

AutoPlot

**Symbol and macro implementations for
drafting the lighting plot in
MiniCAD/VectorWorks**

**Forms and macro implementations for
creating theatrical lighting paperwork
using Panorama**

Installing AutoPlotVW

- 1 Copy all the files in the folder named "AP Plug-ins" into the "Plug-ins" folder located in the VectorWorks Folder.
- 2 Copy the file named "AutoPlot" in the folder named "AP Workspace" into the "Workspaces" folder located in the VectorWorks Folder.
- 3 Choose one of the following:
- 4 Open the file labeled AP Stationery, and a blank document with a all the symbols resources will be opened.

OR

- 5 Open any document you desire and then using the "Resource" palette, import the symbols you desire from the file named "SymMacsVW"
- 6 Once in the drawing space go to the "File" menu, open the "Workspaces" menu item, and select the AutoPlot workspace.
- 7 If you desire, you may modify the "AutoPlot" workspace anyway you wish using the Workspace editor item in the "File" : "Workspace" menu item.

VectorWorks and MiniCAD

While I have enjoyed creating the AutoPlot, and using it in my day to day work at UCLA, I find creating the documentation required to share this work to be tedious in the extreme. The necessity of creating that documentation does not go away. Should you find this documentation wanting please feel to contact me in any manner to help with your questions.

The following documentation comes primarily from the description of AutoPlot as it was implemented in MiniCAD 5 through MiniCAD 7. I have added and changed much to conform to the VectorWorks version, but there will be places where references are still made to MiniCAD and not VectorWorks, but in VectorWorks, all the macros should work as described.

Symbols & Macros

A description of the VectorWorks implementation

LET'S TALK ABOUT THE LIGHTING SYMBOLS

Each lighting symbol is attached to a record containing the following fields: **Unit #, Position, Channel, Purpose, Color, Circuit, Dimmer, Wattage, Type, Template, Short Purp, Miscl#1, Miscl#2, Miscl#3, Miscl#4, Miscl#5**. These fields are designed to be used in the manner described below. Understand that it is possible to put almost any value in these fields if you want to, but you will become very confused if you do.

Unit #: This is the number of the unit at a given lighting position, usually electric pipes. Pipes are numbered by the macros from Stage Left to Stage Right. Booms and Ladders are numbered from the top to the bottom and from closest to the proscenium to farthest from proscenium. The unit numbering in striplights can accommodate any numbering scheme you want to force into it; however, the macros give each circuit in a striplight, or far cyc, a decimal designation. This decimal numbering was easier to implement and makes more sense than the Unit A Circuit 1 system that is standard on most light plots. This method is also more consistent with the numbering of other instruments on the plot. My apologies to your electricians but believe me it's better this way.

Position: This is the lighting pipe, boom, or other designation of location

Channel: This is the logical control designation.

Purpose: This is the description of the lights function often used in the Hookup paperwork.

Color: This is used to hold any indication of color filters or lack there of for the unit.

Circuit: This is used to hold the identification of the wire running from the position to the dimmer.

Dimmer: This is used to hold the identification of the actual dimming unit. In theaters where there is a dimmer per circuit the dimmer number and the circuit number are often the same. In theaters where that do not have dimmer per circuit and have a manual patching system the dimmer number and channel number are often the same. In some theaters, the one I'm in most often, all three ID's are different.

Wattage: This holds the wattage of the unit.

Type: This holds the unit's description, e.g. 6X9, 6" Fresnel, etc.

Template: This identifies the gobo, if any, in the unit.

Short Purp: This is a shorter version of Purpose that can be displayed on the plot. The Purpose field could be displayed if you wished, but the Purpose or Function field in most hookups is too long to comfortably fit on the plot.

Misc#1: This can be used for anything you want. I use it to hold the multicable ID that a unit plugs into.

Misc#2: Used for anything you want.

New in VectorWorks, the ERS and Source 4 symbols in the symbol file have a piece of text placed in the barrel of each symbol that is attached to this field and assigned to the class Iris/Template. Stan and I place a capital "O" in this field for any fixture that has "iris" in the type description, or we place a capital "T" in this field for any fixture that has something in its Template field.

Misc#3: Used for anything you want.

Misc#4: Used for anything you want.

Misc#5: Used for anything you want.

ADAPTING OR MAKING SYMBOLS:

It is quite conceivable that you will find that you desire a symbol that is not provided.

To create a symbol from scratch do the following.

1. Draw the graphic representation that you desire. (Hint. The "Add Surface" command you will find useful.
2. Create a separate text field for each field value you wish to show on the plot. Use the font, font size, alignment, and style you wish. The symbols in the AutoPlot file use the centered Helvetica font. Place the text in the relation you desire to the graphic image. At this point the value in each text field doesn't matter.
3. Under the "Organize" menu select "Create Symbol..."
4. Name the Symbol.
5. Activate the "Next Mouse Click" radio button.
6. Name the would be symbol.
7. Click on that point in the would be symbol that you wish to be the insertion point.
8. Go to the Resource palette, select the new symbol, click on the "Edit..." button.
9. Click on the "2D Component" button, and then click on the "Edit" button.
10. Be sure that the selection tool (pointer) is active.
11. Click in some empty portion of the screen so that nothing is selected.
12. Go to the Object Info (OI) window and click on the square next to the word "Lights" at the top of the OI window. This will attach the symbol to the Lights database.
13. The words "Symbol Defaults" should appear at the top of the OI window. Select and enter any values in the various fields that you wish this symbol to have when placed.
14. For each text field do the following.
 - a) Select a text field
 - b) Go to the "Organize" menu and chose "Link Text to Record"
 - c) Go to the "Organize" menu and chose "Link Text to Record"
 - d) Choose the database field that the text will then display.
15. When finished with all the text fields, click in some empty portion of the screen so that nothing is selected.
16. Press the "Exit Symbol" button

To create a symbol from another symbol do the following.

1. Select an instance (on the drawing) of the symbol you wish to change.
2. Duplicate the selected symbol.
3. Drag the duplicated symbol to an empty space. Leave the symbol selected.
4. Go to the "Organize" menu and select "Symbol to Group"
5. Go to the "Organize" menu and select "Ungroup"
 6. When the dialog shows that asks "Ungroup objects with record or class information?" click on the "Yes" button.
7. Rearrange the symbol any way you wish, or add/subtract any elements you desire.
8. Select all the element you wish to make part of the new symbol.
9. Follow steps 3 through 16 of making a symbol from scratch.

TEXT LABELS WITH 1/2 INCH AND 1/4 INCH SCALE

Prior to the introduction of VectorWorks (VW), AutoPlot used one size of text for both 1/2 inch and 1/4 inch scale. This was a compromise that usually had readable 1/4 inch scale text print out too large in 1/2 inch scale, but allowed for readable text at both scales.

New in VectorWorks, the symbols that I re-created in VW now have two sets of labels one for each scale. The 1/2 inch text labels are actually smaller than the 1/4 inch text labels because the smaller text is readable at the larger scale. There are three macros that control the display of the text: "Show Text for 1/4 in Scale", "Show Text for 1/2 in Scale", "Show Both 1/4 & 1/2 Text." The first two commands are straight forward; they turn on the the designated scale and turn off the other scale. The third command is used when making symbols. It is important that both scales be visible when creating symbols because invisible classes will not be included in symbol definitions.

You should be aware that Ben Percy is the guy who first came up with this ingenious scheme.

TEXT LABELS IN METRIC DRAWINGS

All the classes that are preceded with "1/4" and "1/2" are just that, classes; they can be assigned to any objects. If you use 1:50 and 1:25 scales you could use the text fields assigned to "1/4" and "1/2" respectively, and if you want, change them to any font or size you want.

STRIPLIGHT SYMBOLS:

The symbols for Far Cyscs, R40 strips, PAR 56 strips, and T3 strips are made up of a box

and text for each circuit in the unit. That means that each unit is actually made up of a number of symbols that are grouped together, e.g. a 3 window far cyc is made up of 3 individual symbols grouped together. Each symbol is a box with text fields. The default wattage in each striplight symbol reflects the total wattage for the circuit in that unit, e.g. A 6 foot R40 strip light assumes 150w bulbs and 4 bulbs per circuit, so the wattage placed in the wattage field is 600w. Essentially, striplights are dealt with on a circuit by circuit basis, since that is the way they you will want them represented in the paperwork.

Four window Far Cycs are a special case. The arrangement of the windows, two top, two bottom, will defeat the numbering algorithm of the macros. There is a symbol group in the symbol file that uses a four different symbols containing the designations, "TR", "TL", "BL", "BR", in the symbol names (not in the "Type" field) which indicates the relative positions of the cells. This group not only numbers correctly, but it also has appropriate text placement for the four window graphic which is different than for all the other strip lights. Feel free to rearrange the text of each symbol, but be sure not to rename each symbol.

New in VectorWorks, you no longer have to ungroup your striplights for most of the macros to work. Numbering, aligning, and spacing macros will all work while the symbols are grouped. However, you will not be able to enter data in the Object Info (OI) palette for the individual circuits of a striplight or cyc unit while it is grouped, because the OI palette will display the attributes of the group. You can view and edit data in the "Lights" record one of two ways. 1) You can ungroup the fixture and make each symbol accessible, or 2) you can select the "Edit Group" command under the "Organize" menu, or 3) you can use the "Enter Data for Selected" macro which will enter each group and display the records for each symbol without ungrouping the record.

BOOM SYMBOLS:

None of the boom symbols has a 3D component. This is because fixtures on booms, ladders, and trees are not placed on top of each other in plan view so they are rarely placed on the plot in their actual position. There are some 3D images next to the boom symbols that are not connected to the database. These 3D images can be added to your drawing if you wish without changing the instrument count.

"Circuit" and "Short Purp" labels:

In the symbols of the "SymMac" file, a text field holding Circuit information is placed below the text field holding the Short Purp information. You can turn off any fields that you do not wish to display. Typically lighting designers do not bother to put circuit information on the plot, leaving that for the electricians to do during installation. However, many repertory plot installations often draw a plot that lists the circuits used to aid in restoration of the repertory plot.

Feel free to manipulate what text fields are attached to a symbol and which are displayed. If you have any questions feel free to call. Whether or not you choose to attach and display text fields, it is important that you attach a "Lights" data record to the default of your symbol.

New in VectorWorks,

"Iris/Template" class and attached text label:

"The "Miscl#2" field:

In the ERS and Source 4 symbols of the "SymMac" file, a text field attached to the "Miscl#2" has been put in the barrel of each fixture. Stan and I use it to display a capital "O" in the barrel of symbols that have the word "iris" somewhere in the "Type" field of the "Lights" record, or we use it to display a "T" in the barrel of those fixtures that have any entry in their "Template" field. We currently enter the "O"s and "T"s in the Panorama file using macros. I will be making to macro to do this in the VectorWorks file with the next update. You do not have to pay any attention to this feature or include that text in your own symbols if you do not desire. All the other macros will work regardless.

You may wish to assign some other value to the "Miscl#2" field of the lights record. If you do this you will need to make the "Iris/Template" class invisible to keep that value from showing in the barrel of the symbols.

INSERTION POINTS

The insertion point of the symbols is what all the alignment and spacing routines in the macros use to place the symbols. The insertion point location is determined by the two crossing gray lines in the symbol editing window. MiniCAD uses the object center for its alignment routines and will produce different and usually unwanted results

The insertion point of the symbols may be quite different from the center of the symbol outline. If you wish to move the insertion point of the symbol(s), do the following for each symbol: One, enter the symbol editing window for that symbol. Two, select all. Three, move the everything so that the crossing guide lines intersect the symbol at the place you desire.

The insertion point issue is why there are different symbols for the same kind of instrument that face different ways. Because the insertion point is how the unit is aligned and positioned on the pipe we have found it advantageous to create different facings that optimize (refine??) the position of the instrument .

MOVING LIGHTS

The symbol library includes symbols for Vari*Lites. The moving light symbols have been attached to a record as described above. It will be obvious that there are not enough fields to hold all the DMX channels required by moving lights. The extra DMX channels would be treated separately in the paperwork, should not be counted in equipment totals, and so forth. John McKernon (LightWright) decided that all the extra DMX channels for moving lights will be handled as separate entities in the channel list and will be connected to their respective fixtures by having the same unit # and position description. Stan Pressner and I are following this convention. I have created some macros for inserting extra DMX channels in the Panorama implementation of the lighting paperwork. In addition, I have allowed the paperwork to preserve old Channels that are not on the plot when importing

from the plot. This means that if you add 20 channels to the paperwork and then import the plot records a second time, you won't have to input the 20 channels all over again. I'm not sure how John is going to handle this in LightWright 3, but we're talking, so it will be workable.

"DialogDefaults" Record

A record called "DialogDefaults" holds defaults for things like fixture height, beam spread, and spacing distance. Usually, dialog boxes will use the values in this record as default entries when appropriate. If a macro changes the value that is put in a dialog box, it will also change the value in the record. The "Beamsread WKS" macro uses the "DialogDefaults" record more extensively. The record does not have to be open for its values to read by macros. It does need to be open if you want to change these values.

If you wish to edit the values of the "DialogDefaults" record, click in the drawing so that nothing is selected. The Object Info palette will now display the word "Defaults" at the top, and if you highlight the "DialogDefaults" record you will see and be able to edit the default values of that record.

Keep the "Light List" and "Fixture Count" worksheets closed

Because the program will try to access these two worksheets every time you place, delete, or edit a fixture, it will slow down the performance of the program if the worksheets are open. Do not be afraid to open them whenever you wish to reference them, but if your program is acting real sluggish and showing you a lot of watch cursors, check to see if these worksheets are open.

"Light List" Worksheet

This worksheet is not designed to replace regular channel hookup and instrument schedule paperwork. It will provide you with a quick way to check the data fields on all fixtures. Since all entries are text and not numeric, sorts will sort by the first character which puts 10 right after 1 and 2 right after 19. If you wish to change which columns this worksheet is sorted by, just select row 2 and drag the sort icons that are next to the column letters to which ever columns you desire. As with all data base entries in MiniCAD worksheets, you cannot edit the fields in the worksheet; you must go to the symbol itself.

"Fixture Count" Worksheet

This worksheet will count the number of each type of instrument that you have entered in the list and subtract that from any amounts that you have entered in the inventory column. Columns A and D are user entered data. Columns B and C contain the formula to find each kind of fixture and do the subtraction. You can use the "Make Fixture Count WKS" macro to make a table that only counts the symbols you are using, and not all 71 types of fixtures in the SymMac file. Caution, everytime you use the "Make Fixture Count" macro you will lose any entries you make in your "Inventory" column.

AUTO PLOT MACROS

New in VectorWorks,

Plug Ins, Workspaces, and Palettes.

AutoPlot no longer provides command palettes for macro access. There were two problems with palettes. First, you had to import the palettes into each drawing you make or start each drawing from a stationery file that contains those palettes, and the palettes took up screen real estate that obscured the drawing.

To make AutoPlot macros available to all drawings and have them available from hierarchical menus do the following. Drop all the files located in the "AutoPlot Plugins" folder into the "Plug-ins" folder located in the VectorWorks folder. Drop the folder labeled "AutoPlot Workspace", take the file labeled "AutoPlot" and put it in the folder called "Workspaces" in the VectorWorks folder. When you want to work with AutoPlot macros be sure you are using the "AutoPlot" workspace. To select the "AutoPlot" workspace, go to the "File" menu, to " Workspaces", to submenu "AutoPlot".

Using plug ins it will be possible for me to send out macro updates without having to create files with palettes in them. This will make the updates smaller and easier to install and make available to all drawings.

In some situations, it is very nice to use the macros from a palette on the screen. If you wish, you can copy and paste the scripts from each plug-in to commands that you make from the Resource palette. If you wish to do this and are having trouble, contact me.

MACRO DESCRIPTIONS

(Listed in alphabetical order)

Macro Names

All the Menu commands in AutoPlot begin with "AP_". This naming convention has no functional purpose while you are making your plot. The convention was adopted so that all the AutoPlot plug-ins would be listed together in the plug-ins folder that resides with VectorWorks. The macros are listed below without their "AP_" prefix. Additionally, plug-in names are limited to 27 characters.

"Align TB on Insert Pt

"Align LR on Insert Pt"

The alignment macros align the symbols on their insertion points not by their geometric centers or boundaries. The macros also ask you to click the mouse in order to specify the point to align to instead of using a handle or center of one of the objects as a guide. Holding down a key during the mouse click will abort the macro and move nothing.

"Beam Section"

Before using this macro, draw a line from the fixture to the center beam focus point. Leaving this line selected activate this macro and fill in the beam spread in degrees; the macro will then draw two lines with arrow ends, one on each side of the selected focus line which represents the beam 's section.

"Beam Spread"

This macro requires that you select a light prior to calling the macro. The macro will then ask for the beam spread and height of the fixture. After that you are required to click on where the hot spot falls on the ground plan. The macro will then draw the floor plan of the beam. The bug requiring the useless dialog has been fixed. There are many interface issues having to do with how the height of a position is stored or determined and the same is true for beam spread. In the future, I hope to have a version that allows picking and calculating the spread of multiple fixtures

The current version of this macro was sent to me by Joshua Benghiat after he read my plea for someone to replace my convoluted trigonometry, and I think this version does the oval width slightly more accurately.

"Beam Spread Metric"

This macro does just what the "Beam Spread" macro does, except that it should be used in drawings that use metric units. When you enter the height of the fixture, use the units of the drawing. If the drawing units are meters, enter the height in meters. If the drawing units are centimeters, enter the height in centimeters, etc.

"Beam Spread WKS"

This macro was first devised by Joshua Benghiat. I have played around with some interface elements, but the muscle of this macro is essentially his.

This macro does just what the "Beam Spread" macro does, but it allows you to have the **field** and **beam spread** shown, and, if you wish you can have the macro draw the **field cone**. The macro uses the values in the "DialogDefaults" record to determine what to display. The beam cone will be the stated fixture height. If your fixtures are not given and z value, the cone will be correct, but you won't find the fixture at the top of the cone. Of course, if you haven't given z values to your plot you probably won't be doing sections anyway.

"Change Position Name"

This macro allows you to change the name of a position already assigned to symbols and have that change applied to all the symbols that have the position name you wish to change.

"Change Text Link"

This macro will change the field that text is linked to. If you have text linked to the "Circuit" field and you would rather have it linked to the "Dimmer" Field, use this macro. This macro requires that the text fields you wish to reassign be assigned to classes that have the field name within them, e.g. "1/4 Dimmer", "1/2 Dimmer", or just "Dimmer". First select an example of each symbol you want to change the text in; this is usually done by selecting everything. Invoke the macro. The macro will ask you what field you want to unlink from (e.g. you answer "Circuit"). It then asks what field do you wish to link text to (e.g. you answer "Dimmer".) This macro will also change the class that the text is assigned to.

"Check For Empty Type Field"

This macro checks each symbol instance to be sure that the "Type" field has an entry and that the entry is contained within the symbol name. It is very easy to forget to fill in the defaults for new symbols that you create. This macro helps check for that. The only result of a bogus type field is that you will get an annoying dialog flagging the fact when you reimport an empty or changed "Type" field.

"Collect Dimensions"

This macro allows collects all the dimensions in the drawing and places them in a separate layer.

"Credits"

Registration and Shareware Info.

"Delete Unpositioned"

Sometimes you will accidentally or intentionally create symbols that have no position or unit number and it is unlikely that you will want to export those to the hookup. This macro eliminates all the symbols that are attached to the Lights database and which have no position and unit#.

"Dimension from Ctr"

This macro is a work in progress, and it is to be determined how useful it is. It will place dimensions that are calculated from the centerline between selected objects. Unfortunately, MiniPascal does not let me control the horizontal placement dimension text; it is either placed centered between witness lines or outside the witness lines or on top of a witness line. If the text is allowed to be placed centered between the center line and the off stage edge they often pile up on each other, so I have placed the dimension text on top of the witness line going to the light that is being dimensioned. The macro will use whatever dimension style is currently selected. I have made a custom dimension style called "Sam" that seems to work best with this macro. Access this dimension style through the "Preferences" dialog. The default font and font size for dimensioning is the default font and size that is selected when no other objects on the drawing are selected.

"Dimension Sequentially"

This macro will place dimensions that are calculated from one instrument to the next between selected objects. The macro will use whatever dimension style is currently selected. I have made a custom dimension style called "Sam" that seems to work best with this macro. Access this dimension style through the "Preferences" dialog. . The default font and font size for dimensioning is the default font and size that is selected when no other objects on the drawing are selected.

"Distribute Objects along line"

This macro was downloaded from the Graphsoft web site. It distributes selected objects evenly along a line that is drawn after the macro is invoked. The first and last symbols will be at the beginning and the end of the line.

"Distrib. Syms along line"

We soon discovered that the above distribution macros would distribute lights in the order that they were created instead of the order of their unit# number or original x coordinate. This macro will distribute lights along a line in the order of their unit#. The spacing used is the same as the "Distribute along line". This is probably the macro you want to use or the one following.

"Distrib. Syms by Distance"

This macro works just as the macro above, "Distribute Symbols along line", but instead of using the requested line's length to evenly space the instruments, it lets you specify the spacing in inches.

"Distrib. Syms in Spaces"

This uses the same spacing as the "Distribute variation", it uses only symbols and their unit#'s as the "Distribute Symbols along line" does.

"Enter Data for Selected"

This macro will collect the selected lights and sort them by Unit# and then present a dialogue box for data entry into the database fields. You can end entry at anytime by pushing the finish button

"Enter Data SR to SL"

This macro is the same as the one above, "Enter Data for Selected", except that the order of the cycle through the fixtures is reversed.

"Enter Position for Selected"

This macro requests a position name and puts that name in the position field of all the currently selected units. This macro is especially useful when assigning a position to fixtures that are grouped, such as strip lights.

"Erase Fixture Ids"

Occasionally the AutoPlot Export Data macro will attempt to assign a fixture ID whose value is already in use. When this happens you must use this macro to reset all the fixture IDs and then re-export. When this ID conflict problem happens, it is usually the result of importing symbols from other drawings. (See the new "Export Data" command)

Export Data to Paperwork

Export Data with Labels

(See description of exporting and importing below)

"Fill Selec w Bogus Data"

When making symbols it is often desirable to put data in the fields of the symbol to see how the symbol is behaving. This macro will fill all selected symbols with the same set of data values, so that you see the text fields. The data is arbitrary and based on nothing in the drawing.

"Leadered Label"

This macro was developed by Richard Yopung and posted on America On Line. It's a nice way to put arrowhead labels into your document. The macro keeps running until you double click which allows you to plop down a lot of labels without having to invoke the macro each time. All the labels are put in their own class and drawn on their own layer

"Legend Symbol Collector"

This macro will look through the drawing and collect one sample of each type of fixture that you are using. The macro uses what is entered in the "Type" field of each unit. For example, once the macro has found a 6X9 it will use that symbol and it will ignore all other symbols that have 6X9 as the entry in the "Type" field. However, "6X9 iris", as an entry in the "Type" field, is different from "6X9", so that symbol is collected in addition, etc. The macro will collect the symbols, put them in a column, label them, and disconnect them from the database so that they are not exported or counted. This is only an aid in making sure you have all your symbols in your symbol key when you create it. It will not keep you from having to create and edit your symbol key.

"Make Symbol"

This macro will take whatever is selected and make it a symbol that is attached to the "Lights" record. Any text that is to display field values must be assigned a class whose name contains the name of the field prior to invoking the macro.

"Make Fixture Count WKS"

This macro will create a worksheet that will count the number of each type of instrument that is on the plot. It will not make entries in the worksheet for lights that are not on the plot drawing (i.e. unused symbols). You can manually add rows for inventory that has not been used if you wish. The worksheet uses the "Type" field for comparison and counting. E.G. All the lamps that have "6X9" in the "Type" field will be counted and put in one row; all the lamps that have "6X9 Iris" in the "Type" field will be put in another row. If you manually enter your inventory amounts, in the "Inventory" column, it will do the subtraction and compute what is left. There is a Fixture Count worksheet in the "SymMacs" file that you can import if you wish.

"Move to closest 3 in (H)"

If a symbol's X-coordinate is not evenly divisible by 3, the macro will look in both horizontal directions and place the symbol on the closest X-coordinate divisible by 3. The macro will perform this operation on all selected symbols.

"Move to closest 6 in (H)"

If a symbol's X-coordinate is not evenly divisible by 6, the macro will look in both horizontal directions and place the symbol on the closest X-coordinate divisible by 6. The macro will perform this operation on all selected symbols.

"Number 3 Cir Strip"

This macro will number the selected units from screen right to screen left in integer increments unless the instruments have the words "STRIP" or "CYC" in the Type field of the data record. If either of those type descriptions is found the macro starts numbering in groups of 3 in the following manner:

1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3. You might notice the units are not numbered in the A1, A2, A3, B1, B2, B3 manner. The A1 system makes units difficult to count in the air and difficult to manipulate in computer paperwork, so the decision was made to do it the way described.

"Number 3 Cir Strip ABC"

This macro will number striplights in the traditional USITT approved A1, A2, A3, B1, B2, B3 manner. What a pain.

"Number 4 Cir Strip"

This works just as the 3 circuit striplight numbering except that the decimal increments go up to .4, e.g. 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4.

"Number 4 Cir Strip ABC"

This macro will number striplights in the traditional USITT approved A1, A2, A3, A4, B1, B2, B3, B4 manner. What a pain.

NOTE: It is possible to use the 3 cir or 4 cir numbering macros in place of the "Number Selected" macro since only striplights get decimalized.

"Number DS>US"

This macro will number the selected symbols from screen bottom to screen top. Normally I would describe this as downstage to upstage, but the macros have no way of knowing what the orientation of the stage is on the screen.

"Number Position"

This macro will ask for a position name and then look through the entire drawing for symbols with that name in the position field. It will then sort them and number them from screen right to screen left. Because this macro looks through the entire drawing and all the symbols, I think that it really is too slow. I think you will find it faster and easier to manually select the symbols at a position and then using the "Number Selected" macro below. That method is really convenient, since it is likely that all the symbols are still selected from using the "Enter Position on Selected" macro.

"Number US>DS"

This macro will number the selected symbols from screen top to screen bottom. Normally I would describe this as upstage to downstage, but the macros have no way of knowing what the orientation of the stage is on the screen.

"Number Selected from SL"

This will number the selected symbols from screen right to screen left using integer increments. Normally I would describe this as stage left to stage right, but the macros have no way of knowing what the orientation of the stage is on the screen.

"Number Selected from SR"

Same as "Number Selected" but numbers in the opposite direction, i.e. from screen left to screen right.

"Number SL Boom"

This macro will number lights from screen top to screen bottom. Symbols at approximately the same vertical position are numbered from screen right to screen left.

"Number SR Boom"

This macro will number lights from screen top to screen bottom. Symbols at approximately the same vertical position are numbered from screen left to screen right.

NOTE: The boom numbering is based on the convention of numbering the lights that are closest to the proscenium first, so double hung booms should be numbered differently if they are on different sides of the proscenium wall. The boom numbering macros assume that the booms, ladders, or trees have been placed up stage of the proscenium wall. If you wish to use these macros to number box booms, windows or other positions downstage of the proscenium wall use the macro that is designated for the opposite side of the stage, e.g., a stage left box boom (audience right) would use the "Number SR Boom" macro.

"Replace Group"

This macro will replace the currently selected group with the active symbol in your resource palette. In MiniCAD 6 you must select the symbol you want to replace before invoking the macro; this is because of the way symbol selection is implemented with the Resource window.

Why would you want to do this?? Sometimes text in a symbol is not in a convenient place relative to other objects in the drawing. The usual way to deal with this problem is to create a special symbol with the text in the place you want. It is also possible to select a symbol instance and convert it to a group then edit the group. The group will stay attached to the record, but the text will no longer be linked to a record field. This is not a problem if the value in the records does not change, because the text doesn't change when you convert to a group. A problem will arise if you change values in the record of the group or reimport new values to the drawing from the hookup. Sometimes I have found that I wish to convert any groups I may have back into symbols before I export again, and this macro makes the replacement, retaining all record values, easy.

If the above discussion is totally opaque to you, feel free to give me a call (see credits and have MC up and running at the time).

"Replace Symbol"

This macro will replace all the currently selected symbols in the plot with the active symbol in your resource palette. It will preserve all the data from the old symbol except for the "Type" and "Wattage" fields which it will replace.

"Reset Origin"

This macro will reset the origin to the original 0,0 of the drawing. This can be useful if you find that your spacing and alignment commands and macros are not behaving as expected. The AutoPlot spacing and alignment commands should not be dependent on the original origin, MiniCAD has had inconsistent performance in the past.

"Select By Channel Sample"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same value in the "Channel" field of the "Lights" database

"Select By Circuit Sample"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same value in the "Circuit" field of the "Lights" database

"Select By Polygon"

This macro requests that you draw a polygon that encloses all the objects that you wish to select. The polygon may be irregular.

"Select By Position Sample"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same value in the "Position" field of the "Lights" database

"Select By Posit & Type Sample"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same value in the "Position" field and the same value in the "Type" field of the "Lights" database

Be sure you understand the difference between the following 2 selection macros

New in VectorWorks,

"Select By Symbol Type"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same symbol type regardless of what is in the "Type" field of the "Lights" record.

"Select By Type Sample"

Select a fixture as a sample and then invoke this macro to select all the symbols with the same value in the "Type" field of the "Lights" database

New in VectorWorks,

"Show Text for 1/4 in Scale"

This makes visible all text fields attached to record fields that have a class name preceded by "1/4 ", and it makes invisible all text fields attached to record fields that have a class name preceded by "1/2 ".

New in VectorWorks,

" Show Text for 1/2 in Scale "

This makes visible all text fields attached to record fields that have a class name preceded by "1/2 ", and it makes invisible all text fields attached to record fields that have a class name preceded by "1/4 ".

New in VectorWorks,

"Show Both 1/4 & 1/2 Text"

This makes visible all text fields attached to record fields that have a class name preceded by "1/4 " or "1/2". **You will definitely want to use this macro when you are creating, duplicating, and/or editing fixture symbols.**

Spacing Macros

The following spacing macros use the "DialogDefaults" record to input default values in the dialogues. If you don't have an "DialogDefaults" record the macro will make one. For all the spacing macros, except "Space Horiz in Opening", holding down a key during the mouse click will abort the macro and move nothing.

"Space Horiz from Ctr"

This macro will space the currently selected symbols a queried distance apart horizontally centered at a queried point on the screen.

"Space Horiz from SL"

This macro will space the currently selected symbols a queried distance apart horizontally starting at a queried point on the screen on the left side of where you want the symbols to start appearing.

"Space Horiz from SR"

This macro will space the currently selected symbols a queried distance apart horizontally starting at a queried point on the screen on the right side of where you want the symbols to start appearing.

"Space Horiz in Opening"

This macro will ask you to draw a line representing the distance of a horizontal opening you wish the wash to cover. It will then take the currently selected instruments, count them and use that number to determine the size of that number equal spaces on the pipe. It will then put each of the selected lights in the middle of one of those spaces.

e.g. You have already selected 5 lights on the FOH position. You then activate the macro. It asks you to draw a line representing the opening. You then draw a line that has a length of 40 feet along the X axis. The macro divides 40 feet by 5 coming up with 8 horizontal spaces and it then puts each of the selected lights in the middle of one of those spaces. The macro will not change any instrument's position on the Y axis.

"Space Vert from Top"

Same as "Space Horizontally" but spaces from the click down the screen.

"Space Vert from Bottom"

Same as "Space Horizontally" but spaces from the click up the screen.

Using Spacing Macros in Metric Drawings

When using the above macros in drawings done with metric units, enter the drawing units whenever it asks for input in inches. If the drawing units are meters, answer in meters. If the drawing units are centimeters, answer in centimeters, etc.

"Twofer Selected"

This macro will connect up to 20 lights with a twofering indication. If the fixtures are wider than they are tall, the twofer will run horizontal. If the fixtures are taller than they are wide, the twofer will be vertical. If you wish to have the opposite orientation, hold down the option key when clicking on the position of the twofer line. The twofer indication is sent to the back of any layer it is drawn on so that it does not obscure notes, and the twofer lines are put into a class called "Twofer" so that you can hide their display if desired.

In order for the Twofering macro to work in the manner that you expect you must ungroup any symbols that have been grouped together, e.g. strip and cyc units.

"Twofer Bump-H"

This macro will request that you draw a rectangle around the intersection where you wish to place the bump in the twofer line. It will then redraw the horizontal portion of the intersection with a bump in it. It will then expect you to select another intersection and will keep repeating until you either double click or hold down a key on the keyboard while clicking at which point the macro will terminate.

"Twofer Bump-V"

This macro is just like "Twofer Bump-H" above except that a bump is placed on the vertical portion of the intersection.

Twofer Bump Orientation.

The Orientation of the twofer bump is always in the same direction. If you wish to change the orientation of a twofer bump you must use the mirror tool (my preferred method) or flip it and drag it back to place

"Zoom Specific"

I have often wanted to be able to specify the zoom percentage, especially when zoom out. This macro does that.

EXPORTING & IMPORTING THE DATABASE

"Export Data+"

One must use this export macro and NOT the "Export Database" command under the File menu. This is because the macro writes a unique name into each symbols name attribute and exports that name, (always a number) with the other fields. This name provides a unique plot link that will be used when importing data back to the plot file using the import command below. Lastly, this macro will query you for a file name with a default of "Lights.export".

*** This macro will now check to see if any symbol names have been left blank. If there are symbols attached to the Lights database that have no name, it means that AutoPlot tried to assign a name that was already in use (very bad). This macro will alert you when there are blank names and direct you to use the "Erase Fixture IDs" macro and re-export.

"Export w Labels+"

This works just like "Export Data" above, except that the first record that it exports has the name of each field as the value of each field. This macro is provided for those of you that use Lightwright 3, Filemaker Pro, or other database programs that put a dialog box that allows you to rearrange the order of import. Those of you using Panorama will get an extra record that you will need to delete.

"Import Data+"

This macro will import values from a tab delimited text file. The fields must be in the following order Unit #, Position, Channel, Short Purp, Type, Circuit, Color, Dimmer, Purpose, Wattage, Template, Misc#1, Misc#2, Misc#3, Misc#4, Misc#5, PlotLink. The MiniCAD "readln" command does not seem to be implemented properly and requires a printable, non-space character in every field. Be sure that whatever generates your text file puts a "-" in any empty fields; this macro will strip the "-" out as it reads the data in.

Any record that comes in with a PlotLink field that equals "0" will be identified as a fixture that is not on the plot. The macro will then attempt to determine the location of that new fixture based on the Unit # and Position fields; it will then place a generic black box at that position and display the displayable fields and unit type. The generic black boxes can then be changed to the appropriate symbols using the "Replace Symbol" macro. For the macro to perform this part of the macro properly, it is required that you have a symbol called "Generic Unit" in your symbol list; such a symbol exists in the "Symbols & Macros" file. Be sure to import this symbol into your drawings.

Any record comes in with a PlotLink field that equals "IGNORE" will not be imported.

"Import Data XL"

This works just like "Import Data+" above, except that it uses an algorithm that does not require that a "-" be put into empty fields. This macro should be used for files that are imported from Excel or any program that does not put the "-" in empty fields. This macro runs at about 2/3 the speed of the macro above. Panorama and LightWright 3 can use the "Import Data+" macro above.

The Panorama files included in this package do all the stuff mentioned above

automatically.

Panorama and Panorama Direct

Panorama 3 by ProVUE is a flat file database that is very fast, faster than any other database program on any micro computer platform. Panorama 3 also has an extremely powerful yet simple macro language. While this macro language is not as powerful as some DB programming languages such as 4D, FoxPro, or Access, it is much simpler and will run rings around Filemaker Pro, both in power and speed. Panorama 3 is a fairly expensive program costing in Nov. 96 close to \$295; HOWEVER, there is a cheaper alternative, Panorama Direct. ProVUE sells a version of their database called **Panorama Direct for \$99**. Panorama Direct will do everything that Panorama will do except allow for the creation of macros; it will however run the macros in files created by Panorama 3. If you want to use the macros I have created in Panorama without having the ability to change and customize them, buy Panorama Direct. Panorama Direct will allow you to customize the forms that are used. If you have any further questions give me a call

HOW TO PASS INFORMATION TO AND FROM THE PLOT AND HOOKUP USING PANORAMA_3 OR PANORAMA DIRECT.

(should also be read by those wishing to use other database programs)

REQUIRED FOR ALL THINGS

1. MiniCAD 6.0(or later) and Panorama or Panorama Direct
 - a. I'm sure that it is possible to use another database program, but I don't support it.
 - b. Any database program should be able to read and right the text files necessary for the MiniCAD plot.
2. The lighting symbols you use must be connected to a data base in the MiniCAD drawing with the following fields in the following order
 - a. unit#, position, channel, short purp, type, circuit, color, dimmer, purpose, wattage, template, miscl#1, miscl#2, miscl#3, miscl#4, miscl#5, plotlinkID (name field of symbol).
 - b. The Symbols in the file "Symbols & Macros" do this already.
3. The Panorama Hookup and the MiniCAD Plot must be in the same Folder
4. I STRONGLY RECOMMEND that you use the Panorama file "Paperwork+" as your template file for the hookup until such time as you understand what is going on well enough to make the necessary changes.

- a. "Test Hookup" has the two macros for import and export and the form used for export.
5. Use the AutoPlot+ stationery or import the plot macros and symbols from the "SymbolsMacros+" file.

THE STEPS OF THE PROCESS

1. In the Plot run the macro called "Export Data+".
 - a. This macro writes a tab delimited file called "Lights.export" to be read by the Panorama file called "Test Hookup"

2. Open your Panorama Hookup and run the "GET Data From Plot" macro. This macro only opens the file "Lights.export" and reads in the information, replacing all information in the Hookup file with the information read.
 - a. If you are not using the "Paperwork+" file as your hookup database, you will need to pay attention to the order that the fields have been exported. The "Lights.export" file can be opened by any word processor or spreadsheet if you wish to check it. The field order is the same as the order in the info window of MiniCAD.

3. Play with your hookup any way you want keeping in mind the following things.
 - a. DO NOT CHANGE any info in the "PlotLink" field.
 - 1) the exception is those records that you have added after importing from the plot; you will be adding "0" and "IGNORE" to the PlotLink field of those records. (see the description of the "Import Data" macro above)
 - b. The "PlotLink" field is the unique link to the plot for each instrument.

4. When you are done playing with your hookup run the "SEND Data to Plot" macro.

5. Open or go to the MiniCAD Plot and run the "Import Data" Macro. This macro will run the file selection dialog box. Be sure to select the "Hookup to MC" file.

You may send hookup information to the plot as many times as you wish; it will just fill in the database fields it has information for.

New in VectorWorks

There use to be a bug in the MiniPascal macro language requiring that a "-" be put into empty fields that were going to be imported back into the MiniCAD light plot file. This bug has been corrected in VectorWorks. Any program that can create a tab delimited file can create a file that can be read by the AutoPlot macros in VectorWorks.

Lightwright 3 for the Mac

LW3 has not been released yet (1/11/99), but when it is, you will be able to import and export with AutoPlot just as you would with Panorama described above. John has allowed me to beta test his creation and communicating with MiniCAD using the AutoPlot macros seems to work perfectly.