SHOWDESIGNER

Introduction

The ShowDesigner is the main application of the MSD software package. The ShowDesigner enables you to place objects and spots from libraries, thus creating the complete scene.
It is also possible to create and store light settings in cues, and use the simple playback facilities to play back the cues.
By using the render option, you can create a realistic image of your scene. This image will be calculated taking into account the following parameters.

- For spots:
  - Intensity, Iris, Zoom, Color, Gobo.
- For materials
  - Transparency, Reflection
- Shadow
- Smoke

Scenes created with the ShowDesigner can be used in the OffLine module. The OffLine module together with the playback facilities let you check the cues. (No extra hardware required).
By using optional hardware, DMX values can also be transmitted, letting you control spots and dimmers directly from the ShowDesigner, or you can transmit the DMX values of the cues to you light console.

Martin ShowDesigner

Layout

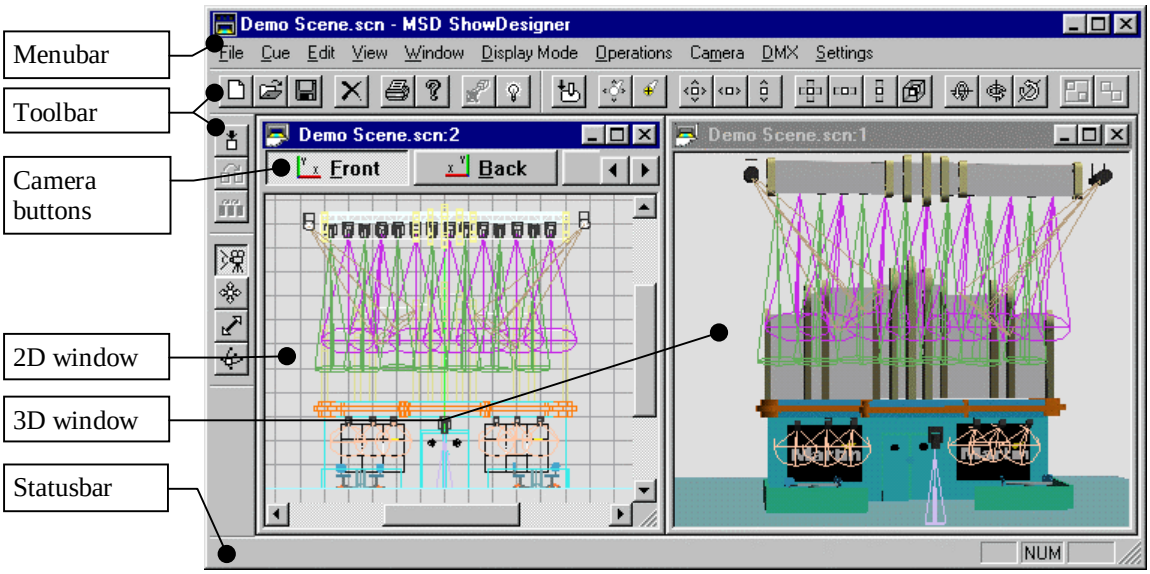

Figure 1: The application window

The application window has a menubar, a statusbar, toolbars, 2D windows and 3D windows. The menubar will be covered in ‘Menu bar’ (see page 30), the toolbars in ‘Tool bar’ (see page 49), 2D windows and 3D windows in ‘

Window types’ (see page 5).

System of Axis

Because the MSD is a three-dimensional (3D) graphical program, a system with three axes has to be determined: the X-axis, Y-axis and Z-axis. The axes represent respectively the spatial horizontal-, vertical- and depth axis. In the program, the X-axis is red, the Y-axis is green and the Z-axis is blue.

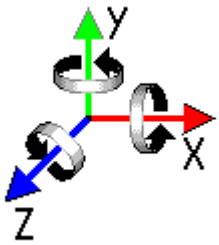

Figure 2: Spatial axes

NOTE: If (in case of a window) the horizontal, vertical and depth axes are mentioned, these axes concern the window axes. These window axes are not necessarily the same as the spatial X-, Y- and Z-axis.

Display modes

There are 4 different display modes. Each display mode shows you a different representation of the scene.

Wireframe

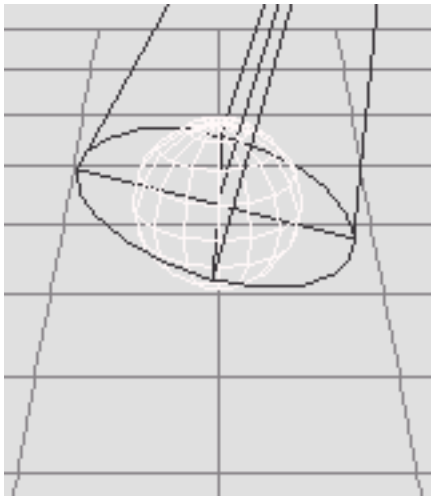

Figure 3: Wireframe

This option will show the scene in wireframe mode. This will show your objects and spots as solid lines with a single color.

Wireframe (Lighted)

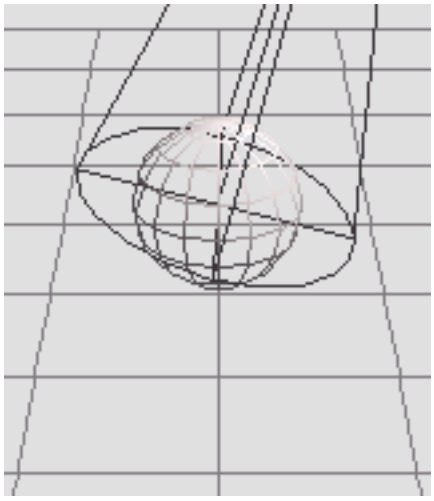

Figure 4: Wireframe lighted

This option will show the scene in lighted wireframe mode. This will show your objects and spots as colored lines which are shaded by a light source.

Solid

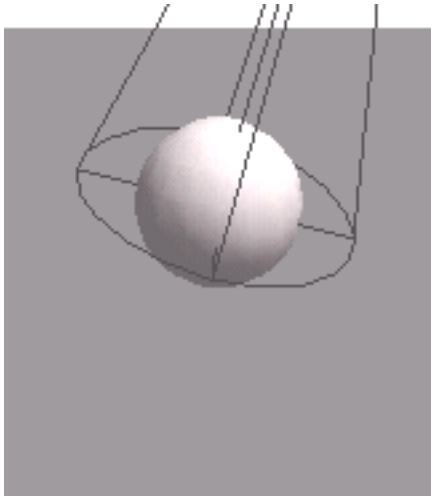

Figure 5: Solid

This option will show the scene in solid mode. This will show your objects and spots as fast, solid, simple shaded objects, using a single light source.

Render

Figure 6: Render

This option will calculate a realistic image of the scene, lighted by the spots in the scene (with their fader, iris, zoom angle, gels and gobo settings). During the calculation of the image, shadows, reflections, transparency and even smoke can be taken into account. Depending on the complexity of the scene and the selected options, this calculation may take a while.

When you start the rendering, you will get a dialog with the render options.

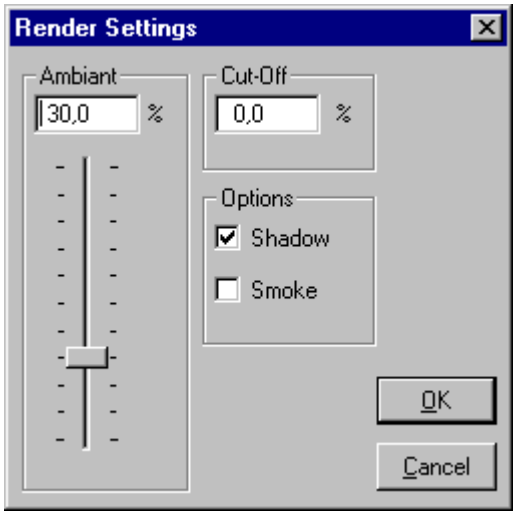

Figure 7: Render settings dialog

The default render settings can be changed in the ‘Render Settings tab’ (see page 46).

Window types

The program has 2 types of windows, namely 2D windows and 3D windows. Each window has it’s own capabilities, although many are available in both. You can not change one type of window into the other, but you can open as many windows of both types as you like. (Opening a window can be done by selecting ‘New 2D window’ or ‘New 3D window’ from the menu (see ‘Window Menu’ on page 35). Both types of windows are further explained in the following sections.

2D Windows

2D windows give you an orthographic view of your scene. You can work in on of six views, namely Front, Back, Left, Right, Top and Bottom. You can change between these views by selecting a camera by clicking one of the ‘Camera buttons’ in the top of a 2D window (see Figure 1). By clicking on the current (down) camera button, the position and scale of the camera will be adjusted so the entire scene will be visible. If only a part of the scene is visible (when you are zoomed in) you can pan through the scene with the vertical and horizontal scrollbars at the right and bottom of the window.
The 2D window also has a grid to enhance orientation in the scene. The size and color(s) of the grid can be set in ‘Grid tab’ (see page 44).

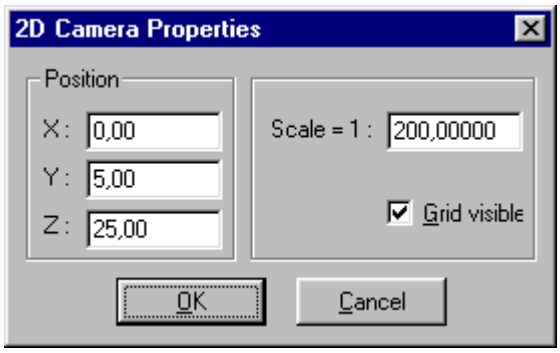

Figure 8: 2D Camera properties

In the 2D camera properties dialog of a 2D window you can set the camera position, the scale and if the grid should be visible in this view.

3D Windows

3D windows give you a perspective view of your scene. Here you can view the scene from any point and with different camera angles. The 3D window has some features the 2D window has not:

- You can use the 'Render' display mode to calculate a realistic image.
- You have an inspect mode, which will rotate your camera around the Y-axis of the scene. You can start and stop the inspect mode by clicking the right mouse button in a 3D window and selecting 'Other', "Inspect Object' for the appearing context menu.

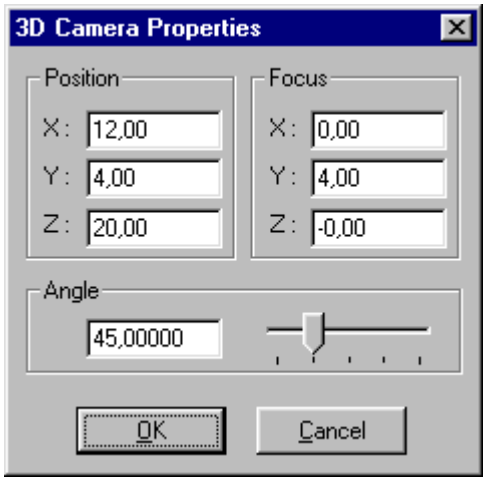

Figure 9: 3D Camera properties

In the 3D camera properties dialog of a 3D window you can set the camera position, the focus point (the point you are looking to) and the camera angle.

List Windows

Object List

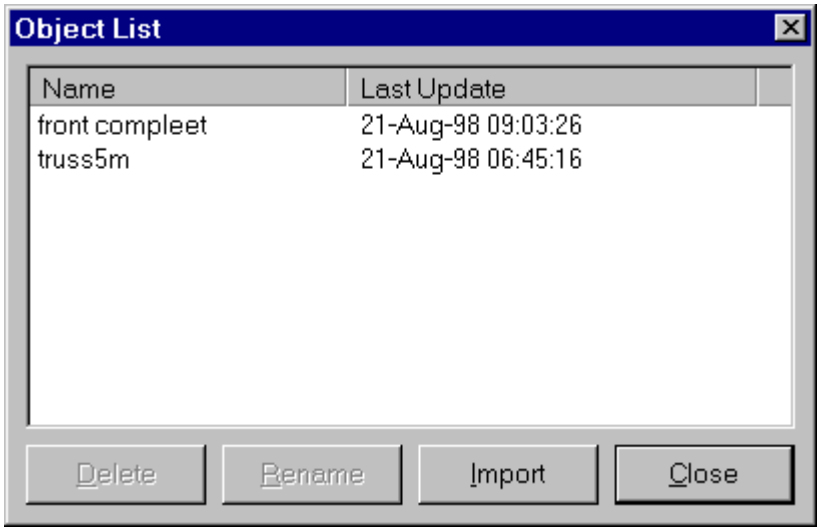

Figure 10: Object List

This list shows all the objects that are in this scene. To open this window you must select the object list menu item. In new scenes this list will be empty, the above example is taken from the demo scene. As you can see there are two objects used in the demo scene. The name of the objects is in the first column and the second column of the list shows you when the object was last saved. At the bottom of the window are four buttons. The delete and rename buttons in the example are grayed, this means that they can not be used at the moment. As soon as you select one of the objects, by clicking on the name with the left mouse button, these two buttons will become available. The functions of these buttons are described below. At the top of the list you see a gray area with the text 'Name' and 'Last Update' in it, this is called the header. In the header you can also see two vertical lines. If you move your mouse cursor over these lines, you will see the cursor of the mouse change into a vertical line with two little arrows. When this happens you can click the left button of the mouse and while holding it down, move the mouse left and right. As you are moving the mouse you will see that the column width of the list will change. A double click on the vertical line will change the width of the column to the minimal width required to display all text in that column. All objects in this list can be inserted in the scene using the insert operation, which is activated by clicking the  button.

- The **Delete** button:
  The delete button simple allows you the remove the selected object from the list. You will be asked to confirm this action. Deleting the object from the list will not affect any inserts of this object. You can however no longer insert this object in the scene.
- The **Rename** button:
  The rename button allows you the change the name of the selected object. After you have clicked on this button, a box will appear around the selected object. In this box you can type a new name it. After you press the enter-key the object will be renamed. If the name you typed already exists in this scene you will see an error box and the rename operation is canceled.

- The **Import** button:
  The import button allows you the get objects from modellibraries into this scene. You will be presented with the standard file open dialog box in the modellib directory. You can now select the library from which you want an object. After opening the library you will see a list of all objects in that library. You can now select an object from this list and press the OK button. The object you selected will be copied into this scene and it will be shown in this list. If the object you selected has a name which is already used in this scene the new object will be renamed by adding a '.x' to the name, where the x represents a number starting from 1 and increasing until a name if found that is not used.
- The **Close** button :
  The close button will close this window. You can leave this window open while you work with the program, but often you will close it you have more space on the screen for your other windows. This window can be opened again by selecting the Object list menu item

Spot List

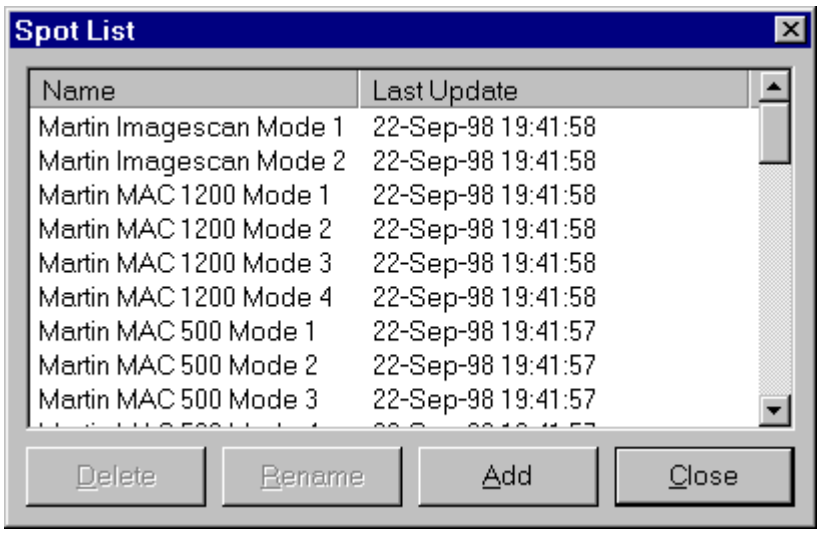

Figure 11: Spot List

This list shows all the spots that are in this scene. To open this window you must select the 'spot list' menu item. In new scenes this list will be filled with the spots defined in the file 'default.spt' in the spots directory. By default this file contains a long list of Martin spots. The second column of the list shows you when the spot was last saved (for the default spots this is the same as the time the scene was created). At the bottom of the window are four buttons. The delete and rename buttons in the example are grayed, this means that they can not be used at the moment. As soon as you select one of the spots, by clicking on the spot name with the left mouse button, these two buttons will become available. The functions of these buttons are described below. At the top of the list you see a gray area with the text 'Name' and 'Last Update' in it, this is called the header. In the header you can also see two vertical lines. If you move your mouse cursor over these lines, you will see the cursor of the mouse change into a vertical line with two little arrows. When this happens you can click the left button of the mouse and, while holding it down, move the mouse left and right. As you are moving the mouse you will see that the column width of the list will change. A double click on the vertical line will change the width of the column to the minimal width required to display all text in that column. All spots in this list can be inserted in the scene using the insert spot operation that is activated by clicking the  button.

- The **Delete** button:
  The 'Delete' button simple allows you the remove the selected spot from the list. You will be asked to confirm this action. Deleting the spot from the list will not affect any inserted spots of the selected type in the scene. You can however no longer insert a spot of this type in scene.
- The **Rename** button:
  The 'Rename' button allows you the change the name of the selected spot. After you have clicked on this button, a box will appear around the selected spot, in this box you can type a new name it. After you press the enter-key the spot will be renamed. If the name you entered already exists in this scene you will see an error box and the rename operation is canceled.
- The **Add** button :
  The 'Add' button allows you to get spots from spot definition files into this scene. You will be presented with the standard file open dialog box in the spot directory. You can now select the spot definition file you want to add to this scene. All spots in the selected file will be added to the scene. If the spot definition file contains a spot with a name which is already used in this scene the new spot will be renamed by adding a '.x' to the name, where the x represents a number starting from 1 and increasing until a name if found that is not used.
- The **Close** button :
  The 'Close' button will close this window. You can leave this window open while you work with the program, but often you will close it you have more room on the screen for your other windows. This window can be opened again by selecting the 'Spot list' menu item

Material List

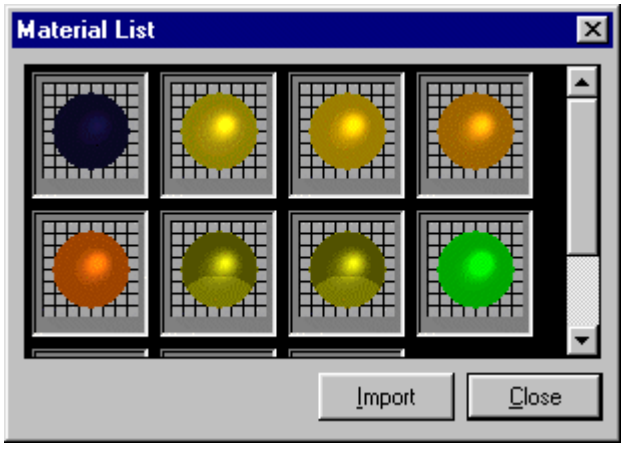

Figure 12: Material List

This list shows all the materials defined in the scene. To open this window you must select the 'Material list' menu item in the 'File' menu. In new scenes this list will be empty, the above example is taken from the demo scene. As you can see there are number of material defined. At the bottom of the window are two buttons. If you click your right mouse button in the black area or on one of the previews, a context menu will be displayed (see Figure 13). The functions of the buttons and the context menu are described below. All materials in this list can be assigned to object parts by selecting the Materials tab in the object properties (see page 21).

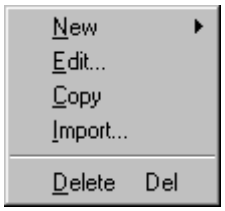

Figure 13: Material list context menu

- **Import**
  The **Import** button and the **Import** option of the context menu both have the same function. They allow you the get materials from material libraries, other scene files and model libraries. When you start the import, a file dialog will appear in which you can select the file from which you want import materials. When you have opened the file, you will be given a list of all materials in that file. You can now select all the materials you want to import into this scene.
- **New** and **Edit**
  The 'New' option from the context menu gives you a option of two types of material to create and the 'Edit' option allows you to edit the selected material. On information about the different types of material and the parameters you edit you can look at 'Materials' at page 14 in this manual.
- **Copy:**
  The 'Copy' options lets you copy the selected material. A dialog (see Figure 14) will appear in which you can enter the new name for the material.

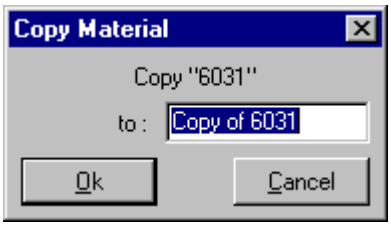

Figure 14: Copy material

- **Delete**:
  The 'Delete' options is used to delete the select material from the list. You will be asked to confirm this action. Deleting the material from the list will not affect any objects using this material. You can however nolonger assign this material to other objects.
- The **Close** button:
  The 'Close' button will close this window. You can leave this window open while you work with the program, but often you will close it you have more room on the screen for your other windows. This window can be opened again by selecting the 'Material list' menu item in the 'File' menu

Cue List

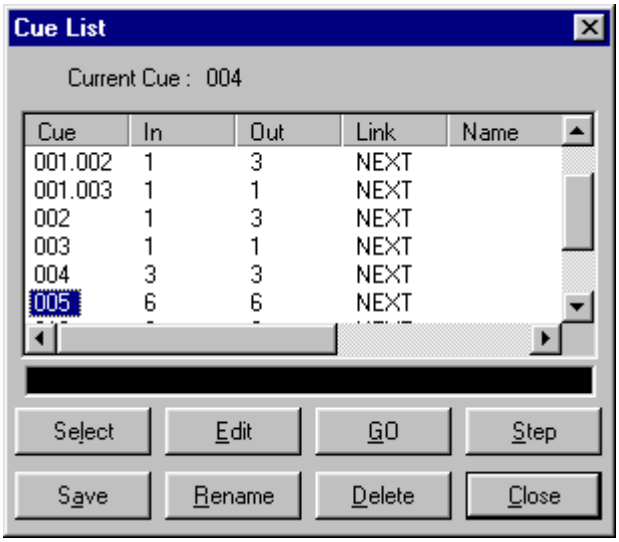

Figure 15: Cue List

For information on managing cues, see 'Cues' on page 18. This list shows all the cues in this scene. To open this window you must select the 'Cue List' menu item or the 'Select Cue' menu item. In new scenes this list will be empty, the above example is taken from the demo scene. As you can see there are several cues in the demo scene.
At the top of the dialog, you can find the 'Current Cue'. This is the last selected cue. In the list itself, 1 or more cues can be highlighted. If an operation works on 1 cue only, it will be the first highlighted cue; otherwise it will work on all highlighted cues.

At the top of the list you see a gray area with the text 'Cue', 'In', 'Out', etc. This is called the header. In the header you can also see two vertical lines. If you move your mouse cursor over these lines, you will see the cursor of the mouse change into a vertical line with two little arrows. When this happens you can click the left button of the mouse and while holding it down, move the mouse left and right. As you are moving the mouse you will see that the column width of the list will change. A double click on the vertical line will change the width of the column to the minimal width required to display all text in that column. Every cue has 8 columns:

- Cue
  This is the identifier of a cue. It can range from 1 to 999.999.999, which represents cue 999, subcue 999 and subsubcue 999.
- In
  This is the cue fade in time (in time notation).
- Out
  This is the cue fade out time (in time notation).
- Link
  Here you can specify a cue link to another cue.
- Name
  A descriptive name for the cue.

- Follow
  This specifies the followon time if a link is specified.
- Delay In
  This is the cue delay in time (in time notation).
- Delay Out
  This is the cue delay out time (in time notation).

At the bottom of the window are eight buttons. The functions of these buttons are described below.

- The **Select** button:
  The select button allows you to select the highlighted cue and it will become the current cue. In other words, the stage will represent this cue.
- The **Save** button:
  The stage settings will be saved as the highlighted cue.
- The **Edit** button:
  The edit button allows you to edit the cue properties (fade times, delay times, link etc) of the (first) highlighted cue.
- The **Rename** button:
  The rename button allows you to edit the cue number of the highlighted cue.
- The **GO** button:
  The GO button will start a crossfade from the current cue to the highlighted cue. The Step button will turn into a STOP button. After the crossfade is done, and an autolink is specified, the next crossfade to the linked cue is automatically started, and so on. It will stop when no autolink cue is specified or the user presses the STOP button. (See also Step)
- The **Delete** button:
  The Delete button will delete the highlighted cue(s).
- The **Step** button:
  The step button will start a crossfade from the current cue to the highlighted cue. The Step button will turn into a STOP button. After the crossfade is done, it stops. If an autolink is defined, it will not be executed. A crossfade can be stopped at any moment by pressing the STOP button. (See also **GO**)
- The **Close** button:
  The close button will close this window. You can leave this window open while you work with the program, but often you will close it you have more space on the screen for your other windows. Selecting the 'Cue list…' menu item from the 'File Menu' can open this window again.

Working with objects and spots

You can perform various interactive operations on objects and spots (like move, scale and rotate). A lot of these operations are available from the toolbar; the rest can be selected from the menu. To use one of these operations you do the following:

1. Select the operation from the toolbar or the menu.
2. Click on the object or spot you want to use with this operation, this object will become picked.
3. While holding down the left mouse button, drag the mouse
4. You can now cancel the operation by clicking the right mouse button.
5. If you let the left mouse button go, the operation will be finished and the changes will be shown in all the windows currently open (except windows in the render display mode).
6. If you want to perform the same operation again you can start at item 2.

We recommend you use the interactive operations in the 2D window only, because using them in the 3D window can have strange results.
You can pick an object (or spot) is by clicking the left mouse button inside the object. When you want to pick a spot, you can click inside the beam as well. There can be only one picked object (or spot) in a scene, and this object will have a red box drawn around it. Although we mention only objects in the rest of this section, the same holds for spots. Because objects can be behind other objects, you will need a method to pick these obscured objects. This is done by repeatedly clicking (not to fast, because this will count as a double-click) without moving the mouse. On the first click the object nearest to the camera will be picked, the next click will pick an object further away. This continues until the furthest object is picked, the next click will then pick the nearest object again.
If you want to perform an operation on an object that is obscured by others, it is often helpful to first pick the correct object and then select the correct operation. To start this operation however you would need to click in the window again, possibly picking another object. To avoid this picking of another object, you can hold down the 'ALT' key. When the operation is started you can let go of the 'ALT' key.
In short, the 'ALT' key prevents the system from picking another object when starting an operation.

Some operations, like group and align, require more than one objects to work with. In a scene there can only be one picked object, so these operations require something else, they require selected objects!
Before you can select an object you first have to pick it. After you have picked the object you can open the context menu of the window (by right clicking in the window); in this menu you see an option called 'Select'. This option will select the object. Objects that are selected are drawn with a green box around them. To unselect or deselect the object; you use the same menu option.
A quick way to deselect all objects in the scene, is by using the menu option 'Edit | Deselect All'. (This menu item has the shortcut Shift-Esc).

Besides the interactive operations described above there are also so called 'property sheets'. Property sheets are dialogs containing a number of tabs (or pages). There are different property sheets for objects and spots; these are described in ‘Properties’ starting on page 20 of this manual.

Materials

All work with materials is done in the 'Material List' (see page 9). Using the context menu of this window, you can create new, edit, copy, import and delete materials. There are two kinds of materials in the Martin ShowDesigner. We have simple materials and textures. Simple materials have a single color combined with reflectance and transparency parameters. The textures extend the simple materials with a bitmap and some mapping options.

Simple materials

All the parameters of the simple material can be set using the following dialog.

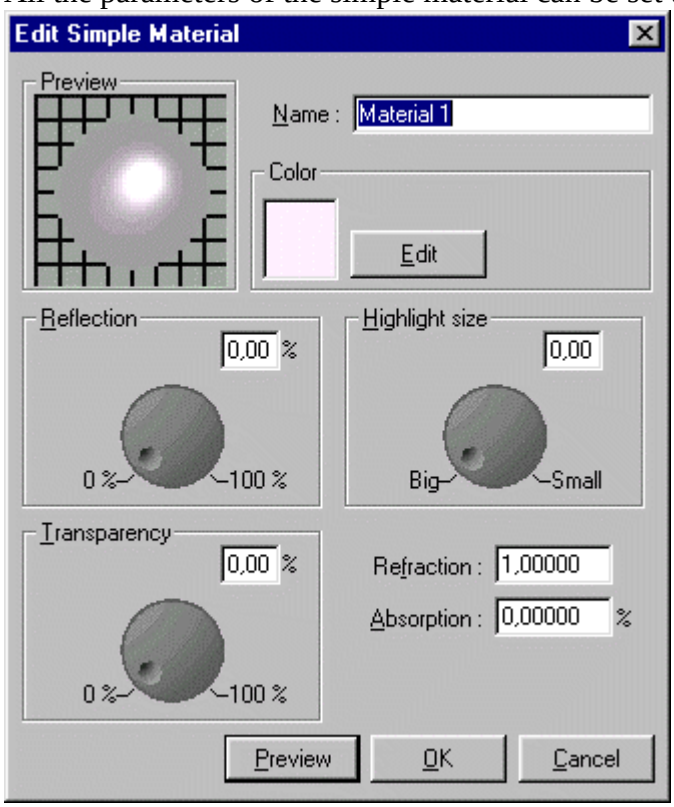

Figure 16: Simple material parameters

At the top right you see a preview. This preview is rendered when you press the 'Preview' button at the bottom of the dialog, or when you click 'OK' to close the dialog. This preview is used to visually select the materials in the rest of the program. The preview consists of a sphere in front of a wall with gridlines on it. Below the sphere is a floor. The sphere will be of the material you are editing. The gridlines can be used to check the transparency parameters. The floor will become visible as a reflection in the sphere when you make the material reflective. The scene is lit a spot from the top left to allow you to check the highlights of the material. Next to the preview you see a box with the name of the material, there you can change the name of the material. Below the name you see box called 'Color'. This box contains a rectangle with the color of the material. You can change the color of the material by clicking on the 'Edit' button; this will display a dialog in which you can select a new color (see page 17). Below the 'Preview' and the 'Color' box you see the Reflection parameters. There are two parameters that define the reflectance of a material. The first (on the left) is the reflection. This is the percentage of light that is reflected back. 0% indicates a dull surface and 100% indicated a perfect mirror. The second parameter (on the right) is the 'Highlight size'. This value is an indication of the

smoothness of the material. If a material is rough, a big highlight can be seen on the surface. If a material is very smooth, the size of the highlight will be small. Below the reflection parameters you see the transparency parameters. On the left you see the transparency percentage, this percentage indicates the amount of light going in through the material, the rest of the material will be reflected back or used to color the object depending on the amount of reflectance you have set. Next to the transparency percentage you see the other two transparency parameters. The refraction indicates the refraction index of the material, see Table 1 for a few examples. The absorption finally indicates how much light is lost in the material; this also depends on the thickness of the material. The value set here is the percentage of light lost per meter.

Diamond	2.42
Glass	1.55
Ice	1.31
Quartz	1.55
Perspex	1.49
Water	1.34

Table 1: Refraction indices

Textures

The parameters of textures can be set in two dialogs. One is very similar to Figure 16, the only difference is an extra button marked 'Bitmap' next to the
'Edit' button. If you click on this button you get the following dialog

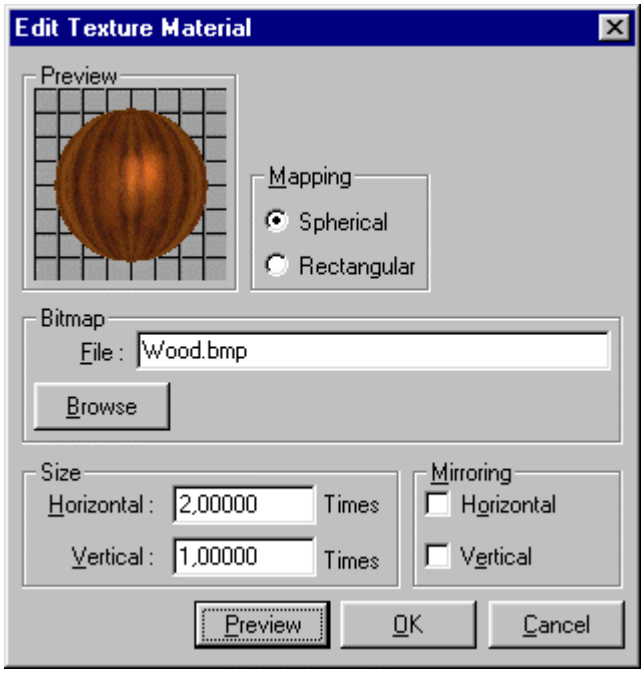

Figure 17: Texture parameters

The top left corner shown the preview just like in the 'Simple material parameters' dialog. To the right of the preview you can see a box called 'Mapping'. Here you can select how the bitmap will be 'pasted' on the object. If you select 'Spherical' the bitmap will be wrapped around the object. If you select 'Rectangular' the bitmap will be pasted on the front of the object. If you select 'Rectangular' mapping, some options in this dialog will change (see Figure 16). The bitmaps that is used for the texture can be typed in or selected from a list by clicking on the

'Browse' button. Below the 'Browse' button you can see a box called 'Size'. This is where the 'Rectangular' and 'Spherical' dialogs differ. If have selected a 'Spherical' mapping, than you enter the number of repetitions here. The horizontal number indicates the number of times the bitmap is repeated from the back of the object to around the front to the back of the object again. The vertical number indicates the repetition count from top to bottom. In 'Rectangular mapping' you should enter the size of the bitmap (the size of the object that the bitmap represents). Next to the 'Size' box you see a box called 'Mirroring'. These options take effect only when the bitmap needs to be repeated, If these options are on, the bitmap will be mirrored every time the bitmap is repeated in that direction.

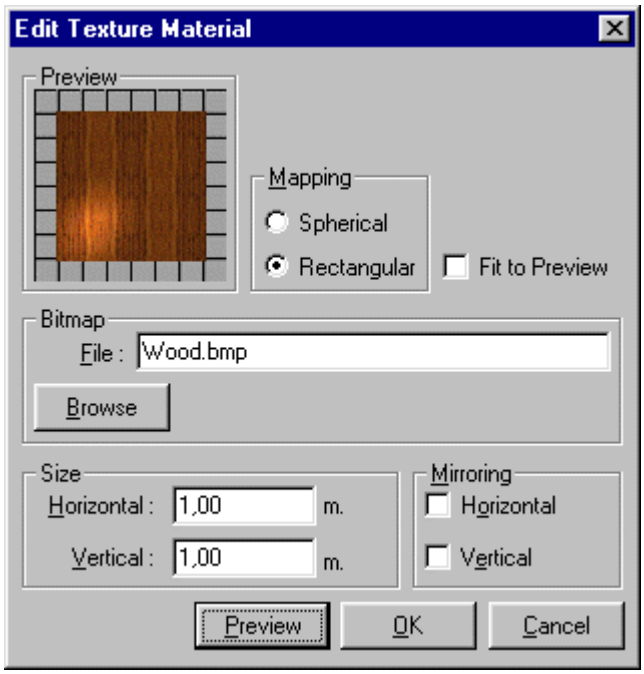

Figure 18: Rectangular mapped texture

Another option only available to Rectangular mapped textures, is the 'Fit to Preview' option. This option changes only the preview, when you activate this option; the size of the texture will be ignored when the preview is calculated. Instead of the size you entered, the size will be scaled to fit the cube in the preview exactly.

Color Selection

Whenever you need to enter a color, the MSD software will display the following dialog.

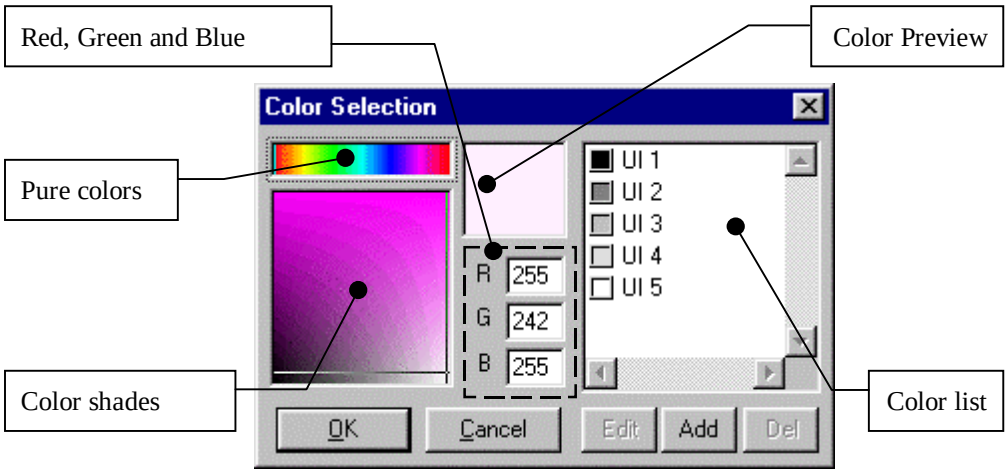

Figure 19: Color Selection

This dialog is divided in two parts, the left part allows you to enter a color using the mouse or by typing in the Red, Green and Blue values directly. On the right is a list of colors from which you can choose.

Selecting a new color

The 'Pure colors' field can be used to select the color display in the top of the 'Color shades' field. The 'Color shades' field can then be used to select the desired shade. On the left of the field all the shades between the pure color and black are displayed. On right you will find all the shades between the pure color and white. While you are dragging the mouse in these fields, you can see the selected color in the 'Color Preview'.

Using the color list

The list can be used to quickly select a previously saved color. You can use the 'Add' button to add the selected color to the list. If you select a color from the list, the 'Edit' and 'Del' buttons will become available. With the 'Del' button you can delete the selected color from the list. When you click on the 'Edit' button, the following dialog will appear

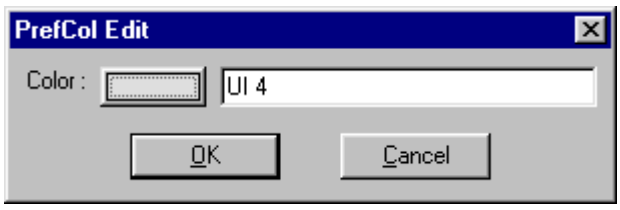

Figure 20: Color list color edit

In this dialog you can change the name of the color and change the color by clicking on the button next to the name. When you click on the color button you will get a dialog very similar to the dialog in Figure 19, except for the buttons beneath the list.

Cues

A cue is represented by a cue number. You can define 999 cues. Each cue can be subdivided into 999 subcues and each subcue can again be subdivided into 999 parts. This 3 level numbering is only used for sorting of the cues, so there is no difference between a cue with cue number 7 and a cue with number 4.27.200, it only means that cue 7 comes after cue 4.27.200

So, the 998001999 possible cues are sorted like this:

001
001.001
001.001.001
..
001.001.999
001.999
001.999.001
..
001.999.999
..
999

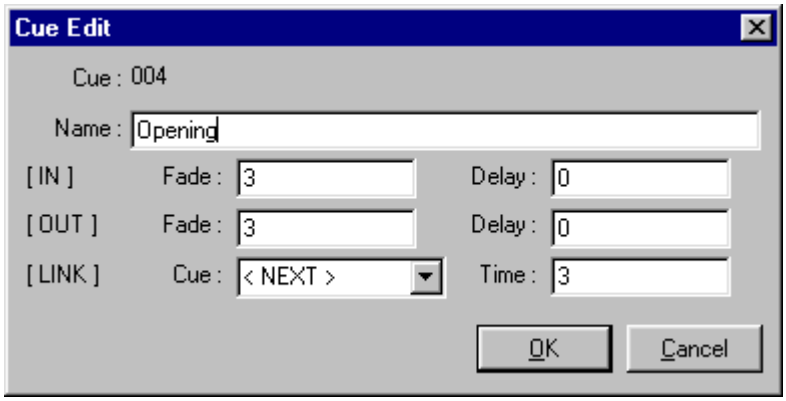

Figure 21: Cue edit dialog

You can give the cue a name, time settings and (optionally) a link.
The name of a cue is purely informational for the user.

After [IN] you can enter the 'fade in' time and the 'delay in' time.
After [OUT] you can enter the 'fade out' time and the 'delay out' time.
After [LINK] you can specify if you want a link to another cue, and if so, what the 'link time' should be.

Time values are entered (and displayed) in 'time notation'. This format looks like this:
[[hours:]min:]sec[.tenthsec]
The elements between [and] are optional. The minimum time you can enter is one tenth second (0.1) and the maximum time is 999 hours, 59 minutes, 59 seconds and 9/10 of a second (999:59:59.9). So 20 is 20 seconds, 1:10 is 1 minute and 10 seconds, etc.
You can enter a time in different ways: entering 5025 (5025 seconds) or 83:45 (83 minutes and 45 seconds) will both produce 1:23:45 (1 hour, 23 minutes and 45 seconds) as time.

Default, a cue has no link to another cue, so after 'link cue' you will see '< NO LINK >'. You can select a link from the drop down box by clicking on the down arrow next to it. In the drop down box you will find the options '< NO LINK >', '< NEXT >' and all other cues. By selecting a link, a crossfade to this linked cue will automatically start 'link time' seconds after you started the crossfade to the cue you are editing. Selecting '< NEXT >' will link to the next cue in the cue list, if there is a next cue, otherwise the crossfading stops.

A crossfade example:
A crossfade from cue A to cue B, where cue A has a 'fade out' of 5 sec. and an 'delay out' of 2 sec. Cue B has an 'fade in' of 4 sec, an 'delay in' of 6 sec, a 'cue link' to cue C and a 'link time' of 15 sec.

Time (sec)	Crossfade
T	User starts the crossfade by pressing the 'GO' button.
T + 2	Cue A starts to fade out.
T + 6	Cue B starts to fade in
T + 7	Fade out completed.
T + 10	Fade in completed.
T + 15	The next crossfade (to cue C) starts.

Table 2: Crossfade timing example

Properties

You can change most of the parameters of a spot or object by using the property sheets. You can get the property sheet of picked items by right clicking in one of the windows containing the scene. Doing this will show you the context menu, in which you can select options specific for that window. One of these options is 'Properties'. Selecting this menu option will display a dialog with multiple tabs (see Figure 22). This dialog is called a property sheet. Below the tab windows you see three buttons, called 'OK', 'Cancel' and 'Apply' (We used a Dutch version of windows to create the images, so the text differs). You use the 'OK' button to accept the changes and close the property sheet. The 'Cancel' button just closes the property sheet without accepting the changes. The 'Apply' button can be used to accept the changes without closing the property sheet, this allows to check the new settings and edit them if necessary without repeatedly opening the property sheet.
Following is description of the properties of objects and spots, beginning with the properties of objects.

Object properties

Orientation tab

There are two tabs in the property sheet of objects. The first is the 'Orientation' tab.

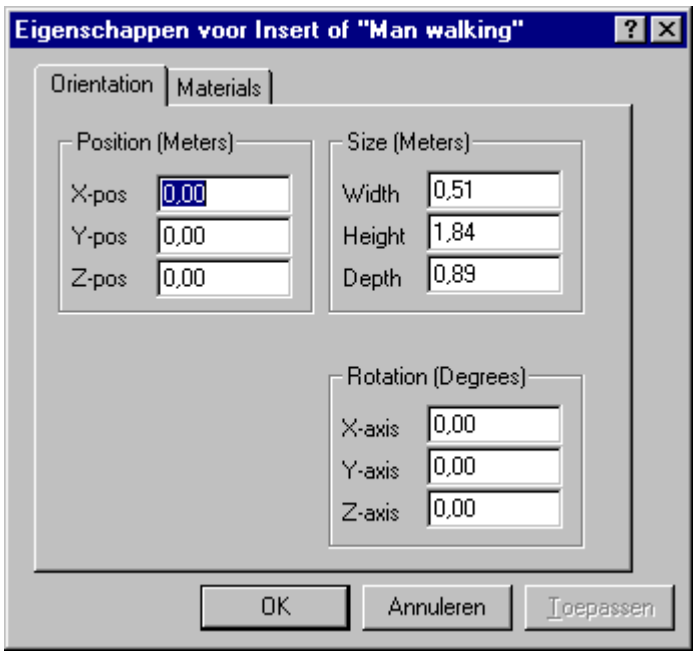

Figure 22: Orientation of objects tab

This page lets you enter the exact position, size and orientation of the picked objects. The page is divided into three parts. At the top left you see three edit fields for the position. Next to the position you can see the fields for the size and below that you see the fields for the orientation. In this page you can enter the position and size in meters and the orientation in degrees, this can be changed in the user settings property page (see page 43).

Materials tab

The second and last tab is the ‘Materials’ tab.

Figure 23: Materials tab

The material tab allows you to change materials of object parts. In the MSD Modeler you can create objects and define parts that have a material or color. All these defined parts are listed in the ‘Parts’ list (left list). In the ‘Materials’ list (the right one) you see all the materials currently in the scene. This list can be managed in the ‘Material List’ (see page 9). Materials can be added to this list here also. By clicking on the ‘Add’ button you can import materials from material libraries, model libraries or other scenes. The parts list shows you the current material for each part. You can change the material by first selecting the correct part in the parts list. If this part is already overwritten by another material, this material will become active in the materials list. You can now select another material from the list. You can use the ‘Unlink’ button to reset to the original material (the material or color defined in the modeler).

Spot properties

The number of tab in the spot properties depends on the capabilities of the picked spot. In the next paragraphs we give a description of all possible tabs. As an example we used a Martin PAL 1200E, because this spot has all of the possible tabs. Exception are the ‘Color Wheels’ tab and the ‘Gobo’ tab, for these tabs we used a Martin MAC 500 and a Robert Juliat 614SX respectively. While you are changing the settings in these tabs, the system will reflect these changes in the DMX it is sending to the MSD OffLine and the DMX driver currently selected.

Orientation tab

The ‘Orientation’ tab looks like this

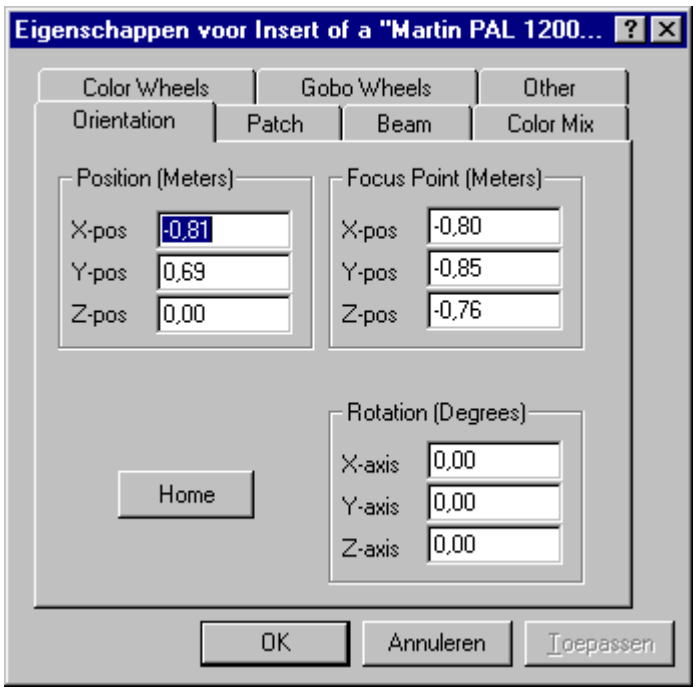

Figure 24: Orientation for Spots tab

This tab looks a lot like the tab described in Object Properties. The difference is the button ‘Home’ and the ‘Focus Point’ fields instead of the size. The ‘Home’ button is only available if the spot has Pan/Tilt capabilities. By pressing the ‘Home’ button the Pan and Tilt will be set to half its maximum value. The ‘Focus Point’ fields can be used to focus the spot on a known position. Some of these tabs not only effect the picked spot but also the selected ones. When this is the case it will be mentioned with the description of the tab.

Patch tab

The ‘Patch’ tab is used to change the patch of the spot and looks like this

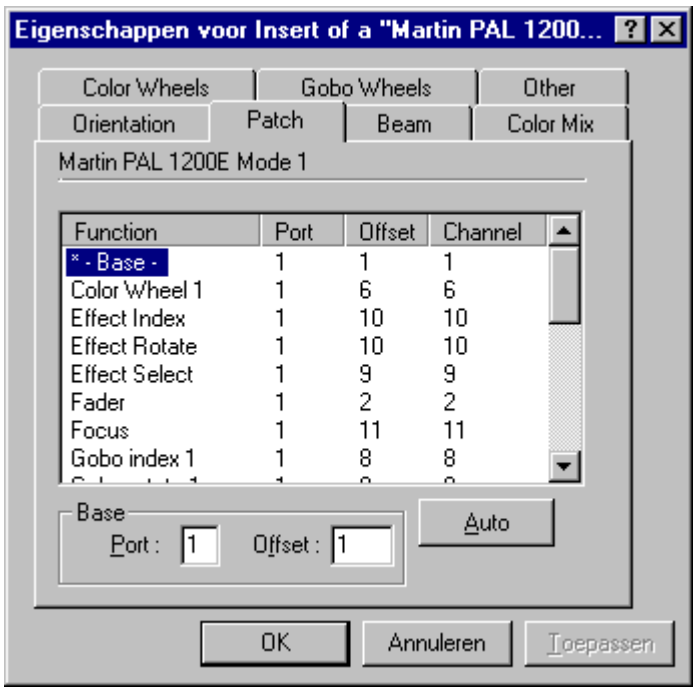

Figure 25: Patch tab

At the top of the tab you can see the type of the spot being patched. Below that you see a list of all effects in this spot. Effects that can be patched are preceded with an ‘*’. Each line in this list contains the function name, the port or link to which this spot is connected, the offset on this link and the channel number. The offset is the part you select on the real spot. When select an item that can be patched, the name will appear below the list. You can now enter the correct port and offset for the selected effect. If you select an item that can not be patched, the ‘Base’ item will appear. The ‘Auto’ button can be used to let the spot be automaticly patched on a free address. When you place an spot in the scene it will be automaticly patched on a free address, so you only need to change the patches in special cases.

Beam tab

The Beam tab is used to change the angle, and intensity of the spot. It can display up to three sliders

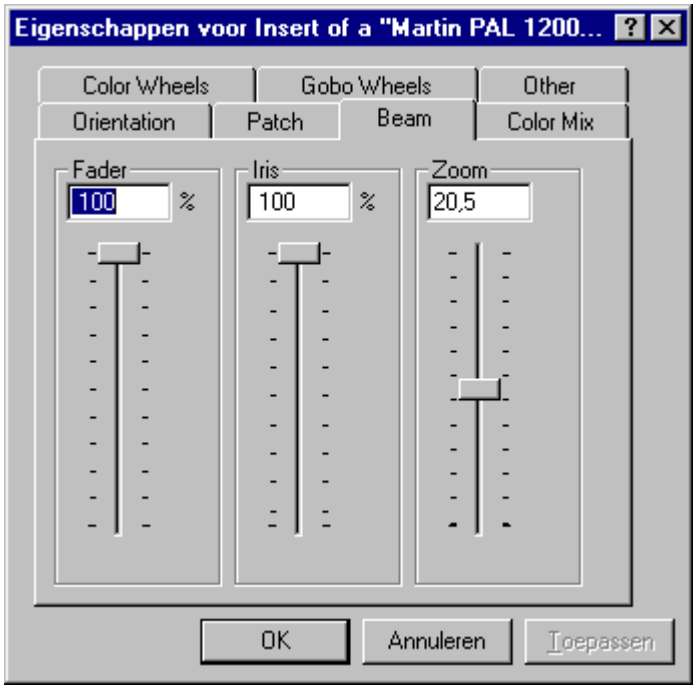

Figure 26: Beam tab

The first slider is called ‘Fader’ and controls the intensity of the spot. When you slide the slider down, the intensity will decrease. Slide the slider up and the intensity will increase. You can also enter the percentage directly by typing it in the edit field. This slider will always be present. The second slider is the ‘Iris’, Sliding this up will open the iris, Sliding it down will close the iris. Again you can enter the required percentage in the edit field at the top of the slider. This slider is only available if the picked spots has a iris in it. The last slider is the ‘Zoom’ slider this controls the beam angle of the spot and is therefor only available when the spot supports zooming. These three sliders also have an effect on spots that are selected. The fader and iris will work with any selected spot that has a fader and iris. The zoom will work on all selected spots of the same type as the picked spot.

Color Mix tab

The Color Mix tab is used to select a color for a spot. This tab can also be called ‘Color’ when the picked spot has no color mix or color wheel capabilities. In that case you can select a color that is used as gel.

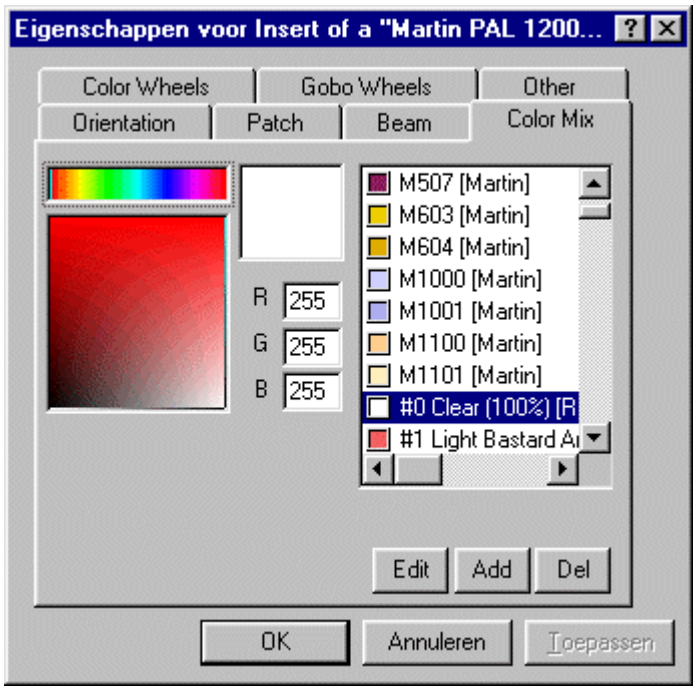

Figure 27: Color Mix tab

As you can see this look a lot like the color selector descused in ‘Color Selection’ on 17, the difference is in the colors that are in the list. Instead of normal colors, the list now shows a list of gels from the gel libraries. Per gel the color, number, description and manufacturer are given. When you change the color, the system will search the gels in the list for a match, the nearest color it finds will be display between the list and its buttons. By clicking on this item the found color will be selected. Changes in this tab will effect both the picked spot and selected spots for as far as the selected spots have a color mix capability or no color wheels.

Color Wheels tab

The color wheel tab is used to select a color from a wheel of colors.

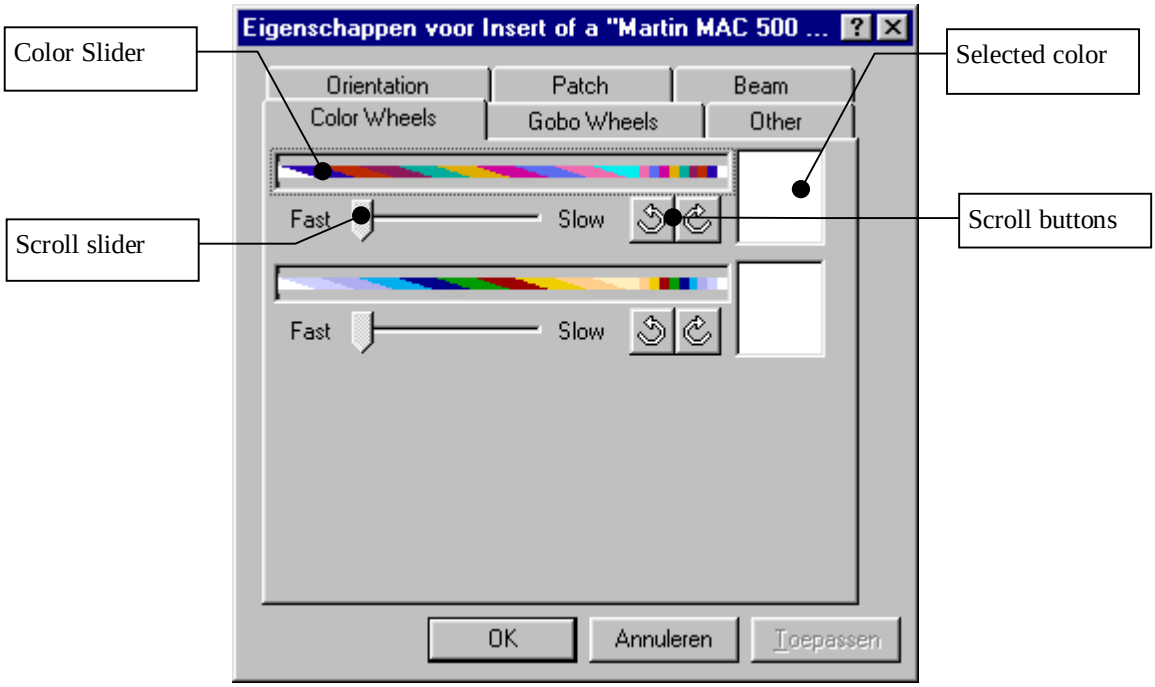

Figure 28: Color Wheels tab

As you can see the tab consists of two very simular parts, this is because the Martin MAC 500 has two color wheels in it. For every color wheel in the spot you can see the following :

- Color slider;
- Selected color box;
- Scroll slider;
- Scroll buttons.

The scroll slider and Scroll buttons are only displayed if the color wheel can scroll continues.
You can use the Color slider to select the correct color. At the front of this scroller you can select a position in between two colors (the diagonal colors). At the end you can select the colors in the wheel. This is because in a Martin MAC 500 the lower regions of the DMX allows the user to slowly scroll from one color to the next, and at higher DMX the colors will be fixed. At still higher DMX values the color wheel will do a continues scrol, both clock-wise and counter clock-wise, this is why the ‘Scroll slider’ and ‘Scroll’ buttons are displayed. If you click on one of these buttons, the color wheel will start scrolling. You can use the ‘Scroll’ slider to regulate the speed of the scrolling. If you click on the ‘Selected’ color button, the scrolling stops and the selected color will be set in color wheel. The changes made in this tab will also effect all selected spots of the same type as the picked spot.

Gobo Wheels tab

The tab for gobos looks like this

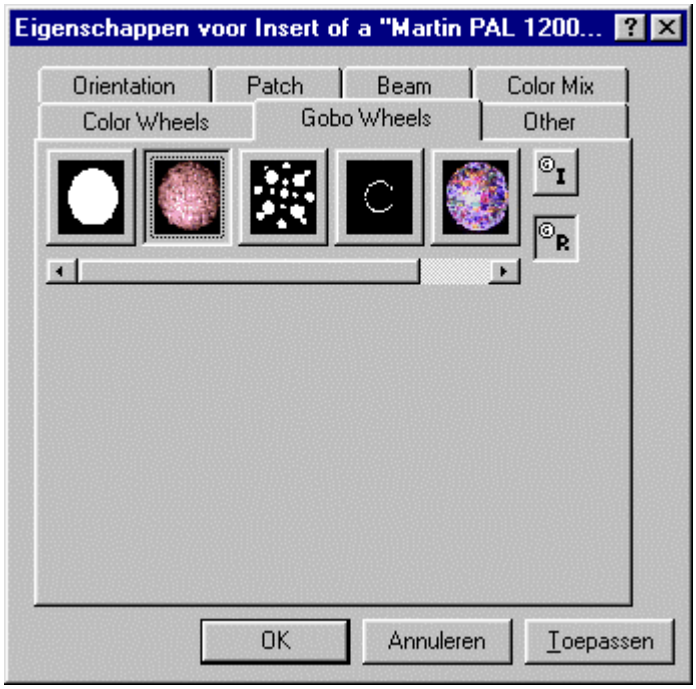

Figure 29: Gobo Wheels tab

In this tab you can select the gobo you want to be displayed by the spot. All gobos in the wheel will be displayed as buttons. If there are more than five gobos in the wheel, a scrollbar will be displayed below the five buttons, allowing you to scroll through the available gobos. A gobo can be selected by clicking on the button. If the selected gobo has index and/or rotating capabilities, two buttons will appear next to the five gobo buttons. The top button is used to select the indexed version of the gobo and the bottom to select the rotating version. The angle of the indexed version and the speed of the rotating version can be set in the 'Other tab' on page 29. Changes made to the settings in this tab will effect the picked spot and all selected spots of the same type.

Gobo tab

If a spot has no gobo wheel but it can display gobos then the following tab is available

Figure 30: Gobo tab

A preview of the selected gobo is displayed in the top left corner. If you know the filename of the gobo, you can type it in the 'File' field. If you want to seek a file you can select the 'Browse' button, this will open a file dialog in which you can select the correct gobo.

Other tab

Effects that are not covered in the preceding tabs can be found in the ‘Other’ tab. The tab looks like this

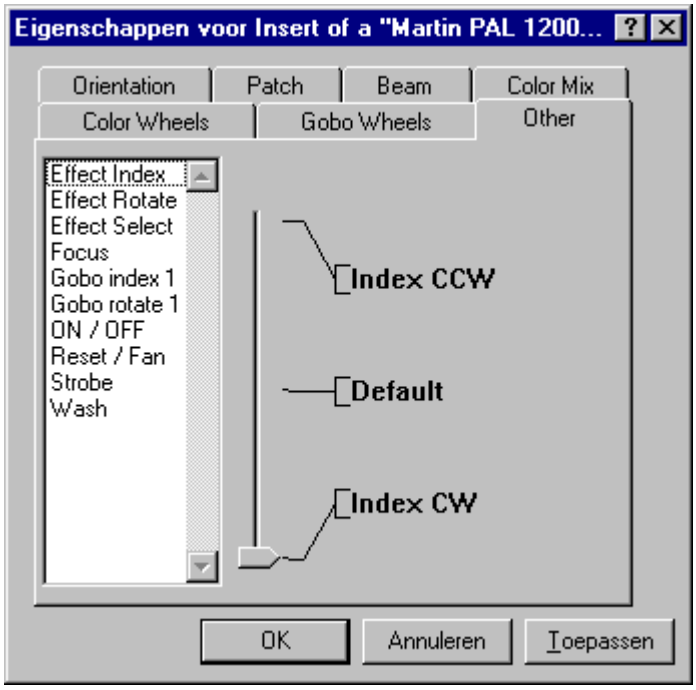

Figure 31: Other tab

On the left you see a list with all the effects that can be controlled in this tab, selecting an effect from this list will change the slider on the right. The slider on the right is used to change the settings of the selected effect. The slider has the same range as the effect. It is therefor possible, when two or more effects use the same DMX channel, for the DMX value to be out of range for the selected effect. This will be indicated by the text ‘OUT OF RANGE’ above the slider. Changes made in this tab will effect both the picked spot and all selected spots of the same type.

Menu bar

File Menu

Figure 32: File menu

You will use the entries in this menu to open, close and save files, show the various lists, setup the printer, get information about the program and exit the program.

File | New

Shortcut : Ctrl+N 

This menu is used to create a new scene. The system will ask to save any changes to the current scene if a scene is already open. The new scene will read the file 'default.spt' in the spot directory for all the default spots.

File | Open...

Shortcut : Ctrl+O 

This menu is used to open an existing scene. You will be presented with the standard file dialog in the scenes directory. After you selected a scene the current scene will be closed and the new scene will be opened. If the current scene was changed since the last save you will get the opportunity the save these changes or cancel the open command.

File | Close

Use this menu item to close the current scene. If the current scene has any unsaved changes you will get the opportunity to save these before the scene is closed.

File | Save

Shortcut : Ctrl+S 

Save is used to save the current scene. If the current scene was never saved before, you must enter a name for the new scene.

File | Save As...

This menu item is use to give the scene a new name. If you use this option you must select a new name for the scene. The scene is then saved using this name. Any subsequent saves of the scene will be done using this name.

File | Object list...

This option shows the 'Object List' window (see page 7). In this window you can delete, rename and import objects. In a new scene this list will be initially empty.

File | Spot list...

This option shows the 'Spot List' window (see page 8). In this window you can Delete, Rename and Import spots. In a new scene this list will contain all spot reads from the 'default.spt' file in the spots directory.

File | Material list...

This option shows the 'Material List' window (see page 9). In this window you can Edit, Copy, Import, Delete and Create new materials. In a new scene this list will be initially empty.

File | Cue list...

This option shows the 'Cue List' window (see page 11). In this window you can Edit, Delete and Create new cues. In a new scene this list will be initially empty.

File | Print Setup...

This option allows you to setup the current printer

File | Recent files

Here you will find the 4 last saved/opened files. By selecting one of these files you can open the selected scene.

File | About ShowDesigner...

This option will display a window in which you can get information about the program. By clicking on the info button you will see information about the current installed version, the installation date, the serialno of the program and the name with which the program was installed.

File | Exit

Shortcut : Alt+F4
This option will shut down the program. If there is a scene open and if this scene has any unsaved changes you will be asked to save these changes or cancel the operation.

Cue Menu

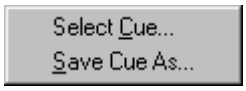

Figure 33: Cue menu

Cue | Select Cue...

This option shows the ‘Cue List’ (see page 11).

Cue | Save Cue As...

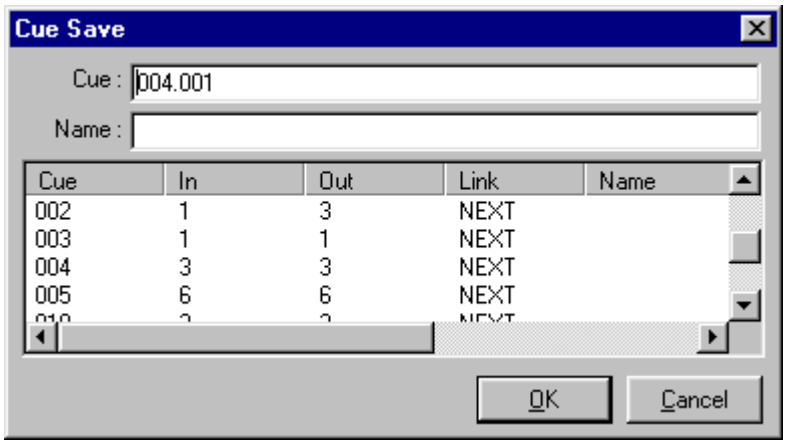

Figure 34: Cue save dialog

This option allows you to save the current stage settings as a new cue. If possible, a cuenumber is generated, which will directly follow the 'current cue number' and precedes the cue number following then current cue. (If the current cue is 4 and the next cue is 6, it will generate the cue number 5. If you have a current cue 4 and the next cue is 5, it will generate the cue number 4.1 and so on)
In this window you can work with cues. In a new scene this list will be initially empty.

Edit Menu

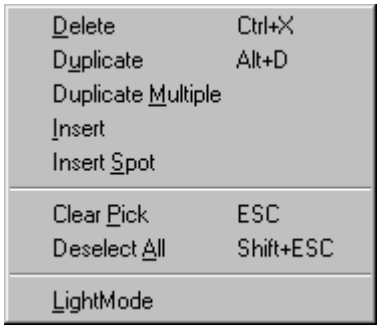

Figure 35: Edit menu

You will use the entries in this menu to delete, copy and insert objects and spots, clear pick or selection and switch between ‘Light Mode’ and ‘Normal Mode’.

Edit | Delete

Shortcut : Ctrl+X 

This option will delete the picked object.

Edit | Duplicate

Shortcut : Alt+D 

This option will copy the picked object. When you click with your left mouse button inside a window, the copy will be inserted into the scene. If you keep the mouse button down, you can directly move the inserted copy around until you release the mouse button.

Edit | Duplicate Multiple

This option will make multiple copies of the picked object. When you click with your left mouse button inside a window, a dialog will appear.

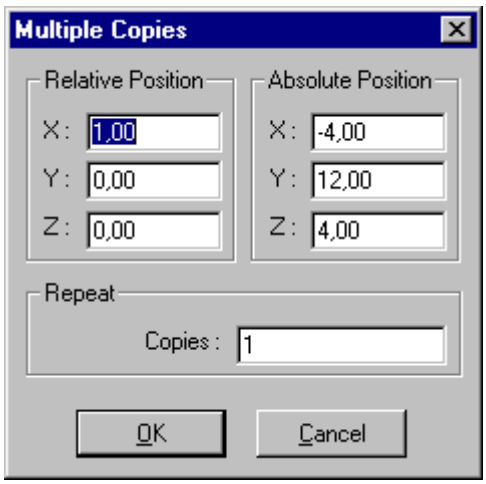

Figure 36: Multiple copies dialog

In de 'Multiple Copies' dialog, you can enter the position where the first copy of the picked object should come. You can do this relative to the position of the original, or absolute by giving the world coordinates. For example (see Figure 36), if you have a spot on position (-5.0, 12.0, 4.0), you can set the first copy 1.0 meter to the right (relative) or set it on position (-4.0, 12.0, 4.0) (absolute). All other copies will be positioned relative to the previous copy in the same way as the first copy is positioned relative to the original. What this means is that in the previous example, the second copy would be on position (-3.0, 12.0, 4.0), so 1.0 meter to the right from the first copy.
In the 'copies' field you can enter how many copies you want.

Edit | Insert

This option allows you to insert an object from the object list into the scene. See ‘Object List’ on page 7 for more information about objects. When you click in a window after selecting this option a list of available objects will appear. The desired object will be inserted after clicking on it in the list.

Edit | Insert Spot

This option allows you to insert a spot from the spot list into the scene. See ‘Spot List’ on page 8 for more information about spots. When you click in a window after selecting this option a list of available spots manufacturers will appear. When you move your mouse over the desired manufacturer, all available spots from that manufacturer will appear. The desired spot will be inserted after clicking on it in the list.

Edit | Clear Pick

Shortcut : Esc
This option clears the current pick. If you had something picked, it will be unpicked.

Edit | Deselect All

Shortcut : Shift+Esc
This option clears the selection. If you have one or more objects selected, they will be deselected.

Edit | LightMode

This option activates and deactivates the Lightmode. When you are working in Lightmode, you can only pick spots. All other objects are ignored if you try to pick something.

View Menu

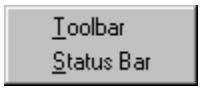

Figure 37: View menu

You will use the entries in this menu to view or hide the toolbars holding the buttons and the status bar at the bottom of the main window. If an item is visible a checkmark will be displayed in front of the menu item.

View | Toolbar

This menu is used to show or hide the toolbars. For an overview of all the buttons in the toolbars you can look at the ‘Tool bar’ entry in this manual.

View | Status Bar

This menu is used to show or hide the status bar.

Window Menu

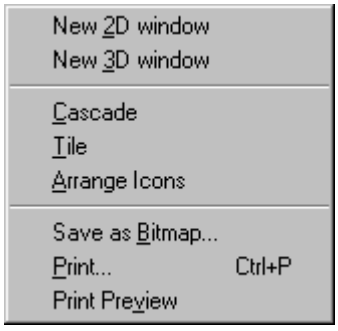

Figure 38: Window menu

You will use the entries in this menu to open or arrange windows and to save or print windows.

Window | New 2D window

This option opens a new 2D window.

Window | New 3D window

This option opens a new 3D window.

Window | Cascade

This option will arrange all open windows to be all the same size, stacked one on top of another.

Window | Tile

This option will arrange all open windows to be tiled side by side, so all windows will be totally visible.

Window | Arrange Icons

This option will arrange all icons to be at the bottom of the main window.

Window | Save as Bitmap...

This option allows you to save a window as a Windows bitmap (BMP).

Window | Print...

Shortcut : Ctrl+P 

This option allows you to print a window. The print will always be in wireframe mode.

Window | Print Preview

This option allows you to preview how a window will be printed.

Display Mode Menu

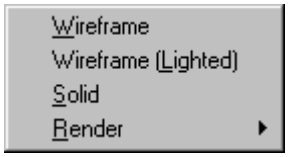

Figure 39: Display mode menu

This menu allows you to select the display mode of a window. If gives you a range of representations of a scene.

Display Mode | Wireframe

This option will show the scene in wireframe mode. This will show your objects and spots as solid lines.

Display Mode | Wireframe (Lighted)

This option will show the scene in lighted wireframe mode. This will show your objects and spots as lines, which are shaded by using a light source.

Display Mode | Solid

This option will show the scene in solid mode. This will show your objects and spots as solid, shaded objects.

Display Mode | Render

Figure 40: Render menu

This menu will only be available in a 3D window. It allows you to realistic render your scene, taking into account lighting, reflection, shadows, smoke etc.

Display Mode | Render | Start

The start option will start the rendering of the scene (see page 4).

Display Mode | Render | Hold

The Hold option will temporarily stop rendering the window. This might be useful if you are rendering a complex scene. By setting the rendering on hold, you get more time to do other things (in this application or another). This option is only available if you are currently rendering in the window.

Display Mode | Render | Resume

The Resume option will resume rendering a window, which was previously stopped by using the Hold option. This option is only available if the window is currently in a 'hold rendering' mode.

Display | Render | Exclusive

The Exclusive option is a special case of the Start option. The exclusive option also will start rendering a window, but if you choose this option, the ShowDesigner application will turn its full attention to the rendering process of the window. This means that nothing else can be done with the ShowDesigner until the rendering process is completed. It can not be stopped! So be very careful to use this option. The only advantage of this way of rendering is that it is faster.

Operation Menu

Figure 41: Operation menu

This menu allows you to start an operation one or more objects and/or spots.

Operation | Move

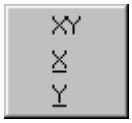

Figure 42: Operation, Move menu

The Move operations allow you to interactively manipulate the position horizontally and/or vertically by moving the mouse.

Operation | Move | XY

This option allows you to move something both horizontally and vertically.

Operation | Move | X

This option allows you to move something only horizontally.

Operation | Move | Y

This option allows you to move something only vertically.

Operation | Rotate

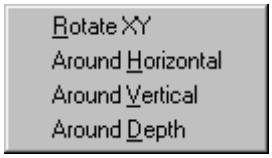

Figure 43: Operation, Rotate menu

The Rotate operations allow you to interactively manipulate the orientation of one or more objects.

Operation | Rotate | Rotate XY

This option allows you to rotate something around both the horizontal and vertical axis.

Operation | Rotate | Around Horizontal

This option allows you to rotate something around the horizontal axis.

Operation | Rotate | Around Vertical

This option allows you to rotate something around the vertical axis.

Operation | Rotate | Around Depth

This option allows you to rotate something around the depth axis.

Operation | Scale

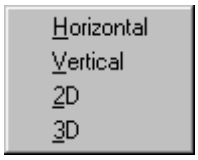

Figure 44: Operation, Scale menu

The Scale operations allow you to interactively manipulate the size of one or more objects.

Operation | Scale | Horizontal

This option allows you to scale something horizontally.

Operation | Scale | Vertical

This option allows you to scale something vertically.

Operation | Scale | 2D

This option allows you to scale something horizontally and vertically.

Operation | Scale | 3D

This option allows you to scale something uniformly by scaling the whole object by the same amount.

Operation | Replace Spot...

This option allows you to replace a spot by another spot. The spot will have the same position, patch address and focus point. Other settings will be read back from DMX.

Operation | Align Chain

This option allows you to align two or more selected objects in a chain like way. The selection order for this align operation is very important. The object that is first selected will stay where it is, so you first have to make sure that this objects is in the right place. The second selected object will be aligned to the first one, the third selected object to the second and so on. There are several ways that two objects can be aligned. The one that will be used is the same as the one that is default calculated for a normal align operation (see the next menu option ‘Align…’ for more information on the different align possibilities.)

Operation | Align...

This option allows you to align one or more selected object(s) to the active (picked) object. When you select this option, a dialog will appear.

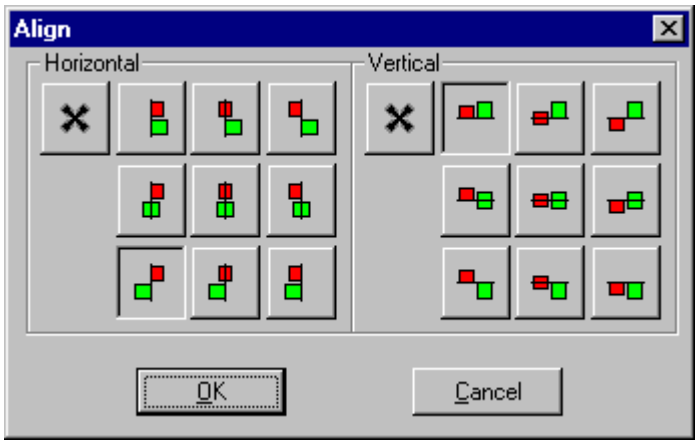

Figure 45: Align dialog

In this dialog, the green square represents the selected object(s), and the red square the active object. The 'Align' operation will not move the active (picked) object. It will align the selected object(s) to the active object. You can align the objects horizontally and/or vertically. Horizontally you can align the left, center and right. Vertically you can align the top, center and bottom. Default, the program will make a guess how you want to align the objects. It does this by comparing the distances between the active object and the first selected object. Horizontally, it will compare the distances left-left, left-center, left-right, center-left, center-center, center-right, right-left, right-center and right-right, and chooses the minimal distance. It does this again for the vertical alignment. These default horizontal and vertical alignments are visible as the two pushed down buttons. You can always select another (or no) alignment by pushing down the desired alignment button.

Example:
Say you have a scene with a truss hanging 2 meters of the floor. You roughly place 4 spots hanging below the truss. You can now select the spots and then pick the truss. When you now select the 'Align' operation, and push down the  button for no horizontal alignment, and the  button for vertical alignment, it will snap the top of all the selected spots to the bottom of the active truss.

Operation | Group

This option allows you to group the selected objects and/or spots together. The resulting object can be treated as a single object form then on. Such a group can always be split again by picking it and selecting the 'Ungroup' operation.

Operation | Ungroup

This option allows you to split a group into its components. Each component will be added to the selection.

Camera Menu

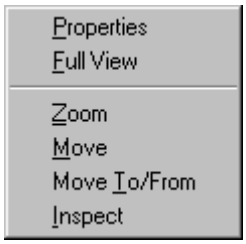

Figure 46: Camera menu

This menu allows you to manipulate the camera or a window.

Camera | Properties

For information on the camera properties, see Figure 8 and Figure 9 in ‘Window types’ starting on page 5.

Camera | Full View

This option will try to adjust the camera so that the entire scene will be visible.

Camera | Zoom

This option allows you to interactively zoom in/out. In 2D windows, the scale will change and in 3D windows, it will be the camera angle that changes.

Camera | Move

This option allows you to look around with the camera. In 2D windows, you can move around then view plane and in 3D windows, you can look around by tilting the camera from left to right and from top to bottom.

Camera | Move To/From

This option allows you to move the camera to and from. In 2D windows, this does the same as the ‘Zoom’ operation. In 3D windows, the camera is moved forwards or backwards.

Camera | Inspect

This option allows you to inspect an object by moving the camera around a point. In 2D windows this can only be done if you have an active (picked) object. The camera will move around the center of the object. In 3D windows the camera will move around the center of an active object if there is an active object, otherwise the camera will move around the focus point of the camera.

DMX Menu

Figure 47: DMX menu

You will use the entries in this menu to select and setup a DMX driver and to change DMX input/output options.

DMX | Follow

The follow option will turn on/off the follow mode. If the follow is active, The program will be sampling the incoming DMX and update the stage settings accordingly, until you turn the follow mode off.

DMX | Snapshot

The Snapshot option will sample the incoming DMX once and update the stage settings accordingly.

DMX | Setup Driver...

This option allows you to change the settings of the current driver. What kind of settings, if any, are available depends on the active DMX driver.

DMX | Select Driver...

This option allows you to select which of the installed DMX drivers you want to use. If you select another driver, it will be used the next time you run the program. In other words, you have to exit and restart the program to have the change of DMX driver take effect.

Settings Menu

Figure 48: Settings menu

This menu allows you to adjust the programs appearance and preferences.

Settings | Main Background

This option allows you to change the appearance of the background of the main application window.

Settings | Window color

This option allows you to change the background color of the 2D-and 3D windows.

Settings | Preferences

In the preferences dialog you can set your preferences. Some are local (apply only to the Martin ShowDesigner), some are global (they may apply to all Martin ShowDesigner modules). The preferences are arranged into groups, with each it's own tab (page). Each tab (Units, Grid, Detail, Render Settings, Auto Save and Paths) will be explained below.

Units tab

The units tab contains global preferences.

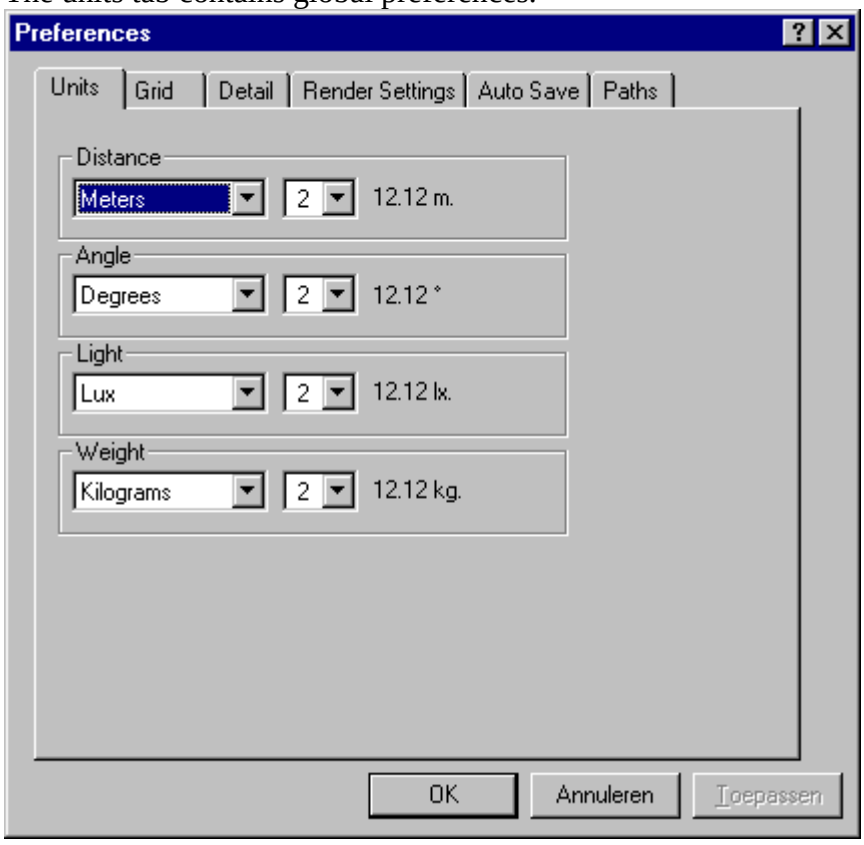

Figure 49: Units tab

In the Units tab, you can select which units the applications should use:

- Distance: Meters, Millimeters, Inches or Feet & Inches.
- Angle: Degrees (360°), Radials (2π) or Gradients (400°).
- Light: Lux or Foot-candle.
- Weight: Grams, Kilograms or Pounds.

Grid tab

The grid tab contains local preferences.

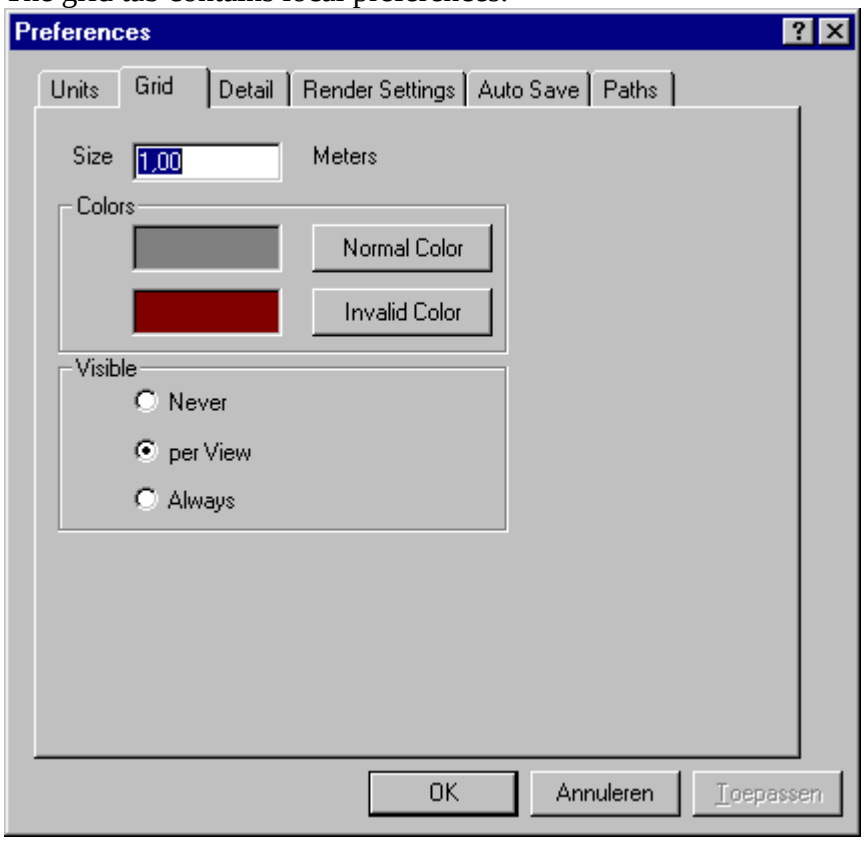

Figure 50: Grid tab

In the Grid tab, you specify the grid settings for 2D windows.
You can specify how far apart the grid lines should be (in the example every meter).
The color of the grid is selected by pressing the 'Normal Color' button. If you zoom out in a window, the grid lines could become to close together. The grid size is then automatically adjusted (temporarily). So if you zoom out, the grid size will go from 1 meter to 10, 100, 1000 etc. meters. To inform you that the grid size is not the specified grid size, the color of the grid will become the 'Invalid Color'.
In the 'Visible' section of the grid tab, you can specify if the grid should be OFF for all windows (Never), if the grid should be ON for all windows (Always), or that you can specify for each window whether or not the grid is on (per View).

Detail tab

The detail tab contains local preferences.

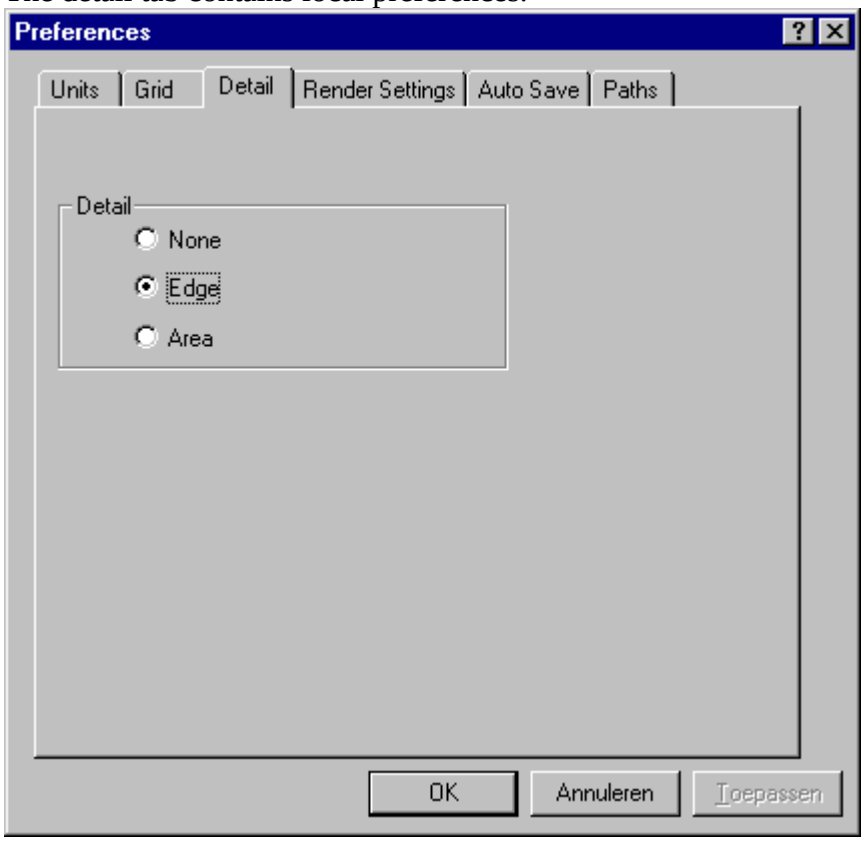

Figure 51: Detail tab

In the Detail tab, you can specify the detail level of objects.

Render Settings tab

The render settings tab contains local preferences.

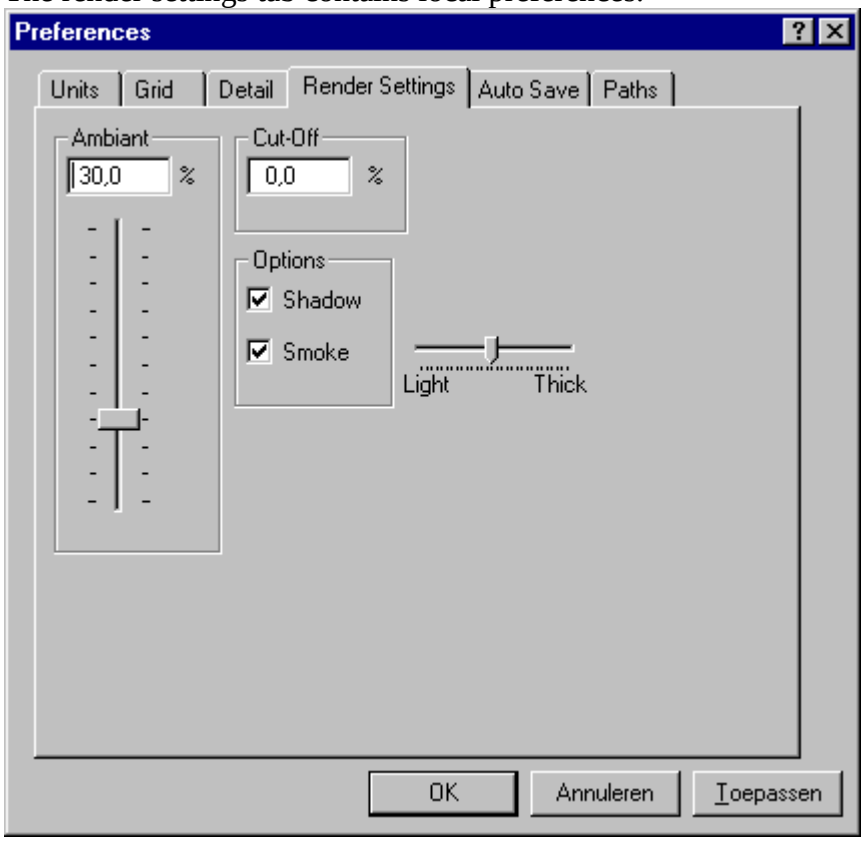

Figure 52: Render Settings tab

In the Render Settings tab, you specify the default render settings for rendering in 3D windows.

- Ambient: Here you can set the amount of ambient light to use in a rendering.
- Cut-Off: During rendering, the light of a spotlight is ignored if its fader if below the Cut-Off value (which means that the light of a spot with a low fadersetting is not used for the rendering).
- Options: Set default options for the render process. If smoke is enabled, you can select a smoke level.

Auto Save tab

The detail tab contains local preferences.

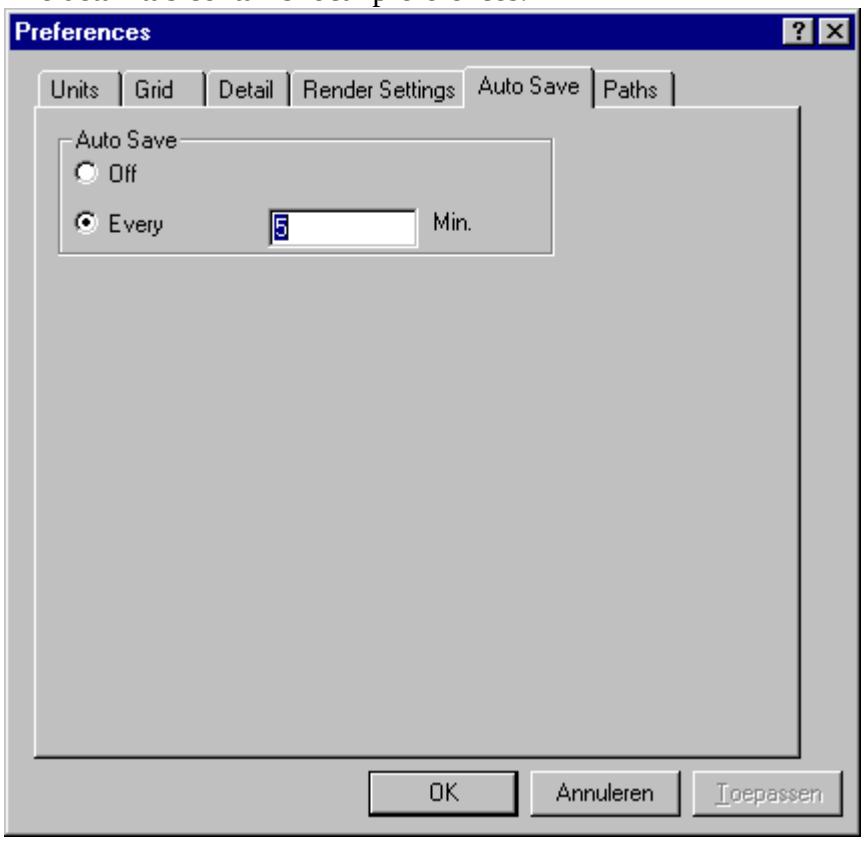

Figure 53: Auto Save tab

In the Auto Save tab, you specify if you want the program to automatically save your scene, and if so, how often.
The autosave will save the scene in the 'Other' directory (If you installed MSD in 'C:\Program Files\MSD4', it will be the 'C:\Program Files\MSD4\Other' directory).
The temporary file will look something like 'Backup 15-Oct-98 15_43_18.scn', which means its a Scene backup, created at 15:43 on October the 15th 1998.

Paths tab

The Paths tab contains global preferences.

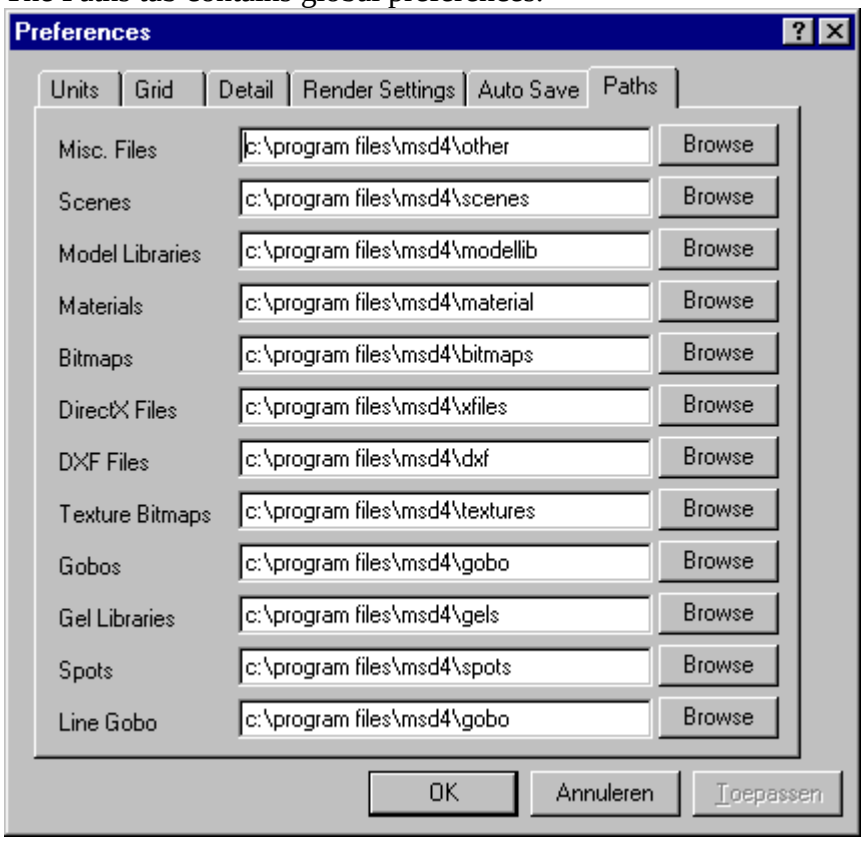

Figure 54: Paths tab

In the Paths tab, the default paths to the different kind of files are set. By default they point to the installed subdirectories. Normally you don't have to change any of them.

Settings | Store layout

This option allows you to save the layout of the program. It will store positions and sizes of the application windows, the 2D and 3D windows, and the lists (Object, Spot, Material and Cue).

Settings | Restore layout

This option allows you to restore the layout of the program by loading the saved settings.

Tool bar

The following table shows all the buttons that are in the toolbars. In the first column the button is shown and in the second column the menu name where the '|' indicates a submenu

	File | New
	File | Open
	File | Save
	Edit | Delete
	Window | Print
	File | About ShowDesigner
	Operations | Beam Hidden
	Edit | Lightmode
	Edit | Insert
	Edit | Duplicate
	Edit | Duplicate Multiple
	Edit | Insert Spot
	Operations | Beam | Move
	Operations | Beam | Focus
	Operations | Move | XY
	Operations | Move | X
	Operations | Move | Y
	Operations | Scale | 2D
	Operations | Scale | Horizontal
	Operations | Scale | Vertical
	Operations | Scale | 3D
	Operations | Rotate | Around Horizontal
	Operations | Rotate | Around Vertical
	Operations | Rotate | Around Depth
	Operations | Group
	Operations | Ungroup

	Camera | Zoom
	Camera | Move
	Camera | Move To/From
	Camera | Inspect

Table 3 : Toolbar buttons

Reference

Figure List

Table List