

***Part Two:
Using Crystal Reports***



Notes

Chapter 9 Introduction to Crystal Reports

This chapter introduces Crystal Reports, shows you how to start the program, introduces you to some of the things the program can do, and familiarizes you with some of the “nuts and bolts” of using the program.

About This Part of the Manual

This part of the manual contains all of the information you should need for building reports quickly and easily using Crystal Reports. It is divided into three appendices:

Chapter	Description
Chapter 9: Introduction to Crystal Reports	Introduction gives you a brief overview of Crystal Reports. It familiarizes you with the Crystal Reports screens, using the mouse, error messages, and the help facility.
Chapter 10: Using Crystal Reports	This chapter conceptually leads you through the process of creating a report with Crystal Reports. It suggests a methodology for creating reports starting with nothing more than a one sentence statement of purpose for the report.
Chapter 11: Practical Crystal Reports	Practical Crystal Reports is a “How to” chapter. It contains a variety of report creation topics and additional information on the practical aspects of using Crystal Reports to solve typical reporting problems.

For information on topics not found in these appendices, refer to the Crystal Reports Help system.

This part of the manual assumes that you understand the basic concepts and usage of Microsoft DOS or PC-DOS, and Windows 3.0 or higher. The procedures also assume that you will be using a mouse in the creation of your reports. While the instructions occasionally indicate keyboard methods for using the program, the instructions are generally mouse-oriented since most Windows users have a mouse.

Special Notations Used in this Part

The following notations are used throughout this part of the manual:

- Delete* means the Del key on your numeric keypad.
- Escape* means the Escape or Esc key on your keyboard.
- Enter* means the Enter, Return, CR or ↵ key, depending on which of these keys appears on your keyboard.
- Click* means to click the left mouse button one time.

- ❑ *Double click* means to click the left mouse button twice, in quick succession.
- ❑ The term *Cursor Keys* means the Pg Up, Pg Dn, and Arrow Up, Arrow Down, Arrow Right, Arrow Left, Home, and End keys on your numeric keypad.
- ❑ *Ctrl+Key*, *Shift+Key*, and *Alt+Key* are examples of the notation for two key combinations. They mean to press the first key in the combination (*Control*, *Shift*, or *Alt*), and, while keeping it depressed, to press the second key in the combination (designated as *Key*).
- ❑ Text enclosed in double brackets (for example, « *information* ») is intended to expand or explain the information that it follows.
- ❑ Field names in formulas are *italicized*.
- ❑ Insert|Formula means to select the Formula option from the Insert menu.
- ❑ Drag, when used in talking about field boxes, means to position the cursor on a field box, depress the left mouse button, and keep the button depressed while moving the field to a new position.
- ❑ Drag, when used in talking about text, means to depress the left mouse button and, while it is depressed, move the I-beam cursor across the text of interest to highlight and thus select it.
- ❑ Computer type indicates data that you are to enter using the computer keyboard. It is also used to show example formulas.

Starting Crystal Reports

You can start Crystal Reports in two ways:

- from the DOS command line
- from the Windows environment.

From DOS

To start Crystal Reports (and Windows at the same time) from the DOS command line, type:

```
cd
```

and the name of the directory into which you installed Crystal Reports. For example, if you installed Crystal Reports in the default Crystal Reports directory, type:

```
cd \CRW
```

and then press Enter.

At the prompt, type:

```
win CRW
```

and press Enter. Windows and Crystal Reports are both started.

From Windows

Once in Windows, select the group window that holds the Crystal Reports icon.

- If you're using a mouse, double click on the Crystal Reports icon to start the program.
- If you're using the keyboard, use the arrow keys to select the icon and then press Enter.

You can also start Crystal Reports from within Windows by double clicking on the file name *CRW.EXE* in the File Manager.

The Crystal Reports Registration Dialog Box

The Crystal Reports Registration dialog box appears whenever you start Crystal Reports unless you have registered your copy of the program with the company, received a serial number, and entered it in the *Enter serial number...* edit box to disable this opening dialog box.

There are two good reasons to register your copy of Crystal Reports:

- Registration entitles you to technical support should you ever require assistance in using the product.
- Registration assures you that you will be notified whenever the product is upgraded to offer new features, benefits, and efficiencies.

The Crystal Reports Registration dialog box options are as follows:

Enter serial number... edit box	Use this edit box to enter the serial number that Crystal Services sends you when you register the program. Be careful to enter the serial number correctly.
Proceed to Crystal Reports button	Use this button to close out the dialog box and go directly into the Crystal Reports program. The button will be useful until you receive and enter your registration serial number. At that time the Crystal Reports Registration dialog box will no longer appear when you start the program.
Edit Registration Info button	Use this button to enter/edit product registration information. The Edit Registration Info button takes you to the Crystal Reports Registration dialog box. Use this dialog box to enter your name, company name, and phone and fax numbers. Crystal Reports stores this information and displays it and/or prints it out automatically when you print out the registration form, call up system information (via the Help System Information command), or send in a technical support request (via the Help Technical Support Request command).
Print Registration Form button	Use this button to print a copy of the completed registration form.

How to Register Your Copy of Crystal Reports

Use the following procedure to register your copy of Crystal Reports.

1. Click the Edit Registration Info button.

The Crystal Reports Registration dialog box appears.

2. Enter your name, address, phone, and fax in the edit boxes provided, and click OK when finished

You are returned to the Crystal Reports Registration dialog box.

3. Click the Print Registration Form button.

Crystal Reports prints out a copy of your completed registration form.

4. Fax the form to Crystal Services at the number that appears on the form, or mail it to Crystal Services at the address that appears on the form.

5. In a few days, the company will mail or fax you back your serial number.

6. Enter the serial number in the Enter serial number... edit box, and click the Proceed to Crystal Reports button when finished.

This takes you to Crystal Reports and disables the dialog box so it no longer appears when you start the program.

If you are an experienced Windows user who wants to get right into the program, follow these steps to set up a Crystal Reports report for the first time after you install the program.

- 1. Start Crystal Reports by double clicking on the Crystal Reports icon in the Program Manager.**
- 2. Select New Report from the File menu.**
- 3. When the Choose Database File dialog box appears, select the first database you want to activate for your report and press OK when finished.**

The Crystal Reports Report Editor appears with Page Header, Details, and Page Footer sections set up on your report template. The sections are all blank initially. Create your report by inserting and formatting items in each of these sections.

- 4. The Insert Database Field dialog box appears on screen with the Report Editor.**

The Insert Database Field dialog box displays a list of all of the fields in the active database. To speed the entry of multiple fields, the box remains on screen until click on the Done button. You can move the dialog box to a new location if you wish.

- 5. Select the first field you want to appear on the report.**

A rectangular insertion cursor appears.

- 6. Position the cursor at the point in the Details section where you want your field to appear, and click the left mouse button to enter it.**

Crystal Reports marks the field position with a rectangular box. The characters in the box indicate whether the field is text (XXX...), number (555,...), dollar value (\$555,...) date (YYYY-M...), or Boolean (T/F). The number of characters in the box indicate the number of characters allowed for the field in the database from which it came.

- 7. Repeat Steps 5 and 6 until you have placed all the fields you want to place.**
- 8. To create a title, select Insert|Text Field, type in the information you want to appear, click Accept when finished, and position the field where you want it in the Page Header section.**

You can also insert database fields or special fields in that section from the Insert menu.

9. To see how your results will print, select Print To Window from the Print menu. Close the window when you are finished with your review.

10. If you want to:

- change the placement or width of a field
- format the field
- insert a subtotal or grand total for a field
- delete a field

click the field box for that field. Black handles appear on the right and left sides of the field box to indicate that it has been selected.

- To change the placement of the field, drag the field box to its new position using the mouse or the arrow keys. The arrow keys move the field box one grid position each time you press them.
- To change the width of the field, drag the right or left handle using your mouse or use a Shift-Arrow combination on your keyboard.
- To format or subtotal the field, click the right mouse button while the cursor is inside the field. A pop-up menu appears listing your various options.
 - To change the font, select Change Font and refine your selection using the Font dialog box when it appears.
 - To change the format (alignment within field; number, currency, or date display; etc.) select Change Format and refine your selection using the Field Format dialog box when it appears.
 - To insert a subtotal, select Insert Subtotal and refine your selection using the Insert Subtotal dialog box when it appears. In this dialog box select the field and the condition that triggers a new subtotal whenever the field's value changes, and select the sort direction: Ascending (A to Z, 1 to 9) or Descending (Z to A, 9 to 1). The program creates a new section to hold the subtotal.

NOTE:

The program automatically sorts the data (based on the field that triggers the subtotals) before it subtotals. Manually entering a subtotal sort is not necessary.

- To insert a grand total, select Insert Grand Total. The program creates a new section to hold the grand total.

- To delete the field, select Delete Field.

11. To create a formula to make data calculations or comparisons, select Formula Field from the Insert menu.

Enter a name for your formula in the Insert Formula dialog box, and enter the formula itself in the Formula Editor when it appears. Enter fields, operators, and functions by selecting them from their respective scroll lists.

You can get complete information on each available Function and Operator via the Help button, and you can check your formula syntax via the Check button. Entering a Crystal Reports formula is similar to entering a formula in a spreadsheet cell. When finished editing, select Accept and place the formula just like you do a database field.

12. To change the sort order, select Record Sort Order from the print menu.

Select the field(s) you want Crystal Reports to use for sorting the report data.

13. To change the sort and group by field, select Group Section from the Edit menu.

Select the group section of interest from the list that appears in the Edit Group Section (sections) dialog box, and select the new “trigger” field from the Edit Group Section (edit) dialog box when it appears.

14. If you want to limit your report to specific records (for example, the records of California customers that have YTD sales greater than \$10,000), click the first field on which you want your selection to be based (in this case the State field) and choose Select Records from the Print menu or the right mouse button pop-up menu.

Answer the questions that appear in the Select Records dialog box and click OK when finished. If your selection is based on more than one field, repeat the process with the remaining field(s) until you have completed entering your selection specifications.

15. When finished, you can print your report by selecting Print To Printer from the Print menu.

About Crystal Reports

Crystal Reports is a powerful yet easy to use program for creating custom reports, lists, and form letters using data from your existing databases. The program works by establishing connections with one or more of your databases. Using these connections as conduits, Crystal Reports draws in the values from database fields select and uses them in the report, either in their original form or as part of a formula that generates more sophisticated values.

Crystal Reports was designed to work with all kinds of data: numbers, currency, text, dates, and Boolean (Yes/No) fields. It has a wide range of built-in tools that you can use to manipulate that data to fit your needs. Using these tools, you can:

- make calculations and comparisons of data values,
- calculate subtotals, and grand totals of field values,
- calculate group averages, count the records in a group, and test for minimum and maximum values,
- test for the presence of specific values,
- present data only if certain conditions are met,
- evaluate logical relationships between values,
- convert data from one type to another,
- merge text with other text,
- merge text with data field data, and
- perform numerous other useful, data-related activities.

The data can be placed wherever you want it on the report, highlighted with special fonts and font sizes. With Crystal Reports, your reports can be as simple or as complex as your needs demand.

How Crystal Reports Prepares Reports

Crystal Reports prepares reports by reading data in the database files you have selected and making that data available for use in your report.

- If you wish to use data in a single data file, you simply choose that file when Create the report.
- If you wish to use data in multiple data files, you need to select the files and also to indicate the field or fields in each file that Crystal Reports is to use to match data.

NOTE:

Crystal Reports does not write data to your original data files. Your original files remain unchanged using Crystal Reports, no matter how much you might manipulate the data select.

Databases that Work with Crystal Reports

Crystal Reports can build reports using the standard data files generated by dBASE for Windows and Paradox for Windows as well as with DOS versions of dBASE and Paradox.

The Crystal Reports Window

The Crystal Reports window is simple and easy to understand:

- the Title Bar appears at the top of the window,
- the Menu Bar appears just below the Title Bar, and
- the Button Bar appears just below the Menu Bar.

Title Bar

The Title Bar displays the name of the program running in the window, Crystal Reports. You can use the title bar to activate the window (if the window is buried in a cascade of windows) or to move the window (by depressing the left mouse button with the pointer on the title bar and then, while the button is still depressed, dragging the window to a new location), or to maximize the window (by double clicking on the title bar).

The Menu Bar

The Menu Bar is Crystal Reports' command center. Each option on the menu bar calls up a drop down menu of commands that you can use to create, modify, print, and save your reports.

Each menu is listed in the table below:

File	The File menu includes commands you can use to open, close, and save files, to save files under a different file name, print the file to a printer, and create new report files. It also includes a command you can use to exit Crystal Reports. Additionally it contains a command that allows you to configure Crystal Reports to your specifications.
Edit	The Edit menu allows you to modify aspects of your report. The menu includes commands you can use to edit formulas, to edit and delete group sections, and to change summary operations. It also contains commands for cutting, copying, and pasting text, clearing (deleting) report elements, toggling the display of field names on and off, and changing your report title.
Insert	The Insert menu is the central menu use for creating reports. The menu includes commands you can use to insert database fields, text fields, and formula fields; subtotals, grand totals, summaries (counts, averages, etc.), and group sections; print date, page number, record number and group number fields; and graphics, lines, and boxes.
Format	The Format menu includes commands for changing the look of the elements in your report. It includes commands for changing fonts, and

	formatting fields, report sections, graphics, lines, and boxes. The menu also provides commands for adding field borders as well as background color and drop shadows for your fields.
Database	The Database menu is used to select and delete databases for use with your reports, to change the alias use to identify the database, and to link and unlink databases. It also has a command, File Location, for directing Crystal Reports to look for database files in new locations. Two verify commands can be used to adapt your reports to minor changes in database structure.
Print	The Print menu includes commands that let you print your report to a print window, to a disk file, or to a printer, print the report definition (a report describing your report), select the records or groups to be included in your report, select the order in which report data is to be sorted (by record or by group), and select a printer if you want the report to print on something other than the default printer.
Window	The Window menu includes commands that let you rearrange icons and windows. It also lists the report windows that are open and includes a command that lets you close all report windows simultaneously, if desired.
Help	The Help menu includes a command that takes you to Crystal Reports' main help index, a command that will give you information about the Crystal Reports version you are using, and other help-related topics.

The Button Bar

Crystal Reports groups several commonly-used commands on a Button Bar that remains on screen at all times (unless you choose to turn it off).

Each command is represented by an individual button, and each button displays a graphic that visually describes the command. You activate Button Bar commands by clicking the appropriate button one time with the left mouse button. The Button Bar eliminates some of the steps needed to activate the included commands, and it can thus greatly speed your work in creating reports.

The Status Bar

The status bar at the bottom of the report window displays valuable information to help use Crystal Reports more efficiently:

Button bar functions	When the cursor is over a Button Bar button, the Status Bar displays a short description of the button's function.
Menu command descriptions	When you highlight a menu command, the Status Bar displays a short description of the command . To highlight a menu command, click the menu name and move to the command using the Down Arrow key.
Current selections	When select or place a graphic, field, text field, graphic line or box, special field, or formula, the status bar displays the name of the item selected. It displays: <ul style="list-style-type: none">- the file name for a graphic,- the alias and field name for a field,- the text in a text field,- the words Line for a line and Box for a box,- the field type for special fields (PrintDate, RecordNumber, etc.)- the formula name for a formula.
Graphic Coordinates	When select or create a bit-mapped graphic, a graphic box, or a graphic line, the program displays the coordinates for the left, right, top, and bottom sides of the graphic element.

Right Mouse-Button Capabilities

When you are working in the Report Editor, you can speed up your work considerably using Crystal Reports' right mouse button capabilities. When the cursor is positioned on a report element (a field, a group field, a formula, etc.) and click the right mouse button, Crystal Reports displays a pop-up menu right next to the element. Unlike Crystal Reports' standard menus that group commands by function (editing, inserting, etc.), these pop-up menus are element-specific: that is, they contain only those commands from Crystal Reports' primary menus that are available for use with the selected element. The pop-up menus are valuable because:

- they display the name and source (alias) of the element at the top of the menu so you can identify the elements on your report with a single mouse click,
- they appear right next to the selected element making them quicker and easier to access than Crystal Reports' main menus,
- they contain only the commands you need; you do not need to search for commands on a more comprehensive menu,
- they make it easier to learn Crystal Reports because:
 - they eliminate the need to remember where to find a command, and
 - because you're dealing with only a compact list of commands, they make it easier to pick the right one, and
- they *spotlight* the things you can do with an element making it an easier system to use when you are under pressure or distracted.

Using the Right Mouse Button Menus

Use the following procedure to use the right mouse button menus.

- 1. Position the cursor on the element of interest.**
- 2. Click the right mouse button.**

The pop-up menu appears.

- 3. Select the command of interest from the pop-up menu.**

These options work exactly like the corresponding options that appear on Crystal Reports' primary menus. For information on using any of these menu options, see the corresponding option in *Crystal Reports Help*.

NOTE:

If you have swapped left/right mouse buttons via the Control Panel, the left mouse button will activate the pop-up menus.

Crystal Reports Report Windows

When a Crystal Reports report appears, it appears in a report window.

A report window has a title bar, minimize and maximize buttons, and a control menu box like the Crystal Reports window.

Unlike the Crystal Reports window, the report window does not have its own menu. Instead, the commands from the Crystal Reports menu remain visible and are active for the document window.

Also unlike the Crystal Reports window, the document window has scroll bars at the bottom and along the right hand edge. Using these scroll bars, you can reveal parts of the document that aren't immediately showing in the window.

Getting Help with Crystal Reports

Crystal Reports offers a comprehensive help system to support you during every step of the report development process.

Context Sensitive Help

Context sensitive help gives you immediate help with a screen element of interest (menu command, dialog box, etc.). The program takes you directly to the help information you seek without the need to traverse the indexing system.

NOTE:

To get help on a specific menu command, click the menu name and then use the Down Arrow key to highlight the command of interest. Once the command is highlighted, press F1.

Indexed Help

Indexed help takes you to the help indexing system, a hierarchy of indexes which is designed to help you target your topic of interest. Using the indexing system, you can select a broad topic of interest from the first index and then narrow your selection using the next index that appears, then the next. etc.

Notes
