

SuperReport Pro Objects

SuperReport Pro's toolbar contains tools which enable you to create and manipulate objects (such as fields and variables) which are used in all reports.

These tools (reading from left to right) are:



arrow tool	for selecting, resizing and dragging objects
text tool	for adding new static text items
field tool	for adding new fields from the database
variable tool	for adding new variable from the database
line tool	for drawing either horizontal or vertical lines
box tool	for drawing rectangles (and/or grids)
circle tool	for drawing circles
alignment tool	for aligning selected objects (a pop-up menu appears)

Creating A New Object

Within the exception of the alignment tool, these icons are used to create and manipulate objects on the report. To create an object on the report, select the appropriate tool and drag a rectangle defining the new object.

Selecting Objects

Selecting an object is achieved by first selecting the **arrow**(selection) tool, and then by clicking on the appropriate object within the report. When an object is selected it will be drawn with "handles" at each corner.

To de-select an already selected object, click on it while holding down the **Shi ft**key. Clicking on the object again with the **Shi ft**key will again select the object. If you click on part of the report that contains no objects (without the **Shi ft**key down), any selected objects will become de-selected.

If you wish to select a group of objects quickly, then you can click on the report page (but not on an object) and drag a "marquee" over the objects to be selected - any objects that are touched by or are within the marquee will become selected. Any previously selected objects will become de-selected unless you are holding down the **Shi ft**key in which case the newly selected objects will be added to those previously selected.

Moving Objects

If you click within an object that is already selected, then SuperReport Pro will assume that you wish to move the object, and will allow you to drag it around. If more than one object is selected, then all the selected objects will be moved.

SuperReport Pro also allows you to "nudge" objects using the cursor keys. If you have selected one or more objects, and you press either of the four cursor (arrow) keys, the selected objects will be moved by one pixel in the direction of the cursor key. For example, if you press the up arrow cursor key the selected objects will be moved up by one pixel. Holding down the **Opti on** key while pressing any of the cursor keys will cause the selected objects to be nudged by ten pixels instead of one pixel.

Resizing Objects

If you click within the object's "handles" then SuperReport Pro will assume that you wish to resize the object, and will allow you to drag the corner around, until you release the mouse button. When creating a new object on the label, or resizing an existing object, holding down the **Shi ft**key has the effect of making the height and width of the object the same (as the object is dragged). This feature is useful for creating squares (as opposed to rectangles) and circles (as opposed to ovals).

Objects can also be resized using the cursor keys. If you hold down the **Command** key while pressing any of the cursor keys, any selected objects will be resized. Pressing the **Option** key as well will cause the object to be resized by ten pixels as opposed to one pixel. When the up arrow or down arrow cursor keys are pressed, the lower boundary of the selected objects will be resized in a vertical direction, and when the left arrow or right arrow cursor keys are pressed, the right hand boundary of the selected objects will be resized in a horizontal direction.

Aligning Objects

To align two or more selected objects on the report, click in the **alignment** icon within the toolbar, and hold the mouse button down. An alignment pop-up menu will appear allowing you to specify how you want the selected objects aligned. While keeping the mouse button pressed down, you may drag the mouse within the pop-up menu to select the alignment that you want, then release the mouse. If you drag the mouse outside of the pop-up menu and release the mouse, no alignment will take place.

Reading from top left to bottom left in a clockwise direction the six alignment options are: left aligned, align tops, align vertical centres, align horizontal centres, align bottoms, and right aligned. Note that the alignment of objects is different from the alignment of text within an object.

Setting the Pattern and Colour of Objects

SuperReport Pro allows you to specify the pattern and colour of objects; both the for the object's "fill" and for the object's border. The pattern and colour pop-up icons next to the **pen** symbol are used to change the object's border attributes, while the pattern and colour pop-up icons next to the **paint pot** symbol are used to change the object's fill attributes.

Changing the Line Thickness of Objects

SuperReport Pro allows you to specify the line thickness of lines, rectangles and ovals using the Line Thickness selection area. To change the lines thickness of one or more objects, select the object or objects, and select the required line thickness from the line thickness pop-up icon. Line thicknesses may be a hairline, or 1 point up to 8 point in thickness.

Changing the line thickness only applies to lines, and the borders of rectangles and circles - it has no meaning for other object types.

Setting an Object's Text Attributes

SuperReport Pro allows you to control the text attributes of objects, fields and variables that contain text. You may determine the font, the size, the style and the justification of text within the object. An object's text attributes are set "globally" for the object - you may not make particular words within the object have different text attributes. To change the text attributes for one or more objects, first select the object or objects, and then use the appropriate text options shown in the toolbar (above).

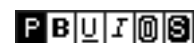
To change the font of an object, click on the pop-up arrow



marker to the left of the font name (shown as "Geneva" above). A pop-up menu will appear listing all the fonts available within your system. The object's font will be changed to whichever new font you select.

To change the font size of an object, click on the pop-up arrow marker to the left of the font size (shown as "9 Pt" above). A pop-up menu will appear listing all the fonts sizes available within your system. If you select the Other... item from the pop-up menu, then a dialog will appear allowing you to enter a font size between 1 and 144 points - fractional fonts are not supported. The object's font size will be changed to whichever new font you select.

To change the font style of an object, click within one the font style boxes.



You are able to choose between **plai ntext**, **bold text**, **underlinedtext**, **itali ctext**, **outlinedtext** and **shadowed** text, or any of these styles in any combination.

When changing the font, size or style of an object, SuperReport will adjust the bottom of the object to accommodate a "whole" number of lines of text for your chosen font, size and style combination.

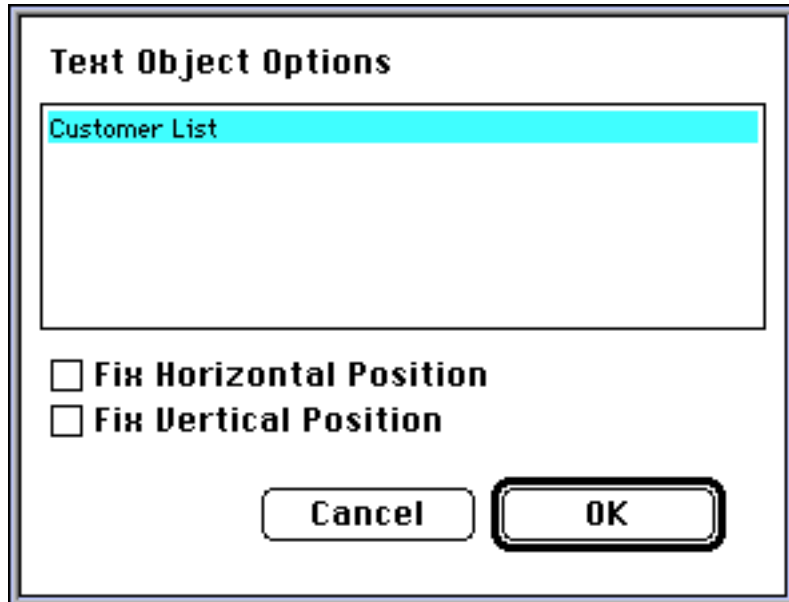
To change the justification of text within an object, click within one of the three justification options (the three icons at the top right of the toolbar). The three available justifications are **left**, **centre** and **right** justified (reading from left to right).



Whenever you select one or more objects, SuperReport will "show" you the font, size, style and justification of the selected objects using the text tools in the toolbar. If you select two text objects, one of which is Geneva 9 pt and the other Helvetica 9 pt, then SuperReport will not show a font name (since the fonts are different), but will show the font size as "9 Pt" since this is a common attribute for both objects.

If you wish to change the default font, size, style and justification for new text objects, then make the text attribute changes when no objects are selected. Any new text objects that are subsequently created will take the new default attributes.

Text Objects



Adding a Text Object

Select the **Text** icon from the toolbar, and drag the text object's rectangle within the report. Once you release the mouse button, a dialog will appear allowing you to enter the static text that you want to appear within the rectangle, and to set the object's positioning options (using the check boxes). The text positioning options are described below in the section *Object Positioning*.

Field Objects

Field ▼ [Invoice]Total

Format ▼ ###,##0.00

Options

- Fix Horizontal Position
- Fix Vertical Position
- Print With Variable Width
- Print With Variable Depth
- If Empty, Replace By Items Below
- Show Calculated Value

Calculate...
Repeat...
Script... Cancel OK

Adding a Field

Select the **Field** icon from the toolbar, and drag the field's rectangle within the report. Once you release the mouse button, a dialog will appear allowing you to name the field, to select the print formatting (for number, date, time, boolean and picture fields), and to set the object's positioning options (using the check boxes).

To name the field, choose a field from the file/field pop-up menu that is displayed when you click on the pop-up menu icon to the right of the word "Field".

For number, date, time, boolean and picture fields, you may select one of the predefined formats from the pop-up menu that will appear when you click on the pop-up menu icon to the right of the word "Format". You may enter your own format string directly in the **Format** text area instead of using one of the predefined formats, if you wish. See the section on *Object Formatting* below.

The field positioning options are described below in the section *Object Positioning*.

The buttons that deal with the object's calculated, repeating attributes, and script are dealt with later. An explanation of the scripting capabilities for objects is also described later. See the sections on *Automatic Calculations For Objects*, *Repeating Objects*, and *Scripts*.

Variable Objects

Adding a Variable

Select the **Variable** icon from the toolbar, and drag the variable's rectangle within the report. Once you release the mouse button, a dialog will appear allowing you to name the variable, to select the print formatting (for number, date, time, boolean and picture fields), and to set the object's positioning options (using the check boxes).

To name the variable, choose a variable from the variable names pop-up menu that is displayed when you click on the pop-up menu icon to the right of the word "Variable". If the variable names pop-up menu is not active, or you wish to use a variable not listed in the menu, you may enter the variable name directly into the Variable name text area.

You may specify the type of the variable using the **Type** pop-up menu. SuperReport Pro supports three types of variable and variable access. These are "variable", "array (automatic)", and "array element".

For number, date, time, boolean and picture variables, you may select one of the predefined formats from a pop-up menu that will appear when you click on the pop-up menu icon to the right of the word "Format". You may enter your own format string directly in the Format text area instead of using one of the predefined formats, if you wish. See the section on *Object Formatting* below.

The variable positioning options are described below in the section *Object Positioning*.

The buttons that deal with the object's calculated, repeating attributes, and script are dealt with later. An explanation of the scripting capabilities for objects is also described later. See the sections on *Automatic Calculations For Objects*, *Repeating Objects*, and *Scripts*.

Object Formatting

Object Formatting Strings

The object formatting strings are the values that are entered into the Format text area - these are used at print time to format the object's text according to the object's data type.

Format String	Displayed As
Date format strings:	
Short	1/1/92
Abbrev	Mon, Jan 1, 1992
Long	Monday, January 1, 1992
Short2	01/01/1992
Time format strings:	
12:24:15	12:24:15
12:24	12:24
12 hrs 24 min 15 secs	12 hours 24 minutes 15 seconds
12 hours 24 minutes	12 hours 24 minutes
12:24 pm	12:24 pm
Boolean format strings:	
yes;no	
Married;Single	
Has children	
;Not Required	

A boolean value that evaluates to TRUE will have the "yes" text substituted at print time, while a FALSE value will have the "no" text substituted. The text for TRUE and FALSE format strings lie on the left and the right of the separating semi-colon (";") and can be any or no text.

Numeric format strings: (Reals, Integers and Longints)	positive;negative;zero
US\$###,###0.00	
000,000.00;(000,000.00);0.00	
\$^^^,^^^,^^0.00	

The semi-colons separate format strings for positive, negative and zero numbers. The following four symbols are place-holders, #, 0, ^, *. The following table illustrates the effect that the place-holder has on leading or trailing zeros.

#	No effect
0	Displays 0
^	Displays a "hard" space (ASCII 202)
*	Displays a *

If you are to print large numbers, be sure to ensure that you provide sufficient place holders otherwise the numeric value will be printed as "<<<<<<".

Picture format strings:	
Normal	Right and bottom edges may be clipped
Centered	All edges may be clipped
Scaled	Picture scaled within object's rectangle

SuperReport Pro User Guide

Scaled (Proportional)

Picture scaled proportionally

Object Positioning

Field and Variable Object Positioning

SuperReport Pro allows you to control the relative positioning of any object within the printed report, or to fix an object's position. Field and Variable objects have more options that allow you to control the width and depth of the object and the object's effect on other objects. These options are available to you when you create the object, or if you double-click within the object, or by selecting the object and choosing the **Modify Object...** command from the **Edit** menu.

The **Fix Horizontal** and **Fix Vertical** check boxes allow you to fix either the horizontal or vertical position of the object, or both, in relation to the other objects on the report. Any adjustment in a object's rectangle at print time may cause an appropriate adjustment to other objects at print time unless their **Fix Horizontal** and **Fix Vertical** check boxes are checked.

If you have an object near the bottom of the report, and have also defined a text field object above with the **Print With Variable Depth** option set, you would use the **Fix Vertical** setting (in the lower object) to ensure that it remained at its current position, regardless of how small or large the text field object above became at print time as a result of the amount of text within it. Otherwise, the lower object would either be "pulled up" or "pushed down" in sympathy with the rectangle changes of the text field object above.

The **Print With Variable Depth** option will cause SuperReport Pro to extend the bottom boundary of the object's rectangle sufficiently to accommodate the field or variable text. This enables you to define a field or variable object as only one line in height, set the **Print With Variable Depth** option (by checking the check box), and let SuperReport Pro adjust the object's rectangle for you. If the object's rectangle is either contracted upwards or extended downward to accommodate the text, then any objects below that object will be repositioned accordingly unless their **Fix Vertical** setting is set, even if they are not directly beneath the 'variable depth' object but are still below it to either side.

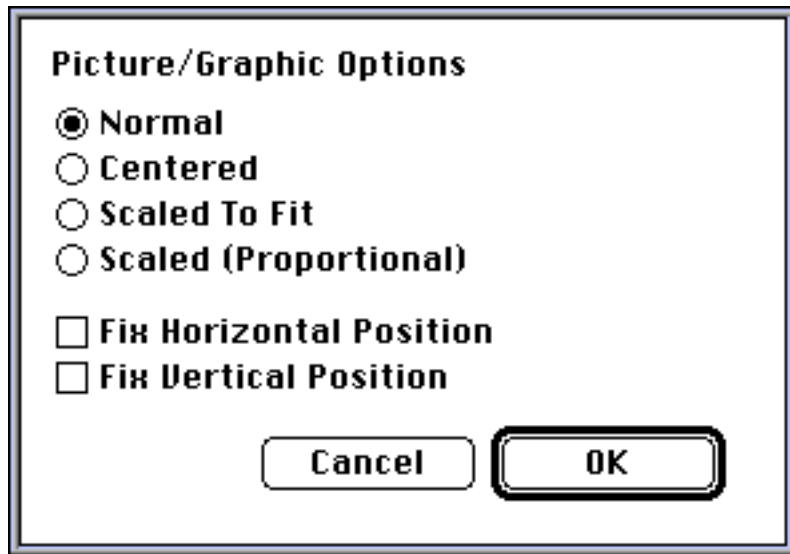
The **Print With Variable Width** option will cause SuperReport Pro to extend the right boundary of the object's rectangle sufficiently to accommodate the field or variable text. Again, like the **Print With Variable Depth** option described above, this will cause any other objects at the same height on the report, and to the right of the original object to be displaced horizontally in sympathy with the object's shrinking or stretching unless their **Fix Horizontal** setting is set.

When the **Print With Variable Width** option is set, and the field or variable object is empty (i.e. contains no text) then SuperReport Pro will automatically "pull" the next object to its right into its position. This is useful for example when you place three fields Title, Firstname and Surname on the same line and let SuperReport Pro take care of the fact that for some records you may have the title or firstname missing.

The **Print With Variable Depth** and **Print With Variable Width** options are mutually exclusive. In other words you may not have both these options set at the same time. If you set one, and the other option is already set then SuperReport Pro will automatically unset the other for you.

The **If Empty, Replace By Items Below** option allows you to "collapse" an empty object, replacing it by the next item below, and pulling up any other items below by the height of the "collapsed" object. Again, setting the **Fix Vertical Position** option in any of the items below will prevent them from being "pulled up". The **If Empty, Replace By Items Below** option is useful for addresses where the address is broken into individual lines, some of which may be empty. Using this option SuperReport Pro will generate the address with any blank lines automatically removed.

Graphics & Picture Objects



Adding a Picture

To add a graphic, such as a logo, to the report, copy the graphic from the Scrapbook, or your graphics application to the Clipboard (using the **Copy** command on the **Edit** menu) and make the SuperReport Pro editor area active, and select the **Paste** command from the **Edit** menu. The graphic will be pasted onto the report. You can then move the graphic and resize it as necessary.

If you double click on the graphic, SuperReport Pro will display the pictures options dialog, Using the options available within the dialog, you can control how the picture is displayed within the object rectangle, and fix the object's positioning if required.

The illustration below shows four graphics. The original graphic is the leftmost graphic, the other three reading from left to right are displayed using the Normal, Centered and Scaled To Fit options, and show the effect that these display options have when the original graphic is resized.

SuperReport Pro supports both PICT and PICT2 images.

Other Object Operations

Changing an Object's Options

To change an object's options, either double-click on the object, or select the object and choose the **Modify Object** command on the **Edit** menu.

A dialog will appear allowing you to change the object's options. Different dialogs appear for different types of objects, although all the object options dialogs have the **Fix Horizontal Position** and **Fix Vertical Position** check boxes in common.

Rearranging Objects

There are four commands on the **Edit** menu, **Send To Back**, **Send Backwards**, **Bring To Front** and **Bring Forwards** that allow you to place an object behind or in front of an object that it overlaps with. To use any of these commands, select a single (or multiple) objects, and then select the appropriate command.

Rearranging objects is used to ensure that the objects are drawn in the correct sequence on your reports. However this feature is also useful for reports that are printed to disk, since the order of the objects determines the order in which the objects are exported.

If you need to "see" the object order, then select the **Show Object Order** command from the **Options** menu.

Selecting an Object hidden behind another

To select an object hidden behind another without having to send the frontmost object behind (using the **Send To Back** command), hold down the **Command** key while clicking on the object you wish to select. Pressing the **Command** key down causes SuperReport Pro to select the rearmost object, rather than the frontmost object (which it does by default). Similarly, if you wish to double-click on an object hidden behind another (to display the object's options dialog), press the **Command** key down while double-clicking.

Duplicating an Object

To duplicate one or more objects from the report, first select the objects to be duplicated and then select the **Duplicate** command from the **Edit** menu.

Deleting an Object

To delete one or more objects from the report, first select the objects to be deleted and then press the **Delete** key or select the **Clear** command from the **Edit** menu. If you need to undo this operation, select the **Undo** command from the **Edit** menu.

Changing an Object from one type to another

To change an object from one type to another, select the object and select the **Change Object...** command from the **Edit** menu. A dialog will appear allowing you to change the object to a new type. This feature is sometimes useful for changing fields to variables and vice-versa.

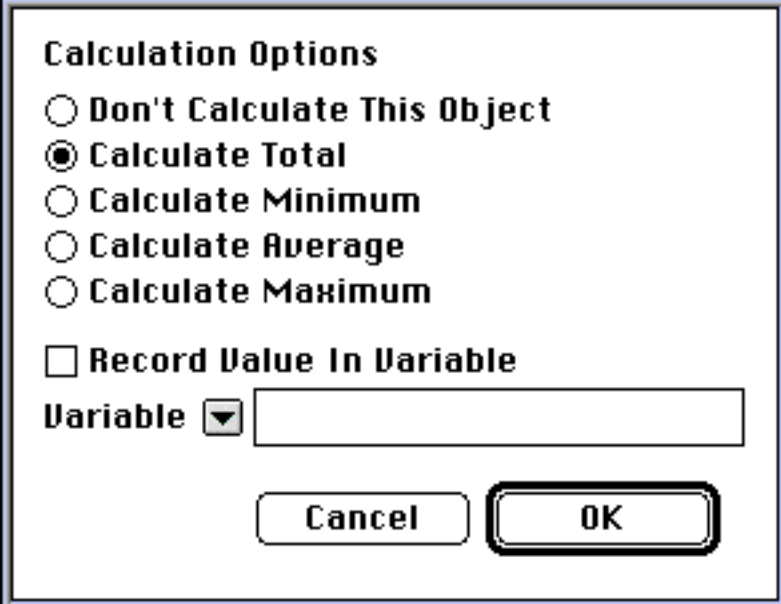
Undoing the last action in the Report Editor

The last action performed in the report editor may be undone using the **Undo** command on the **Edit** menu.

Automatic Calculations For Objects

Changing an Object's Options

SuperReport Pro provides a facility for the automatic calculation (such as totalling) of numeric fields and variables. To make use of this capability, you should click on the **Calculate...** button in the field or variable object options dialog.



The image shows a dialog box titled "Calculation Options". It contains five radio buttons for calculation types: "Don't Calculate This Object", "Calculate Total" (which is selected), "Calculate Minimum", "Calculate Average", and "Calculate Maximum". Below these is a checkbox labeled "Record Value In Variable". Underneath the checkbox is a "Variable" label followed by a dropdown arrow and an empty text input field. At the bottom of the dialog are two buttons: "Cancel" and "OK".

This will produce the calculate options dialog like the one show above. Using the radio buttons, you may select the type of calculation that you wish to have performed.

If you also need to make use of the calculated value in any report or object scripts then check the **Record Value In Variable** check box, and specify the variable name in the edit field provided (or select a variable from the pop up menu icon).

The screenshot shows a dialog box with the following elements:

- Field**: A dropdown menu showing "[Invoice]Total".
- Format**: A dropdown menu showing "###,##0.00".
- Options**: A list of checkboxes:
 - Fix Horizontal Position
 - Fix Vertical Position
 - Print With Variable Width
 - Print With Variable Depth
 - If Empty, Replace By Items Below
 - Show Calculated Value
- Buttons**: "Calculate..." (with a checkmark icon), "Repeat...", "Script...", "Cancel", and "OK".

Once you have selected a calculation type, the **Calculate** button will have a (tick mark) in it to signify that an automatic calculation has been specified.

If the object is in a **Total** or **SubTotal 1... SubTotal 6** section, then you can select the **Show Calculated Value** check box which will cause SuperReport Pro to show the calculated value that is appropriate for that section.

Normally objects to be totalled are placed in the **Body** section of the report with an automatic calculation specified. And objects which are to display the subtotal value (instead of the current value) are normally placed in either the **SubTotal 1... SubTotal 6** or **Total** sections, and will have the **Show Calculated Value** check box checked. However there is no requirement for the object to be placed in the **Body** section, if you only wish to have the calculated value shown in a **SubTotal 1... SubTotal 6** or **Total** section.

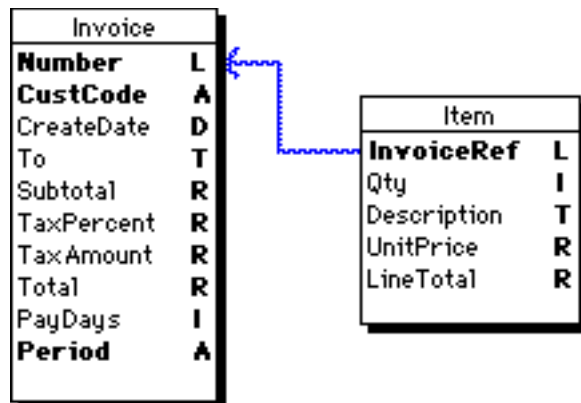
Before the report is generated SuperReport Pro will scan all objects defined on the report seeing whether they require automatic calculations and will then maintain a calculation table for those objects while the report is generated.

Automatic calculations can be used for totalling objects, or to produce minimum, maximum, or average values. And they can be used for either field, array or variable objects.

Repeating Objects

What Are Repeating Objects?

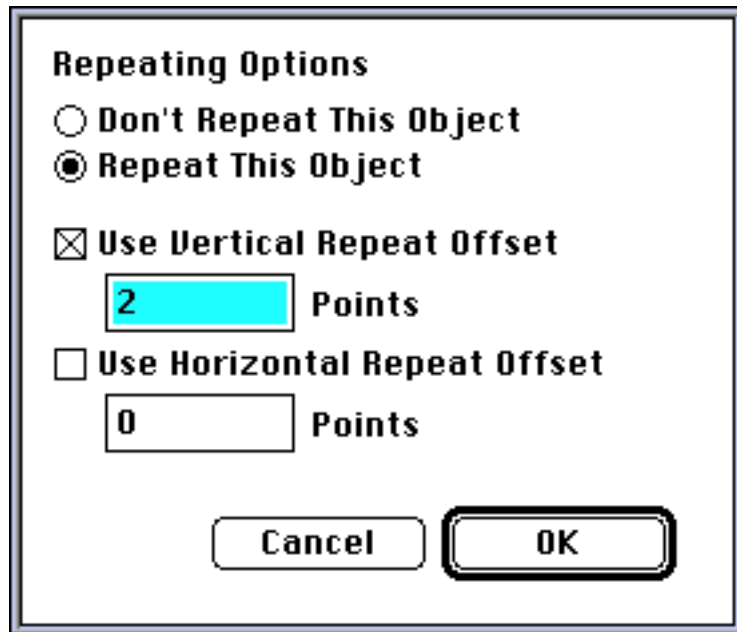
SuperReport Pro performs special actions for objects that have their 'Repeating Object' attribute switched on. The only objects that may have this attribute set are fields, and arrays - setting this attribute for (non-array) variables is not meaningful. Repeating objects can be used to display information from other files or arrays in a column format (in much the same way that 4D does with included layouts, but with a lot less hassle).



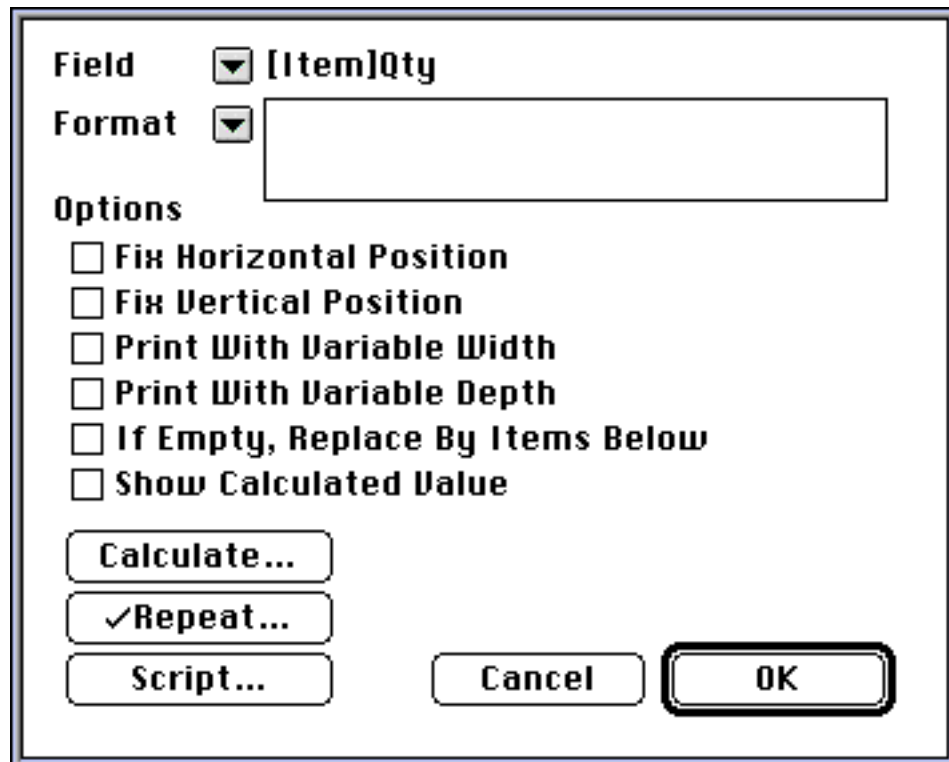
For example, each invoice in a 4th Dimension database might have one or more invoice items belonging to it. If a report was created to print invoices, it would be possible to show the invoice items for each invoice using the repeating object attribute for the [Item] fields.

Normally repeating objects are placed in the **Body** section of a report. They are ignored if placed in the **Footer** section of the report.

As the **Body** section is processed for each [Invoice] record, SuperReport Pro computes the number of repetitions of the repeating [Item] fields based upon the number of records in the [Item] file selection. The second and subsequent repetition of a repeating object will (usually) be placed immediately beneath the previous (or first) instance of the object. In other words, repeating objects repeat downward resulting in columns of repeated data - although SuperReport Pro allows objects to repeat horizontally as well.



When you hit the **Repeat...** button in the object options dialog, the repeating options dialog will appear. Here you are able to specify whether you wish the object to repeat or not, and if so whether to repeat either horizontally or vertically. If you do specify that the object is to 'repeat', then the **Repeat...** button will be shown with a (tick mark) in it.



You can use the **Body Script...** command (on a hierarchical menu displayed when you select the **Scripts** command from the **SuperReport** menu) to create a procedure or script to load or search for the related

records, and to sort them if you wish, prior to printing the **Body** section. The same script could also be used to create and load arrays with information to be printed using repeating objects.

When SuperReport Pro encounters a repeating object in a section, it calculates the number of iterations required for that object, and then will generate as many (new) repeating objects as there are iterations, placing the new objects in a position from its predecessor as defined in the Repeating Options dialog. SuperReport Pro will also adjust the section height to cater for the extra repeating objects that have been placed on the page as the report is generated.

Repeating objects provide a similar capability to 4th Dimension's included layouts, but are much simpler to use.

If you do not wish to use repeating objects, then you can define your report in such a way that (in this example), the [Item] file is the main file, and the [Invoice] information is displayed in a **SubHeader** and **SubFooter** sections. The disadvantage of this method is that it requires that you make use of break processing, and it requires more work.

Object, Section and Report Scripts

Scripts

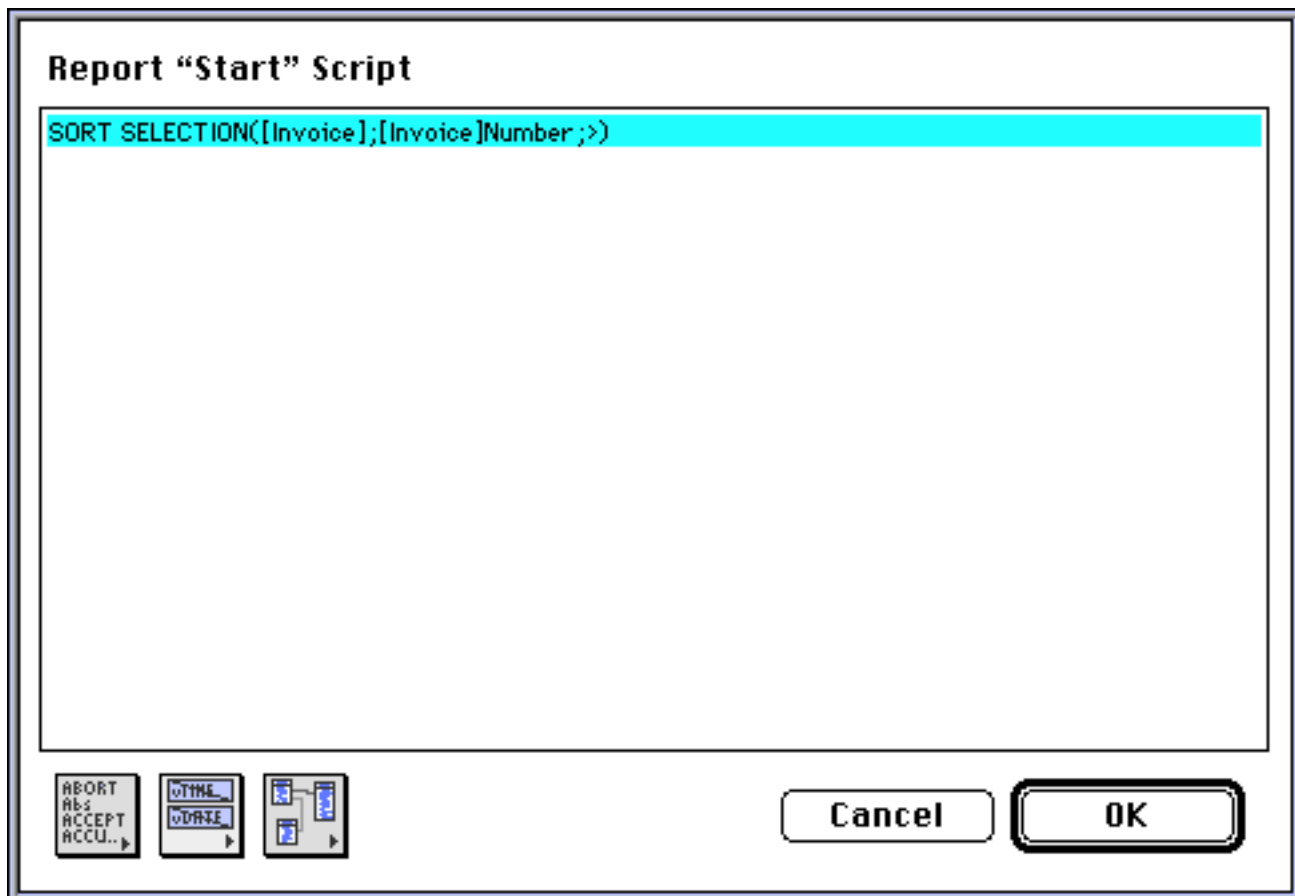
SuperReport Pro allows you to attach an object script to any field or variable object, or section.

To access the script editor window, click on the **Script...** button in the object options dialog. If the object already has a script associated with it, or if you create a new script for the object then the text of the **Script...** button will be preceded by a (tick mark). The tick mark is a quick way of seeing that an object has a script associated with it.

When an object is viewed on the report page, it is also possible to tell whether it has a script attached to it or not. If it does have a script then the top left handle corner of the object will have an inverted triangle visible - the same is also true for sections that have scripts attached.

When the report is generated, object scripts are executed 'just before' they are printed on the report. For example, if an object is in the **Body** section of a report, and the report prints the Body section five times (because the report is printing a selection of five records), then the object script will be executed five times - each time prior to the object being printed on the page. Object scripts are always executed when defined, even if the section that the object is in is suppressed (for printing using the **Select Printing Sections...** commands on the SuperReport menu).

Object scripts can be used to make selections of records in other files, to fill variables with data, or to perform any other action that the 4th Dimension command set will allow.



The SuperReport Pro script editor window appears whenever you select the **Script...** button from the object options dialog, or from the Section Options dialog, or when you select one of the hierarchical menu items from the **Scripts** command on the **SuperReport** menu.

The script editor window contains a text entry field where 4th Dimension statements can be entered. A script may contain one or more lines of valid 4th Dimension statements.

SuperReport Pro neither 'pretty prints' the text in this area nor checks the syntax of the statements that you enter. Each line must contain a self-contained 4th Dimension statement because SuperReport Pro does not support any loop or conditional structures. For example the following statements are NOT valid when entered in the script editor window:

```
If (Size of array(aName)>0)
  For ($k;1;Size of array(aName))
    aName{$k}:=""
  End For
End If
```

If you need to execute statements requiring either loop or conditional structures, you should create a procedure within your 4th Dimension database to perform the action and call the procedure from SuperReport Pro by entering the procedure name within the script editor window.

The script editor window contains an **OK** and **Cancel** button. These are used to save or cancel any changes that you make to the scripts.

The three icons at the bottom left of the dialog window may be clicked on to provide pop-up menus listing the 4th Dimension command set, the file structure contained within the 4th Dimension database, and a list of variables used within the database. Selecting an item from any of these pop-up menus will insert the relevant text into the text above.

Report Sections

Sections

A SuperReport Pro report document is broken up into different sections. These sections are the **Header** section, **SubHeader** sections, **Body** section, **SubTotal** sections, **Total** section and **Footer** section. There are six **SubHeader** sections named **SubHeader1**, **SubHeader2** ... **SubHeader6** and six **SubTotal** sections named **SubTotal 1**, **SubTotal 2**... **SubTotal 6**.

A report always has the following sections; a **Header** section, a **Body** section, a **Total** section and a **Footer** section. The **SubHeader** and **SubTotal** sections are optional and are only used when break processing is to take place - in fact these two types of section are used to define the number of break levels and when the breaks will occur.

Sections occur on a report in the following order:

Header
SubHeader1
SubHeader2
SubHeader3
SubHeader4
SubHeader5
SubHeader6
Body
SubTotal6
SubTotal5
SubTotal4
SubTotal3
SubTotal2
SubTotal1
Total
Footer

Those sections not shown in bold are optional and are not required on a report. The other sections occur on all reports. When SuperReport Pro is launched and a blank document is displayed, the four standard sections (**Header**, **Body**, **Total** and **Footer**) are always automatically created.

The **Header** section marker marks the bottom of the header section of the report. Everything from the top of the page to the **Header** section marker is in the **Header** section. The **Header** section of the report and the objects within that region are printed at the top of every page that is generated by SuperReport Pro. Similarly, the region between the **Total** section marker and the **Footer** section marker and the objects contained within that region are printed at the bottom of every page that is generated.

A section region is bounded at its bottom by the section marker of the same name, and at the top by the section marker above.

Where are the Sections used in the printed Report?

The **Header** section and its objects (those contained within the section) are printed at the top of every page of the report that is generated by SuperReport. The **SubHeader** sections **SubHeader1**, **SubHeader2** ... **SubHeader6** are described later. The **Body** section and its objects are printed for each iteration, or for each record of the selection that is processed. The **SubTotal** sections **SubTotal 1**, **SubTotal 2**... **SubTotal 6** are also described later. The **Total** section and its objects are printed after the final iteration,

or after the last record in the selection and its **Body** section has been printed. The **Footer** section and its objects are printed at the bottom of every page of the report that is generated by SuperReport Pro.

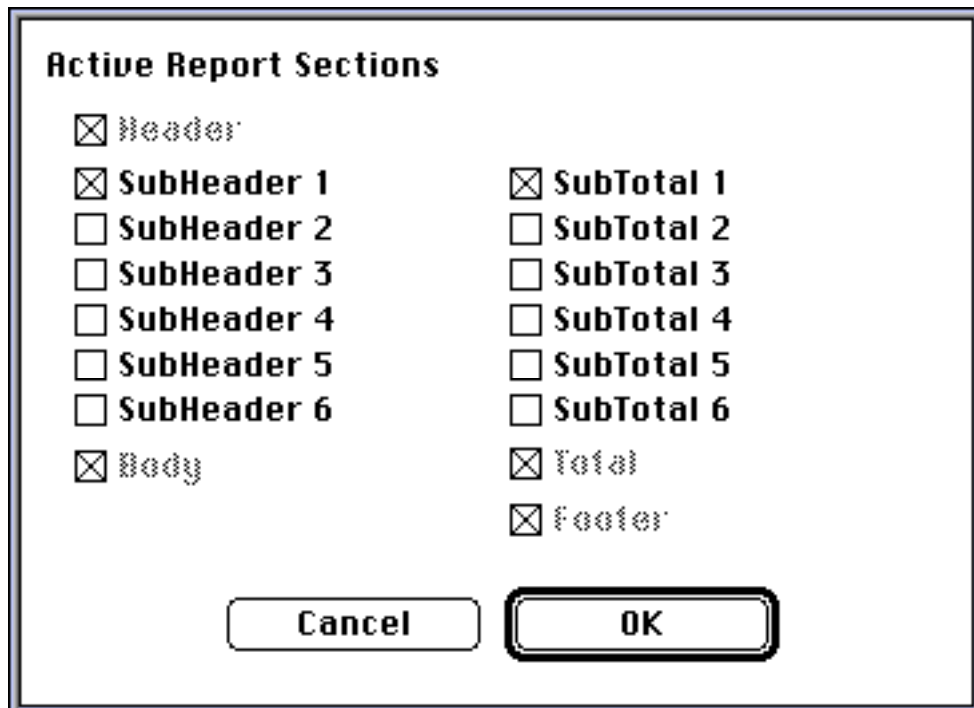
Moving the Sections

To move a section marker, either click on the section marker's line, or on the rectangle that contains the section's name. SuperReport Pro will allow you to move the section horizontally without restriction, and vertically up as far as the section marker above, and down as far as the section marker below. In the example shown, you are not able to move the **Body** marker above the **Header** marker, nor below the **Total** marker.

If you hold the **Shift**key while dragging the section markers, then ALL the sections markers beneath the selected one will be moved in sympathy with it. For example, dragging the **Body** section marker while holding the **Shift**key would cause the **Total** and **Footer** markers to move in sympathy.

Selecting the **Positions Sections...** command from the **Edit** menu will produce a dialog that allows you to quickly set the horizontal position of the section marker rectangles (these contain the section name). Using the dialog, you may place the section marker rectangles at the left of the editor area, staggered across the editor, or at the right hand edge of the editor area. This facility is useful if you find the section markers obscuring parts of the report.

You can also show or hide the sections using the **Show Sections** command on the **Options** menu. The **Lock Sections** command on the **Options** menu is used to prevent the sections from being moved or modified by accident.



The dialog box titled "Active Report Sections" contains a list of checkboxes for various report sections. The sections and their checkbox states are:

Section Name	Checkbox State
Header	Checked
SubHeader 1	Checked
SubHeader 2	Unchecked
SubHeader 3	Unchecked
SubHeader 4	Unchecked
SubHeader 5	Unchecked
SubHeader 6	Unchecked
Body	Checked
SubTotal 1	Checked
SubTotal 2	Unchecked
SubTotal 3	Unchecked
SubTotal 4	Unchecked
SubTotal 5	Unchecked
SubTotal 6	Unchecked
Total	Checked
Footer	Checked

At the bottom of the dialog are two buttons: "Cancel" and "OK".

Creating and Deleting SubHeader and SubTotal Sections

To add or delete sections use the **Add/Delete Sections...** command from the **Edit** menu. Using the dialog that appears, you are able to add or remove sections by checking the appropriate checkboxes.

Break Processing

SuperReport Pro's break processing capability will enable you to print report subheadings, subtotals and grand totals for the entire record or array selection to be printed provided that the record or array selection is sorted appropriately.

Assume the following record information sorted alphabetically by region, and by customer name within region:

[Customer]Name	[Customer]Region	[Customer]Sales
Mission Computers	Central	15,000
GTec Systems	London	100,000
MacGregorTech	London	85,000
Dartmouth Shipping	West Country	8,000
Great Combe Systems	West Country	25,000
River Down Ltd	West Country	156,000

And that a report is required in the following format:

Region	Central	
Mission Computers		15,000
	Total for Region Central	<u>15,000</u>
Region	London	
GTec Systems		100,000
MacGregorTech		85,000
	Total for Region London	<u>185,000</u>
Region	West Country	
Dartmouth Shipping		8,000
Great Combe Systems		25,000
River Down Ltd		156,000
	Total for Region West Country	<u>189,000</u>
	Grand Total	<u>389,000</u>

For SuperReport Pro to produce the above printed output would require only a single break level using both a **SubHeader1** section and a **SubTotal 1** section.

The record selection also needs to be sorted on the [Customer]Region and [Customer]Name fields prior to the report being printed otherwise the break processing will not function correctly. This can be done by creating a Start Script for the report to sort the selection using the following code:

```
SORT SELECTION([Customer]; [Customer]Region;>;[Customer]Name;>)
```

The maximum number of **SubHeader** and/or **SubTotal** sections indicates the number of break levels that are to be used - one in this case, since there is only one **SubHeader**, and one **SubTotal** section. If there has been one **SubHeader** section used, but two **SubTotal** sections, then there would have been two break levels.

The last thing that remains when creating this report is to indicate to SuperReport Pro the field value that SuperReport Pro is to "watch" in order to generate the correct **SubHeader** and **SubTotal** sections.

The field value (in this example) that determines when to generate the appropriate **SubHeader** and **SubTotal** sections is the **[Customer]Region** field - whenever its value changes, SuperReport Pro will generate a break level. Setting the field or variable that SuperReport is to "watch" in order to generate breaks is described below.

Setting a SubHeader or SubTotal Section's Breaking Value

In order to make use of SuperReport Pro's break processing capability, you must define the field or variable that SuperReport Pro is to "watch" for each of the break levels (**SubTotal 1**, **SubTotal 2** etc). You can define the "breaking" field or variable name in either the **SubHeader** section, **SubTotal** section or in both sections. When SuperReport Pro calculates the number of break levels, and the "breaking" field or variables names for each level, it checks the **SubTotal** sections first, and then the **SubHeader** sections. The reason that you can define the "breaking" field or variables names in either the **SubTotal** section or the **SubHeader** section is because you may have a report that uses only **SubHeader** sections or **SubTotal** sections, or a mixture of the two.

In the example above, if no subtotals for the sales figures was required, but a breakdown of the customers by regions was, then only the **SubHeader1** section might be defined - there would be no need for the **SubTotal 1** section.

To set the breaking field or variable name that SuperReport Pro is to watch, either double-click on the section marker, or select its name from the hierarchical menu that appears when you select the **Modify Section** command on the **Edit** menu. This will produce the section options dialog shown below.

SubHeader 1 Section Options
 Always Use This Section
 Only Use This Section On Value Changes Of...
Object Name
Page Breaking Options
 Place This Section On The Current Page
 Start A New Page BEFORE Starting This Section
 Start A New Page AFTER Completing This Section
 Print This Section On The Report
 Keep Whole Section On Same Page
 Adjust Section At Print Time For Clipping Margin

To set the breaking field or variable name select the **Only Use This Section On Value Changes Of...** radio button.

Clicking on the pop-up menu to the right of the text "Object" will allow you to specify whether the object to be "watched" is a field, a variable or an array variable.

To select the field or variable name, click on the small pop-up menu icon between the text "Name" and the entry field that contains the text "[Customer]Region". Doing so will produce a pop-up menu listing the available fields or arrays depending upon which object type you have selected. You are also able to enter the name directly into the entry field if you so wish.

As SuperReport Pro processes the report, it will "watch" each of the specified breaking fields or variables, and will generate a break (and print the appropriate **SubHeader** and **SubTotal** sections) when it detects that its value has changed.

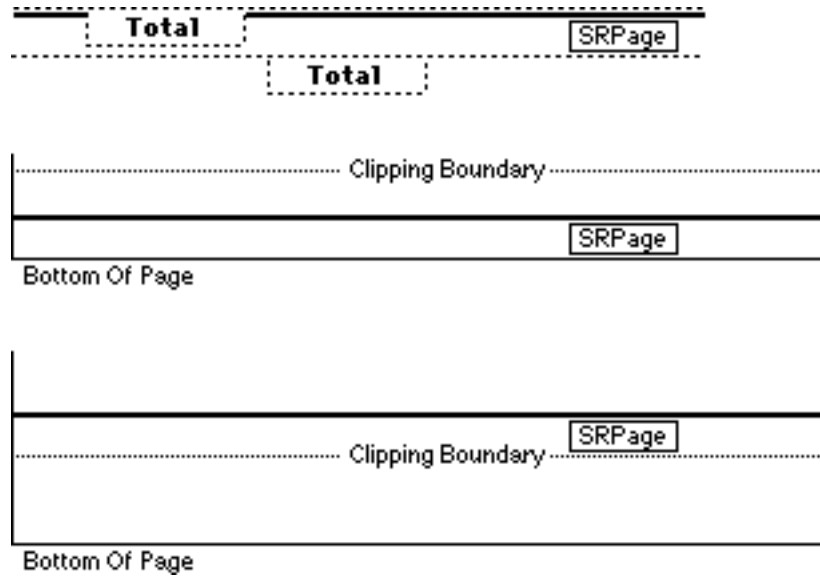
Setting the Section Options

To display the section options dialog, either double-click on the section marker within the report, or select its name from the hierarchical menu that appears when you click on the **Modify Section** command on the **Edit** menu. If the section you wish to modify is disabled, then this is because it has not yet been defined on the report. For example, if you have a single break level because you have only created a **SubHeader1** and a **SubTotal 1** section, then the **SubHeader2 ... SubHeader6** and **SubTotal 2... SubTotal 6** menu items will be disabled.

The Section Options dialog will then be displayed. A complete description of setting the breaking value is described above in the section *Setting a SubHeader or SubTotal Section's Breaking Value*.

The Section Options dialog also allows you to control page breaking. Using the Page Breaking Options radio buttons, you can determine whether the current section is to be printed on the current page, or whether a new page is to be generated before or after the current section is printed.

The **Adjust Section At Print Time For Clipping Margin** checkbox is only used for the **Footer** section. Checking this option causes SuperReport to automatically "lift" the footer section area, when it is printed, above the clipping margin at the bottom of the report page. This feature is useful since it means that you can define the height of your **Footer** section to accommodate your footer objects without having to calculate the additional height required to allow for the clipping margin.



If you do not set the **Adjust Section At Print Time For Clipping Margin** checkbox then the footer objects will be printing within the page's clipping area - ie they will not be printed.

If however the **Adjust Section At Print Time For Clipping Margin** checkbox is set then the Footer section will be increased in height by the size of the clipping region at the bottom of the printed page causing the footer objects to be printed above the clipping boundary as you would expect.

If you have defined your report in terms of the physical page and if you do not set the **Adjust Section At Print Time For Clipping Margin** checkbox then you will have to set the Footer section height tall enough to accommodate both the printer's clipping margin and the objects that you wish to place in the footer area of the report.

Section Scripts

SuperReport Pro allows you to attach an object script to any defined section. To access the script editor window, click on the **Script...** button in the section options dialog. If the section already has a script associated with it, or if you create a new script for the section then the text of the **Script...** button will be preceded by a (tick mark). The (tick mark) is a quick way of seeing that an object has a script associated with it.

When an section is viewed on the report page, it is also possible to tell whether it has a script attached to it or not. If it does have a script, then the section marker name will be drawn with an inverted inverted triangle at the top left hand side of the marker.

When the report is generated, section scripts are executed 'just before' their objects are printed on the report. For example, if a **Body** section of a report has a script attached to it, and the report prints the **Body** section five times (because the report is printing a selection of five records), then the section script will be executed five times - each time prior to the section's object being "printed" on the page.

Section scripts like object scripts can be used to make selections of records in other files, to fill variables with data, or to perform any other action that the 4th Dimension command set will allow. The script editor window that the **Script...** button produces is described in more detail above.

Rulers and Guides

Rulers

The SuperReport Pro editor has a ruler that can be made visible or invisible using the **Show Rulers** command on the **Options** menu. When the rulers are active then the menu command will be preceded by a tick mark. You may only create new guides on the report when the ruler is active - this is described in greater detail below.

When a new SuperReport Pro report is created and displayed, the ruler defaults to points. The current unit type displayed on the ruler is indicated by the **Ruler Unit** hierarchical menu display on the **Options** menu. Clicking on the menu produces a units pop-up menu from which you are able to select three possible unit types: Points, Millimetres and Inches.

Creating a New Guide

SuperReport Pro allows you to make use of up to four horizontal and four vertical guides on a report. Guides are used to help you align objects on the report. They may be made either visible or invisible using the **Show Guides** command on the **Options** menu. Guides can only be created when the rulers are shown.

To create a new horizontal guide click in the horizontal ruler at the bottom of the SuperReport Pro editor area and drag a new guide onto the report. As you drag the new guide the cursor will change to the guides cursor shown to the left. Similarly, to create a new vertical guide click in the ruler at the right hand side of the editor area, and drag a new vertical guide on to the report.

If there are already four horizontal guides on the report, you will be unable to drag a new horizontal guide. By the same token, if there are already four vertical guides on the report you will be unable to drag a new vertical guide.

Moving a Guide

To move a guide, click on it and drag its outline to a new position.

Deleting a Guide

To delete a guide (either horizontal or vertical), click on it and drag it off the report editor area - this will cause SuperReport Pro to remove the guide from the report.

Report Scripts

Scripts

The **Script** menu item on the **SuperReport** menu produces a hierarchical menu listing three menu items. These items correspond to the three types of script that SuperReport is able to execute as the report is generated.

The **Start Script** is executed before the report is generated - this procedure is normally used to load a selection of records and to sort them prior to printing.

The **Body Script** is executed as each record (or element of the array) in the current selection is processed - this procedure is normally used to load related records, or to search and sort for a selection of records in another file.

The **End Script** is called when the report has finished printing - it can be used to clear arrays of variables that were used or to reinstate the record selection in force before SuperReport Pro generated its report.

If the script menu item is preceded by a tick mark, then this means that the relevant script is active and contains 4th Dimension statements, and will be executed at the appropriate time during report generation. If the menu item is not checked then there are no 4th Dimension statements for that procedure and SuperReport Pro will not execute any code. These three SuperReport scripts are analogous to 4th Dimension's report layout phases - the **Start Script** is equivalent to the **Before Selection** phase, the **Body Script** is equivalent to the **Before or During** phase, and the **End Script** has no equivalent phase.

Selecting any of these menu items will produce the script editor window which is described above. A developer is able to disable the **Script** menu item preventing access to the hierarchical menu.

Report Main File Or Iterations

Choose Report File Or Iterations

Selected Report File
Invoice

Fixed Number Of Iterations
Value 0

Use Value In Variable
Name

Use Size Of Array
Name

Cancel OK

Unlike 4D's reports, a SuperReport Pro report contains details of the file that the report is to 'iterate' when generating the report output. A report can either iterate using a file, or it can generate a designated number if iterations determined by the size of an array or value in a variable (for example).

Selecting the **Report File/Iterations**.command from the **SuperReport** menu produces the dialog shown above. Here you can specify how the report is to be generated using one of there are four radio buttons.

Specifying a Report File

If you specify a **Selected Report File** then SuperReport Pro will iterate through the current record selection for that file when generating the report output. SuperReport Pro will issue a **FIRST RECORD** before the report commences, and will issue **NEXT RECORD** commands to generate each **Body** section.

If you wish the report to automatically make a new record selection prior to reporting, use a **Start Script** to issue 4D commands to make the new selection. The **Start Script** will be executed before SuperReport Pro calculates how many records there are in the current selection for the specified file.

Specifying a Fixed Number of Iterations

Specify a **Fixed Number Of Iterations** causes SuperReport Pro to generate a fixed number of iterations (regardless of any file selection sizes). You might use this option when you require a designated number of report pages.

Specifying the number of Iterations based on the value in a Variable

Specify the **Use Value In Variable** option causes SuperReport Pro to generate a fixed number of iterations determined by the numeric value contained in the variable whose name is entered in the **Name** field. Generally this value will be calculated within the database before the report is selected for printing.

Specifying the number of Iterations based on the size of an Array

Specify the **Use Size Of Array** option causes SuperReport Pro to generate a number of iterations determined by the size of an array whose name is entered in the **Name** field. This option is generally used when printing from array selections.

Searching and Sorting Record Selections

Making a New Record Selection

Selecting the **Select Records...** command will either produce the standard 4th Dimension Search editor, or a search editor created and installed in the 4th Dimension database by the developer. This command allows you to change the file selection prior to printing (or previewing) the report.

Sorting the Record Selection

Selecting the **Sort Records...** command will either produce the standard 4th Dimension Sort editor, or a sort editor created and installed in the 4th Dimension database by the developer. This command allows you to sort the file selection prior to printing (or previewing) the report.

You may find it more practical to use 4th Dimension statements placed in the **Start Scripts** script to search for a new record selection, and to sort it, prior to printing the report. This has the added advantage that the search and sort operations will be remembered the next time the report is generated.

Loading and Saving Reports

Loading Reports

Generally reports will be automatically loaded in the SuperReport Pro editor for you (the developer will have used code within the 4D database to do this for you automatically). However, using the **Open...** command on the **F i l e** menu, you are able to load reports directly from disk.

Saving Reports

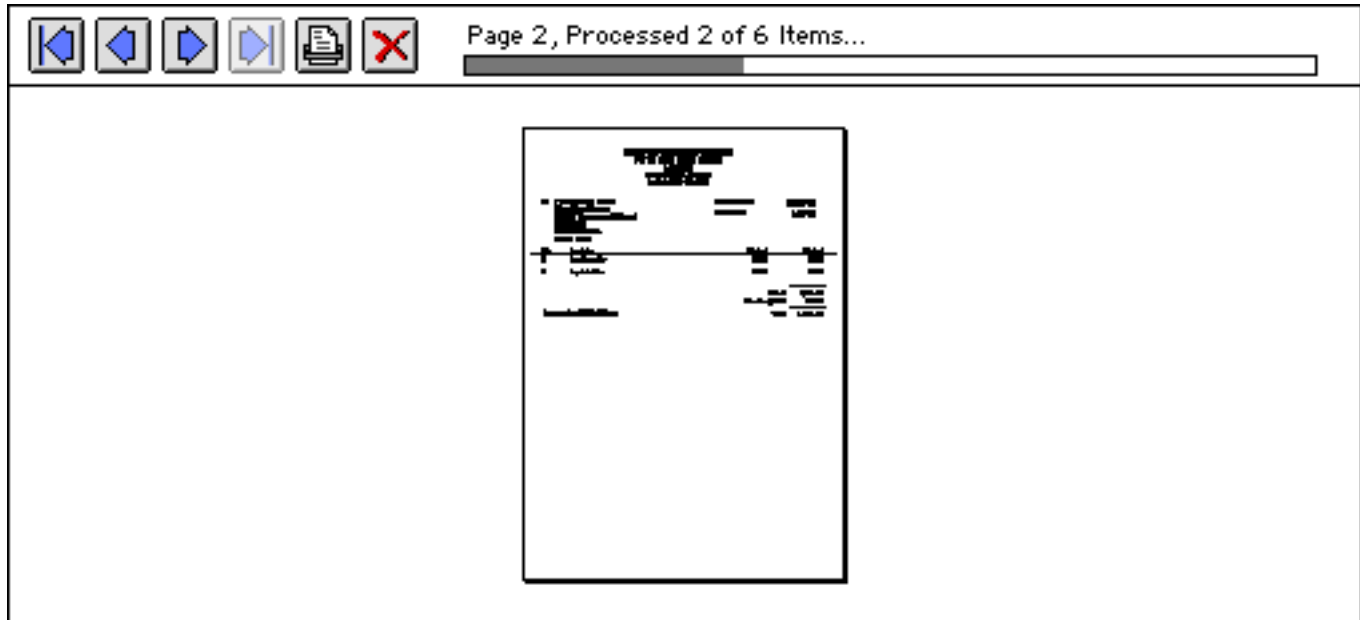
Generally reports will be automatically saved for you when you quit the SuperReport Pro editor. However, you can use the **Save** and **Save As...** commands on the **F i l e** menu to save the report as a document on disk.

Having done so, you will later be able to re-load the report using the **Open...** command on the **F i l e** menu.

Printing SuperReport Reports

Print Preview

Selecting the **Print Preview** command from the **File** menu will cause SuperReport Pro to preview the report within the SuperReport Pro editor area. The area will change providing you with a new toolbar containing page navigation buttons, a Print button and a Done button (used to return to the report editor).



As SuperReport Pro previews the report, a thermometer provides an indication of how far through the record (or array) selection the preview has progressed. The preview stops as each page is generated, and you need to select the next page button (third icon from the left) to generate the next page.

Using the other navigation buttons, you can step backwards and forwards through the generated pages. The page navigation buttons can be activated using the **Command** key and the arrow (cursor) keys. The **Print** button prints the current viewed page. If you need to print all the pages, terminate the preview using the **Done** button (with a 'cross' in it), and print the report normally using the **Print** command from the **File** menu.

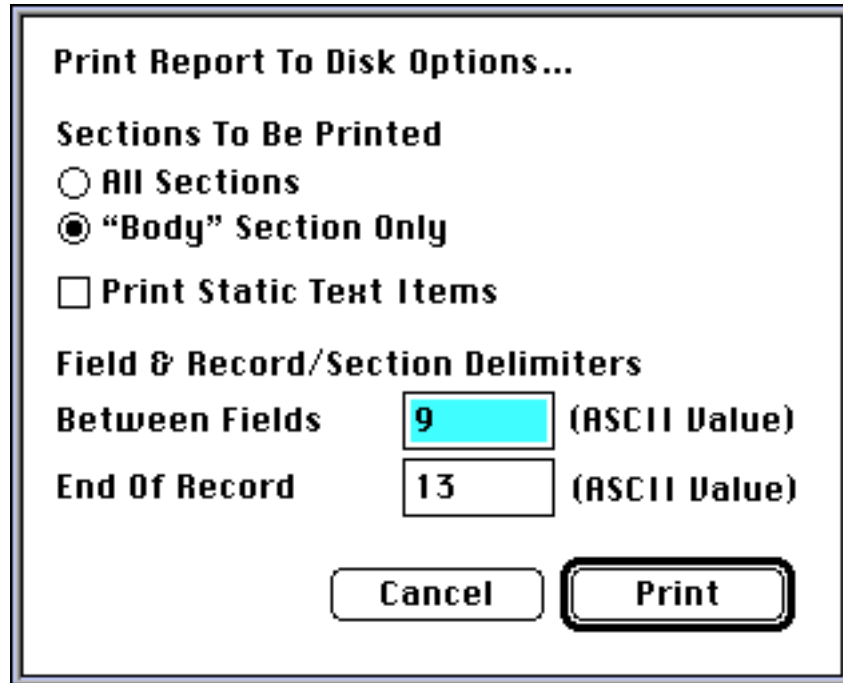
description	Unit Cost	Unit Cost
uperReport Pro	399.00	798.00
uperLabel Pro	399.00	798.00
	Subtotal	1,596.00
	Sales Tax@ 8.00%	127.68
Due Within 30 Days	Total	1,723.68

If you click within the 'mini' printed page (in preview mode), SuperReport Pro will 'zoom' the page to 100% allowing you to see the report page as it would print. Using the scrollbars, you are able to move the page around. You can also hold down the **Option** (Alt) and **Command** (Apple) keys, and drag the page using the mouse.

If you find that the preview produces no visible output, then make sure that you have one or more items in your current selection for printing. If not, you can use the **Select Records...** command from the **SuperReport** menu. Also ensure that you have defined your report correctly, with the sections in the appropriate place.

Print To Disk

This facility is provided to allow you to create export documents on disk using SuperReport Pro. The output is in the form of an ASCII file, and SuperReport Pro will display the following dialog displaying the output options available to you.



Print Report To Disk Options...

Sections To Be Printed

All Sections

"Body" Section Only

Print Static Text Items

Field & Record/Section Delimiters

Between Fields (ASCII Value)

End Of Record (ASCII Value)

Using the dialog, you are able to select the sections for printing - normally you would only print the **Body** section, however you do have the option to print all the sections (as defined in the **Select Printing Sections...** dialog).

The **Print Static Text Items** allows you to either print or suppress static text (such as heading etc.) depending upon whether you check the check box or not.

Using the **Between Fields** and **End Of Record** edit fields, you can specify the ASCII value of any character that you wish to have printed between fields, and sections. By default, these are the TAB and carriage return characters (respectively).

If you select the **Print** button, SuperReport Pro will prompt you to create a document. If you do not create a document using the standard save file dialog, then SuperReport Pro will not print the report to disk. If you do create a document, then SuperReport Pro will print the report to disk in your specified document.

Selecting Printing Sections

Generally you will always print the sections that you have defined on your report. However, SuperReport Pro has a very useful feature that allows you to "switch off" certain sections suppressing them from the printed output even though they are defined on the report.

Select Sections For Printing

<input checked="" type="checkbox"/> Header	
<input checked="" type="checkbox"/> SubHeader 1	<input checked="" type="checkbox"/> SubTotal 1
<input type="checkbox"/> SubHeader 2	<input type="checkbox"/> SubTotal 2
<input type="checkbox"/> SubHeader 3	<input type="checkbox"/> SubTotal 3
<input type="checkbox"/> SubHeader 4	<input type="checkbox"/> SubTotal 4
<input type="checkbox"/> SubHeader 5	<input type="checkbox"/> SubTotal 5
<input type="checkbox"/> SubHeader 6	<input type="checkbox"/> SubTotal 6
<input checked="" type="checkbox"/> Body	<input checked="" type="checkbox"/> Total
	<input checked="" type="checkbox"/> Footer

This feature is most useful for reports that make use of break processing where you want to design a single report, but need to print it either with or without the **Body** section. This allows a single report to be printed as two different reports; a detailed report, or a summary report only.

Note that even when sections are "switch off", all the object and section scripts within that section are still executed a print time.