime windows. Within the print preview window, the controls are standard R&R page preview and print buttons.

*Details* — Click this button to present the Report Detail screen for the Catalog entry selected in the grid. If no entries are in the Catalog, it will be gray.

*Relations* — Click this button to present the Related Table Summary grid screen for the selected Catalog entry.

*Fields* — Click this button to present the Field Summary grid screen for the selected Catalog entry.

*Launch* — Click this button to load the selected report to the R&R Report Designer. Librarian will determine which Report Designer to open, xBase or SQL, based on the report platform that is automatically designed when the catalog entry is created. This opens a separate Window from Librarian and one can move freely between them.

If Librarian cannot find the report in the drive and directory saved with the report, it will check the same directory for the current User ID's default drive (see 'Edit User Detail' help for more information) to locate the report. If found, a message will indicate that Librarian will use that report instead. If saved, this new report's drive designations will override THE SELECTED CATALOG ENTRY, but not for any other Catalog entries that share the same Report ID (serial#).

If Librarian still cannot find the report, it will return a message that the report cannot be found and the attempt is abandoned. One may attempt to locate the report through Windows Explorer or from within R&R to update the catalog entry with the current path. In this way, a moved report can be refreshed.

R&R also holds the User ID who launched the report so that any saved changes are automatically assigned ownership to that User in the Catalog, and other reports sharing the same Report ID (serial #) are also updated. Any subsequent reports built or modified during that R&R session are also assigned to that User ID. It doesn't matter whether those reports were launched from Librarian or not.

One can launch multiple reports to separate, simultaneous R&R sessions in this way, up to the limit of the licenses available within the installation.

*Close* — Click this button to exit the screen and return to the Main Menu.

## Report Detail Controls Screen

The screenshot shows a window titled "Report Detail" with a blue title bar. The window contains the following fields and controls:

- Report Name:
- Rpt Serial #:
- Platform:
- General Info | Version | Master Table | Master Index | Printing | Notes (tabbed interface)
- Rpt Serial #:  Librarian ID:  Owner:
- Report Name:
- Directory:
- Description:
- Updated by another owner Modified by owner ID:
- Buttons: Help, Remove, Edit, Close

### **Controls for Catalog Entry Details Screen**

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

During editing or view, one may move freely between the tabs.

While NOT editing:

*Remove* — This button will delete the Catalog record on the screen and ask for verification prior to completing the process. The Catalog entries and related table and field information will only be removed if there are no other Catalog entries that share the Report ID (serial #). Messages will seek confirmation in either case.

This button is disabled for non-administrators.

*Edit* — This button will deactivate the Remove button and change the legends to 'Save' and 'Revert' for the Edit and Close buttons. Also activated will be all data applicable elements for editing.

*Close* — This button will exit the screen and return to the Report Catalog grid.

While editing:

*Save* — This button will store the changes made to the Catalog entry.

*Revert* — This button will leave the User ID assignments unchanged.

### **Data Elements**

Report name and serial number appear at the top of the screen at all times. Report Designer Platform, xBase or SQL, is also displayed at the top of the screen.

*General Info Tab* (see previous page for image)

*Report Serial #* — Assigned by R&R V9.0 and later.

*Librarian ID* — Assigned by Librarian at the time of Catalog entry creation. These IDs are assigned sequentially and deleted IDs are not reused, unless it happened to have been the highest number ID and the database had been cleansed. These are ALWAYS unique. *Owner* — Librarian assigned User ID designated as the Catalog entry's owner. 'GLOBAL' is also a valid value.

*Directory* — Stored location, according to the assigned User ID, for the report.

*Description* — Available for editing. Librarian user can assign up to an 80-character description, to appear in the Report Catalog grid for easier identification.

Updated by another Owner and the Owner ID that made the changes are shown, when applicable.

## Version Tab

Report Name:  Rpt Serial #:

Platform:

General Info | **Version** | Master Table | Master Index | Printing | Notes

Version #:  Author:

Comments:

|       | Creation                                | Last Modification                       | Last Launch                   |
|-------|-----------------------------------------|-----------------------------------------|-------------------------------|
| Date: | <input type="text" value="03/18/2002"/> | <input type="text" value="03/18/2002"/> | <input type="text" value=""/> |
| Time: | <input type="text" value="16:44:36"/>   | <input type="text" value="16:49:30"/>   | <input type="text" value=""/> |

Help Remove Edit Close

*Version #* — Available for editing. User may define any applicable value.

*Author* — Available for editing. Usually would hold the name or ID of the person who originally defined the report.

*Comments* — Available for editing. Free-text box for describing the report and or freelance reporting. Maximum 200 characters. Entered text will word-wrap and the box can be scrolled.

*Creation Date/Time* — Maintained by Librarian from the report spec.

*Last Modification Date/Time* — Maintained by Librarian from the report spec.

*Last Launch Date/Time* — Updated by Librarian based on the selection of the 'Launch' button for the Catalog entry on the Report Catalog grid screen.

### Master Table Tab

The screenshot shows a 'Report Detail' dialog box with the following fields and controls:

- Report Name: All Counts.RSW
- Rpt Serial #: ul01DO3201
- Platform: SQL
- Tabbed interface with 'Master Table' selected.
- Master Table: tblResults
- Master Alias: TBLRESUL
- Data Source: Dodgers
- Buttons: Help, Remove, Edit, Close

This tab's contents vary depending on xBase or SQL platform. SQL platform screen shown above:

*Master Table* — Table file or table name for the master table assigned in the R&R report.

*Master Alias* — Alias assigned to the master table in the R&R report.

*Data Source* — Name of the ODBC data source saved with the report. R&R uses that data source to find and read the master table and all of the related (joined) tables in the report.

xBase Platform item:

*Directory* (in place of *Data Source*) — Full directory path for the location of the master table.

## Master Index Tab

The screenshot shows a 'Report Detail' dialog box with the following fields and controls:

- Report Name:
- Rpt Serial #:
- Platform:
- Navigation tabs: General Info, Version, Master Table, **Master Index** (disabled), Printing, Notes
- Master Index:
- Index Type:
- Directory:
- Index Key:
- Index Tag Name:
- Low Scope:
- High Scope:
- Buttons: Help, Remove, Edit, Close

The Master Index tab is disabled and not applicable to SQL platform reports.

*Master Index* — Index file name if a master index is specified for the report. Otherwise blank.

*Directory* — If blank, drive and directory are the same location as the master table.

*Index Type* — Data type of the values for the index key values.

| <u>Description</u> | <u>Coded Value</u> |
|--------------------|--------------------|
| Character String   | C                  |
| Numeric            | N                  |
| Date/Date-Time     | D                  |
| Logical            | L                  |

*Index Key* — The key expression used to build index values for the specified index. These values are designed to match the linking field values. The box will show as much of the key expression as will fit. Up to 200 characters of the expression is stored in the field MTKEY.

*Tag Name* — For multiple index files that use tags, this is the name assigned to the particular key shown. Used in Foxpro, dBase etc.

*Low Scope* — Lowest master index value for which R&R will read the master table. Blank if first record.

*High Scope* — Highest master index value for which R&R will read the master table. Blank if last record.



## Printing Tab

The screenshot shows a 'Report Detail' dialog box with a 'Printing' tab selected. The fields are as follows:

- Report Name: All Counts.RSW
- Rpt Serial #: ul01D03201
- Platform: SQL
- Print Device: HP LaserJet 1100 -- SB on WKayak01\hplj5b (VMNSPOOL.DRV)
- Orientation: Landscape
- Page size: 8 1/2 x 11 in
- Export Defined:
- Copies to Print: 1
- Print Beginning Page #: 1
- Print Ending Page #: 9,999
- Print to file:
- File Name: (empty field)
- Directory: (empty field)

Buttons at the bottom: Help, Remove, Edit, Close.

*Print Device* — Name of the printer specified with the report.

*Orientation* — Page direction specified for the report. Portrait (coded value 'P') or Landscape (coded value 'L').

*Page size* — Description of the paper or page size saved with the report.

*Export defined* — Box is checked if any data or report export parameters have been defined for the report.

*Copies to Print* — Number of copies of the report to be printed as defined in the report.

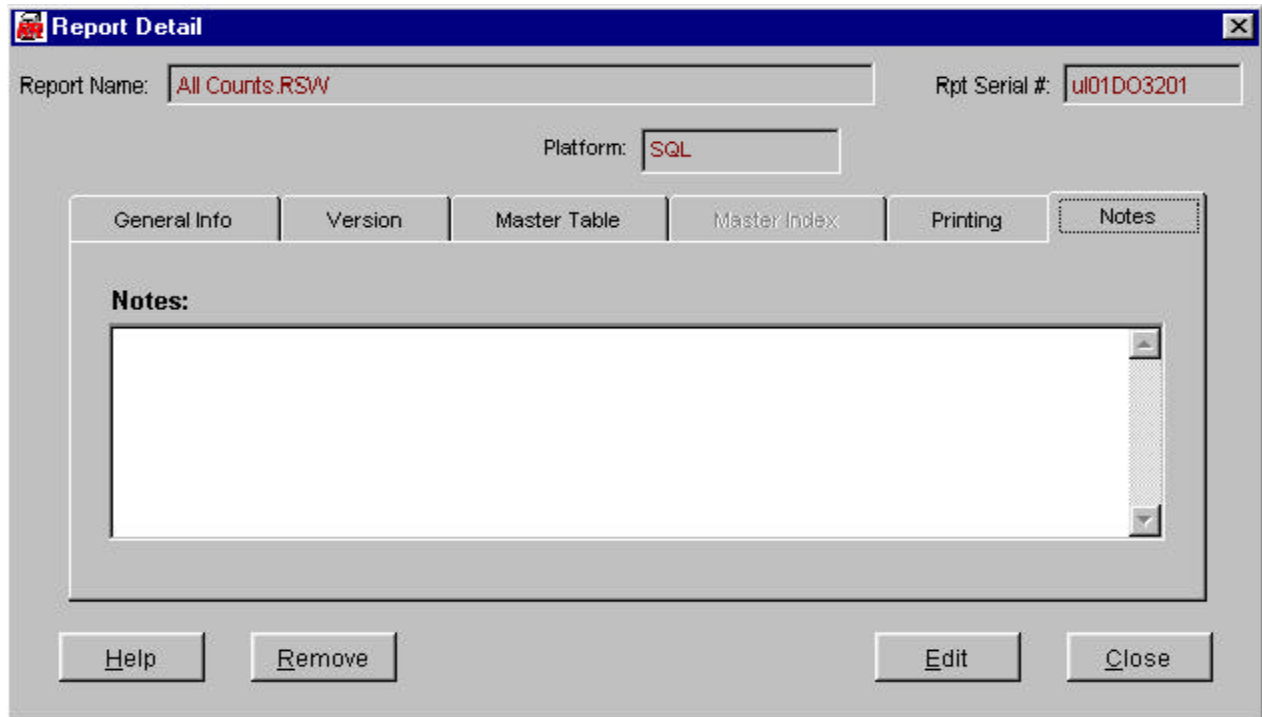
*Beginning/Ending Page #s* — First and last page to print. ALL pages will produce a VERY large number for the ending page and page 1 for the beginning page.

*Print to file* — Box is checked if the output will go to a printer file instead of to a printer device.

*File name* — The name of the output file, when applicable.

*Directory* — Full directory path for the output file, when applicable.

## Notes Tab



The screenshot shows a window titled "Report Detail" with a blue title bar. At the top, there are two text boxes: "Report Name: All Counts.RSW" and "Rpt Serial #: ul01D03201". Below these is a "Platform:" label followed by a text box containing "SQL". A horizontal tab bar contains five tabs: "General Info", "Version", "Master Table", "Master Index", and "Printing". The "Notes" tab is selected and highlighted with a dotted border. Below the tabs is a large, empty text area with a vertical scrollbar on the right side, labeled "Notes:". At the bottom of the window, there are four buttons: "Help", "Remove", "Edit", and "Close".

**Notes** — Available for editing. Memo field for unlimited description, history and accounts of the particular report. Text will word-wrap and the box can be scrolled.

## Related Tables

In addition to the information related to the report, Librarian also catalogs information about the relations between tables. Each report may have none, one or multiple relations between the Master Table and other tables, or from one related table to another. The Master Table and associated information is saved with the main Catalog record.

Within each R&R report, any table referenced (including the Master Table) has a unique 'alias' name so that the same table, or two files with the same table name, can exist in the report with a unique identity. It is the aliases which identify the table through R&R and Librarian, as referenced in formulas, fields and so forth. Each relation creates one record in a separate Librarian table: RPTABLES.DBF. (See the 'Data Dictionary' section for details.)

The complete list of related tables specified for the report is presented in the Related Tables Summary grid. The grid contents and headings vary depending on whether the report selected is an xBase or SQL report.

| Related Alias | Related Table | Linking Field | Linking Alias | Join Type | Match | Fail |
|---------------|---------------|---------------|---------------|-----------|-------|------|
| ► RRCUST      | RRCUST.DBF    | CUSTNO        | RRORDERS      | E         |       | T    |
| RRITEMS       | RRITEMS.DBF   | ORDNO         | RRORDERS      | S         |       | S    |
| RRPRICES      | RRPRICES.DBF  | PRODUCT_NO    | RRITEMS       | E         | F     | B    |
|               |               |               |               |           |       |      |
|               |               |               |               |           |       |      |
|               |               |               |               |           |       |      |
|               |               |               |               |           |       |      |
|               |               |               |               |           |       |      |

### Related Table Grid Controls

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

This screen is the entry point to the Related Tables Detail screen.

Use the scroll bar to view portions of the Related Tables grid. The columns may be

resized by clicking and holding on the lines to the right of the column headings. The grid will return to standard sizes upon screen refresh.

The Report Name and Report ID (serial #) appear at the top of the grid.

The grid includes key elements of the related tables used in the report. See the Related Table Detail help for explanations. Use the scroll bar to view portions of the related table grid. All related tables appear in alphabetical order (not case sensitive) by R&R table alias.

Click on the record line of the grid to select that related table. Then click the 'Detail' button to view additional information for the select relation. In the Related Table Detail screen, you can move between fields using the Next/Previous buttons.

*Details* — Click this button to present the Related Table Detail screen for the field selected in the grid. If no related tables are specified in the report, it will be gray.

*Close* — Click this button to exit the screen and return to the Report Catalog.

### Related Table Detail Screen

| Left Alias | Left Join Field | Related Table | Related Alias | Related Join Field | Join Type | Match Ctrl |
|------------|-----------------|---------------|---------------|--------------------|-----------|------------|
| RRORDERS   | ORDNO           | RRITEMS.DBF   | RRITEMS       | ORDER_NO           | E         | S          |
| RRITEMS    | PRODUCT_NO      | RRPRICES.DBF  | RRPRICES      | PROD_CODE          | E         | S          |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |
|            |                 |               |               |                    |           |            |

## Controls for Related Table Details Screen

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

During viewing, one may move freely between the tabs.

*Next/Previous* — These buttons will take you to the next or previous related table record in alphabetical order by alias name. The controls will gray when the first or last field record is reached.

*Close* — This button will exit the screen and return to the Related Tables Summary grid screen.

## Data Elements

Data Elements vary greatly between xBase and SQL Platforms. xBase platform data elements shown below.

*Related Alias / Controlling Alias* — Always visible at the top of the window. The alias is the R&R table alias assigned to the related table.

*All Tabs* — Report ID (serial #) for the current report and Report Name are shown on all of the tab overlays.

The screenshot shows a window titled "Related Table Detail" with a blue title bar. Inside the window, there are two input fields at the top: "Related Alias:" with the value "arcustmm" and "Controlling Alias:" with the value "arinvoha". Below these is a tabbed interface with four tabs: "Controlling Table", "Related Table", "Related Index", and "Join Parameters". The "Related Table" tab is active. Under this tab, there are several fields: "Rpt Serial #:" with "1Q4917V79D", "Report Name:" with "Item Licensing Sales by Unit.RRW", a checkbox labeled "Updated by another owner" which is unchecked, and "Last change by owner:" with an empty field. Below these are "Table Alias:" with "arinvoha" and "Linking Field:" with "NUMBER". At the bottom of the window, there are four buttons: "Help", "Previous", "Next", and "Close".

*Controlling Table Tab* (see previous page)

*Updated by another Owner* and the *Owner ID* that made the changes are shown, when applicable.

*Table Alias* — Controlling table alias assigned in R&R. This could be either the master table alias or one of the other related table aliases.

*Linking Field* — The field name from the controlling table that holds the data values used to find records in the related table.

*Related Table Tab*

*Related Table* — Data file or table name for the related table in the relation.

*Directory* — If blank, the directory is the same as the one where the Master Table for the report is located. Otherwise, the full or relative directory path, with drive letter, if necessary, is displayed.

*Relation uses index* — Box is checked if the relation is performed using an index file. If unchecked the relation is based on the record number of the related table.

*Table Alias* — The alias assigned to the related table in R&R.

## Related Index Tab

**Related Index** — The file name for the index file used for the relation. If a record number link, the entry is blank.

**Directory** — If blank, drive and directory are the same location as the related table.

**Index Type** — Data type of the values for the linking field and, hence, the index key values. For record number relations, the values is always numeric.

| Description      | Coded Value |
|------------------|-------------|
| Character String | C           |
| Numeric          | N           |
| Date/Date-Time   | D           |
| Logical          | L           |

**Index Key** — The key expression used to build index values for the specified index. These values are designed to match the linking field values. The box will show as much of the key expression as will fit. Up to 200 characters of the expression is stored in the field RTKEY.

**Tag Name** — For multiple index files that use tags, this is the name assigned to the particular key shown. Used in Foxpro, dBase etc.

## Join Parameters Tab

Related Alias:  Controlling Alias:

Controlling Table | Related Table | Related Index | **Join Parameters**

Rpt Serial #:  Report Name:

Link Type:

Match Type:  Match Length:

Failure Action:

*Link Type* — Method for finding records in the related table.

| Description  | Coded Value | Comments                                                                                                                     |
|--------------|-------------|------------------------------------------------------------------------------------------------------------------------------|
| Exact Lookup | E           | One-to-one relation                                                                                                          |
| Approximate  | C           | Also 1-to-1, closest value not larger                                                                                        |
| Scan         | S           | One-to-many relation                                                                                                         |
| Multi-scan   | M           | One of multiple 1-to-many relations from the same controlling table or one-to-one relations on the controlling table's level |

*Match type* — Full (code value 'F') or Partial (coded value 'P') for character-type relations to describe how the linking field's values will match the index key's values. Full means that the linking field values will match the entire index key values to generate a link. Partial will have the linking field match the first X number or characters of the index key values to generate a link.

*Match Length* — The number of characters (X above) for a partial match. Blank or Full character matches and for record number, date- and numeric-type joins.



**Failure Action** — This is the action R&R will take if it is unable to find any records in the related table.

| Description | Coded Value | Comments                                                                                                |
|-------------|-------------|---------------------------------------------------------------------------------------------------------|
| Blank       | B           | Inability to make a match will build a blank record for the related table's field values                |
| Skip        | S           | Inability to make a match will eliminate the controlling table record from the result set               |
| Terminate   | T           | Inability to make a match for ANY controlling table record will cause R&R to stop generating the report |

SQL Data Elements:

**Left Table (controlling) Alias / Related (right) Table Alias** — Always visible at the top of the window. The alias is the R&R table alias assigned to the table.

**All Tabs** — Report ID (serial #) for the current report and Report Name are shown on all of the tab overlays.

**Left Table Tab**

**Updated by another Owner** and the **Owner ID** that made the changes are shown, when applicable.

**Table Alias** — Controlling table alias assigned in R&R. This could be either the master table alias or one of the other related table aliases.

### Related Table Tab

The screenshot shows the 'Table Join Detail - SQL' dialog box with the 'Related Table' tab selected. The 'Left Table Alias' is 'RRORDERS' and the 'Related Alias' is 'RRITEMS'. The 'Rpt Serial #' is '4P74515086' and the 'Report Name' is 'Basic Columnar Report.rsw'. The 'Related Table' is 'RRITEMS.DBF' and the 'Table Alias' is 'RRITEMS'. The dialog has buttons for 'Help', 'Previous', 'Next', and 'Close'.

*Related Table* — Data file or table name for the related table in the relation.

*Table Alias* — The alias assigned to the related table in R&R.

### Join Fields Tab

The screenshot shows the 'Table Join Detail - SQL' dialog box with the 'Join Fields' tab selected. The 'Left Table Alias' is 'RRORDERS' and the 'Related Alias' is 'RRITEMS'. The 'Rpt Serial #' is '4P74515086' and the 'Report Name' is 'Basic Columnar Report.rsw'. The 'Left Field' is 'ORDNO' and the 'Right Field' is 'ORDER\_NO'. There is an unchecked checkbox for 'Additional Linking Fields'. The dialog has buttons for 'Help', 'Previous', 'Next', and 'Close'.

*Left Field* — The field name for the ‘left’ (controlling) table used to join the tables.

*Right Field* — The field name for the ‘right’ (related) table used to join the tables.

*Additional Linking Fields check box* — The box will be checked if there are additional fields from the controlling and related tables used to perform the join.

### Join Parameters Tab

The screenshot shows a dialog box titled "Table Join Detail - SQL". At the top, there are two text boxes: "Left Table Alias:" containing "RRORDERS" and "Related Alias:" containing "RRITEMS". Below these is a tabbed interface with four tabs: "Left Table", "Related Table", "Join Fields", and "Join Parameters" (which is selected and has a dashed border). Inside the "Join Parameters" tab, there are several fields: "Rpt Serial #:" with "4P74515086", "Report Name:" with "Basic Columnar Report.rsw", "Link Type:" with "Exact lookup", and "Non-Matched:" with "Skip controlling rec". At the bottom of the dialog are four buttons: "Help", "Previous", "Next", and "Close".

*Link Type* — Method for finding records in the related table.

| Description     | Coded Value | Comments                                          |
|-----------------|-------------|---------------------------------------------------|
| Exact Lookup    | E           | Finds all records with exactly the same value     |
| Hi Approximate  | H           | Find the record with the closest value but larger |
| Low Approximate | L           | Find the record with the closest value but lesser |

*Non-Matched*— This is the action R&R will take if it is unable to find any records in the related table.

| <b>Description</b> | <b>Coded Value</b> | <b>Comments</b>                                                                                                                |
|--------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Initial Blank      | I                  | Inability to make a match will generate a record in the result set for each record for the table on the right side of the join |
| Related Blank      | R                  | Inability to make a match will generate a record in the result set for each record for the table on the left side of the join  |
| Skip               | S                  | Inability to make a match will eliminate the controlling table record from the result set                                      |

## Report Fields

Each report contains references to data fields drawn from the tables, calculated fields, total fields, and ParameteRR fields. These field references comprise the core of any report definition and are used to display data in the final report or export, join tables, specify which records will be included, sort and group the selected records, provide a basis for defining totals, and in many more report components.

Librarian will automatically summarize information about each field referenced in the reports and place this data in a separate Librarian table: RPTFIELD.DBF. (See the 'Data Dictionary' section for details.)

(Note: Librarian will not necessarily identify ALL fields referenced within the report. If a field is ONLY used in a calculation formula, a conditional total formula, in the 'Compared to' portion of a query element, or several other places, Librarian will not include it in this list. To be certain that a field used in this manner is listed within the report, place it somewhere in the layout, perhaps outside the right margin where it will not actually print.)

The complete list of fields specified for the report is presented in the Report Field Summary grid.

| Field Name | Alias Name | Active? | Category | Data Type | Sort Level | Group Level | Filter? | In |
|------------|------------|---------|----------|-----------|------------|-------------|---------|----|
| CHGCODE    | arinvoda   | T       | D        | C         | 1          | 1           | T       | T  |
| CUSTYPE    | arcustmm   | T       | D        | C         |            |             | F       | T  |
| DBF_rr     | arinvoda   | T       | C        | C         |            |             | F       | F  |
| DESCRIPT   | arinvoda   | T       | D        | C         |            |             | F       | T  |
| Date_rr    | arinvoda   | T       | C        | D         |            |             | F       | T  |
| GLlicDec   | arinvoda   | T       | Y        | N         |            |             | F       | T  |
| GTlicJan   | arinvoda   | T       | Y        | N         |            |             | F       | T  |
| GTlicNov   | arinvoda   | T       | Y        | N         |            |             | F       | T  |
| GTlicOct   | arinvoda   | T       | Y        | N         |            |             | F       | T  |
| INVDATA    | arinvoaha  | T       | D        | D         |            |             | F       | T  |
| INVNUM     | arinvoda   | T       | D        | C         |            |             | F       | F  |
| InvMoYr    | arinvoaha  | T       | C        | N         |            |             | F       | F  |
| lrmLicDec  | arinvoda   | T       | T        | N         |            |             | F       | T  |
| lrmLicJan  | arinvoda   | T       | T        | N         |            |             | F       | T  |

## Field Summary Grid Controls

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

The Report Name and Report ID (serial #) appear at the top of the grid.

Includes key elements of the fields used in the report. See the Field Detail help for explanations. Use the scroll bar to view portions of the field grid. All fields appear in alphabetical order (not case sensitive) and includes fields from the tables, calc fields, total fields and ParameteRR fields. The columns may be resized by clicking and holding on the lines to the right of the column headings. The grid will return to standard sizes upon screen refresh.

Click on the record line of the grid to select that field. Then click the 'Detail' button to view additional information for the select field. In the Field Detail screen, you can move between fields using the Next/Previous buttons.

*Details* — Click this button to present the Field Detail screen for the field selected in the grid. If no fields are in the report, it will be gray.

*Close* — Click this button to exit the screen and return to the Report Catalog.

## Field Detail Screen

The screenshot shows a window titled "Field Detail" with a close button (X) in the top right corner. The window contains the following fields and controls:

- Field Name:
- Table Alias:
- Field ID:
- Total Field:
- Formula:
- Field Usage:
- Rpt Serial #:
- Report Name:
- Updated by another owner
- Last change by owner:
- Field Name:
- Active field (in use)
- Table Alias:
- Data Type:
- Field Category:

At the bottom of the window, there are four buttons: , , , and .

## **Controls for Field Detail View Screen**

The entire window may be moved around the background by clicking and holding the window title bar.

The window must be closed to view any former window or menu.

**Next/Previous** — These buttons will take you to the next or previous field record in alphabetical order by field name. The controls will gray when the first or last field record is reached. All field types are listed together.

**Close** — This button will exit the screen and return to the Field Summary grid screen.

## **Data Elements**

**Field Name and Table Alias** — Always visible at the top of the window. The alias is the R&R table alias associated with the field.

**All Tabs** — *Report ID* (serial #) for the current report and *Report Name* are shown on all of the tab overlays.

*Field ID Tab* (see previous page)

*Updated by another Owner* and the *Owner ID* that made the changes are shown, when applicable.

**Data types** — Category of data; critical for usage within R&R formulas and for determining the format option for any data field in the layout.

| <b>Description</b> | <b>Coded Value</b> | <b>Comments</b>                        |
|--------------------|--------------------|----------------------------------------|
| Character          | C                  | Includes all character-type fields     |
| Numeric            | N                  | Includes floating point, currency etc. |
| Date/Date-Time     | D                  | Only true date/date-time fields        |
| Logical            | L                  |                                        |
| Memo               | M                  |                                        |

For certain reports, some fields' data type cannot be determined from the information available, even though R&R will know.

'*Active field*' button will be checked if the field is still in use within the report. Unused fields are not immediately removed from the spec, even if they are no longer referenced anywhere in the report. Also, some fields may be part of calculation or conditional total formulas and may be active even though the box is NOT checked. To eliminate inactive fields, remove the Catalog entry (or entries) for the Report ID then re-save the report to re-populate the catalog entries.

*Field Categories* — Source of the data field.

| Description      | Coded Value | Comments                       |
|------------------|-------------|--------------------------------|
| Data Field       | D           | Include data dictionary fields |
| Calc Field       | C           |                                |
| Total Field      | T           |                                |
| Total on a Total | Y           | Find under 'Total fields'      |
| Calc on a Total  | Z           | Find under 'Calc fields'       |
| ParameteRR       | P           | New to V9.0                    |

*Total Field Tab*

The screenshot shows the 'Field Detail' dialog box with the 'Total Field' tab selected. The 'Field Name' is 'GLicDec' and the 'Table Alias' is 'arinvoda'. The 'Rpt Serial #' is '1Q4917V79D' and the 'Report Name' is 'Item Licensing Sales by Unit.RRW'. The 'Total Type' is 'Sum', 'Reset Level' is 'Grand total', 'Basis Field' is 'ItmLicDec', and 'Basis Alias' is 'arinvoda'. The 'Accum Level' is 'Automatic - R&R determines'. There are checkboxes for 'Pre-processed Total' and 'Conditional (see Formula)', both of which are unchecked. At the bottom, there are buttons for 'Help', 'Previous', 'Next', and 'Close'.

*Total Types* — Method R&R will use to derive the total's value. User specified this at definition.

| Description    | Coded Value | Comments                        |
|----------------|-------------|---------------------------------|
| Count          | C           | Count of record in result set   |
| Sum            | S           | Numeric/Logical fields, only    |
| Average        | A           | Numeric/Logical fields, only    |
| Maximum        | H           | Highest value in grouping level |
| Minimum        | L           | Lowest value in grouping level  |
| Std. Deviation | D           | Statistical method              |
| Variance       | V           | Statistical method              |

*Basis Field* — R&R Data field that is the focus column for the total's calculation.

*Basis Alias* — R&R alias reference for the data field that is the focus column for the total.



*Pre-processed Total* check box — Checked if the total is assigned the pre-processed attribute. Otherwise it's a running total.

*Conditional* check box — Check if the total has a conditional formula assigned to it. If so, see the 'Formula' tab for the conditional formula statement.

*Reset Level* — Point at which R&R will reset the total for recalculation. Grouping levels 1-8 coded value equals the level number. Grand total coded value is '9' and page total coded value is '0' (zero).

*Accumulation Level* — Point at which R&R will increment the total's value. Grouping levels 1-8 coded value equals the level number. Every composite record coded value is 'E' and 'Automatic - R&R determines' coded value is 'A'. See help for description of accumulation.

### Formula Tab

The screenshot shows a 'Field Detail' dialog box with the following content:

- Field Name: `InvMoYr`
- Table Alias: `arinvocha`
- Field ID: `1Q4917V79D`
- Total Field: `Report Name: Item Licensing Sales by Unit.RRW`
- Formula: `(year(INVDATE)*100)+month(INVDATE)`
- Field Usage: (empty)

Buttons at the bottom: `Help`, `Previous`, `Next`, `Close`.

The box displays the calculated field formula, or the conditional total formula used for that field. It holds the default value for ParameteRR fields; blank for all other cases. Very long formulas may not fit in the box, and only the first 250 characters of any formula are stored in Librarian. R&R internal limit is 1000 characters.

## Field Usage Tab

Field Name:  Table Alias:

| Field ID                                           | Total Field                                        | Formula                                     | Field Usage                                                   |
|----------------------------------------------------|----------------------------------------------------|---------------------------------------------|---------------------------------------------------------------|
| Rpt Serial #:                                      | <input type="text" value="1Q4917V79D"/>            | Report Name:                                | <input type="text" value="Item Licensing Sales by Unit.RRW"/> |
| Sort Level:                                        | <input type="text" value="1"/>                     | Group Level:                                | <input type="text" value="1"/>                                |
| <input checked="" type="checkbox"/> Used in Filter | <input checked="" type="checkbox"/> Used in Layout | <input type="checkbox"/> Used in Table Join |                                                               |
| Comment:                                           | <input type="text"/>                               |                                             |                                                               |

Buttons:

*Sort Level* — If the field is used as a sorting basis field, that level is indicated.

*Grouping Level* — If the field is used as a grouping basis field, that level is indicated. If used at more than one level (which R&R allows for grouping but not sorting), the highest level is displayed.

*Used in Filter* — Box is checked if the field is a query element basis field. If used as a comparison field, the box is NOT checked and the field will not be listed in the Catalog unless it is used in some other context, or is a calc or total field.

*Used in Layout* — Box is checked if the field appears anywhere within the report bands.

*Used in Table Join* — Box is checked if the field itself is used to join tables as the linking field. If part of a calculation used in linking, or as part of an index key, the box is NOT checked.

*Comment* — Displays the comment assigned to a calculation or total field through R&R.

## Internal Reports

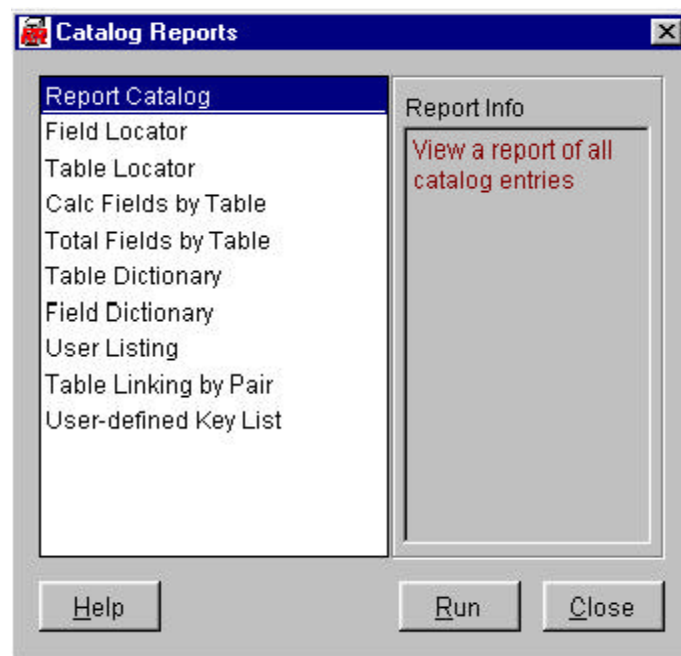
From the Main Menu, Librarian users can access a number of pre-defined R&R runtime reports that summarize key information contained in the Catalog databases. These reports are designed to provide structured output for many of Librarian's primary functions; i.e, cataloging reports, identifying the reports' contents, finding patterns in reports' structures and formulas, etc.

Naturally, these reports just skim the surface of the way you might choose to use Librarian's data. You can use R&R to generate custom reports based on Librarian's databases to suit your own purposes. Either create reports from scratch, or use the existing reports as templates. These reports are installed as 'Read-only' to prevent unintended modifications in R&R, but can be copied to another folder and modified. These reports demonstrate the fundamental of joining Librarian's tables, and include calculated fields to translate coded values to standard descriptions.

Many of Librarian's standard reports utilize the new Parameter fields to prompt a user for selections. This significantly increases the options available for each report; particularly, many reports offer a number of sorting options, or a choice between a specific table or field, or all those available. Some of the reports also take into account the user's rights to view Catalog entries for other User IDs.

In R&R Version 10, we suggest you use the xBase Report Designer to create reports based on Librarian data. All of Librarian's pre-defined reports are readable within the xBase Report Designer, and are loaded at installation as 'read-only'; therefore, if you modify them you must save them under another name or in a folder other than the RL folder.

### Catalog Report Screen Controls



The window must be closed to view any former window or menu.

### *Standard Report List*

This lists the pre-defined R&R runtime reports which provide access to the data in the Report Catalog. Some of them include R&R ParameteRR field prompts to select particular sets of records or alter the report's sorting. All reports have been updated in R&R V10 to include applicable information for reports generated using both xBase and SQL Report Designers.

Double-Click on the list the report you wish to generate, or use the arrows to scroll the list.

*Report Info* — This box will display a description of the report highlighted in the list.

*Run* — Click this button to generate the report selected in the list.

*Close* — Click this button to exit the screen and return to the Main Menu.

### ***Report Descriptions and Potential Usage***

*Report Catalog* — Lists all of the reports available to the current User ID. It populates the RLSTD.DBF runtime input file with the current User ID to set a filter on the report. Therefore, only one person may run the report at any particular moment. A ParameteRR field offers a set or report sorting option.

*Field Locator* — Lists all of the reports that reference a particular field, limited to those available to the current User ID. ParameteRR fields prompt for a field name and data table file or name for which to search.

*Table Locator* — Lists all of the reports that reference a particular data table file or table name, limited to those available to the current User ID. A ParameteRR field prompts for a table file or table name for which to search.

*Calc Fields by Table* — A ParameteRR field prompts for a table file or table name for which to list all of the calculated fields. Leaving that value blank will list ALL calculated fields, sorted by table name. Calc fields using only R&R built-in functions (such as DATE()) are excluded).

*Total Fields by Table* — A ParameteRR field prompts for a table file or table name for which to list all of the total fields. Leaving that value blank will list ALL total fields, sorted by table name.

*Table Dictionary* — Lists all of the table files or table names referenced throughout the entire Catalog. This is NOT limited to just reports available to the current User ID. The report is sorted by table name. This may not list all of the available tables, as many may never be referenced in a report.

*Field Dictionary*— List all of the data fields (and data dictionary entries) referenced in all of the reports throughout the entire Catalog. This is NOT limited to just reports available to the current User ID. The report is sorted by table name and field name within that table. This may not list all of the available fields in the table, as many may never be referenced in a report.

*User Listing*— A complete list of the User IDs and other, non-private information about the user including name, default sort order, etc. A ParameteRR field will prompt for a sort order by name or User ID.

*Table Linking by Pair*— A complete list of all relations between tables, sorted by controlling table file or name and related table file or name within that group. In addition, various linking methods, using different index keys, are also listed. ParameteRR fields prompt for controlling table name and related table name allowing for a focused search.

*User-defined Key List*— This report will list any key expressions that R&R builds at runtime to find records in the related table. ParameteRR fields prompt for controlling table name and related table name, allow for a focused search. This report will list only xBase Report Designer FlexLink indexes.

## Technical Information, Maintenance and Errors

Librarian is a database application, unlike R&R which is data utility. While R&R makes no changes at all to the database it reads, Librarian creates and changes information in its data tables, and allows the user to make additional changes. Although Librarian has just four user-maintained tables, they are subject to all of the considerations of any database application.

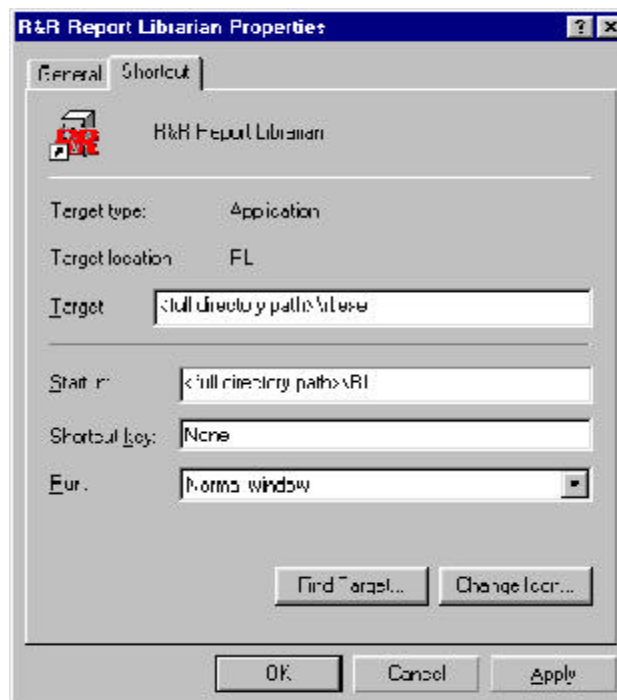
This section also contains a few suggestions on maintaining individual or groups of Librarian records for enhanced use.

### Installation

Report Librarian is automatically installed whenever R&R is installed for the distribution CD (or electronic file distribution). When, at installation, R&R home directory is specified, the installation routine will *automatically* create a folder beneath it named 'RL' and place Librarian's executable programs, data files, and standard reports in that folder. There is no option NOT to install Librarian as standard R&R V10 *expects* it to be present and in that directory. Otherwise, R&R will return error messages when attempting to save a report.

Similarly, Librarian is expecting R&R to be in the folder immediately above in order to launch reports to Report Designer (both xBase and SQL in V10) and find the R&R runtime executable (RRWRUN.EXE) in that folder as well. This tight integration prevents Librarian from being moved to another folder. In addition, since databases are being maintained, all of the .DBF, .CDX and .FPT files in the 'RL' folder must be designated read/write/sharable, on applicable network platforms, for anyone with rights to use R&R.

R&R 'Client' installation will automatically create a Window 'Start Button' program group with the Librarian shortcut, as shown on page 3. Using Windows, this icon can be copied to the desktop, or one can create a new shortcut as shown below:



Replace the section <full directory path> with the notation for where the Librarian is installed. If the directory path has spaces in it, the entire 'Target' and 'Start in' expressions have to be placed within quotation marks. Note that the 'Start in' and 'Target' directory paths MUST be the same.

Under some circumstances, certain R&R users may wish to maintain their own, private Librarian catalogs, in addition to a shared Librarian on a network installation. Since each installation of R&R, whether on a network or local workstation, creates its own Librarian and set of data tables, a user could have access to both Catalogs: the private (local) and shared. The two Catalog will NOT share data, and only the one from which R&R is launched will be updated.

### **Reinstallation and Backing Up**

From time to time, it may become necessary to reinstall R&R due to the license file becoming damaged, errors on the disk, and similar circumstances. If reinstalling to the same directory, R&R V10.0 will simply overwrite all of Librarian's files, including the Catalog and User ID files. This is not a good thing since the Catalog would probably contain much critical information.

If you wish to install to the same directories (folders) as the original R&R V9.0 installation, save the following Librarian files to a safe place **first**:

REPORTS.DBF/.CDX/.FPT--Main Librarian Catalog data file, index and memo files  
RPTABLES.DBF/.CDX--Related Tables data file and index  
RPTFIELD.DBF/.CDX--Report Fields data file and index  
OWNERS.DBF/.CDX--User IDs data file and index

After reinstallation, copy these files back to the 'RL' folder and the data will be restored. If R&R is reinstalled to a new directory, these data files can be copied from the old 'RL' folder to the new 'RL' folder.

Installation or reinstallation of R&R V10.0 as an upgrade to a prior R&R version does *not* require any special saving or preparation for Librarian since that is, essentially, a new Librarian installation.

To make a backup of the Librarian databases, the files listed above are the only ones that undergo changes worth protecting. Regular network backups that cover the R&R folders should be sufficient for most network installations; for local installation a periodic copy of these files via Windows Explorer to a diskette or another folder will suffice.

### **Future Upgrades**

In the likely event that future R&R versions includes enhancements to Librarian that require modification of the user-maintained data tables, these upgrades will include conversion routines that either run automatically upon installation, or include a separate utility to move old Librarian data to the new structures. (In fact, this latter method has been employed in R&R V10's Librarian. See page 9.) At that time, instructions and a description of the changes will be provided in the 'README' file or documentation accompanying the upgrade.

## **Deactivation**

Under some circumstances and for some installations, Librarian cataloging may not be desired. R&R will automatically catalog any reports even if not launched from within Librarian. To prevent R&R from launching the cataloging portion of Librarian, use the following settings in the [Defaults] section of the RRW.INI file:

Librarian = off

With this setting in place, you can still use Librarian to find and launch reports, but there will be no update to either existing reports or for any new reports. A serial number will still be assigned based on the 'Save As' command. You can also continue to edit Catalog entries, where allowed, and perform other maintenance on Librarian. Only the automatic cataloging program started from within R&R is disabled.

To reactivate Librarian cataloging, remove the setting or replace it with:

Librarian = on

## **Accessing from Other Programs**

Librarian's data tables are open to access from any application that can read and update .DBF files. Librarian is written in Microsoft Visual Foxpro Version 6.0 and uses its standard data tables, memos and compound index (.CDX) files.

Should any changes be made to the data files using an outside program (other than the Librarian application), the data tables should be reindexed. One can do so from within Librarian by running the 'Clean Database' utility from the Maintenance Menu. (See page 14.) If the data files are opened using a Foxpro "use" command, the associated index files should be opened and maintained automatically.

When adding records to the catalog table (REPORTS.DBF) from outside Librarian, remember that each catalog record has a unique ID, which is not the serial number. The serial number can be duplicated within the data file since more than one record can reference the same report. The unique ID in REPORTS.DBF is 'RLID', a character field that holds a left-trimmed numeric value. Librarian generates this value internally by finding the highest value and adding one to it.

One possible use of an outside program to update Librarian is to perform a mass change of the drive or directory assignments to certain Catalog entries. If a group of reports is moved to another location, changing the location in the 'DIRPATH' field will allow Librarian to quickly load and update these catalog records, rather than having to locate each one from within R&R or Windows Explorer to have R&R catalog the remainder of the table drive/directory changes.

It is good practice to make a backup copy of the Librarian data files (as described on page 41) prior to making any changes to them from outside Librarian.



While the HELPTXT.DBF file can be edited, it is not suggested as future updates will likely override any changes and there are specific references in the Librarian code to certain records in that file. RLSTD.DBF holds reference information for the R&R runtime reports within Librarian and should not be changed at all. Similarly, OWNERTMP should not be changed and should remain a one-record file. It is used during the addition of a new user ID.

Librarian's cataloging program uses SPEC.DBF and QRYSPEC.DBF during processing and should not be accessed from other programs since that program needs exclusive access to them.

Any data files accessed from external programs should be opened 'shared' unless you are certain that nobody is using either Librarian or R&R.

### ***Changing Librarian's Data Structure***

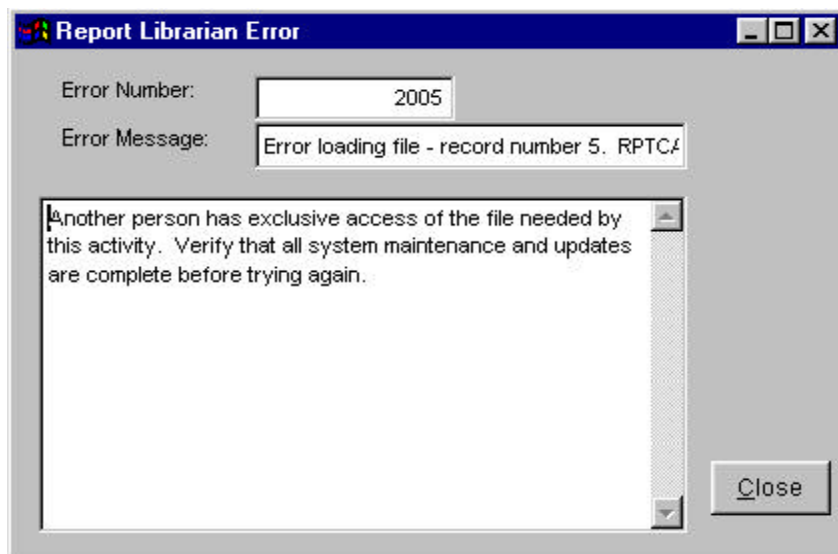
Programs such as Microsoft Visual Foxpro could be used to change Librarian's data tables and indexes. This is possible for some special requirements, but not recommended. As long as all of the standard data fields are present, with the standard data type and size, Librarian will work as designed.

Programmers may also add index tags to the Foxpro Compound index (.CDX) files, but all of the existing indexes must remain.

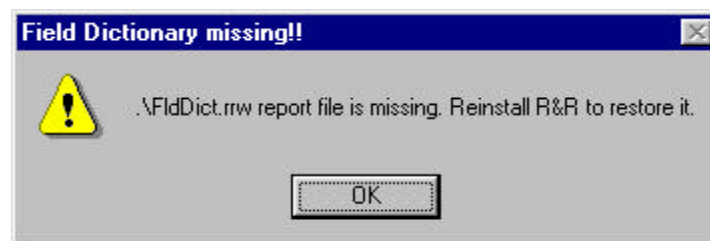
On future upgrades, any changes made to tables or index files may be replaced or discarded. Any changes made to Librarian voids support on this module, however, so only qualified programmers should attempt such changes.

### ***Errors***

Librarian is not a complex program and few things can go wrong during its runtime. The most common problem will be its inability to find a file it is expecting to be present. If one of the data, index, memo, report or program files is moved, deleted, locked, corrupt or damaged, processing will likely stop and R&R will display a box similar to this:

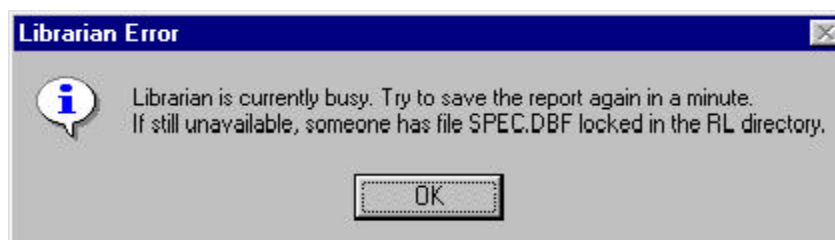


In other situations, the program anticipates that one might encounter a problem due to a shared file being in use by another Librarian user, or a needed data file is not in the drive and directory location anticipated. Librarian then may present a screen such as this:



Follow the instructions on the screen, if any, and close Librarian and re-run it.

Another error that may occur is when more than one person attempting to update the catalog simultaneously from within R&R. This is not allowed and the catalog program will present the following message:



This message can also occur on some systems when you click to save the report twice in a very short time. Update speeds vary greatly depending on the computers and network speeds you use, but it should take just a few seconds for the Librarian catalog program to update. Nothing is lost in the report or Librarian when a message such as this appears. Resaving the report (*without* using the 'Save as' option) will simply update Librarian's catalog and R&R saves the report's contents in either case.

## Librarian Data Dictionary

Below is a listing of the data tables, fields, and index expressions for the four primary Librarian data tables. This is for assistance in designing your own reports based on Librarian data.

### REPORTS.DBF

| Field Name | Type       | Size | Comments                                                               |
|------------|------------|------|------------------------------------------------------------------------|
| PROPID     | Character  | 3    | Indicator of xBase (XB) or SQL (SQL) Report Designer origin of report  |
| REPNAME    | Character  | 80   | Stored R&R report name                                                 |
| DIRPATH    | Character  | 200  | Drive and folder location for report as saved                          |
| EXT        | Character  | 3    | R&R report file extension (e.g. 'RRW')                                 |
| RPTID      | Character  | 10   | Report serial number randomly assigned by R&R                          |
| RLID       | Character  | 10   | Sequential Librarian ID number (left-aligned digits)                   |
| OWNER      | Character  | 10   | User ID associated with the Catalog entry, link to OWNERS.DBF          |
| VERSION    | Character  | 6    | User-maintained item                                                   |
| BRFDESC    | Character  | 80   | User-maintained description of the report                              |
| AUTHOR     | Character  | 30   | User-maintained item                                                   |
| CREATEDT   | Date       | 8    | Date of the first 'Save as' for the report                             |
| CREATETIME | Character  | 8    | Time of the first 'Save as' for the report                             |
| LASTMOD    | Date       | 8    | Date the report was last saved in R&R                                  |
| MODTIME    | Character  | 8    | Time the report was last saved in R&R                                  |
| LASTRUN    | Date       | 8    | Date last launched, from within Librarian only                         |
| RUNTM      | Character  | 8    | Time last launched, from within Librarian only                         |
| COMMENTS   | Character  | 200  | User-maintained long text description of the report                    |
| NOTES      | Memo       |      | Free-text memo of the report's history, changes etc.                   |
| MTABLE     | Character  | 30   | Master table name                                                      |
| MTPATH     | Character  | 200  | Master table drive and folder location as saved (xBase reports only)   |
| DATASRC    | Character  | 80   | ODBC Data Source name for all tables in the report (SQL reports only)  |
| MTALIAS    | Character  | 15   | Master table alias (same as table name unless changed)                 |
| MTINDEX    | Character  | 15   | Master index file name, if applicable (xBase reports only)             |
| IDXPATH    | Character  | 50   | Master index drive and folder. Same as master table if blank (XB only) |
| IDXEXT     | Character  | 3    | Master index file extension (e.g., 'NDX') (XB only)                    |
| IDXTYPE    | Char/Coded | 1    | Master index key expression data type (XB only)                        |
| MTITAG     | Character  | 15   | Master index tag name, if applicable (XB only)                         |
| MTKEY      | Character  | 200  | Master index key expression (XB only)                                  |
| MTHSCOPE   | Character  | 50   | Master index or record number high scope value (XB only)               |
| MTLScope   | Character  | 50   | Master index or record number low scope value (XB only)                |
| SRCRPT     | Character  | 80   | Not in use                                                             |
| SRCPATH    | Character  | 200  | Not in use                                                             |
| PRTDEV     | Character  | 80   | Printing device name as saved                                          |
| PRTLPG     | Numeric    | 7    | Print starting page number (all = 1)                                   |
| PRTHPG     | Numeric    | 7    | Print ending page number (all = 99999 or similar)                      |
| PRTCopies  | Numeric    | 7    | Print copies specified                                                 |
| PRT2FILE   | Logical    | 1    | Flag to indicate that 'print to a file' was selected                   |
| PRTFILENM  | Character  | 80   | Name of printer output file, if PRT2FILE = TRUE                        |
| PAGEDIR    | Char/Coded | 1    | Page print direction (landscape or portrait)                           |
| PAGESIZE   | Character  | 25   | Description of the paper size/type in use (e.g. 'Letter')              |
| FILEPATH   | Character  | 200  | Drive and folder location specified for PRTFILENM                      |
| EXPDEF     | Logical    | 1    | Flag that one or more export file names have been specified            |
| OTHERMOD   | Logical    | 1    | Flag that another Librarian user updated the entry                     |
| OTHERID    | Character  | 10   | User ID of the Librarian user that updated the entry                   |

**REPORTS.CDX indexes for REPORTS.DBF**

| Tag Name  | Date Type | Size | Key Expression                      |
|-----------|-----------|------|-------------------------------------|
| ALIAS     | Character | 45   | mtalias+mtable                      |
| AUTHOR    | Character | 113  | author+UPPER(repname)+ext           |
| CRDT      | Character | 91   | DTOS(createdt)+repname+ext          |
| LASTMOD   | Character | 58   | DTOS(lastmod)+LEFT(repname,50)      |
| MASTAB    | Character | 80   | mtable+LEFT(repname,50)             |
| MTABLE    | Character | 230  | mtable+mtpath                       |
| OWNER     | Character | 20   | owner+rptid                         |
| OWNERNAME | Character | 60   | owner+LEFT(repname,50)              |
| PRODID    | Character | 13   | prodid+rptid                        |
| REPNAME   | Character | 133  | UPPER(repname)+ext+LEFT(dirpath,50) |
| RLID      | Character | 20   | rlid+rptid                          |
| RLNUM     | Numeric   | 10.0 | VAL(rlid)                           |
| RPTID     | Character | 10   | rptid                               |

**RPTABLES.DBF**

| Field Name | Type       | Size | Comments                                                                    |
|------------|------------|------|-----------------------------------------------------------------------------|
| RPTID      | Character  | 10   | Report serial number, link to REPORTS.DBF                                   |
| OWNER      | Character  | 10   | User ID who last saved the report -- determines directory paths             |
| RTABLE     | Character  | 30   | Related table file name                                                     |
| RTPATH     | Character  | 200  | Full directory path for related table. Blank if same as MTPATH or SQL.      |
| RTALIAS    | Character  | 15   | Related table alias assigned                                                |
| IDXLINK    | Logical    | 1    | Indicates when an index (XB) or record number link is used (T=index)        |
| RTINDEX    | Character  | 15   | Related index file name used for the relation (XB only)                     |
| IDXPATH    | Character  | 200  | Full directory path for related index. Blank if same as RTPATH or SQL.      |
| IDXEXT     | Character  | 3    | Index file name extension (e.g. 'NDX'). Flexlink = 'RRW' (XB only)          |
| IDXTYPE    | Char/coded | 1    | Data type for index expression and linking field (e.g. 'C'=Character)       |
| RTTAG      | Character  | 15   | Tag name from multiple index file, if applicable (XB only)                  |
| RTKEY      | Character  | 200  | Key expression used to define the index values (XB only)                    |
| LINKFIELD  | Character  | 15   | Linking field name from the controlling table in the join (XB only)         |
| LINKALIAS  | Character  | 15   | Assigned alias for controlling table in the join                            |
| LINKTYPE   | Char/coded | 1    | Linking methodology coded value, (e.g. 'S' = scan)                          |
| MATCHTYPE  | Char/coded | 1    | 'F'ull or 'P'artial character match. For IDXTYPE='C' only. (XB only)        |
| MATCHLEN   | Numeric    | 3    | Characters to use in a partial match. Value = 0 for full. (XB only)         |
| FAILACT    | Char/coded | 1    | Methodology to employ on no-match in related table. (e.g. 'S' = skip)       |
| RTJOINFLD  | Character  | 30   | Linking field name from the related (right) table in the join (SQL only)    |
| LTJOINFLD  | Character  | 30   | Linking field name from the controlling (left) table in the join (SQL only) |
| ADDLFLD    | Logical    | 1    | Flag to indicate additional fields are used to join tables (SQL only)       |

**RPTABLES.CDX indexes for RPTABLES.DBF**

| Tag Name | Date Type | Size | Key Expression               |
|----------|-----------|------|------------------------------|
| LFIELD   | Character | 40   | linkfield+linkalias+rptid    |
| LINK     | Character | 40   | linkalias+linkfield+rptid    |
| RPTALIAS | Character | 25   | rptid+rtalias                |
| TABLE    | Character | 90   | rtable+LEFT(rtpath,50)+rptid |

**RPTFIELD.DBF**

| Field Name | Type       | Size | Comments                                                                |
|------------|------------|------|-------------------------------------------------------------------------|
| FIELDNM    | Character  | 30   | Table, calculated, total or ParameteRR field name                       |
| ALIASNM    | Character  | 15   | Table alias associated with the field                                   |
| RPTID      | Character  | 10   | Report serial number, link to REPORTS.DBF                               |
| ACTIVE     | Logical    | 1    | Indicates that the field is in use somewhere in the report              |
| FLDCAT     | Char/coded | 1    | Category of field (e.g. 'C' = Calc field)                               |
| DATATYPE   | Char/coded | 1    | Data type for the field (e.g. 'C' = Character)                          |
| TTLTYPE    | Char/coded | 1    | Totaling method assigned, blank if not a total (e.g. 'S' = Sum)         |
| BASISFIELD | Character  | 30   | Field assess for totalling, blank if not a total                        |
| BASISALIAS | Character  | 15   | Table alias associated with the BASISFIELD, blank if not a total        |
| TTLLEVEL   | Char/coded | 1    | Grouping level, page or grand total value (e.g. '1' = Group level 1)    |
| PPTTL      | Logical    | 1    | Indicates whether a total field has been designated 'Pre-processed'     |
| COND TTL   | Logical    | 1    | Indicates whether a total field has a condition formula assigned        |
| ACCUM LVL  | Char/coded | 1    | Point in the result set when a total increments (e.g. 'E'=Every record) |
| FORMULA    | Character  | 250  | Calc field formula, total condition, or ParameteRR default value        |
| COMMENT    | Character  | 100  | Text description assigned to calc or total field                        |
| SORTLVL    | Character  | 1    | Level at which the field is designated for sorting                      |
| GROUPLVL   | Character  | 1    | Highest level at which the field is designated for grouping             |
| INFILTER   | Logical    | 1    | Indicates whether the field is the basis for a filter (not comparison)  |
| INLAYOUT   | Logical    | 1    | Indicates whether the field is presented anywhere in the layout         |
| LNKFLD     | Logical    | 1    | Indicates whether the field is used to join with another table          |

**RPTFIELD.CDX indexes for RPTFIELD.DBF**

| Tag Name | Date Type | Size   | Key Expression                                  |
|----------|-----------|--------|-------------------------------------------------|
| ALIASID  | Character | 55     | aliasnm+fieldnm+rptid                           |
| BASISFLD | Character | 55     | basisfield+aliasnm+rptid                        |
| FIELDID  | Character | 55     | fieldnm+aliasnm+rptid                           |
| FLFCAT   | Character | 46     | fldcat+fieldnm+aliasnm                          |
| RPTID    | Character | 10     | rptid                                           |
| SPECFND  | Character | var 55 | TRIM(aliasnm)+" "+TRIM(fieldnm)+" "+TRIM(rptid) |

**OWNERS.DBF**

| Field Name | Type          | Size | Comments                                                              |
|------------|---------------|------|-----------------------------------------------------------------------|
| OWNER      | Character     | 10   | User ID (always in caps)                                              |
| FNAME      | Character     | 15   | First name for the User ID                                            |
| MID        | Character     | 15   | Middle initial for the User ID                                        |
| LNAME      | Character     | 20   | Last name for the User ID                                             |
| DEFORDER   | Char/coded    | 1    | Default order for Catalog entry presentation (e.g. 'A'=Alpha by name) |
| HOMEDRV    | Character     | 1    | Default drive to search for a report at stored location               |
| OVERWRITE  | Logical       | 1    | Indicates whether User ID can change ownership of Catalog entries     |
| VIEWOTHR   | Logical       | 1    | Indicates whether User ID can view other user's Catalog entries       |
| ADMIN      | Logical       | 1    | Indicates whether User ID has Administrator rights with Librarian     |
| PASSWORD   | Char (binary) | 10   | Encrypted password to allow access with the User ID                   |
| NETSAVE    | Logical       | 1    | Not in use                                                            |

**OWNERS.CDX indexes for OWNERS.DBF**

| Tag Name | Date Type | Size | Key Expression        |
|----------|-----------|------|-----------------------|
| NAME     | Character | var  | TRIM(lname)+" "+fname |
| OWNER    | Character | 10   | owner                 |