
# Introduction to Layout Control with JMRI/PanelPro

Dick Bronson - RR-CirKits, Inc.

Further Clinics in this series:

- Add Signals to your Layout with JMRI/PanelPro

  10:00 PM, Sunday, July 13th
- Create a Detailed CTC Machine Model with JMRI/PanelPro

  10:00 PM, Monday, July 14th
- Introduction to Layout Control with JMRI/PanelPro

  Repeated 4:00 PM, Friday, July 18th

## Setting the PanelPro Preferences

Setup your hardware according to the information found in the JMRI Help pages. Select 'Help' – 'General Help...' then navigate down to 'DecoderPro' – 'DecoderPro Manual' – 'Getting Started' – 'Setting Preferences'. On the web go to:
http://jmri.sourceforge.net/help/en/DecoderProManual/Getting_Started.shtml#Start

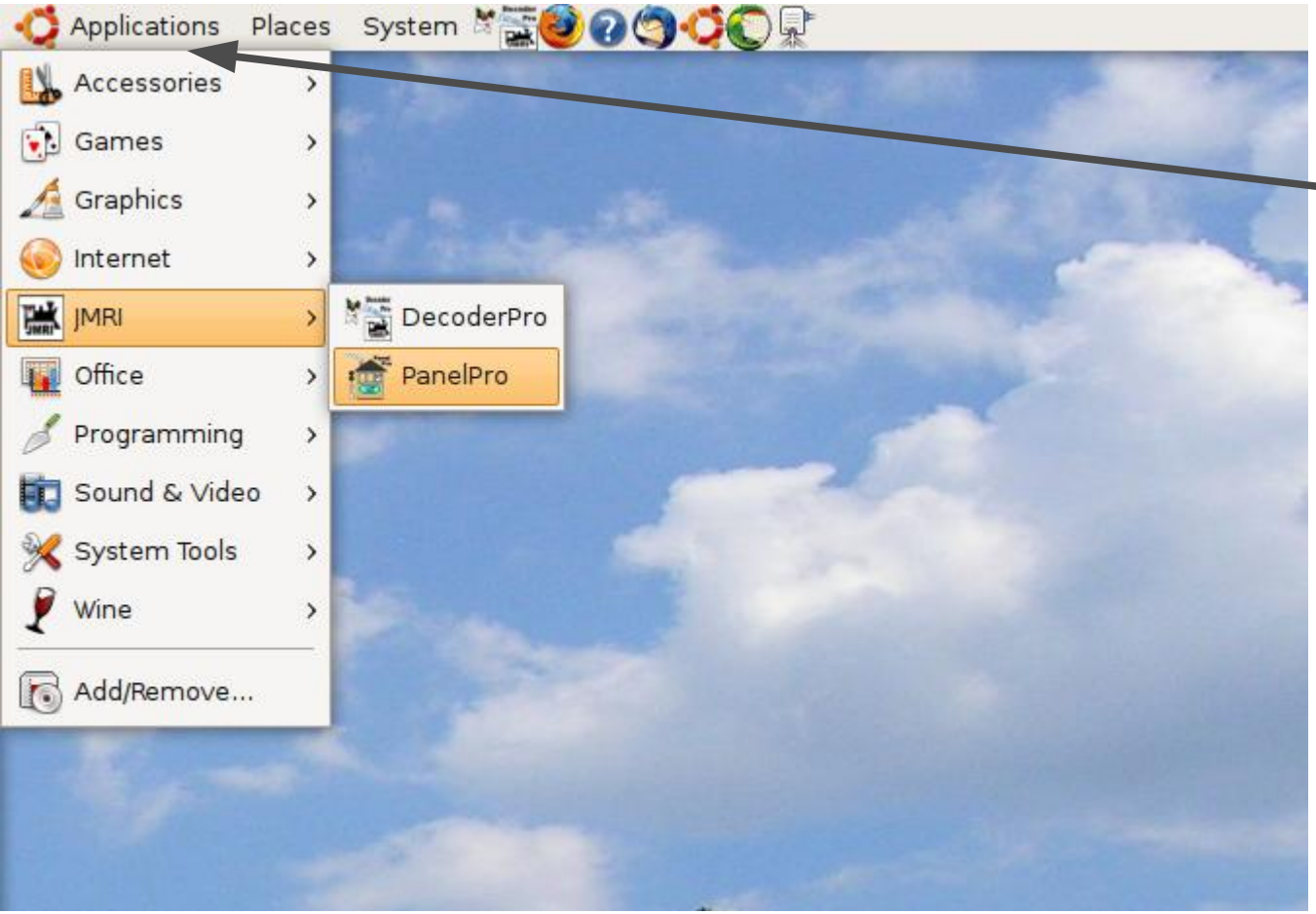
## Note:

The setup options for PanelPro are saved in their own startup file, distinct from those in DecoderPro. Normally you will use the same settings for both DecoderPro and PanelPro.

Be sure to not try and run both PanelPro and DecoderPro at the same time. They are essentially the same program, so you have the full capabilities of each no matter how you run it.

# Getting Started

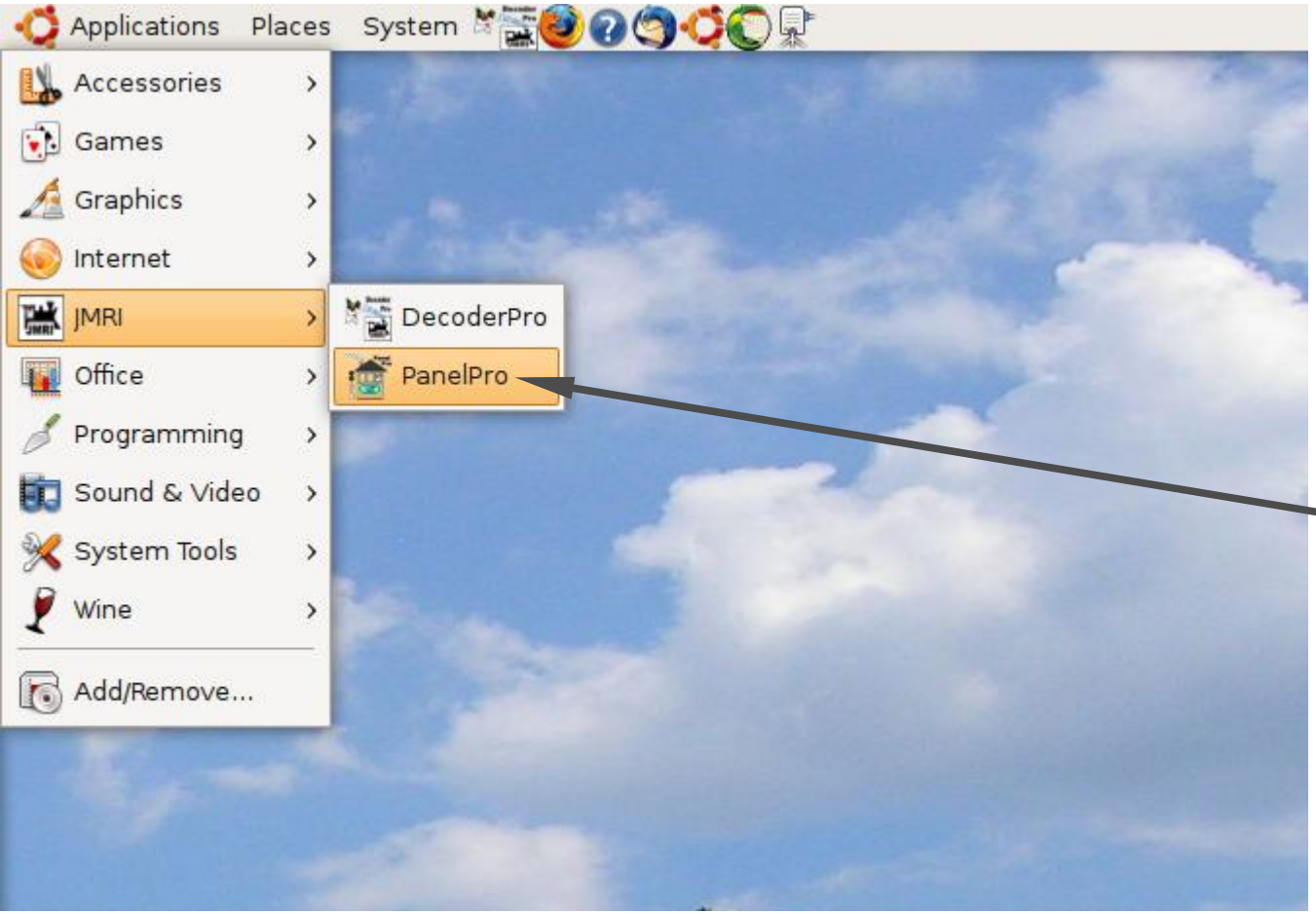
## Starting the Program




- Use your own operating systems method for starting the program. In this demo we are running with Ubuntu Linux.

# Getting Started

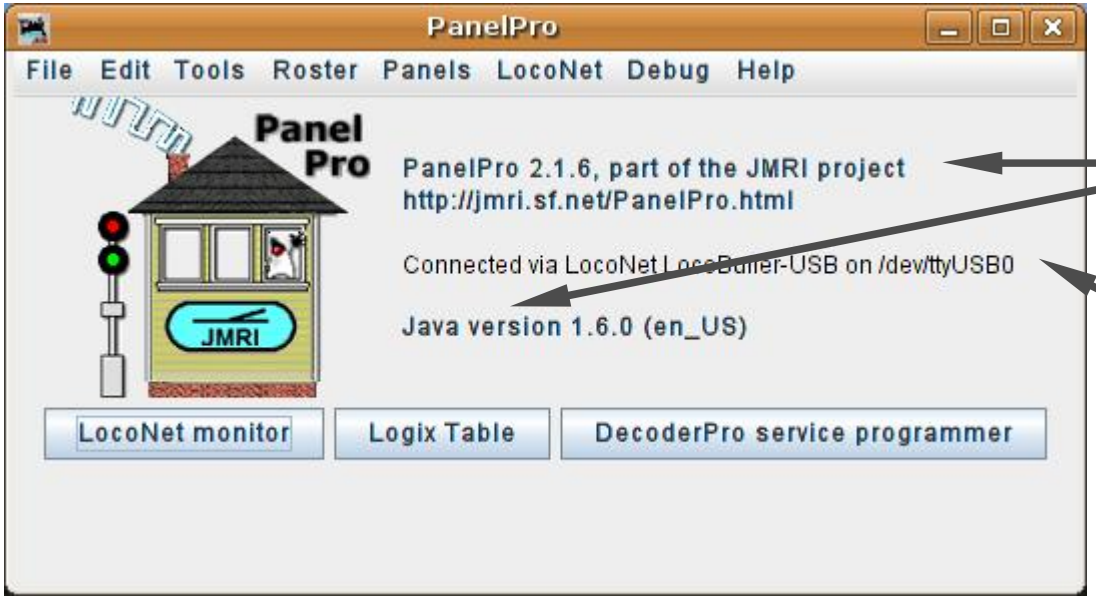
## Starting the Program




- Use your own operating systems method for starting the program. In this demo we are running with Ubuntu Linux.
- Select the desired startup icon and double click.

# Getting Started

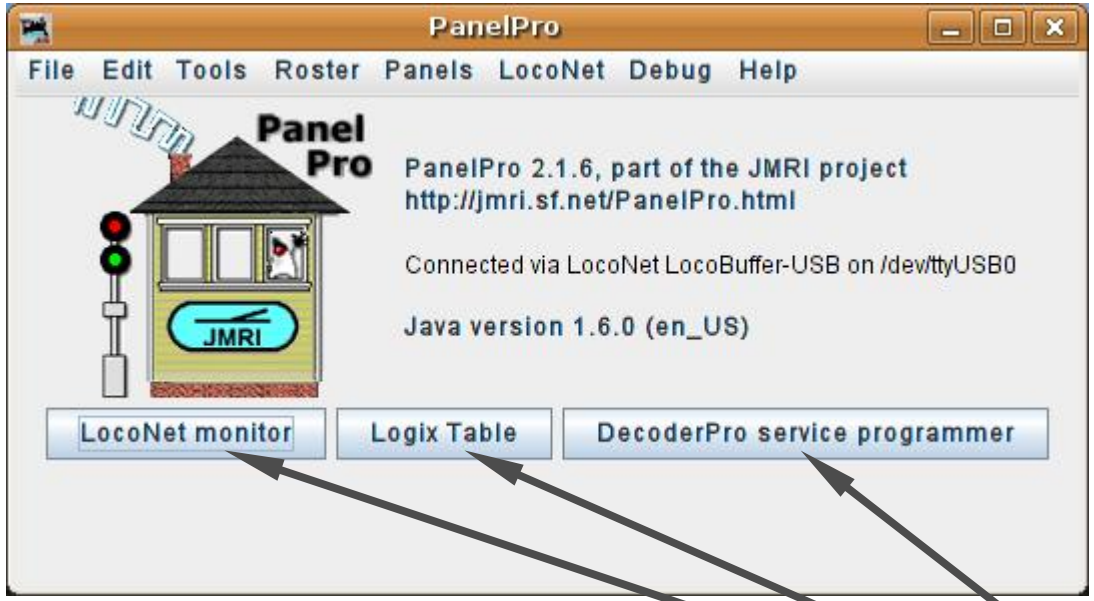
## Useful Information




- The initial PanelPro window includes information about the version numbers of JMRI, Java, and also information about the computer interface. Include this information as well as your computer's operating system type in any support requests.

# Getting Started

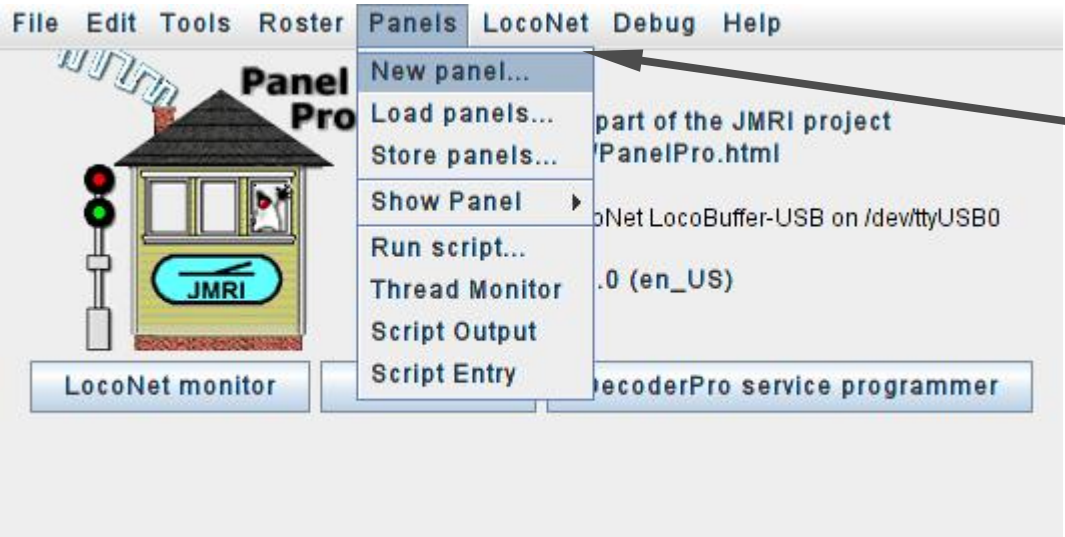
## Useful Information




- The initial PanelPro window includes information about the version numbers of JMRI, Java, and also information about the computer interface. Include this information as well as your computer's operating system type in any support requests.
- I have also added some extra shortcut buttons using the advanced preferences.

# Getting Started

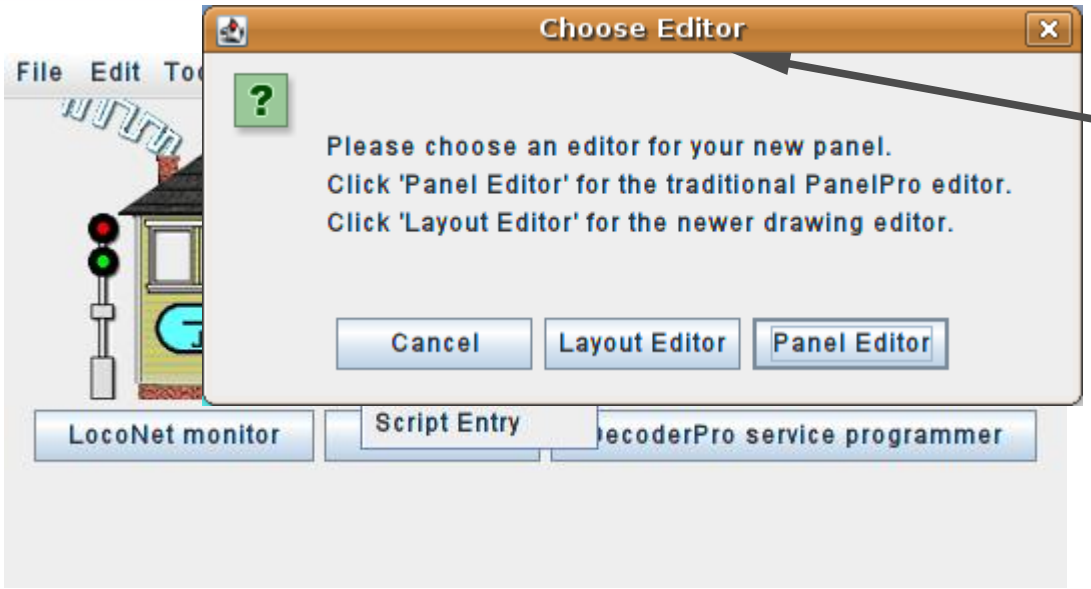
## Opening a new panel




- To get started on building a panel open the 'Panels' drop down list and select 'New Panel'

# Getting Started

## Choose your editor




- This will open a window to select between the 'Layout Editor' and 'Panel Editor'

# Getting Started

## Choose your editor


- This will open a window to select between the 'Layout Editor' and 'Panel Editor'
- The new 'Layout Editor' is a vector based way to create a drawing that follows your layout plan and which auto captures much of the information required for Simple Signaling.

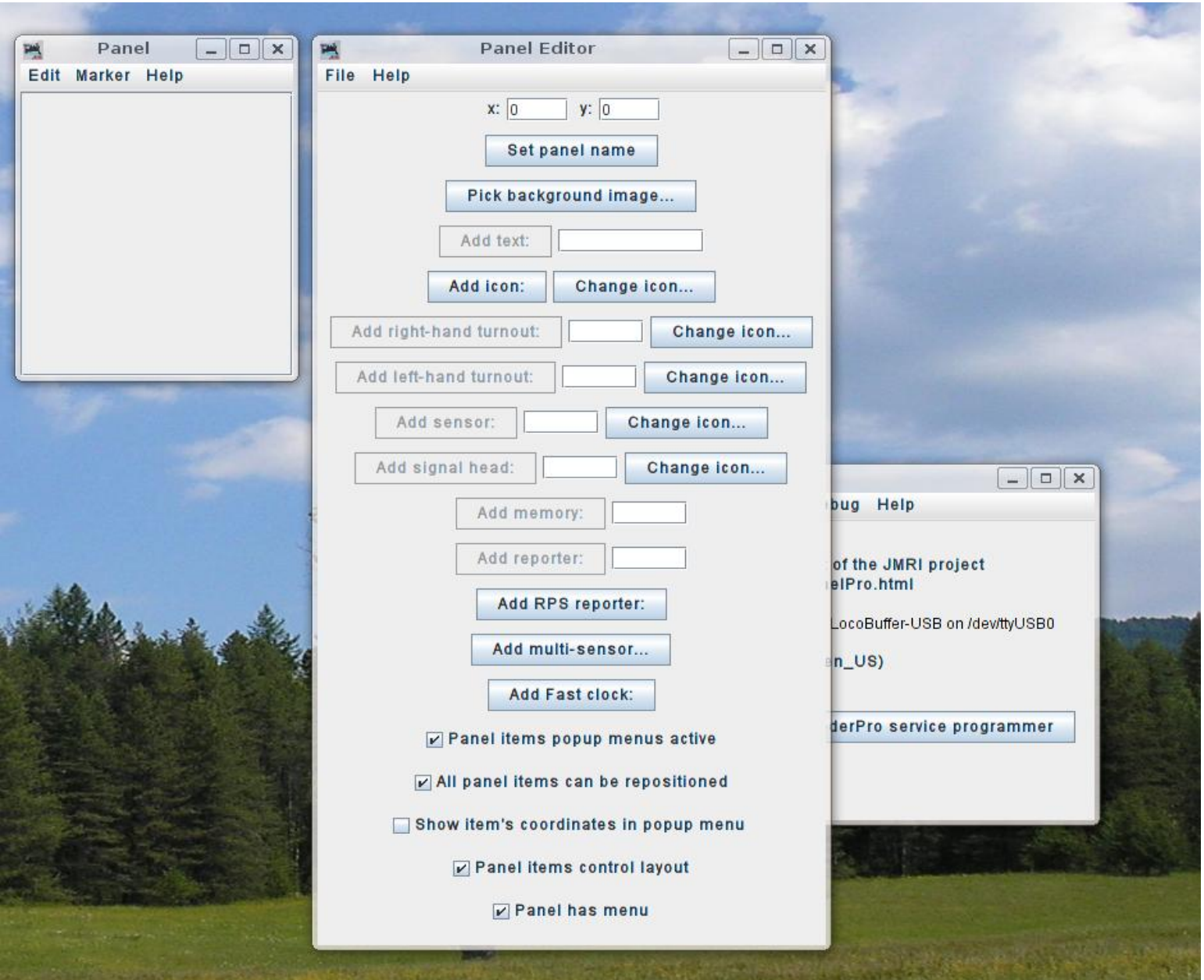
# Getting Started

## Choose your editor


- This will open a window to select between the 'Layout Editor' and 'Panel Editor'
- The new 'Layout Editor' is a vector based way to create a drawing that follows your layout plan and which auto captures much of the information required for Simple Signaling.
- The traditional 'Panel Editor' is a pure graphic based solution that is well suited to making classic CTC panels like we will do in this clinic.

# Getting Started

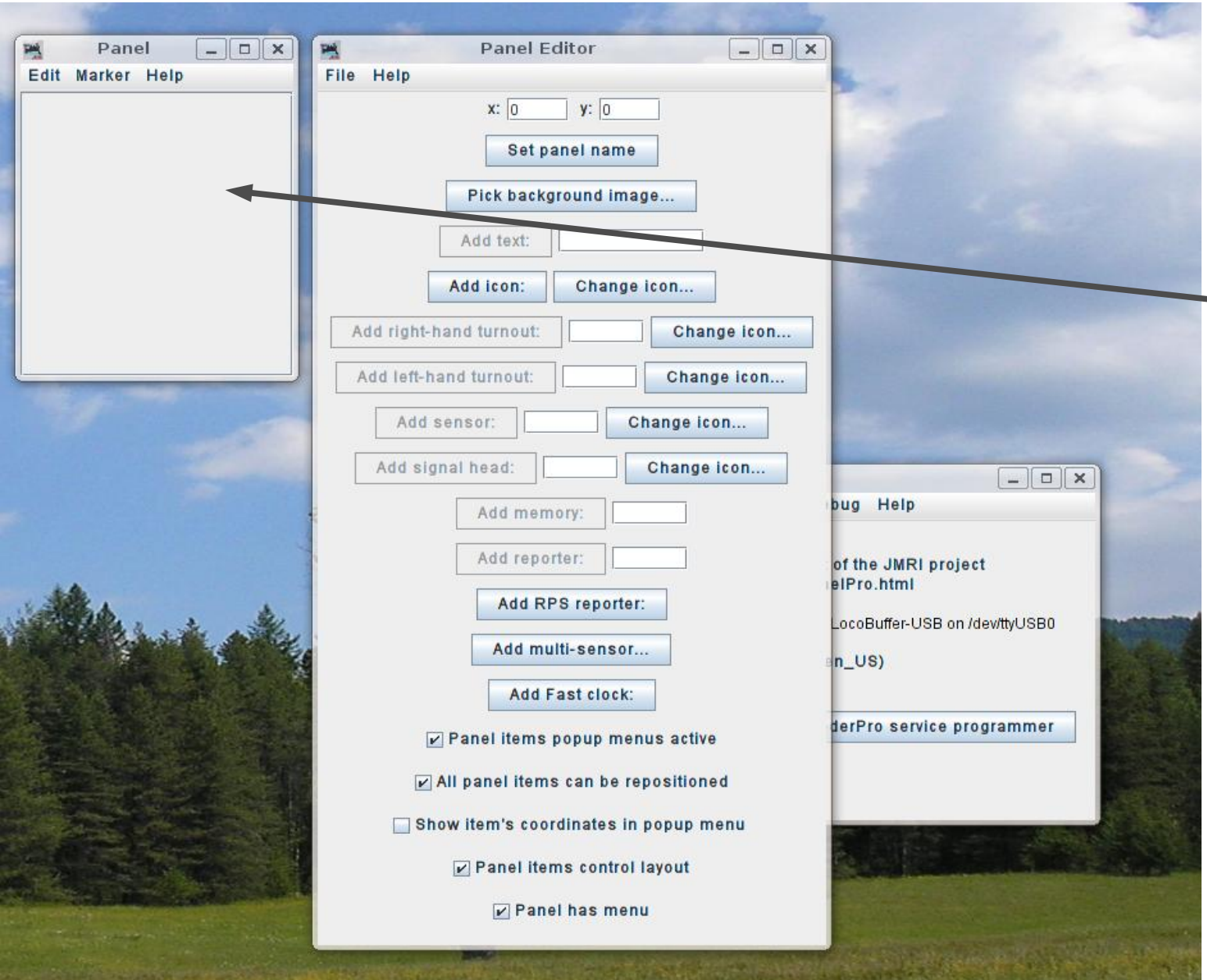
## The new panel




- Clicking on 'Panel Editor' will open two new windows.

# Getting Started

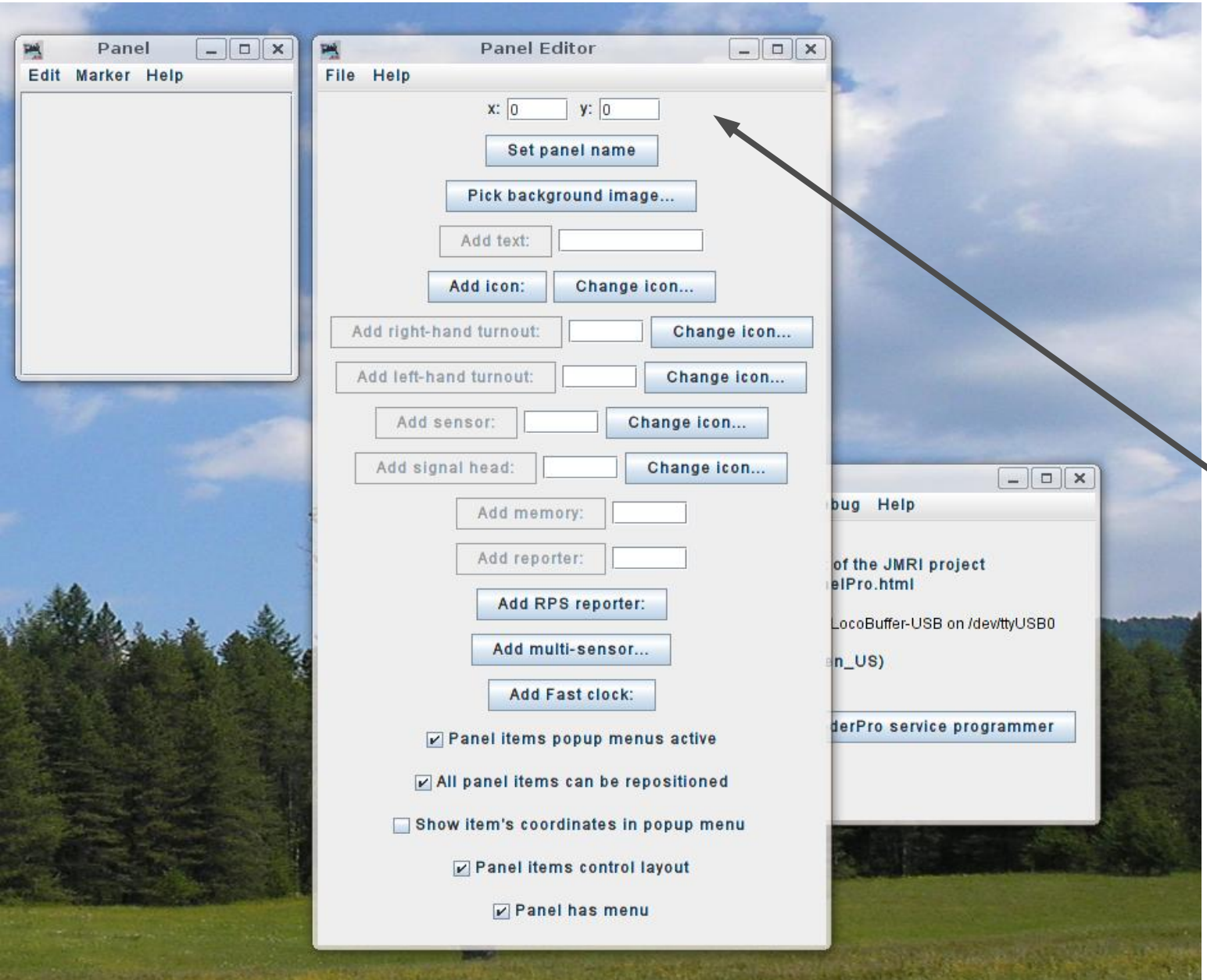
## The new panel




- Clicking on 'Panel Editor' will open two new windows.
- The first is a small window containing a blank panel.

# Getting Started

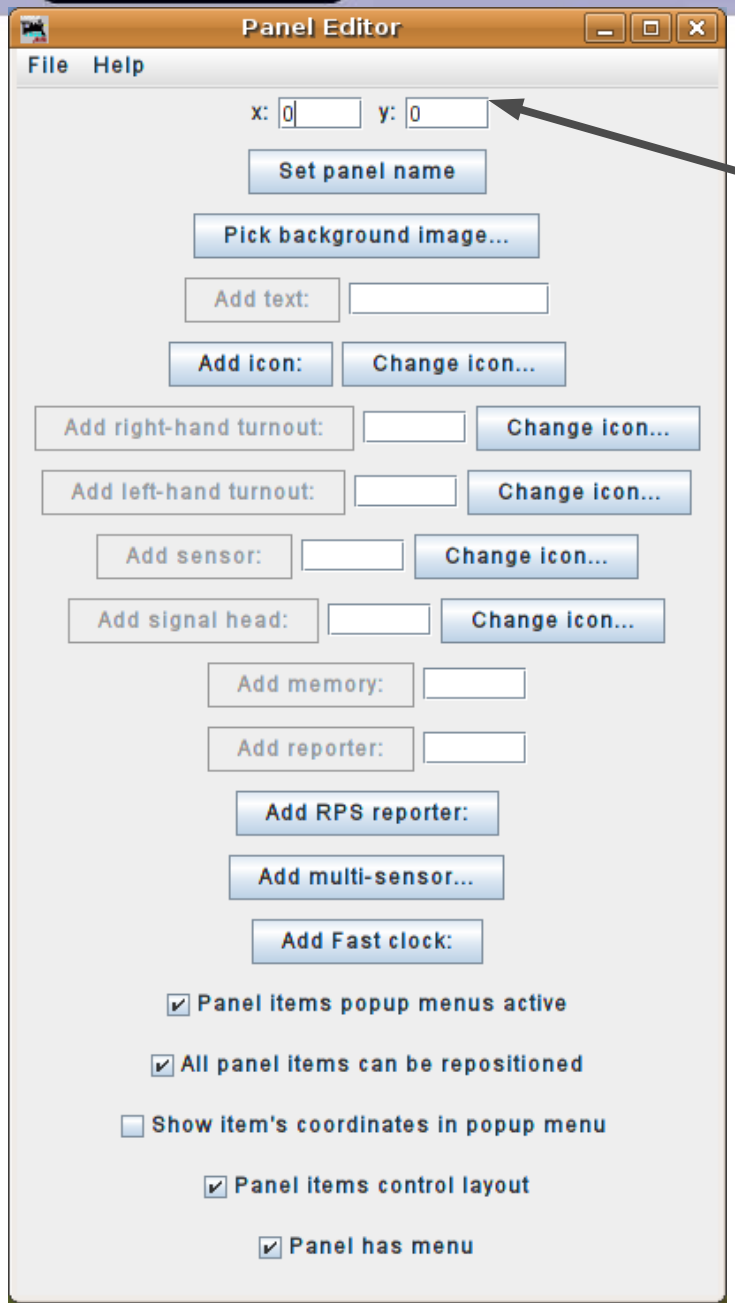
## The new panel




- Clicking on 'Panel Editor' will open two new windows.
- The first is a small window containing a blank panel.
- The second is the Panel Editor itself.

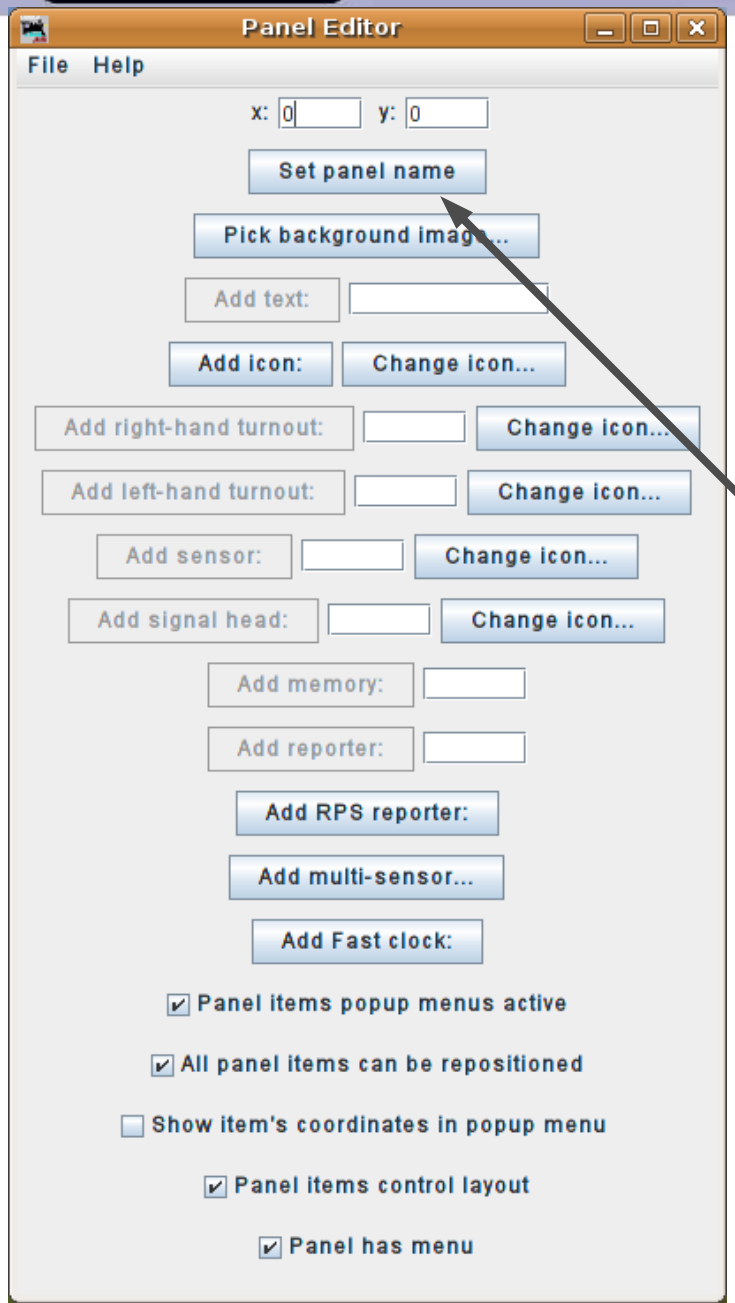
# Panel Editor






## Panel Editor Details

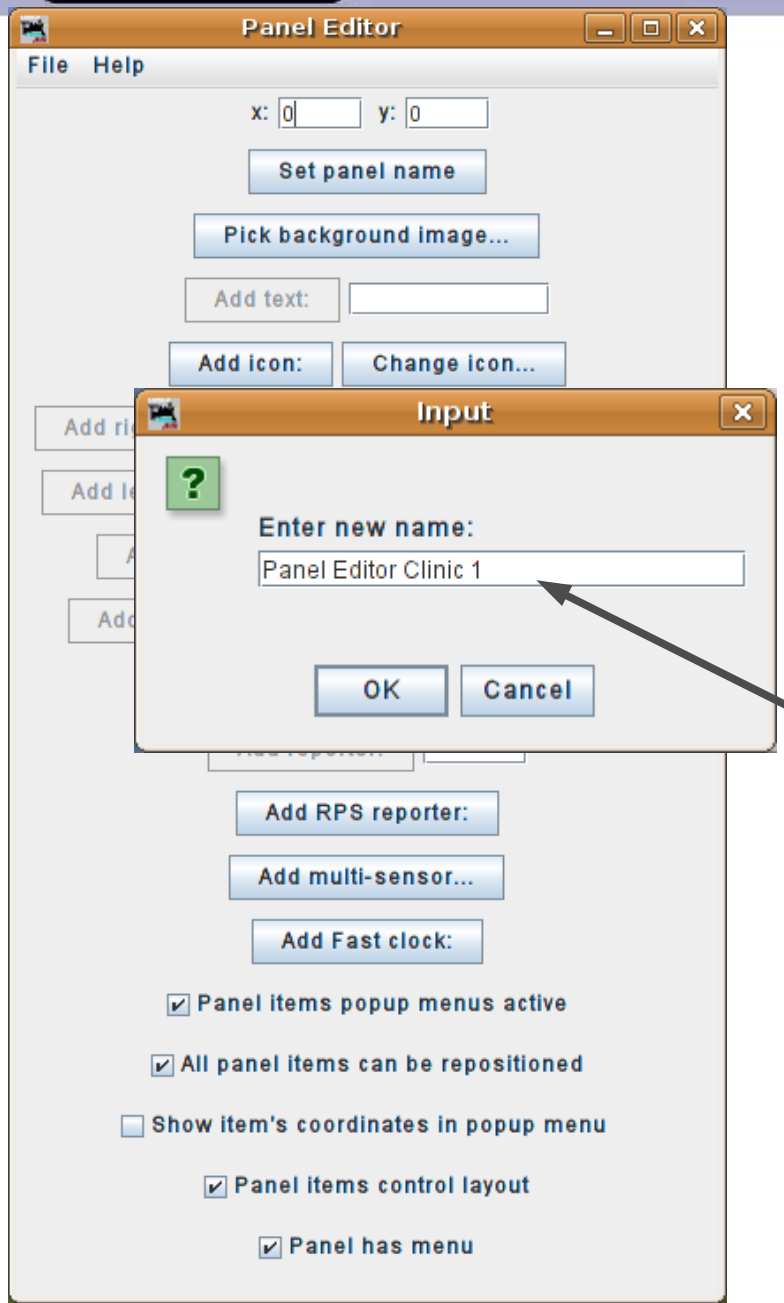
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.



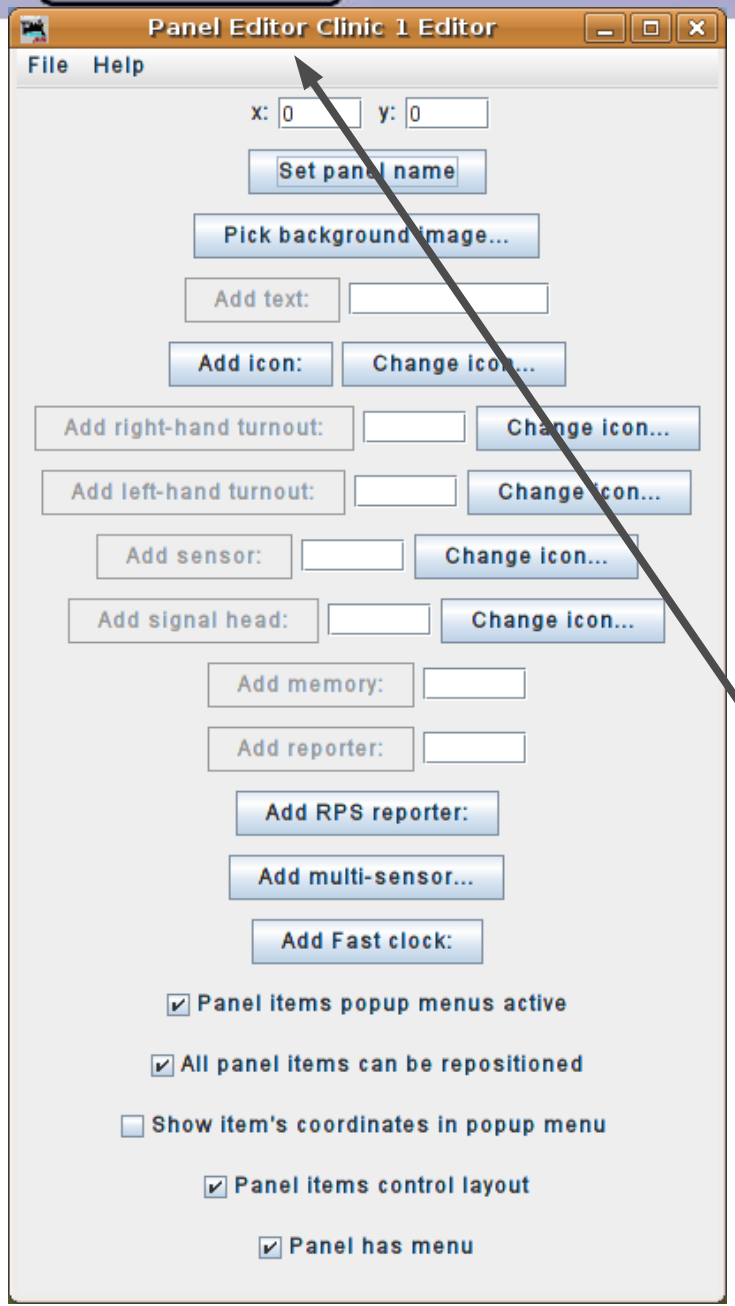

- **Panel Editor Details**
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.
- Click here to name our panel.

# Panel Editor





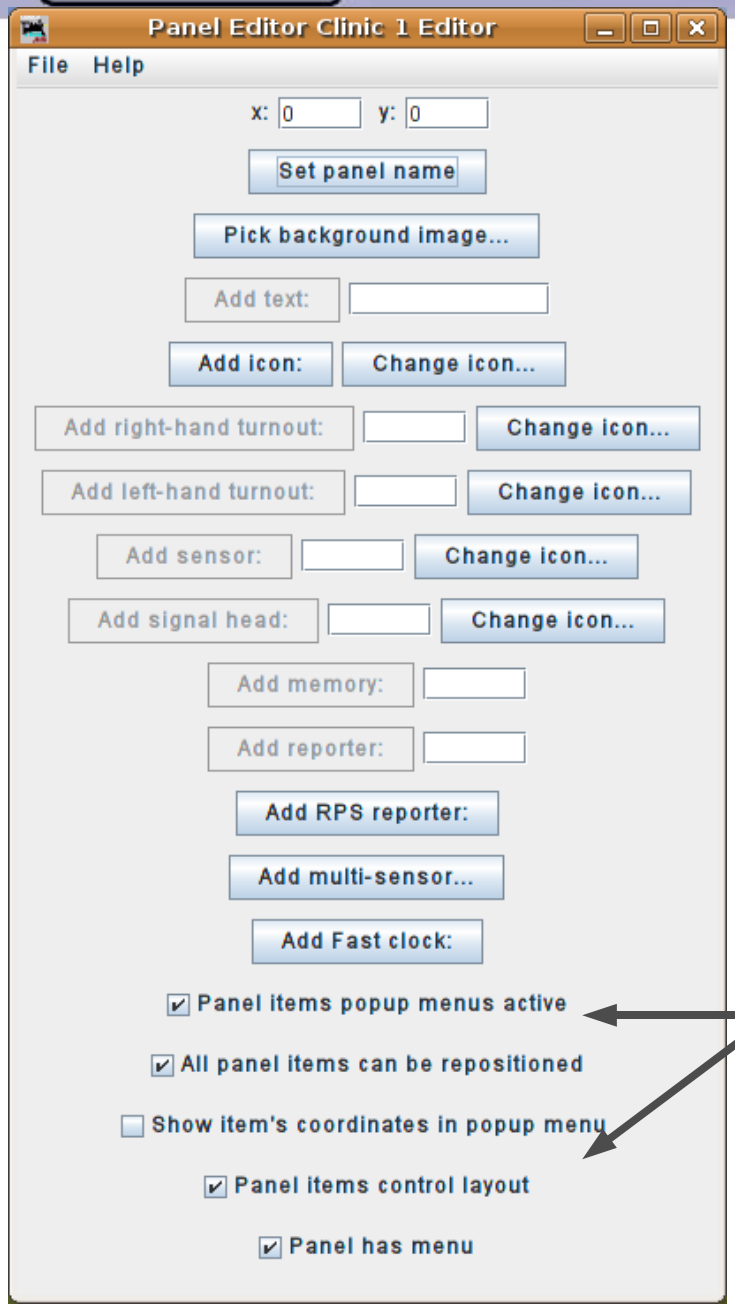

- **Panel Editor Details**
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.
- Click here to name our panel.
- Enter a name for our new panel, then click 'OK'.



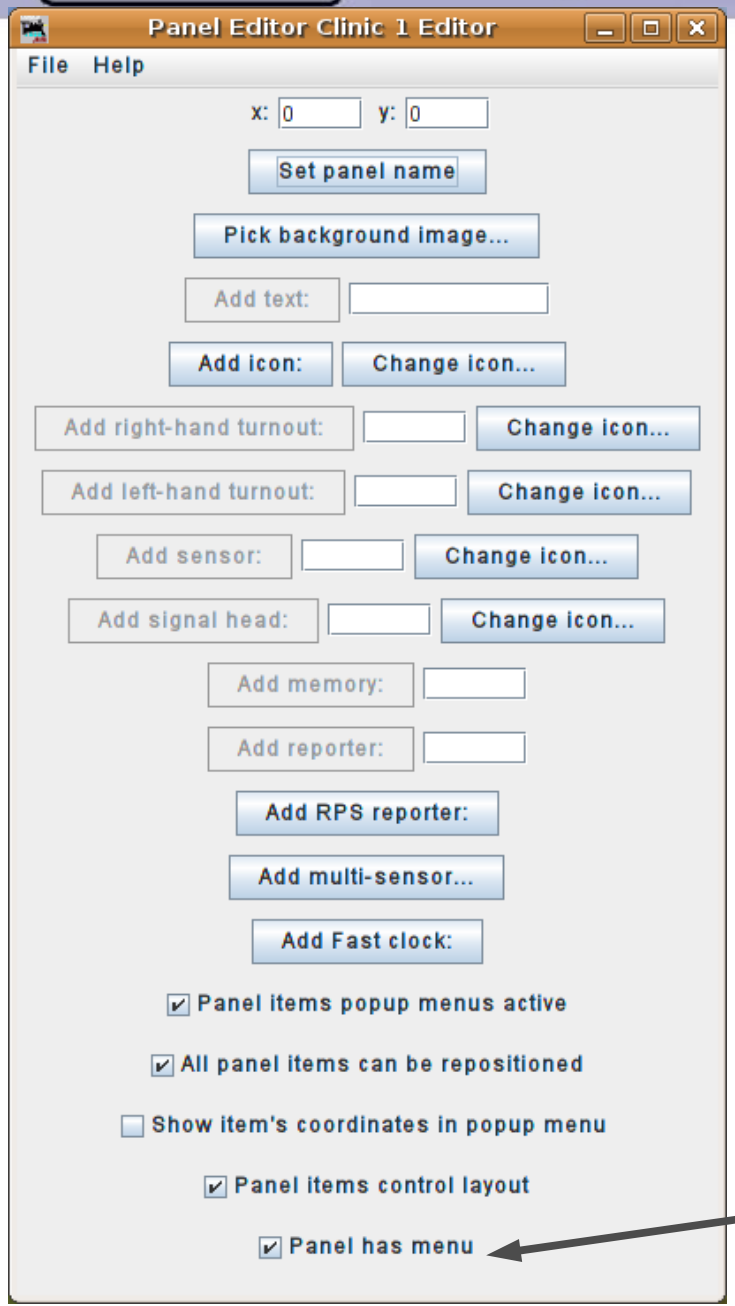

- **Panel Editor Details**
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.
- Click here to name our panel.
- Enter a name for our new panel, then click 'OK'.
- Our new name now shows at the top of the Panel Editor window.

# Panel Editor

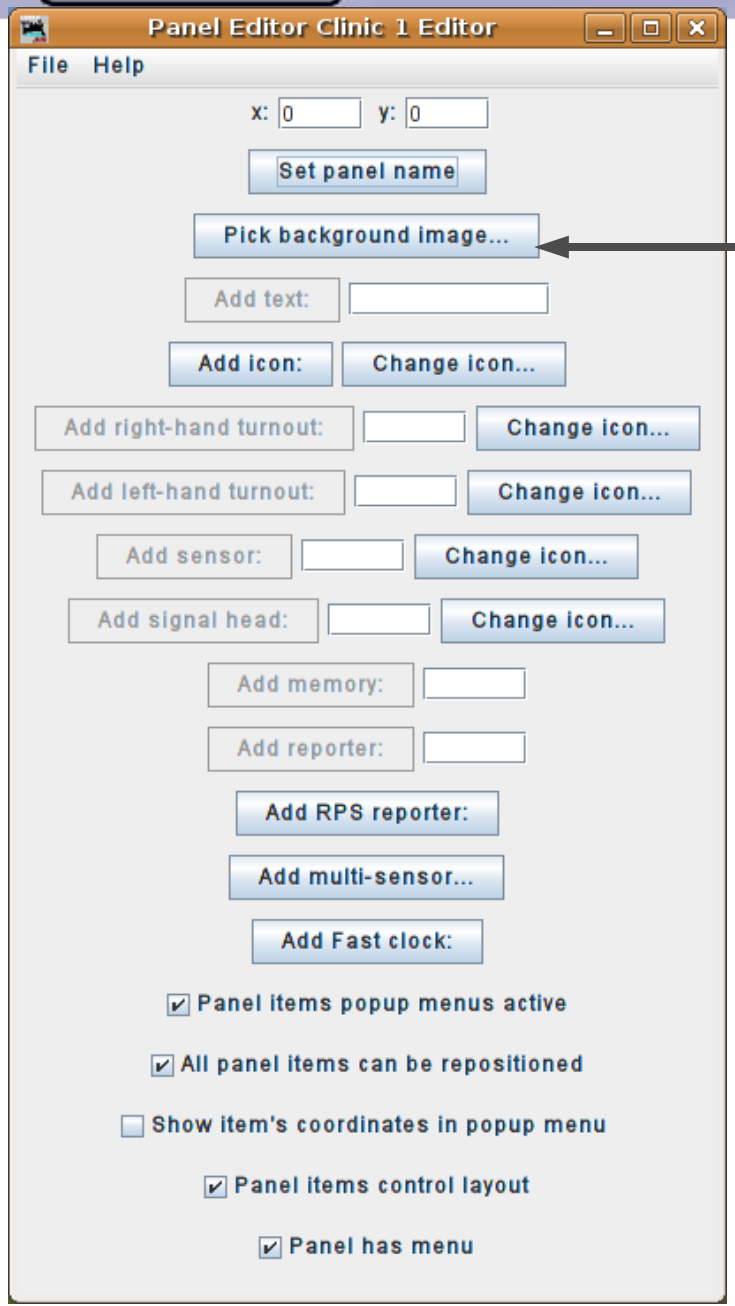
Panel Editor details




- **Panel Editor Details**
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.
- Click here to name our panel.
- Enter a name for our new panel, then click 'OK'.
- Our new name now shows at the top of the Panel Editor window.
- Checkbox options. These 4 check boxes control various behaviors of the individual graphic icons that form the finished panel.



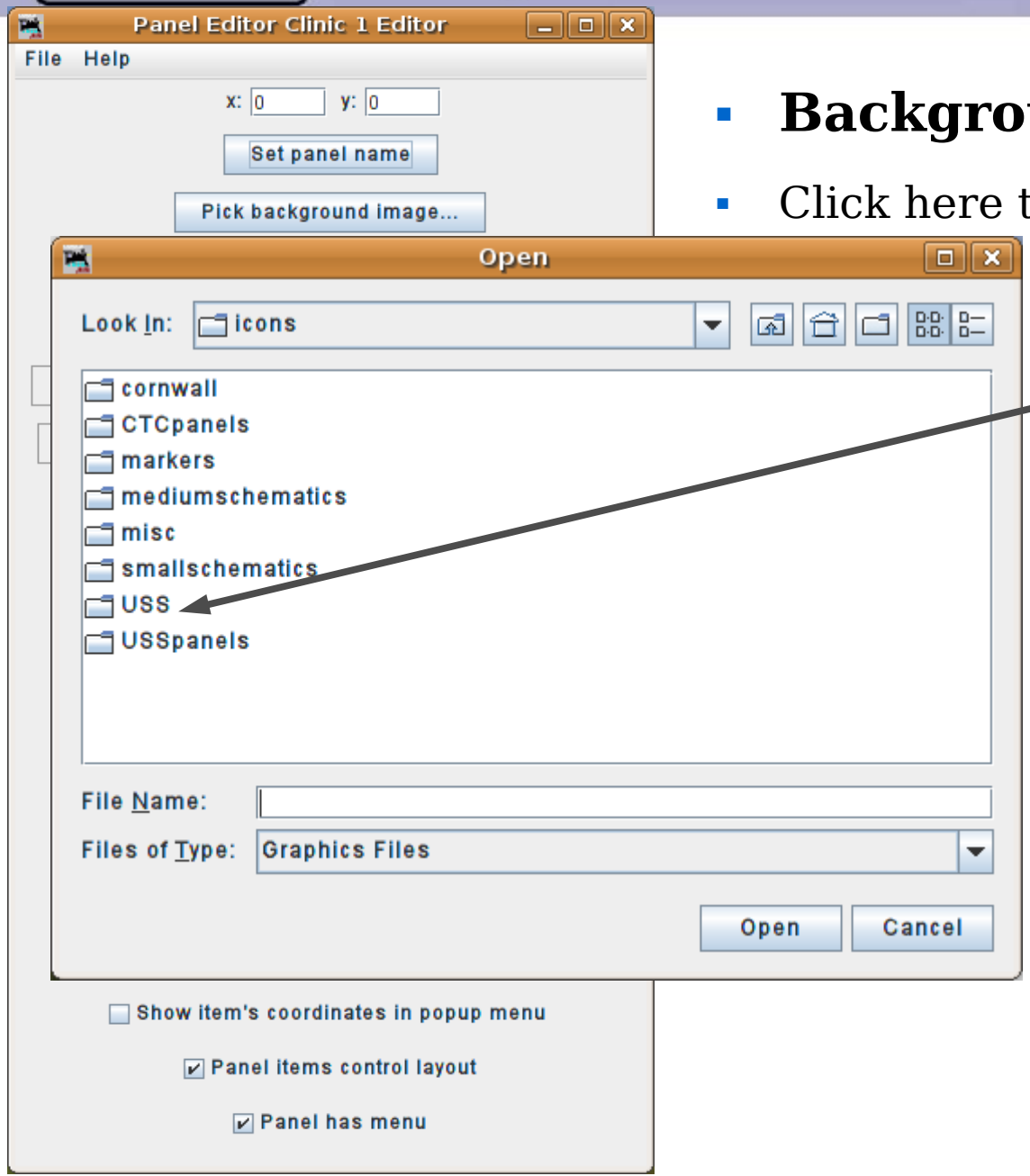

- **Panel Editor Details**
- Coordinates. These coordinates tell the location where graphic objects will appear on the panel. Recent versions default to (0, 0) which is the upper left corner of the panel. Graphic objects are also all referenced to their upper left corners.
- Click here to name our panel.
- Enter a name for our new panel, then click 'OK'.
- Our new name now shows at the top of the Panel Editor window.
- Checkbox options. These 4 check boxes control various behaviors of the individual graphic icons that form the finished panel.
- This checkbox will remove the panel menu itself. Do NOT uncheck this without thinking!




- **Background Images**
- Click here to add a background to our panel.

# Panel Editor

## Background Images

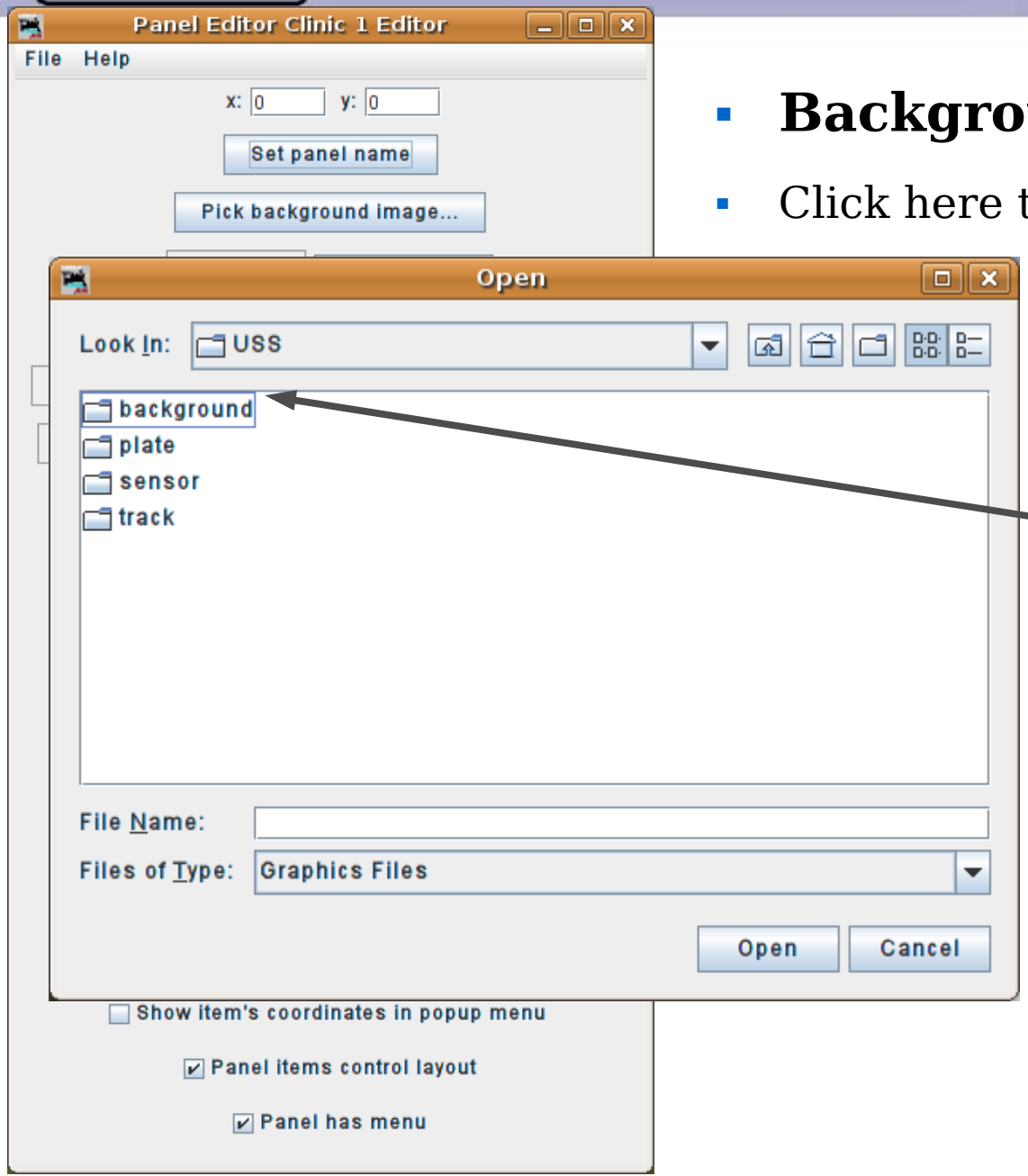



- **Background Images**
- Click here to add a background to our panel.

The icons we will be using are found in the 'USS' folder.

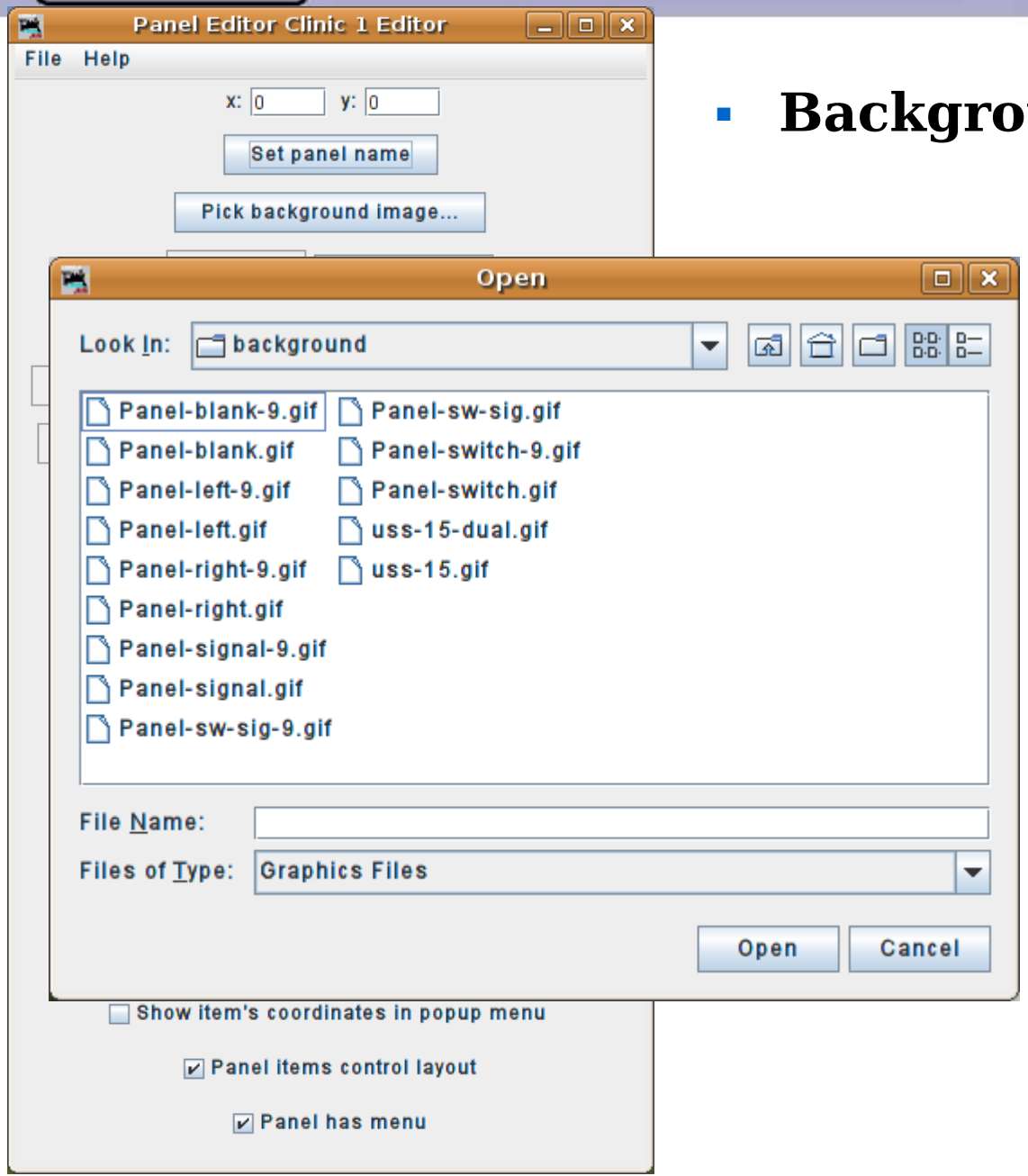
# Panel Editor






- **Background Images**
- Click here to add a background to our panel.

The icons we will be using are found in the 'USS' folder.
In the 'background' sub folder.



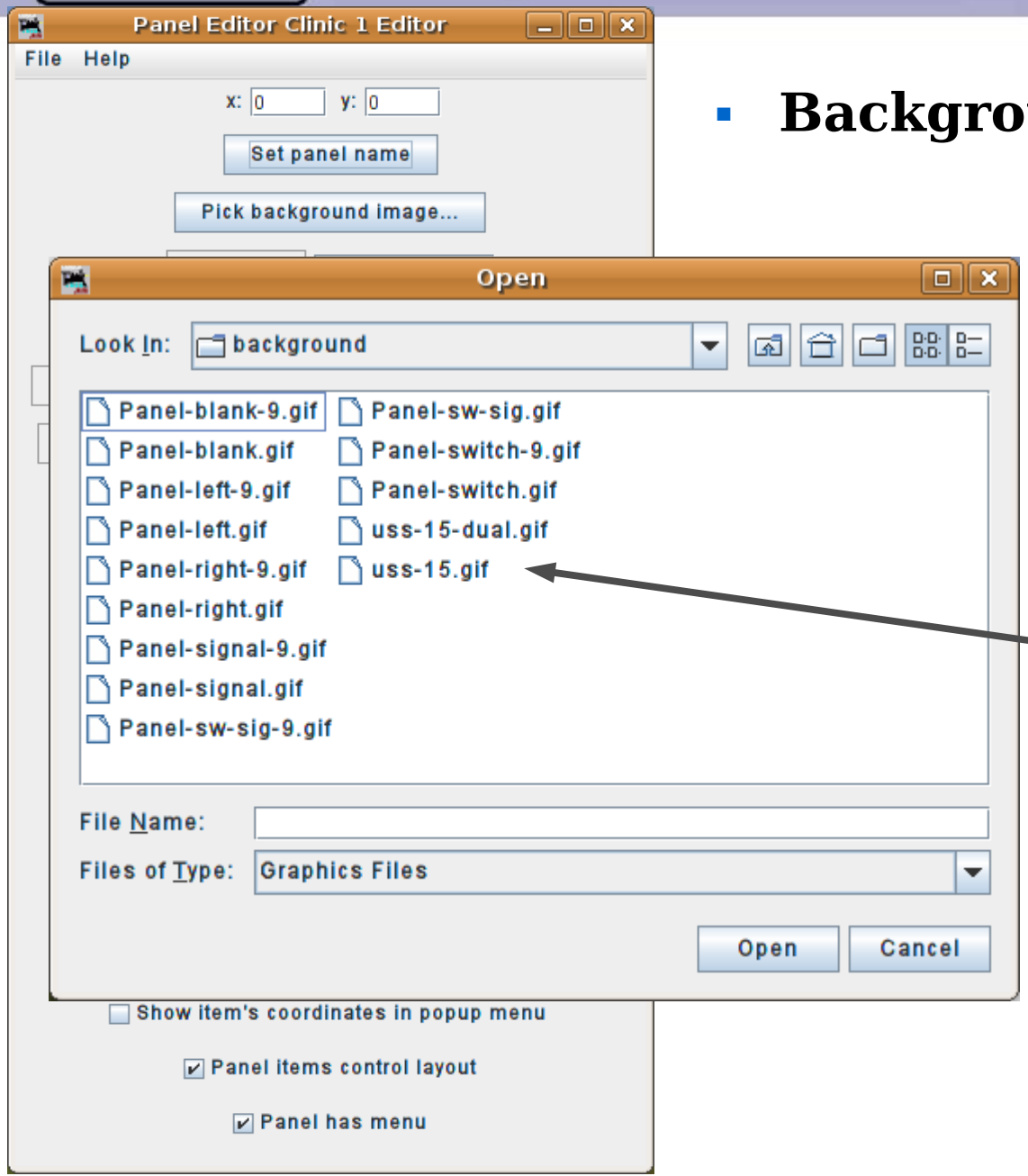

- **Background Images**

There are at least three ways to build a background for our panel.

1. Use a graphic editor and create your own complete panel image including plates.

# Panel Editor

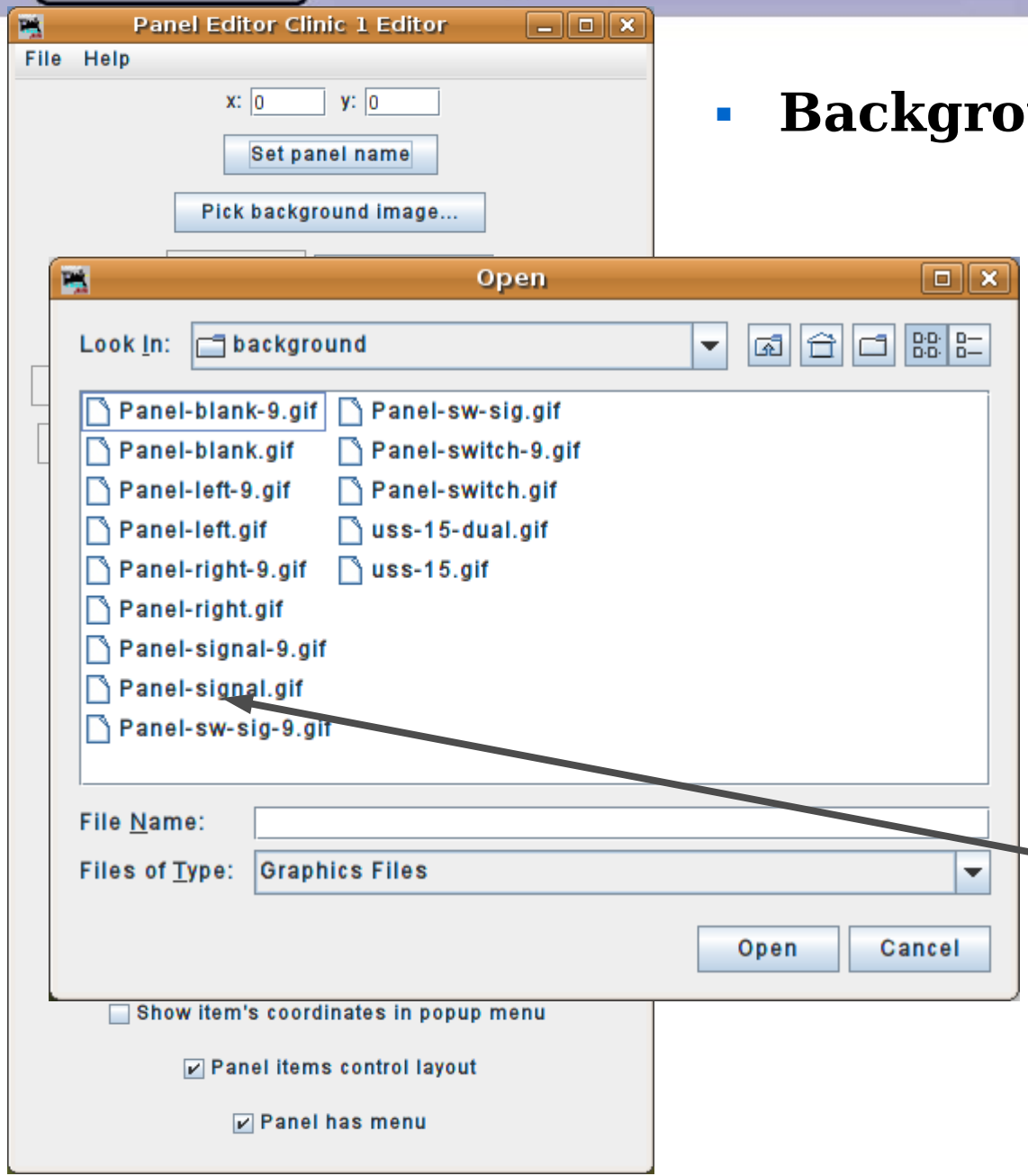





- **Background Images**

There are at least three ways to build a background for our panel.

1. Use a graphic editor and create your own complete panel image including plates.
2. Choose a single or dual 15 position blank image and add individual plates.



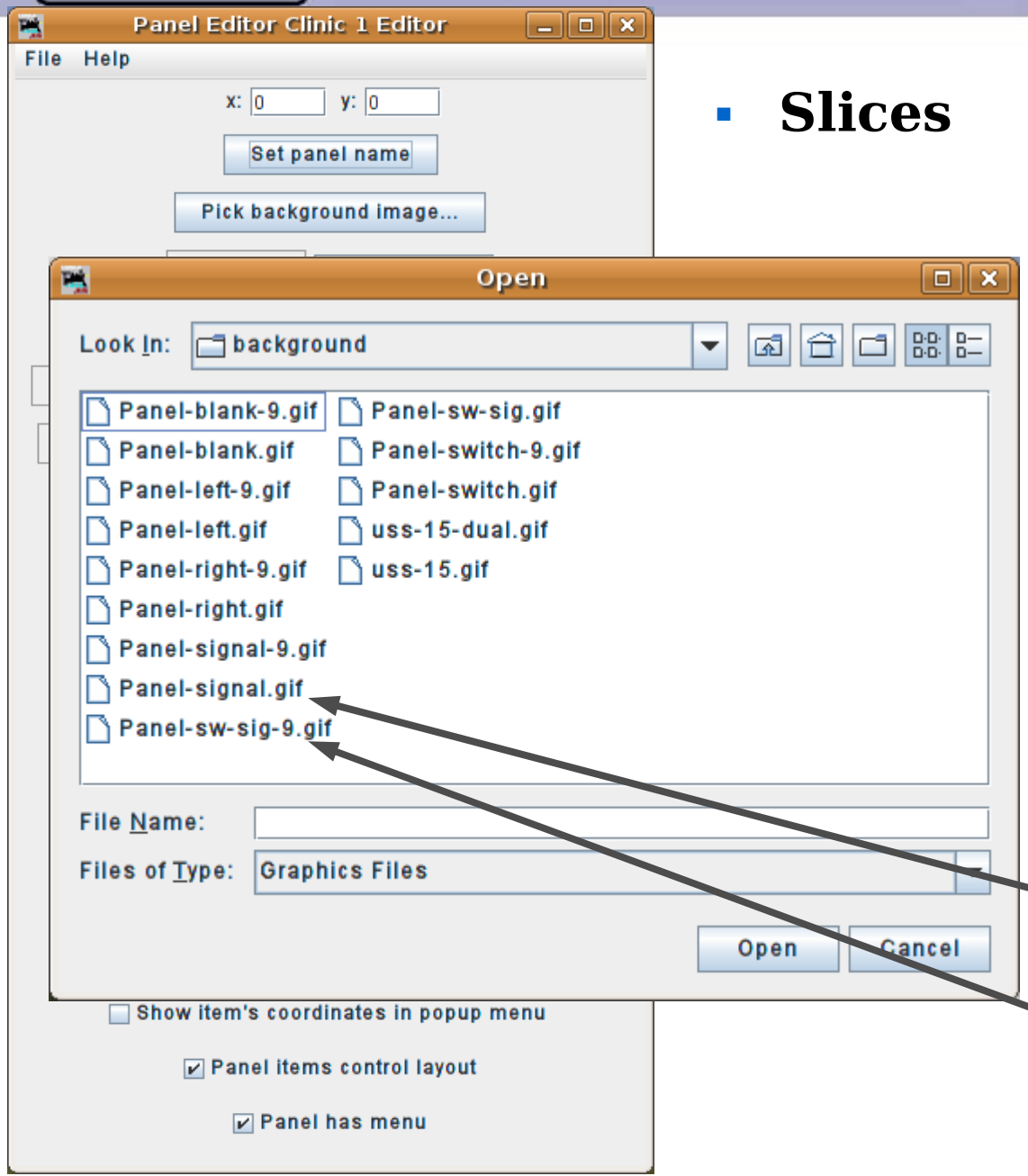

- **Background Images**

There are at least three ways to build a background for our panel.

1. Use a graphic editor and create your own complete panel image including plates.
2. Choose a single or dual 15 position blank image and add individual plates.
3. Slices. This method takes advantage of the capability of panels to be constructed from multiple background images. We will use slices in this clinic.

# Panel Editor

## Background Images Using Slices




- **Slices**

Prototype CTC panels use modular construction. Unused panel positions are simply blanked out.

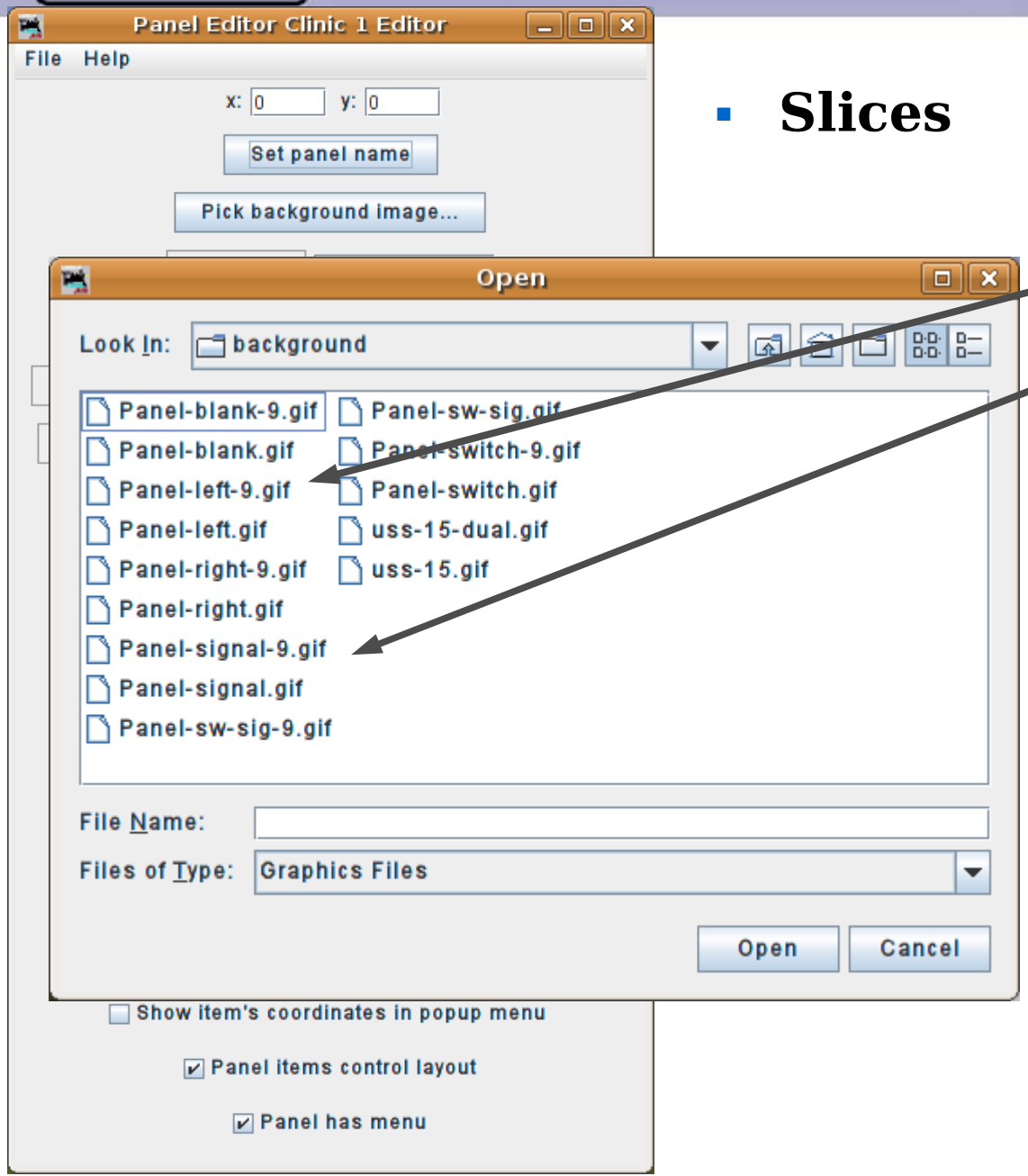
Slices are images of one modular panel position, usually controlling one signal plant. (interlocking)

Each position may be blank, contain a switch plate, a signal plate, or both.

Panel slices are available in two sizes, 718 pixles high and 900 pixles high. The higher images include a '-9' in their names and are more suitable for large screens.

# Panel Editor

## Background Images Using Slices

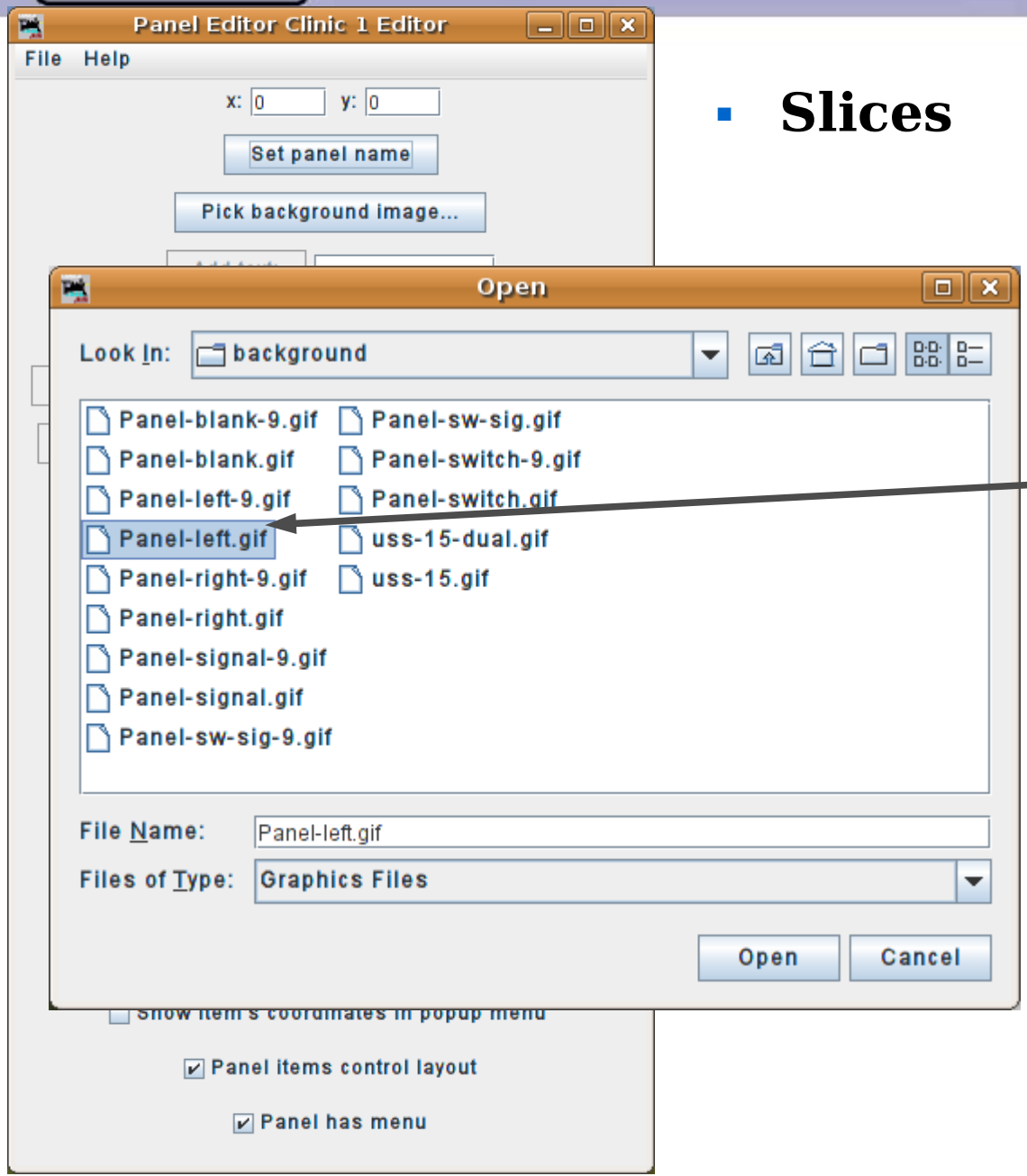



- **Slices**

The slices are two widths. 12 pixles wide for the panel edges, and 65 pixles wide for the modular sections.

# Panel Editor

## Background Images Using Slices




- **Slices**

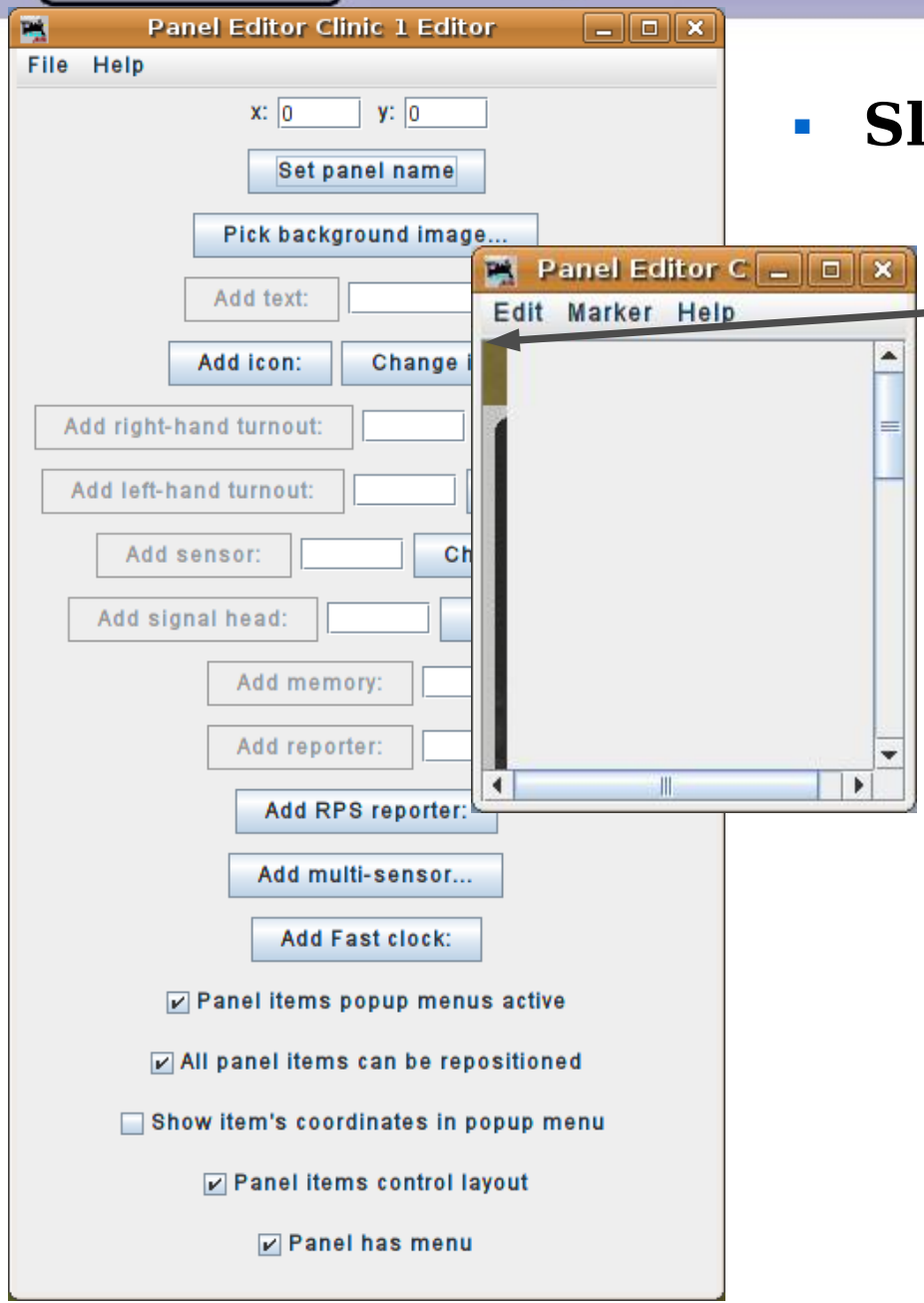
The slices are two widths. 12 pixles wide for the panel edges, and 65 pixles wide for the modular sections.

The first 'slice' of our panel will be the left edge. We will leave the (x, y) coordinates set to (0, 0) for this initial image. We will choose the shorter images to help conserve space for this presentation.

Note: the taller panel images have more room for optional graphics and are closer to prototype proportions. They should be used if possible.

# Panel Editor

## Background Images Using Slices



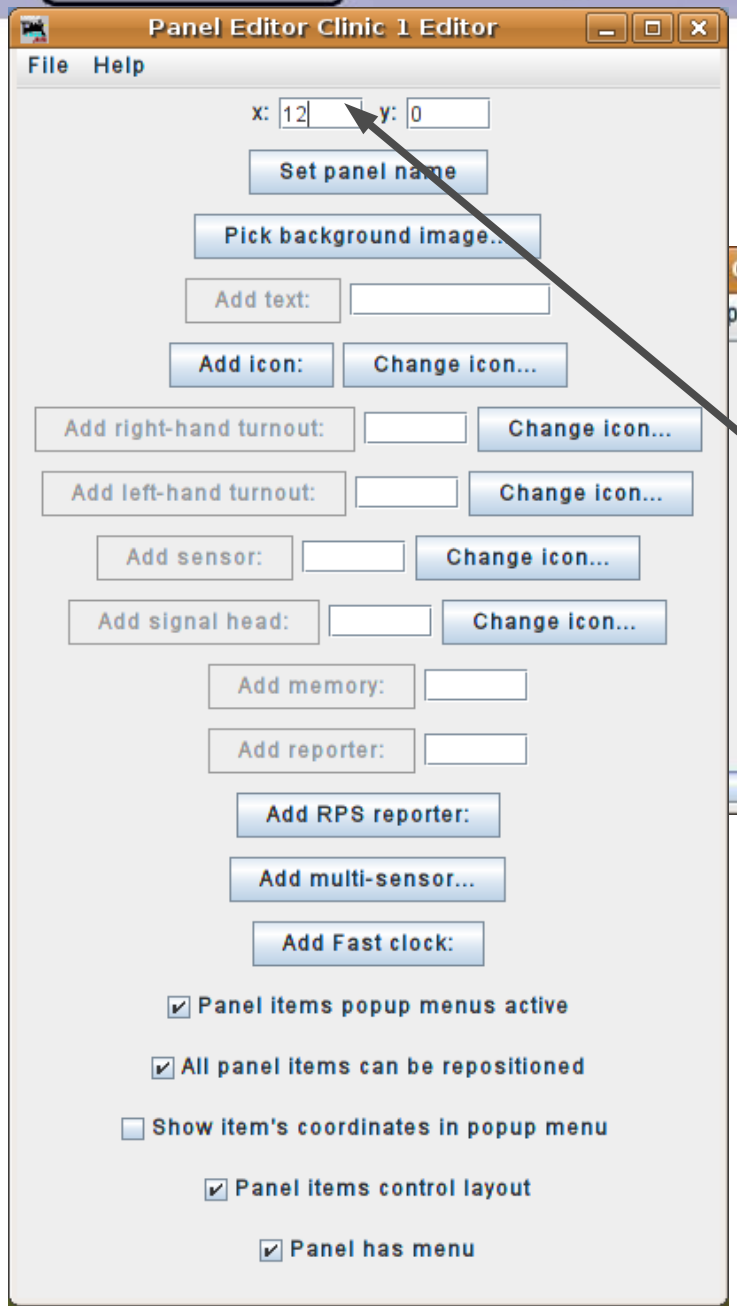

- **Slices**

We see our first 'slice' appear at (0, 0) in the panel window. This is the left side of our panel. Remember, it is 12 pixels wide.

You will need to enlarge the panel window in order to see the entire edge image.

# Panel Editor

## Background Images Using Slices




- **Slices**

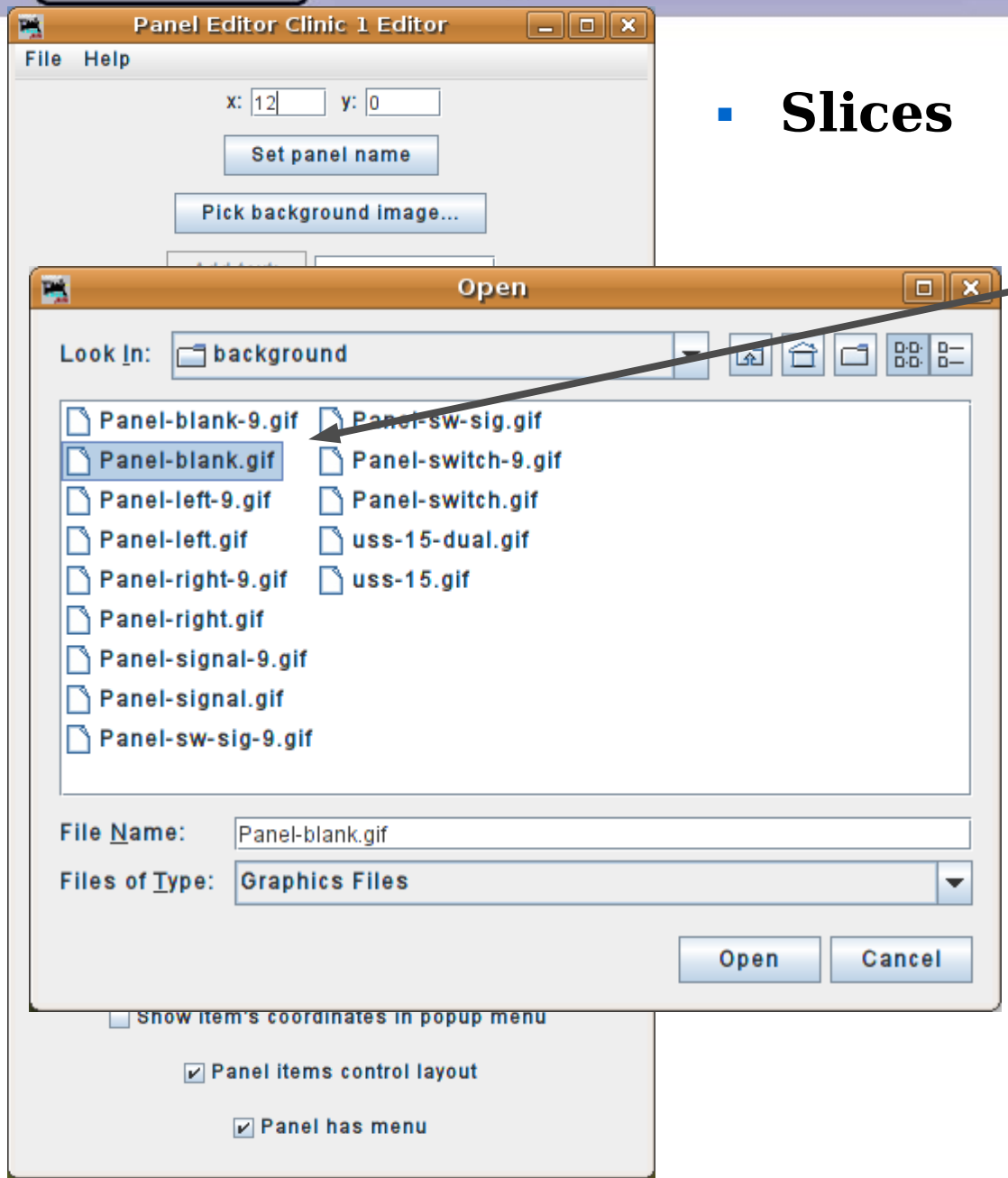
We see our first 'slice' appear at (0, 0) in the panel window. This is the left side of our panel. Remember, it is 12 pixels wide.

You will need to enlarge the panel window in order to see the entire edge image.

Now change the ”x” axis value to '12' to move the starting location for the next slice to the right hand edge of the image that we just added. (the ”y” axis value remains unchanged)

# Panel Editor

## Background Images Using Slices




- **Slices**

The next slice we select will be a blank module which will give us some extra space at the panel's edge.

# Panel Editor

## Background Images Using Slices

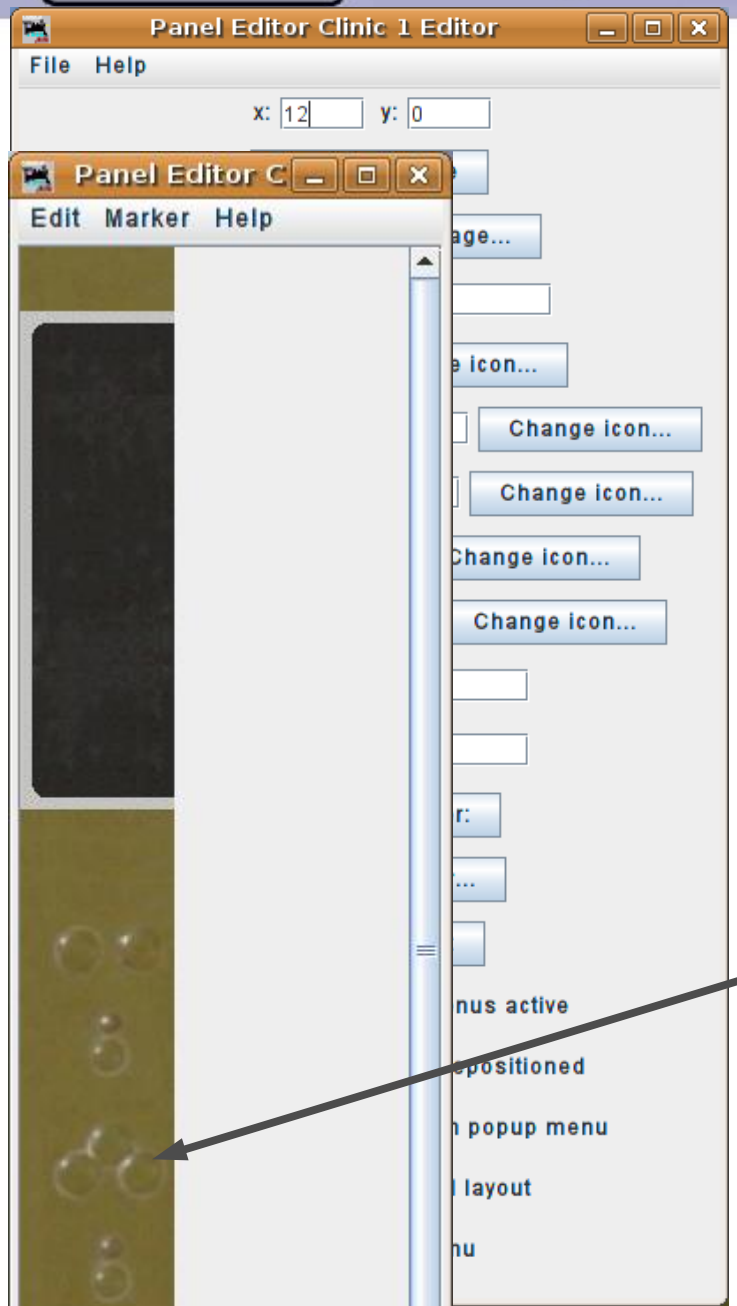

- **Slices**

The next slice we select will be a blank module which will give us some extra space at the panel's edge.

As we can see in this view, our second slice has been positioned exactly next to the first one.

# Panel Editor

## Background Images Using Slices




- **Slices**

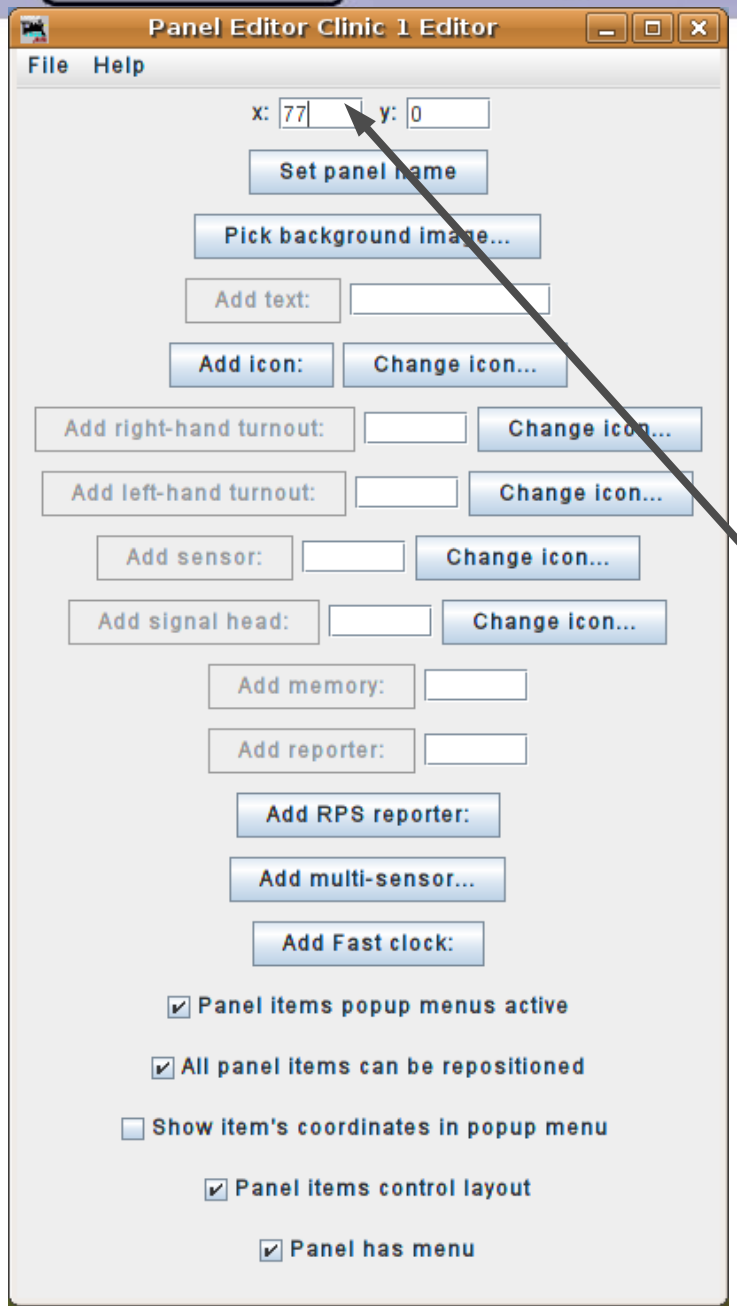
The next slice we select will be a blank module which will give us some extra space at the panel's edge.

As we can see in this view, our second slice has been positioned exactly next to the first one.

The 'blank' module has images of the hole plugs used on the prototype panels at all unused positions.

# Panel Editor

## Background Images Using Slices




- **Slices**

The next slice we select will be a blank module which will give us some extra space at the panel's edge.

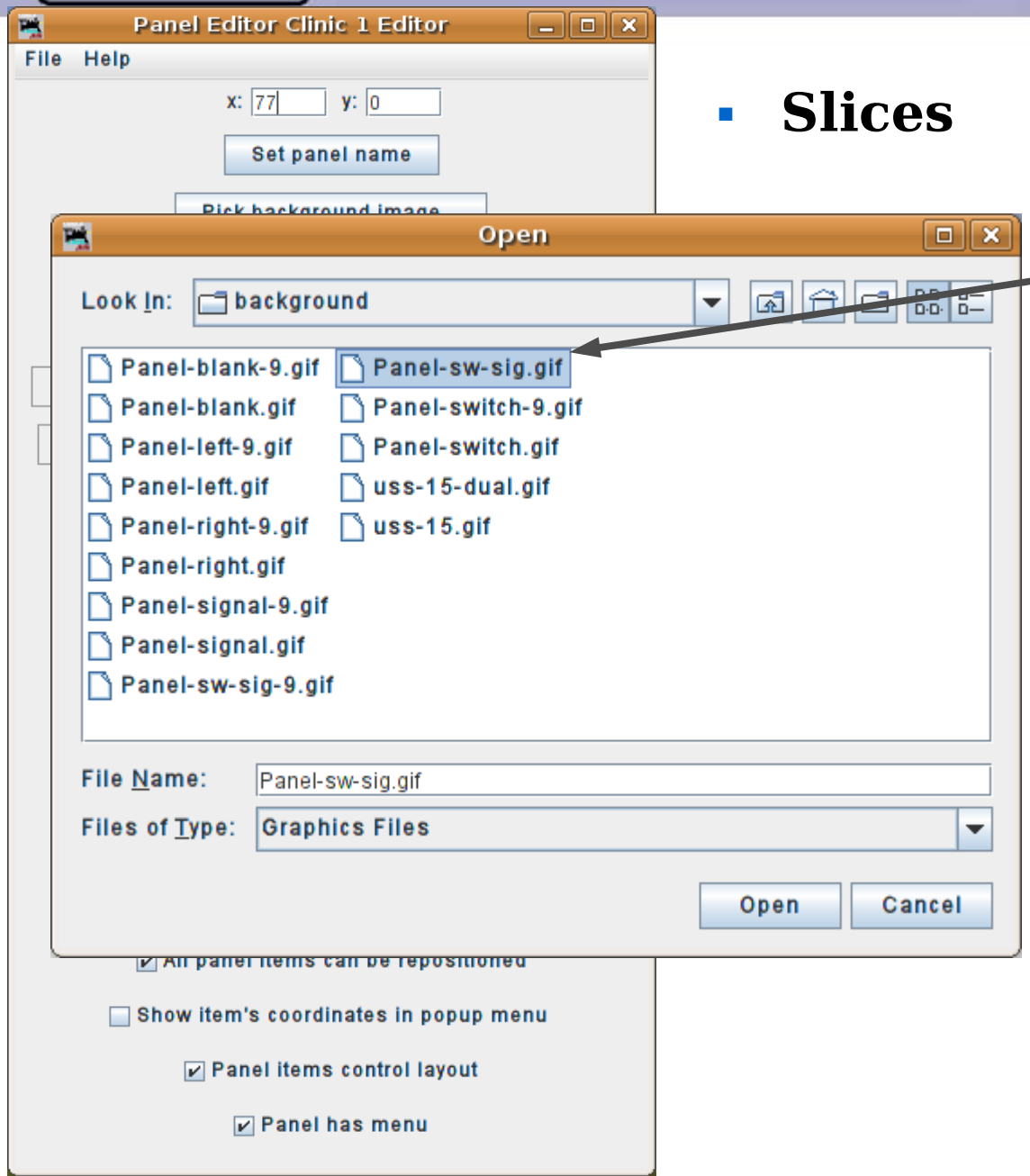
As we can see in this view, our second slice has been positioned exactly next to the first one.

The 'blank' module has images of the hole plugs used on the prototype panels at all unused positions.

Now change the ”x” coordinate to 12+65 or 77 to properly position the next slice.

# Panel Editor

## Background Images Using Slices

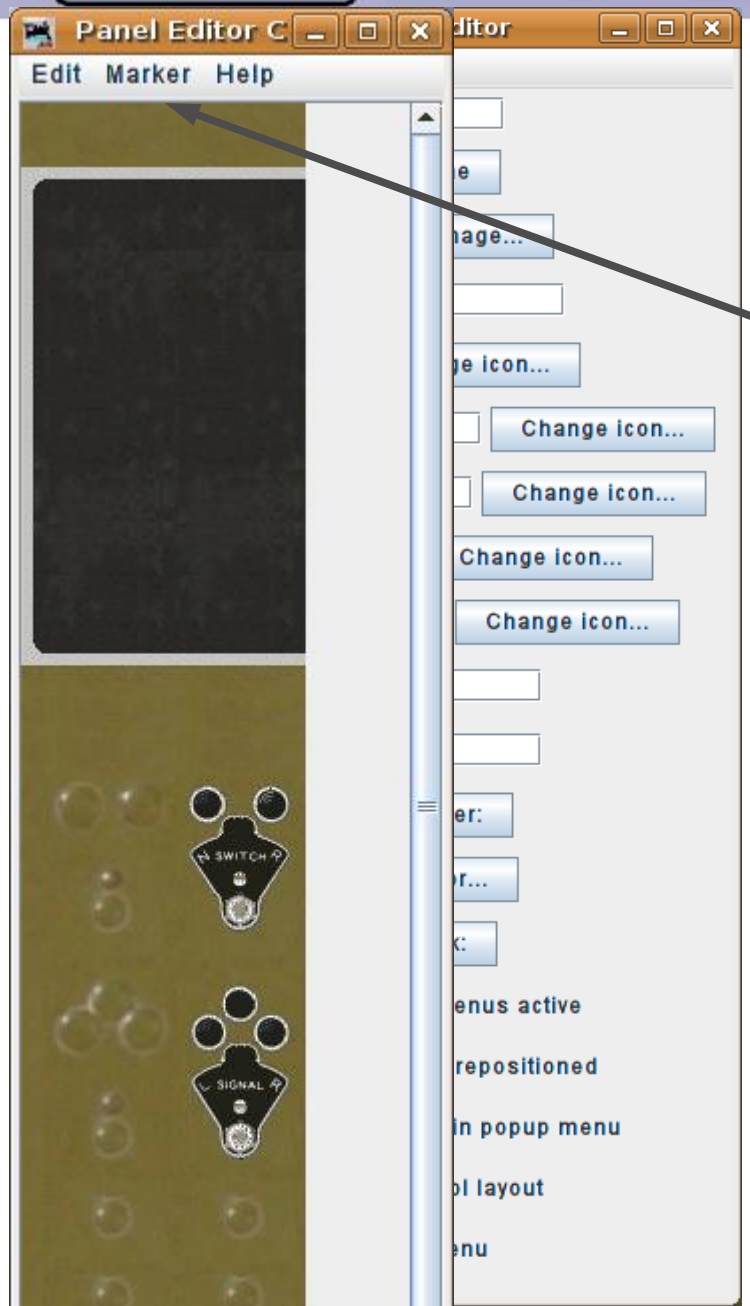



- **Slices**

This time we will choose a slice with both plates included.

# Panel Editor

## Background Images Using Slices

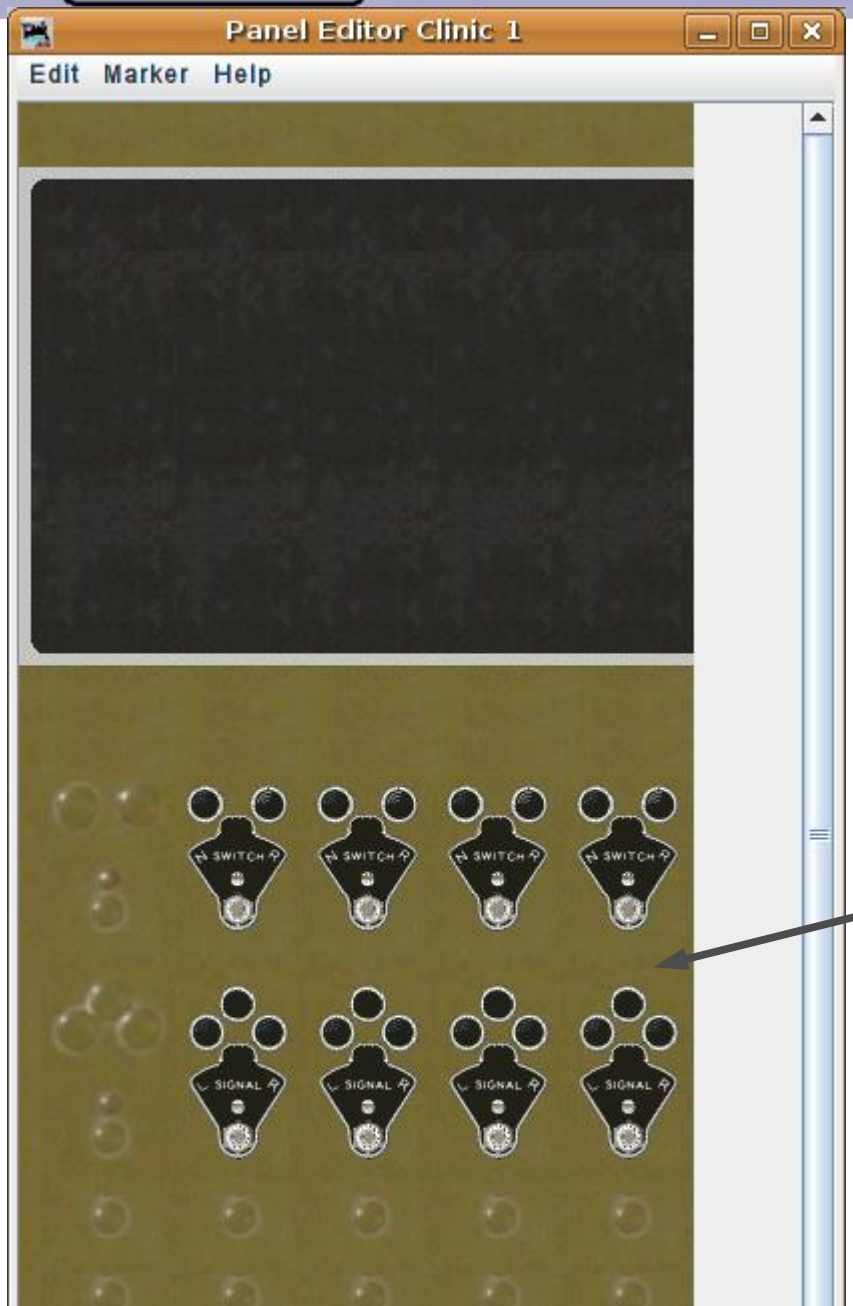



- **Slices**

This time we will choose a slice with both plates included.
Notice how the slices and their included plates are correctly aligned simply by using the correct coordinates.

# Panel Editor

## Background Images Using Slices




### Slices

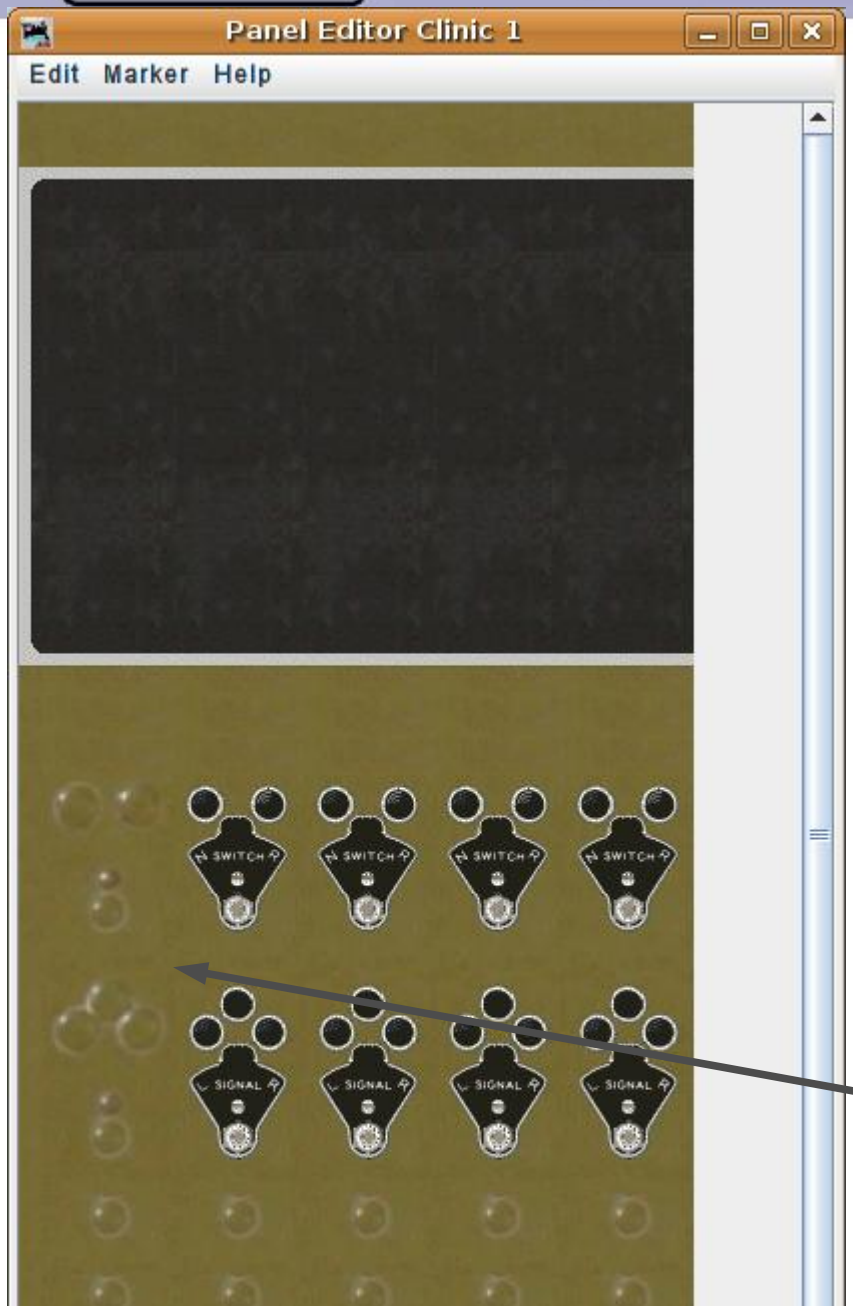
This time we will choose a slice with both plates included.

Notice how the slices and their included plates are correctly aligned simply by using the correct coordinates.

Add 3 more sections using coordinates x:142, x:207, and x:272 for the individual slices.

# Panel Editor

## Background Images Using Slices




## Slices

This time we will choose a slice with both plates included.

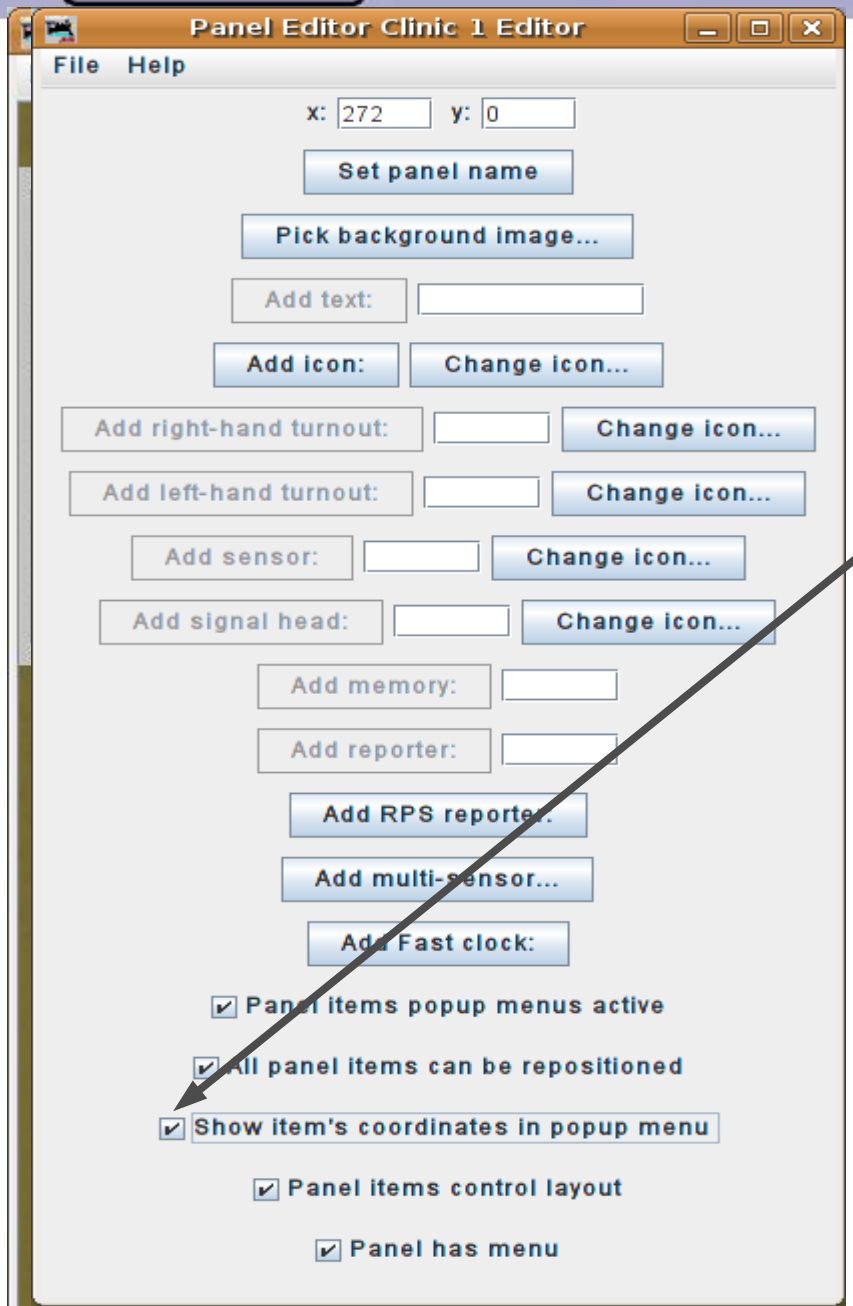
Notice how the slices and their included plates are correctly aligned simply by using the correct coordinates.

Add 3 more sections using coordinates x:142, x:207, and x:272 for the individual slices.

Our panel is starting to take shape. However it would be nice to have another blank section on the left side for this demo.

# Panel Editor

## Background Images Using Slices

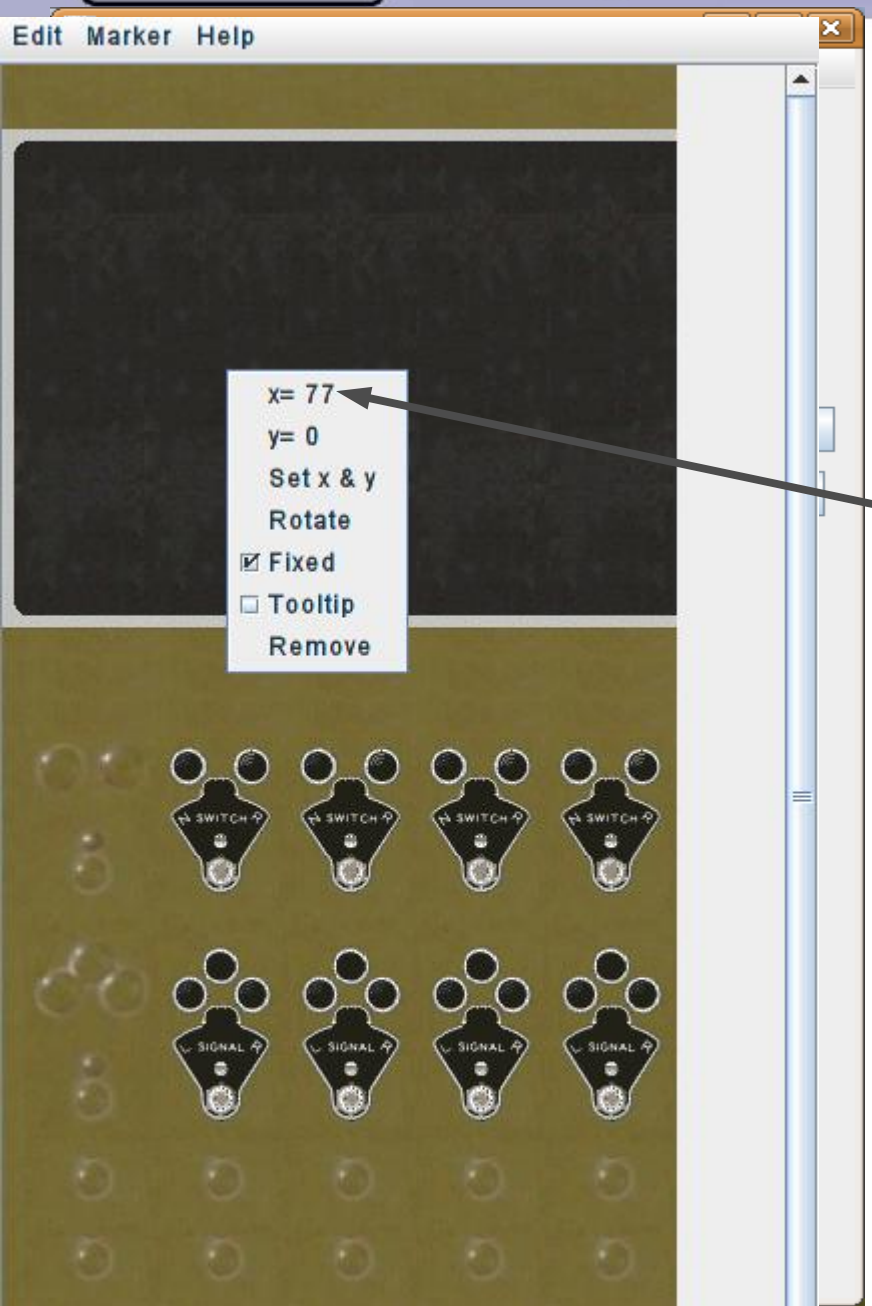



### Slices

Start by enabling the coordinates in popup menus. This will help us tell where our slices are located, and allow us to move them easily.

# Panel Editor

## Background Images Using Slices



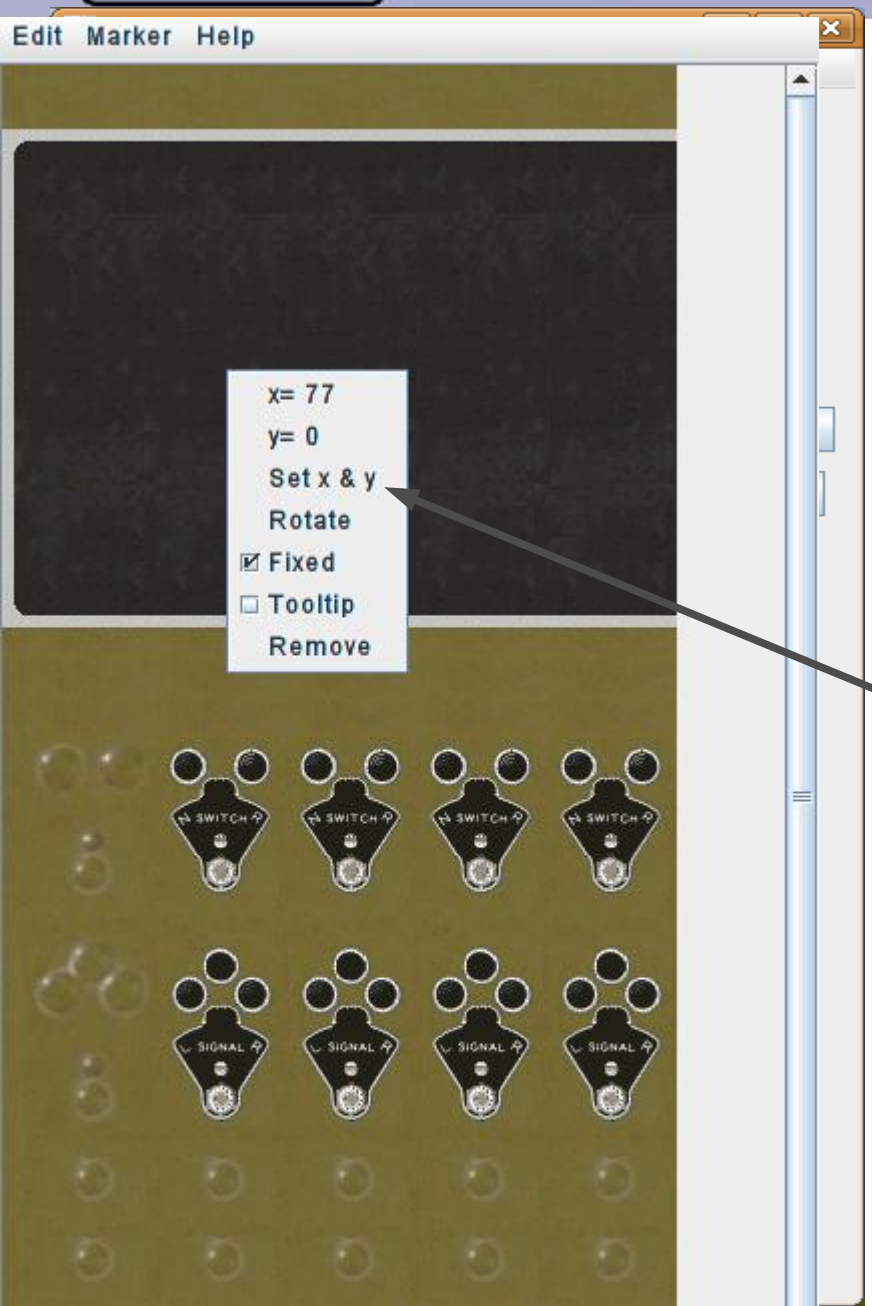

### Slices

Start by enabling the coordinates in popup menus. This will help us tell where our slices are located, and allow us to move them easily.

Next right click in the slice image that we need to move. This opens the popup menu with the current coordinates.

# Panel Editor

## Background Images Using Slices




### Slices

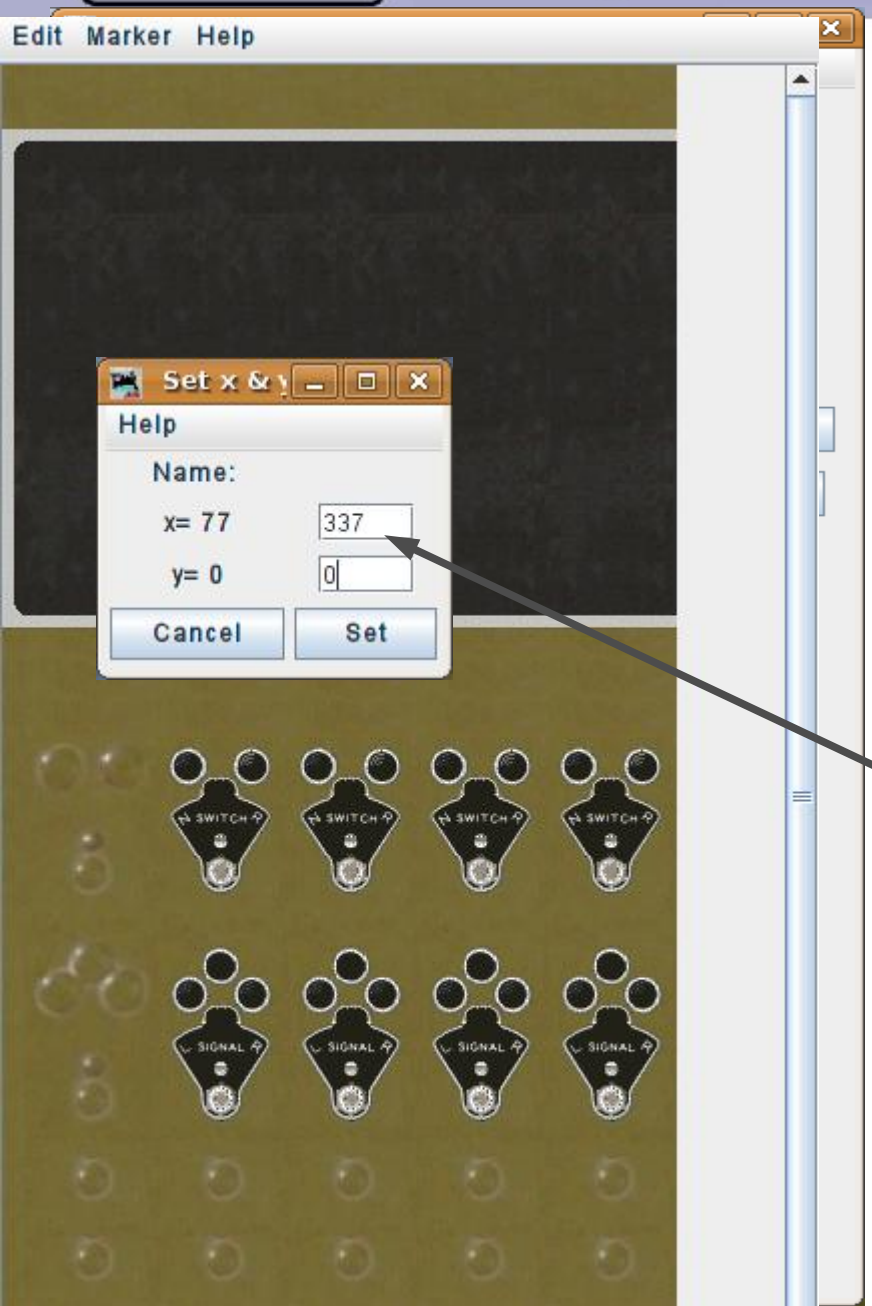
Start by enabling the coordinates in popup menus. This will help us tell where our slices are located, and allow us to move them easily.

Next right click in the slice image that we need to move. This opens the popup menu with the current coordinates.

Now click on 'Set x & y'.

# Panel Editor

## Background Images Using Slices




## Slices

Start by enabling the coordinates in popup menus. This will help us tell where our slices are located, and allow us to move them easily.

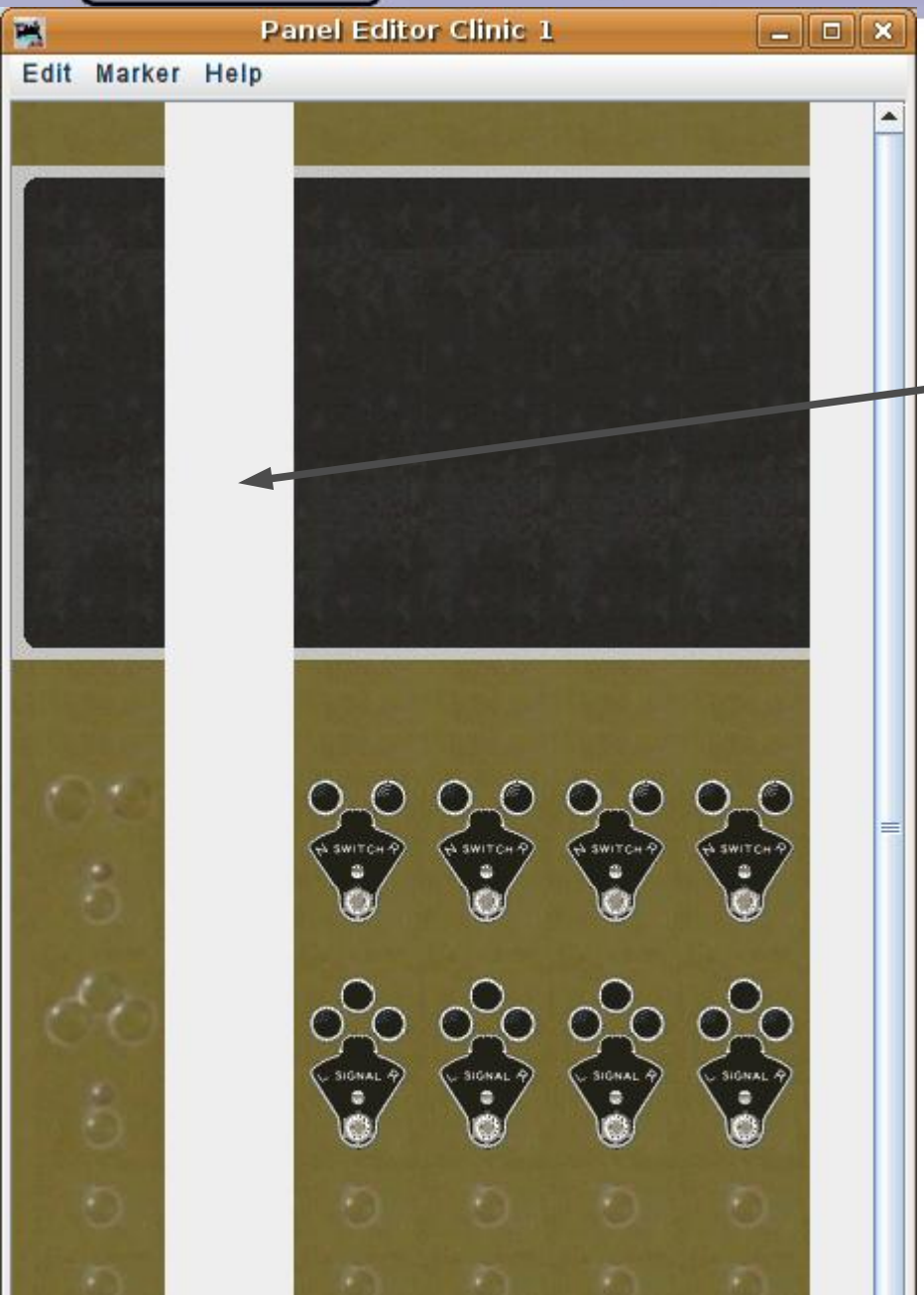
Next right click in the slice image that we need to move. This opens the popup menu with the current coordinates.

Now click on 'Set x & y'.

This opens a new window where we can change the location of this slice. (337,0) is the next position. Write down the original values for later. Click 'Set' to move the slice.

# Panel Editor

## Background Images Using Slices

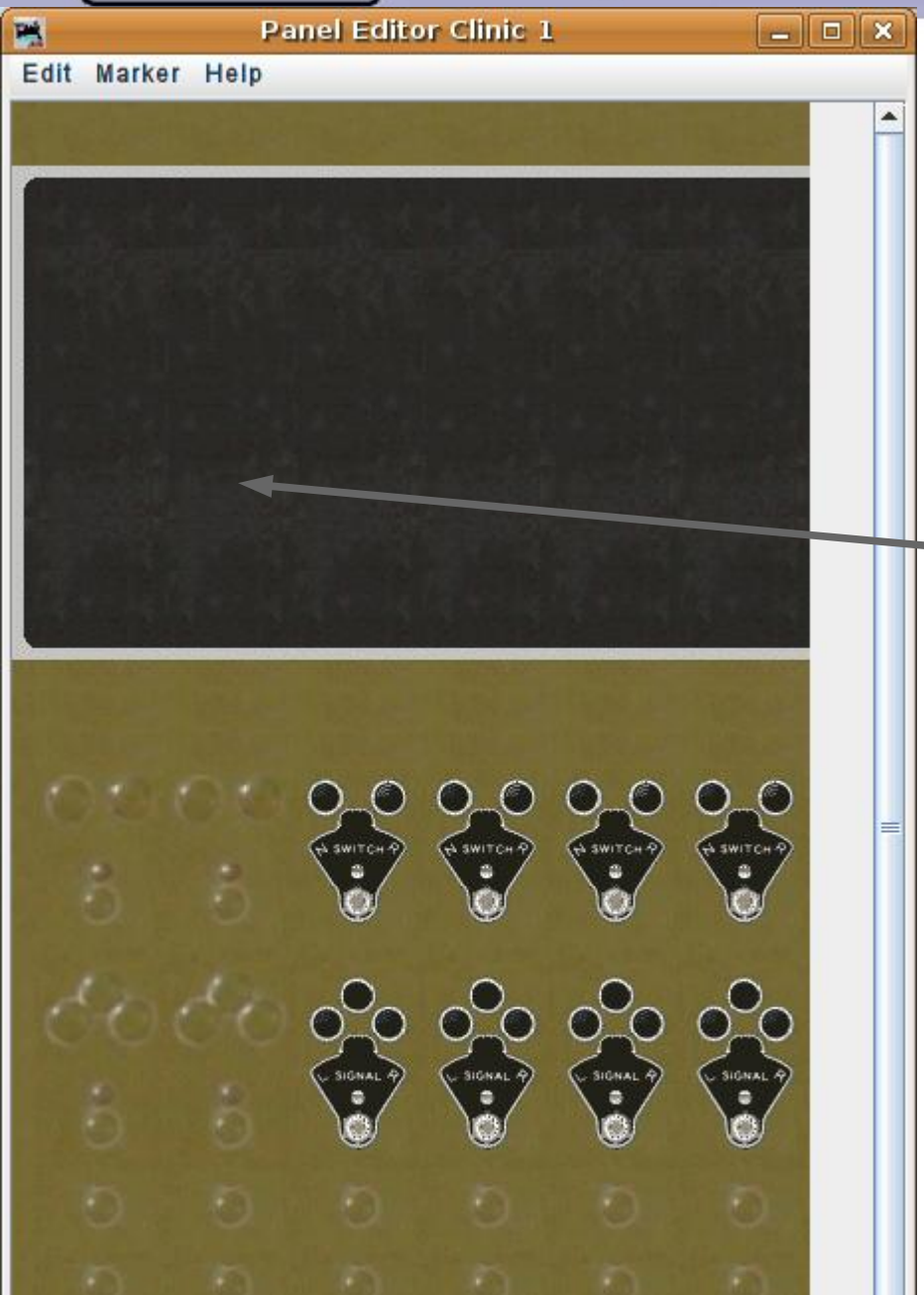



- **Slices**

Now we have our 4 plates where we need them, but have a blank position as a result.

# Panel Editor

## Background Images Using Slices



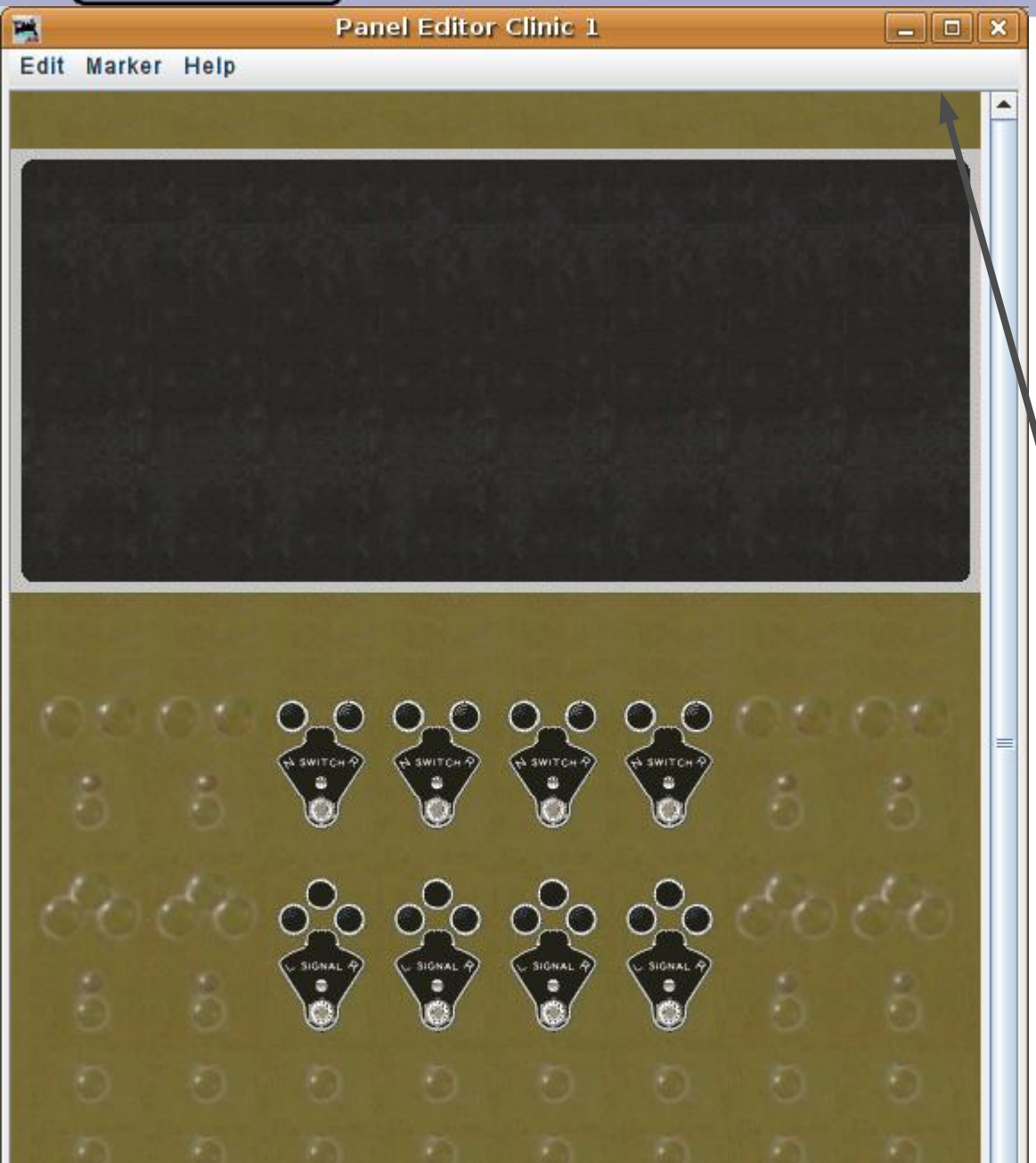

- **Slices**

  Now we have our 4 plates where we need them, but have a blank position as a result.

  Using the skills we just learned add a new blank panel at (77, 0) which will be positioned in the blank space.

# Panel Editor

## Background Images Using Slices




## Slices

Now we have our 4 plates where we need them, but have a blank position as a result.

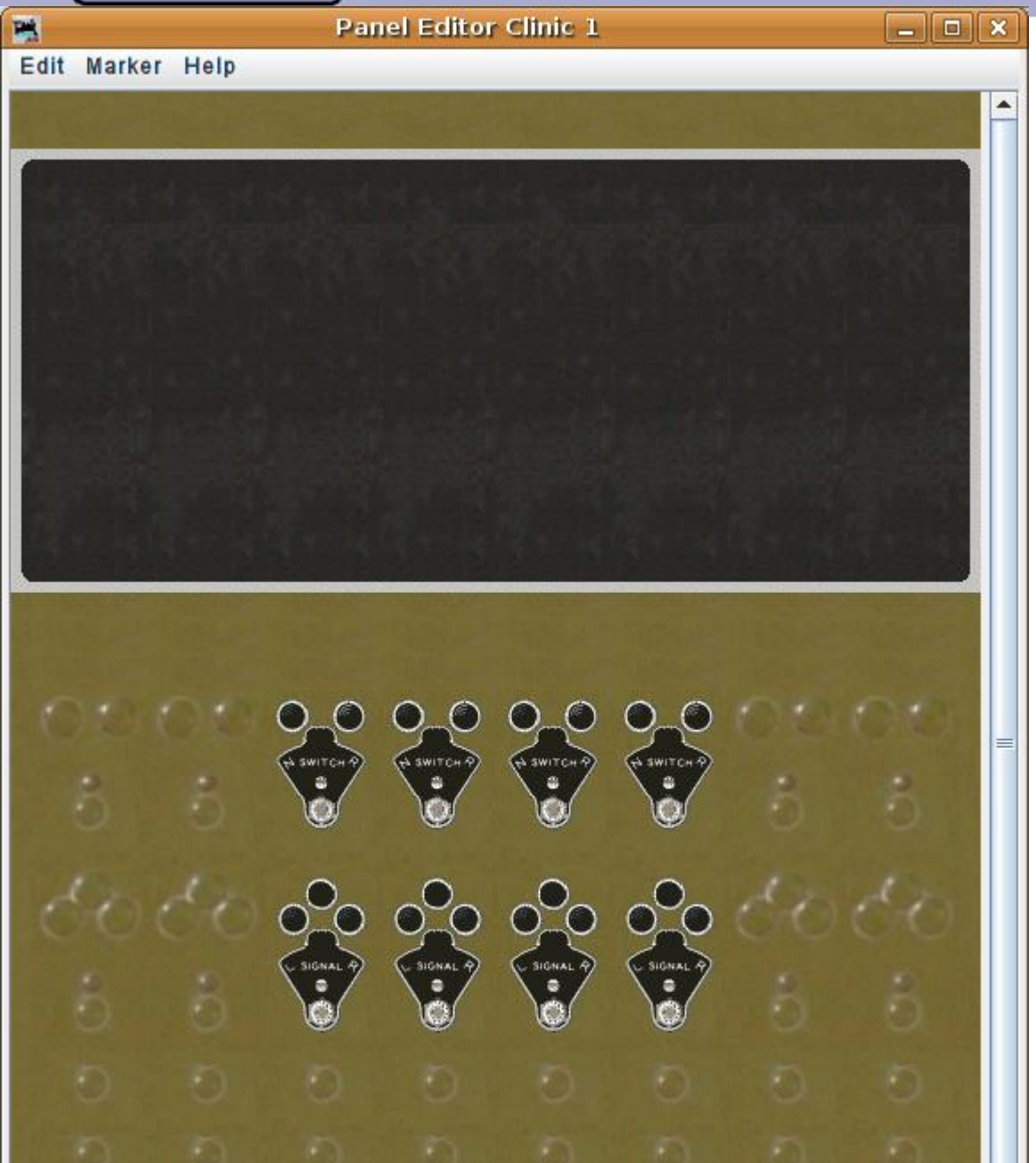
Using the skills we just learned add a new blank panel at (77, 0) which will be positioned in the blank space.

Add two more blank panel sections at (402,0) and (467, 0). Finish off our clinic background image with a 'Panel-right.gif' at (532,0).

Note: The list of coordinates for a 15 position panel are listed in the 'Help' file.

# Panel Editor

Adding text

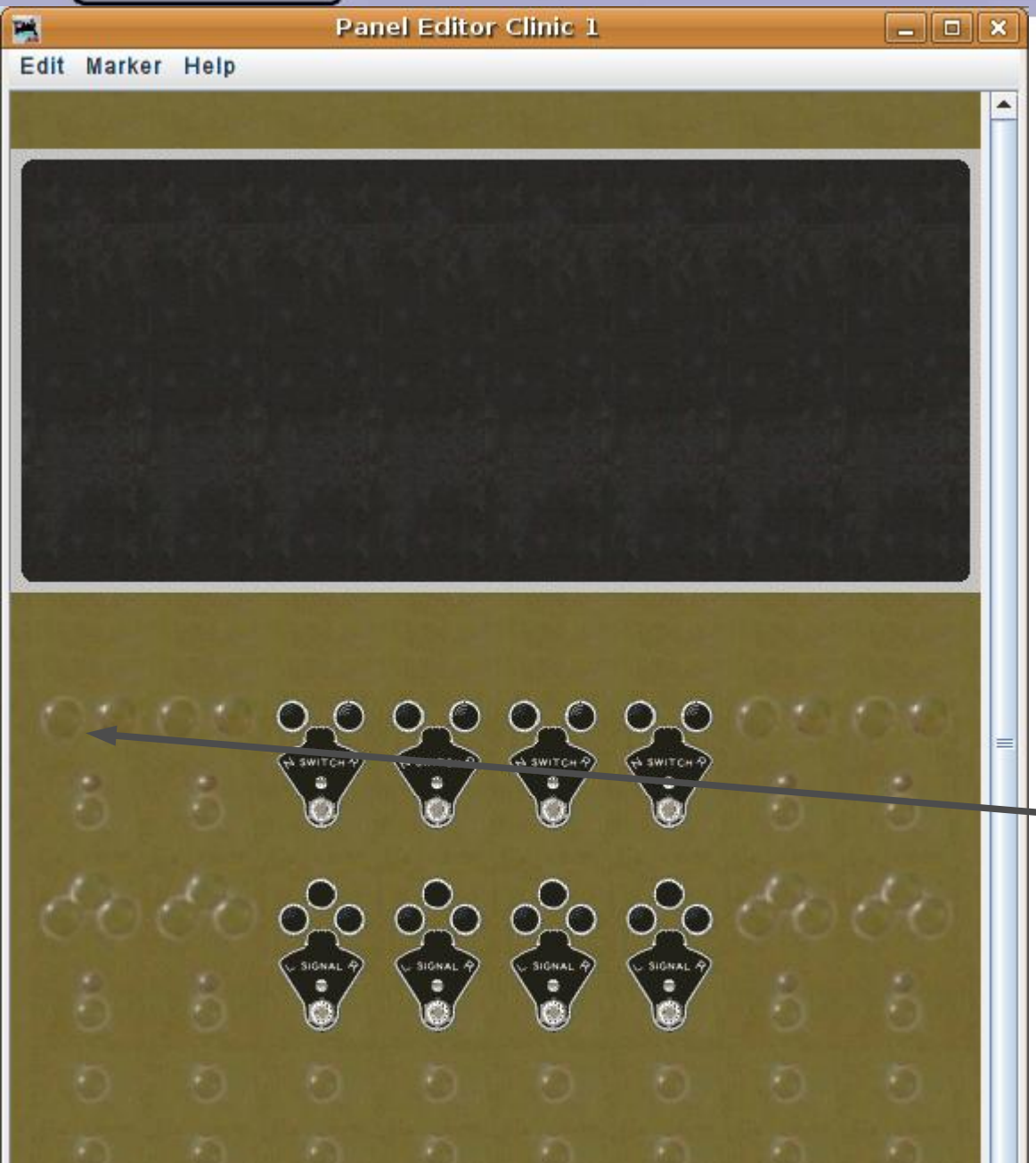



## Text

The plates on a CTC panel are usually numbered consecutively by panel position. If there were multiple panels in different locations covering different sections of the RR the numbering might be continued from one office's panel to the next, resulting in high numbers in some offices.

# Panel Editor

Adding text



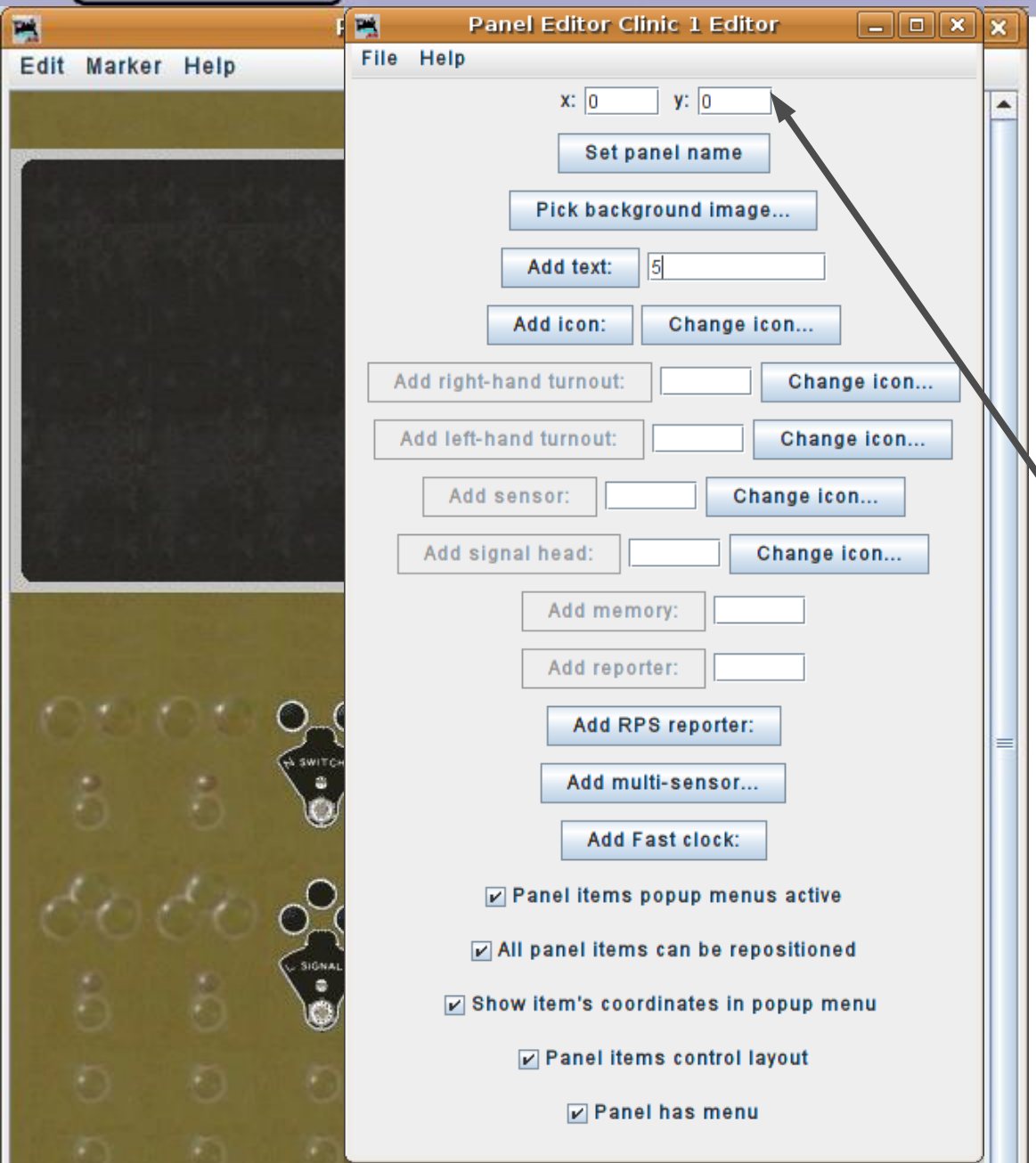

## Text

The plates on a CTC panel are usually numbered consecutively by panel position. If there were multiple panels in different locations covering different sections of the RR the numbering might be continued from one office's panel to the next, resulting in high numbers in some offices.

For our panel we will start numbering from the first position, odd numbers for the upper plates and even numbers for the lower ones.

# Panel Editor

## Adding text



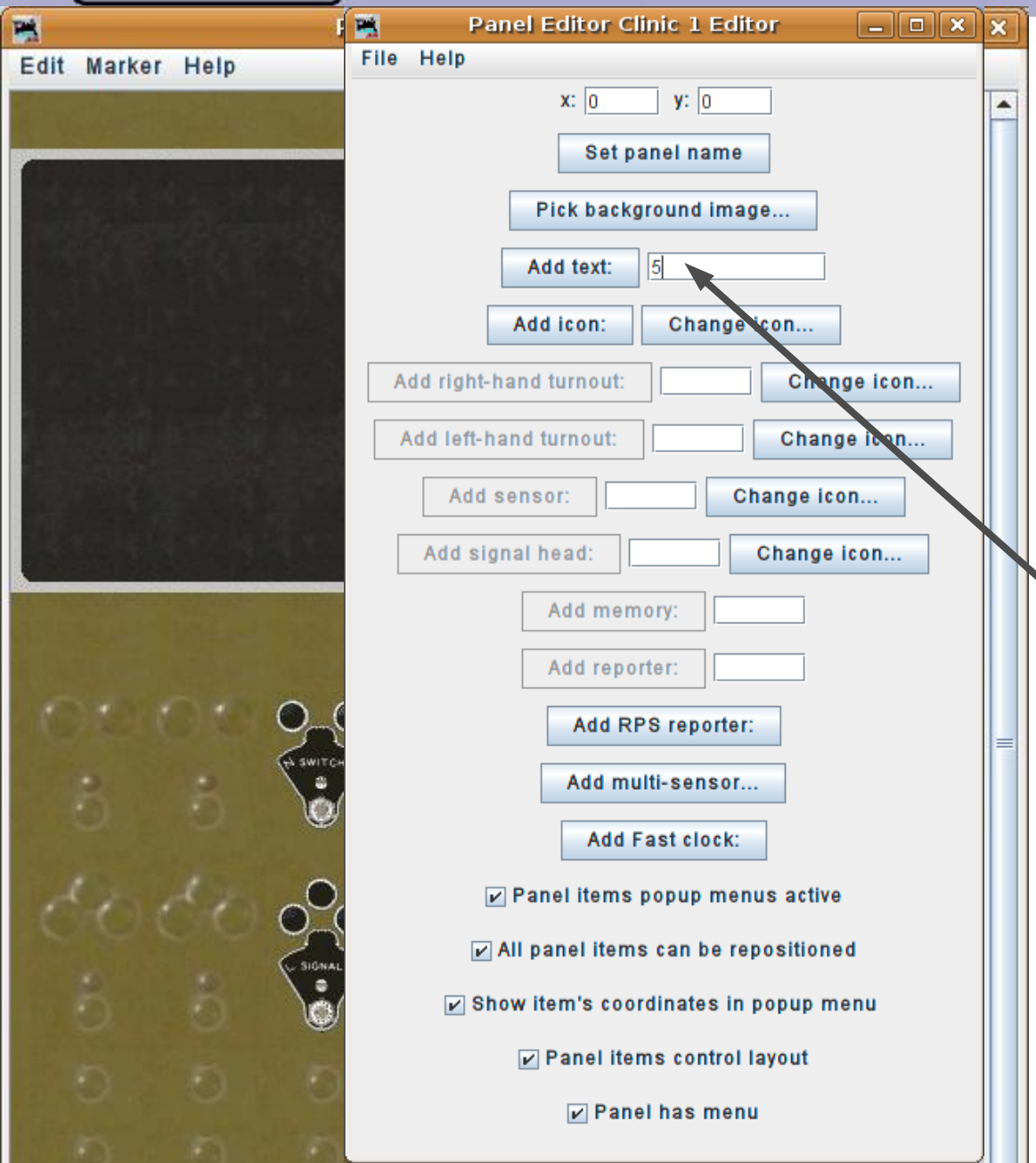

## Text

The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

Restore the (x, y) coordinates to (0, 0,).

# Panel Editor

## Adding text




### Text

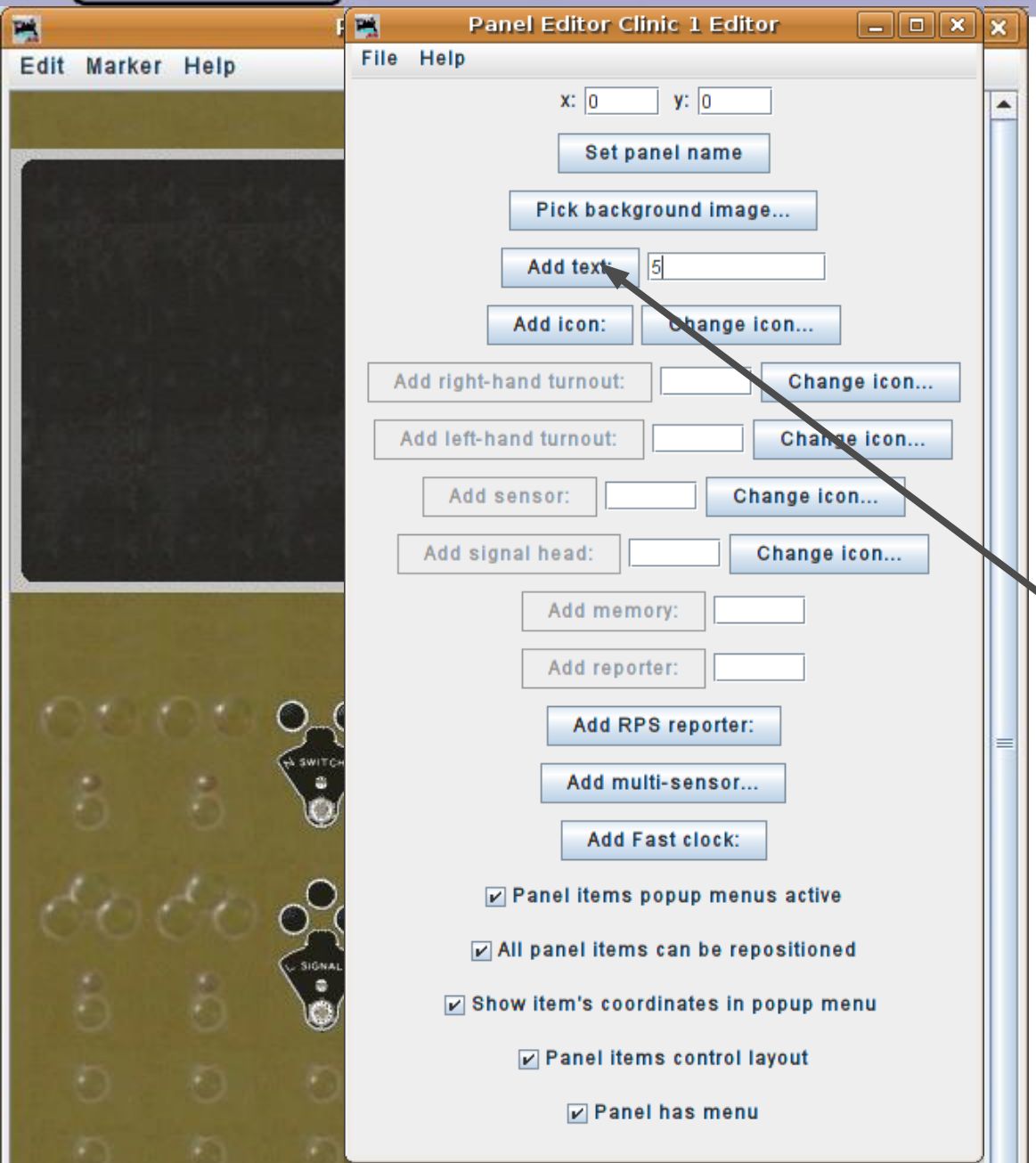
The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

Restore the (x, y) coordinates to (0, 0,).

Enter ”5” into the text box.

# Panel Editor

Adding text




## Text

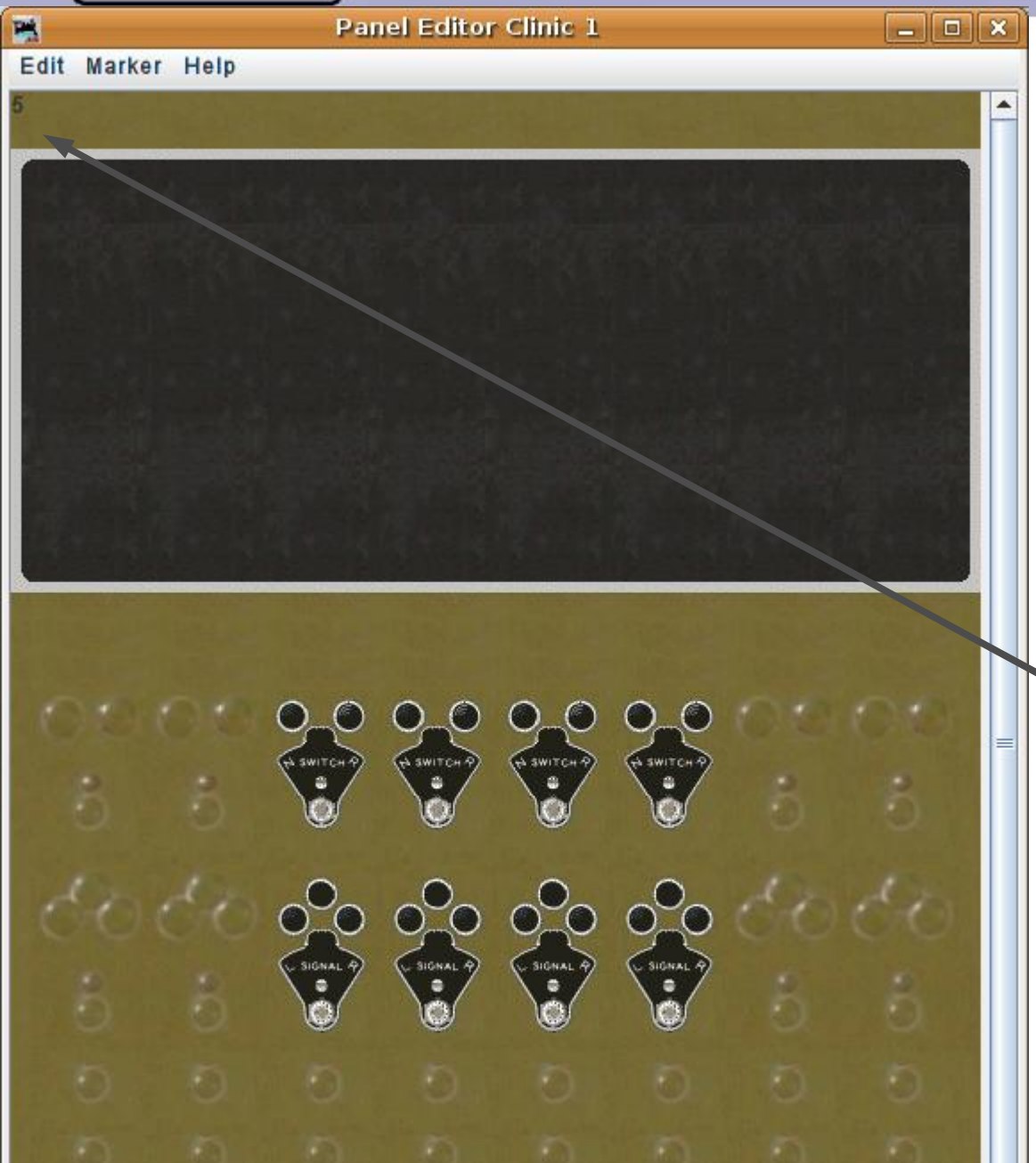
The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

Restore the (x, y) coordinates to (0, 0,).

Enter ”5” into the text box. Click 'Add text:'

# Panel Editor

Adding text




## Text

The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

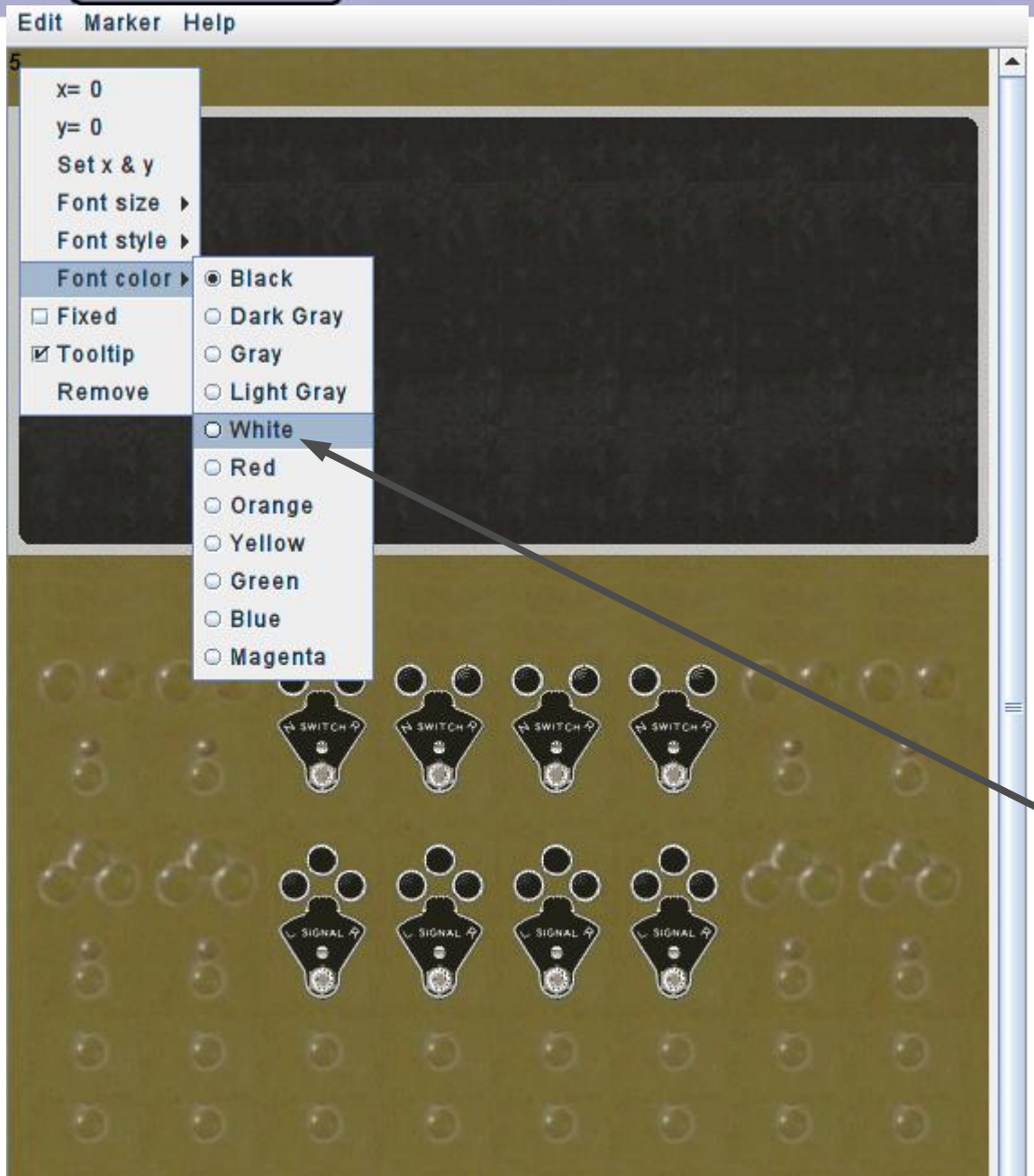
Restore the (x, y) coordinates to (0, 0,).

Enter ”5” into the text box. Click 'Add text:'

The number ”5” has been added to the panel at (0, 0)

# Panel Editor

## Changing text style and color




## Text

The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

Restore the (x, y) coordinates to (0, 0,).

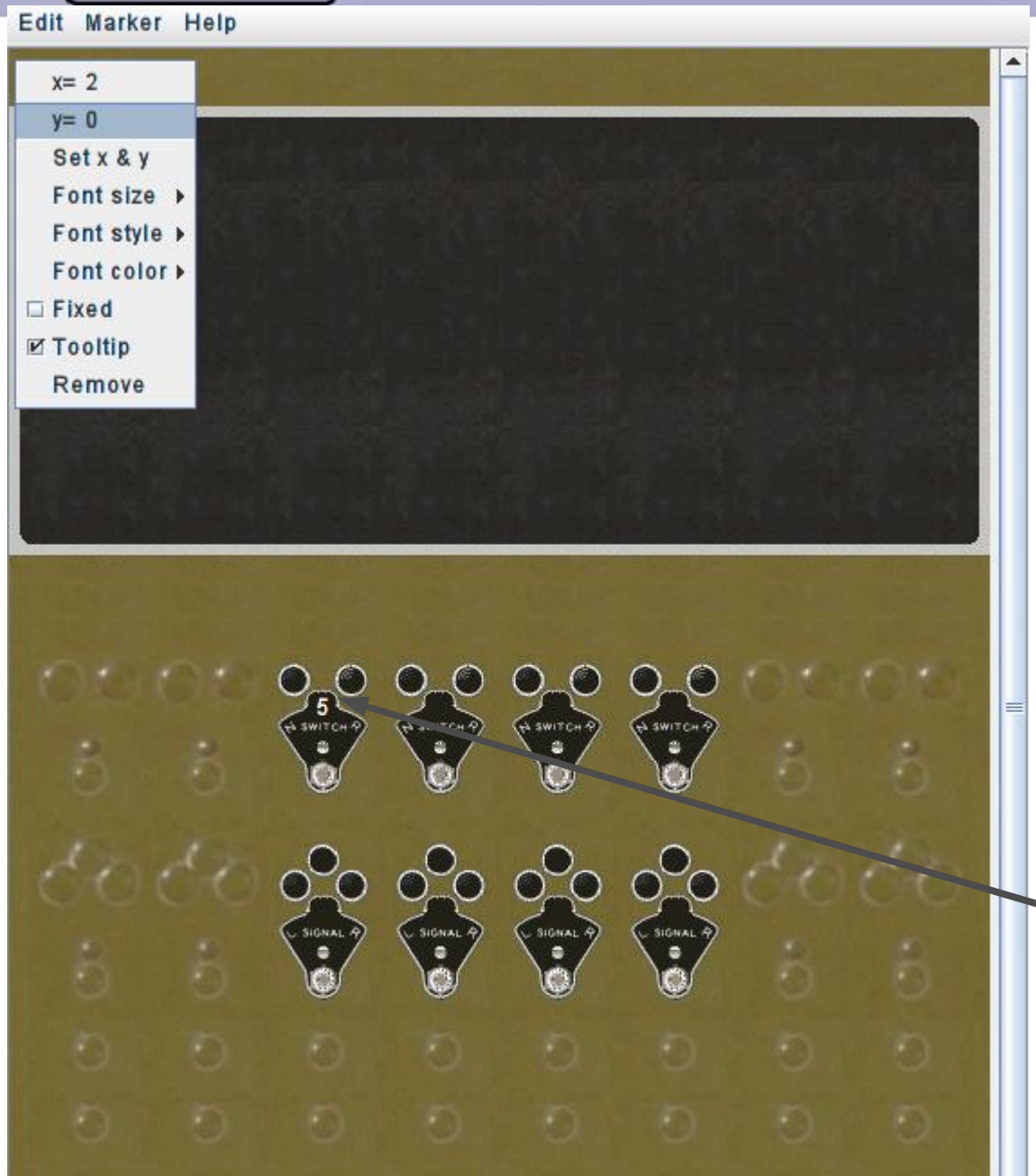
Enter ”5” into the text box. Click 'Add text:'

The number ”5” has been added to the panel at (0, 0)

Right click (meta for Mac) on the text and select 'White'.

# Panel Editor

Moving text position




## Text

The first plate with a number will be number 5. The 'Switch' plates on this panel will be 5, 7. 9. and 11. The 'Signal' plates will be numbered 6, 8, 10, and 12.

Restore the (x, y) coordinates to (0, 0,).

Enter ”5” into the text box. Click 'Add text:'

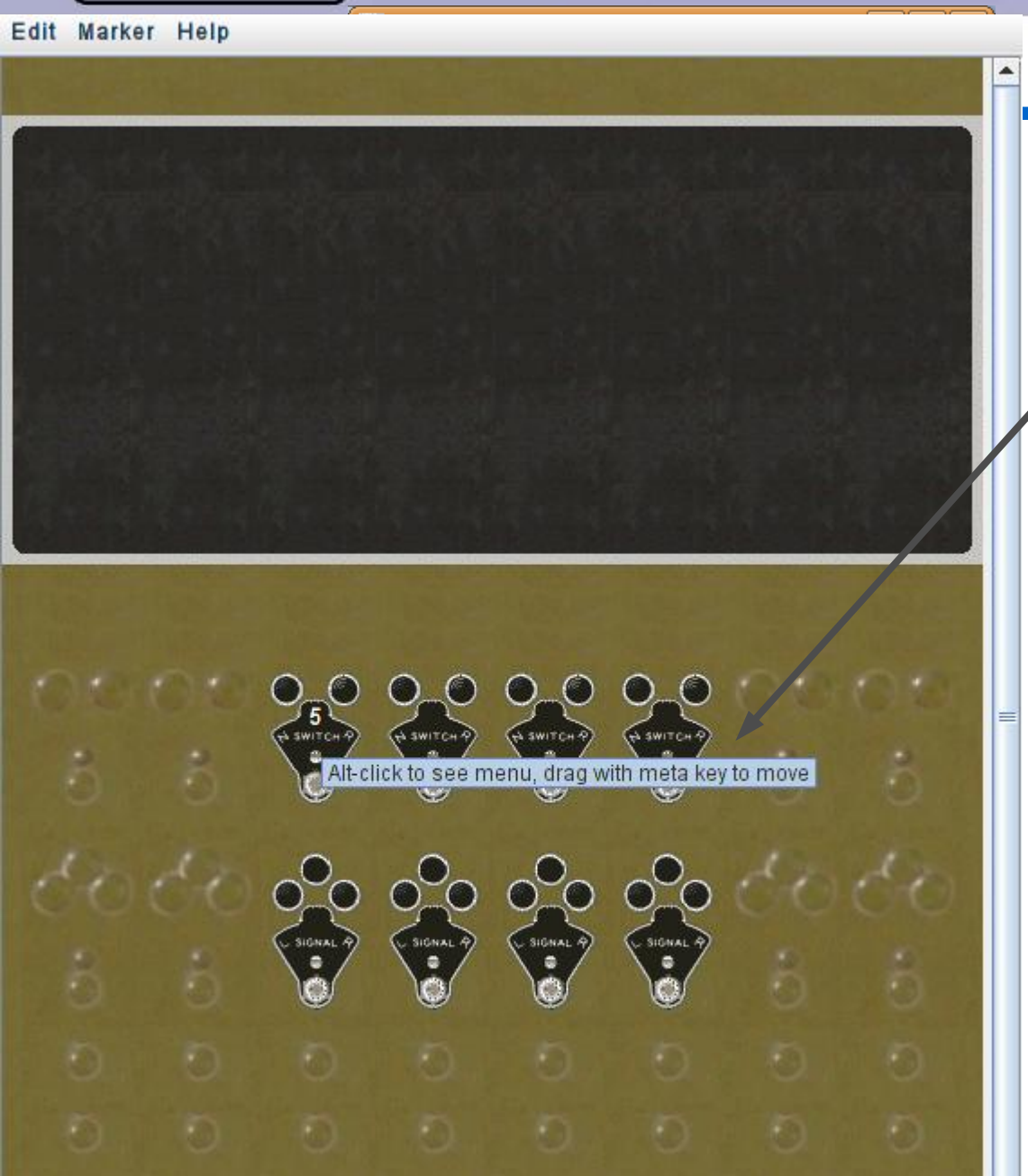
The number ”5” has been added to the panel at (0, 0)

Right click (meta for Mac) on the text and select 'White'.

Right click again and drag the text into proper position.

# Panel Editor

## Tool Tips

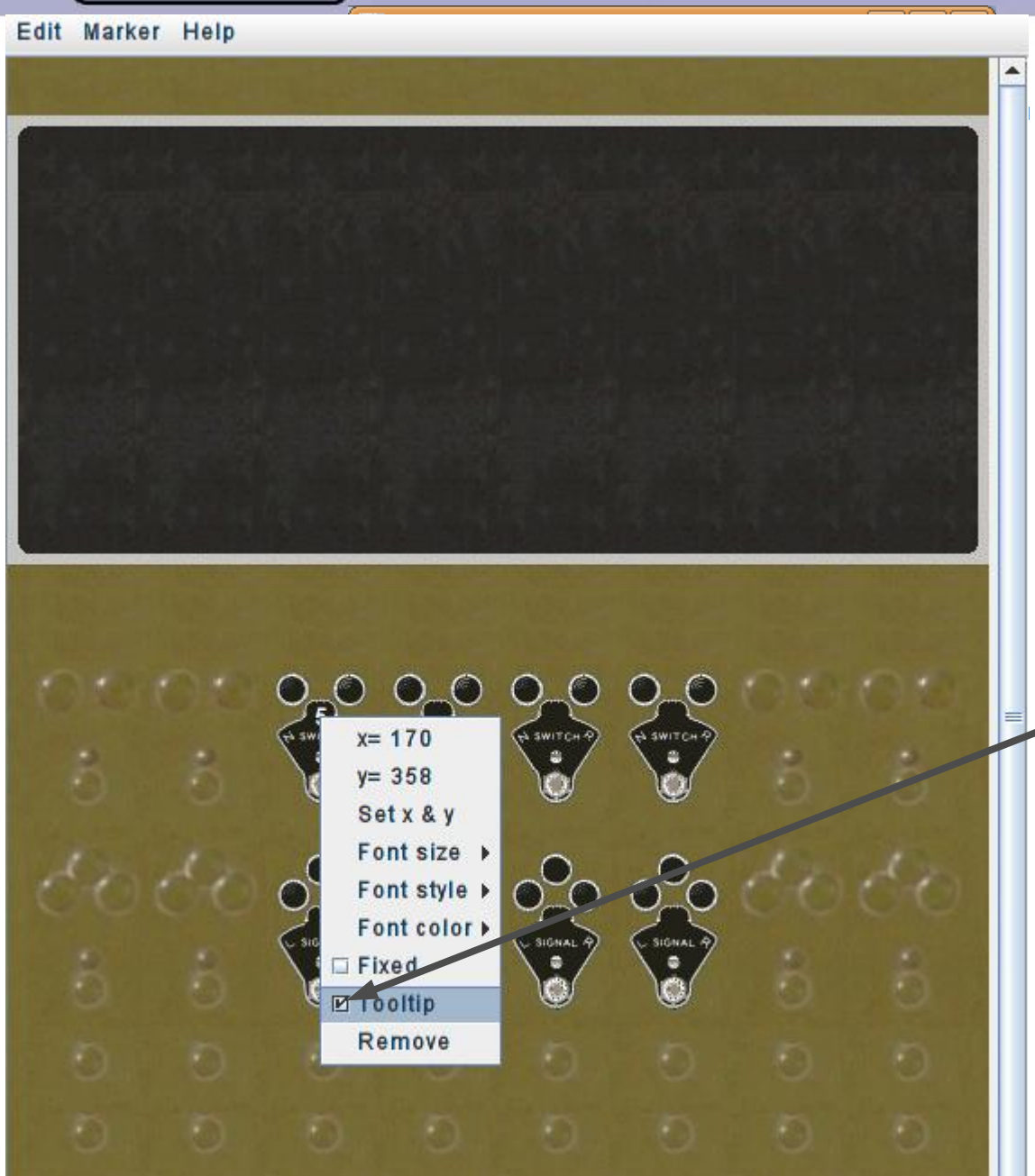



## Text

Pausing the mouse over any graphic object will bring up a tool tip. During panel development this is a good thing, especially for sensors and turnouts. However once the panel is in operation this can become distracting.

# Panel Editor

## Controlling Tool Tips



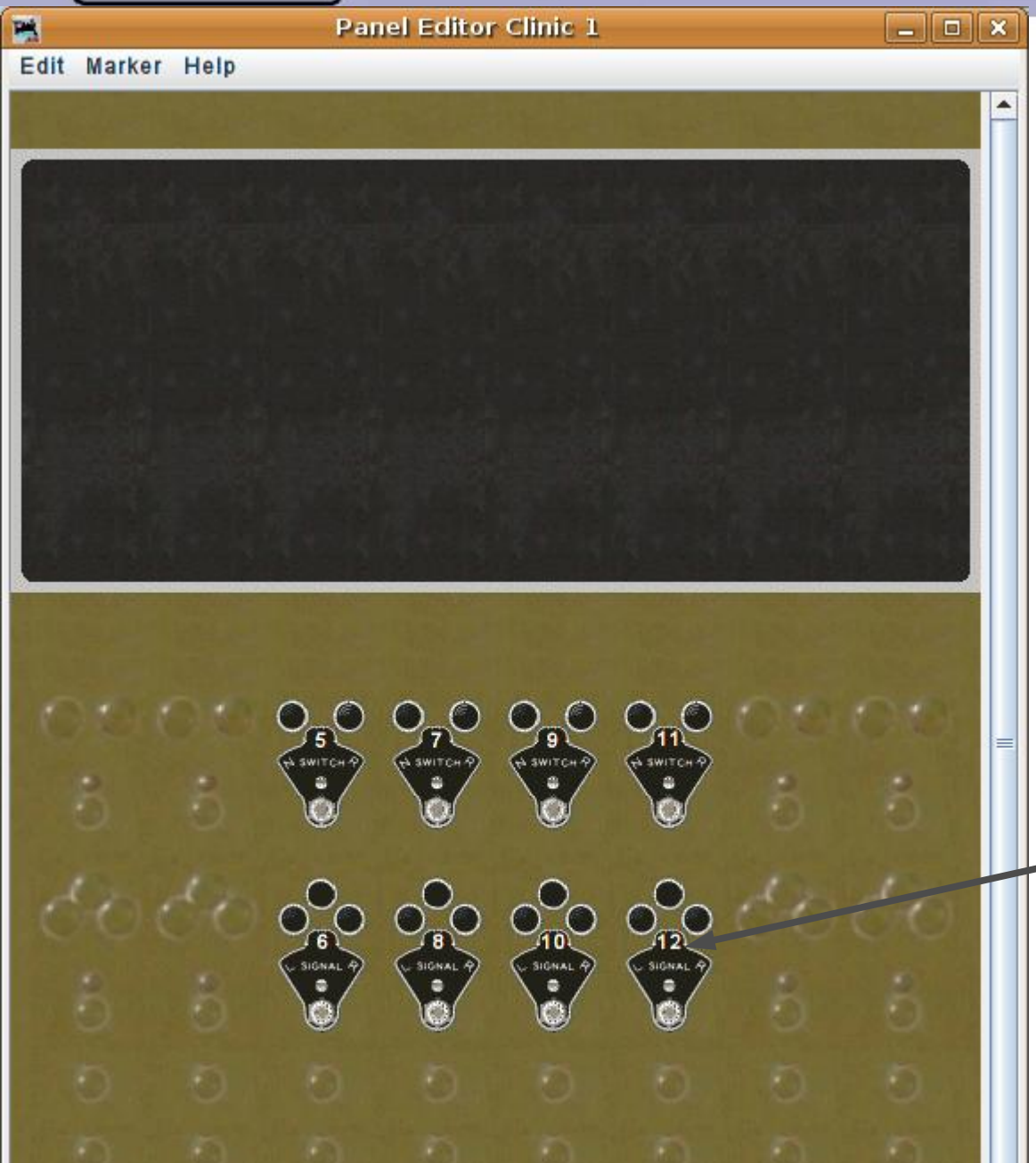

## Text

Pausing the mouse over any graphic object will bring up a tool tip. During panel development this is a good thing, especially for sensors and turnouts. However once the panel is in operation this can become distracting.

To eliminate the tool tips for any item, right click on the item, and then uncheck the 'Tooltip' check box.

# Panel Editor

Finishing off




## Text

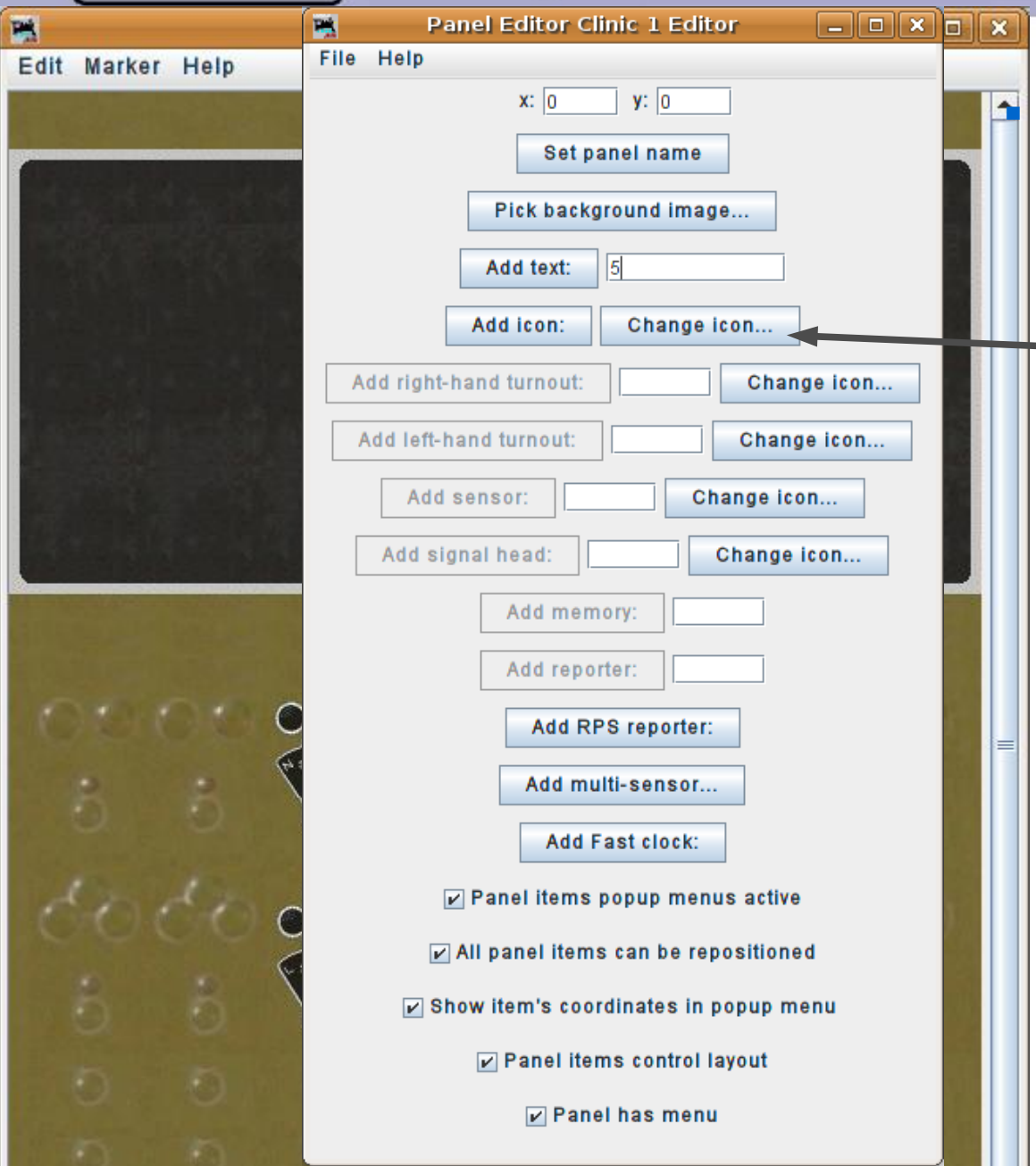
Pausing the mouse over any graphic object will bring up a tool tip. During panel development this is a good thing, especially for sensors and turnouts. However once the panel is in operation this can become distracting.

To eliminate the tool tips for any item, right click on the item, and then uncheck the 'Tooltip' check box.

In a similar way I have added numbers to each plate. I also reduced the font size of each number to 11pt. to better fit in the space available on the plate.

# Panel Editor

## Adding Icons

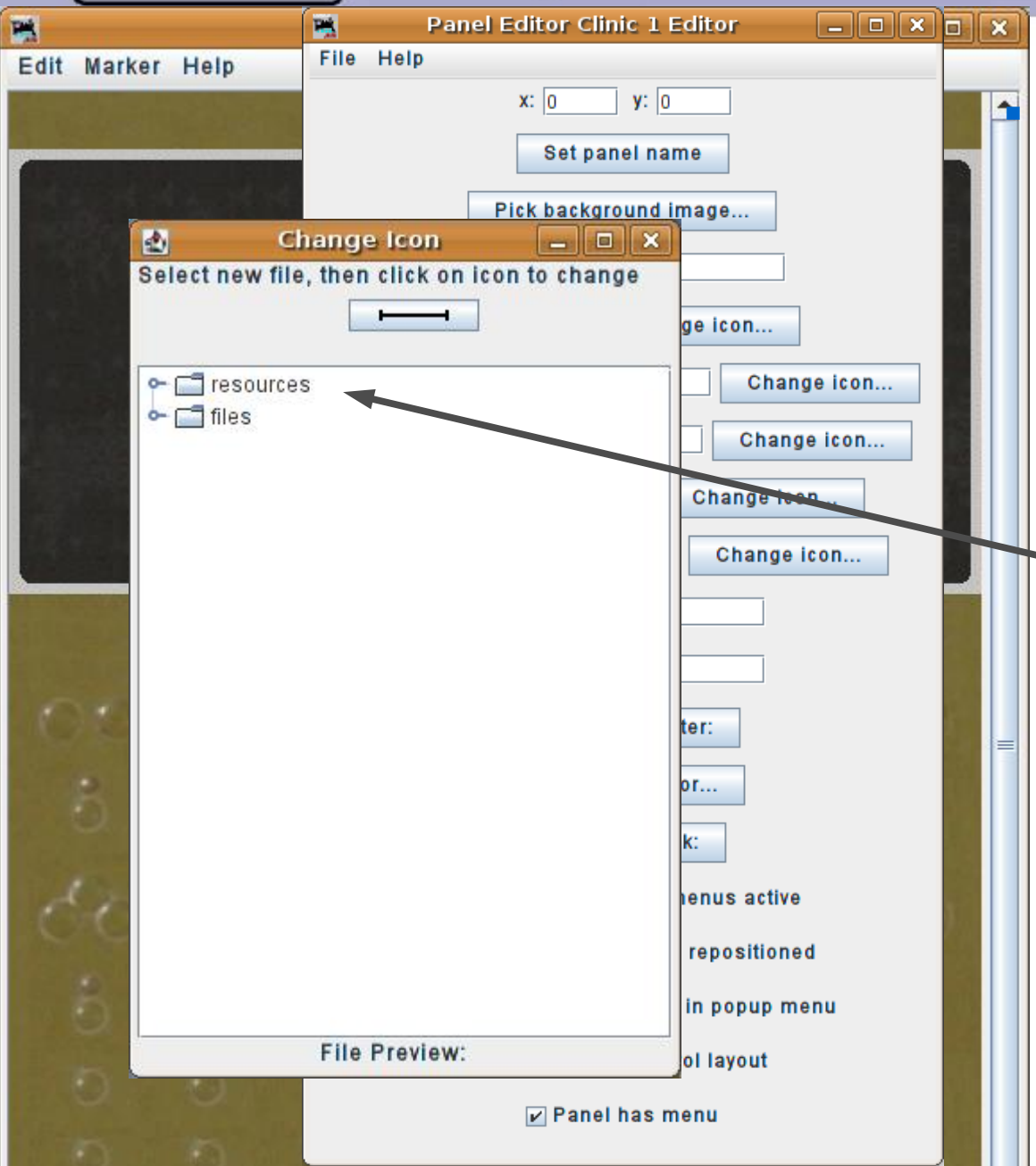



## Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

# Panel Editor

## Adding Icons



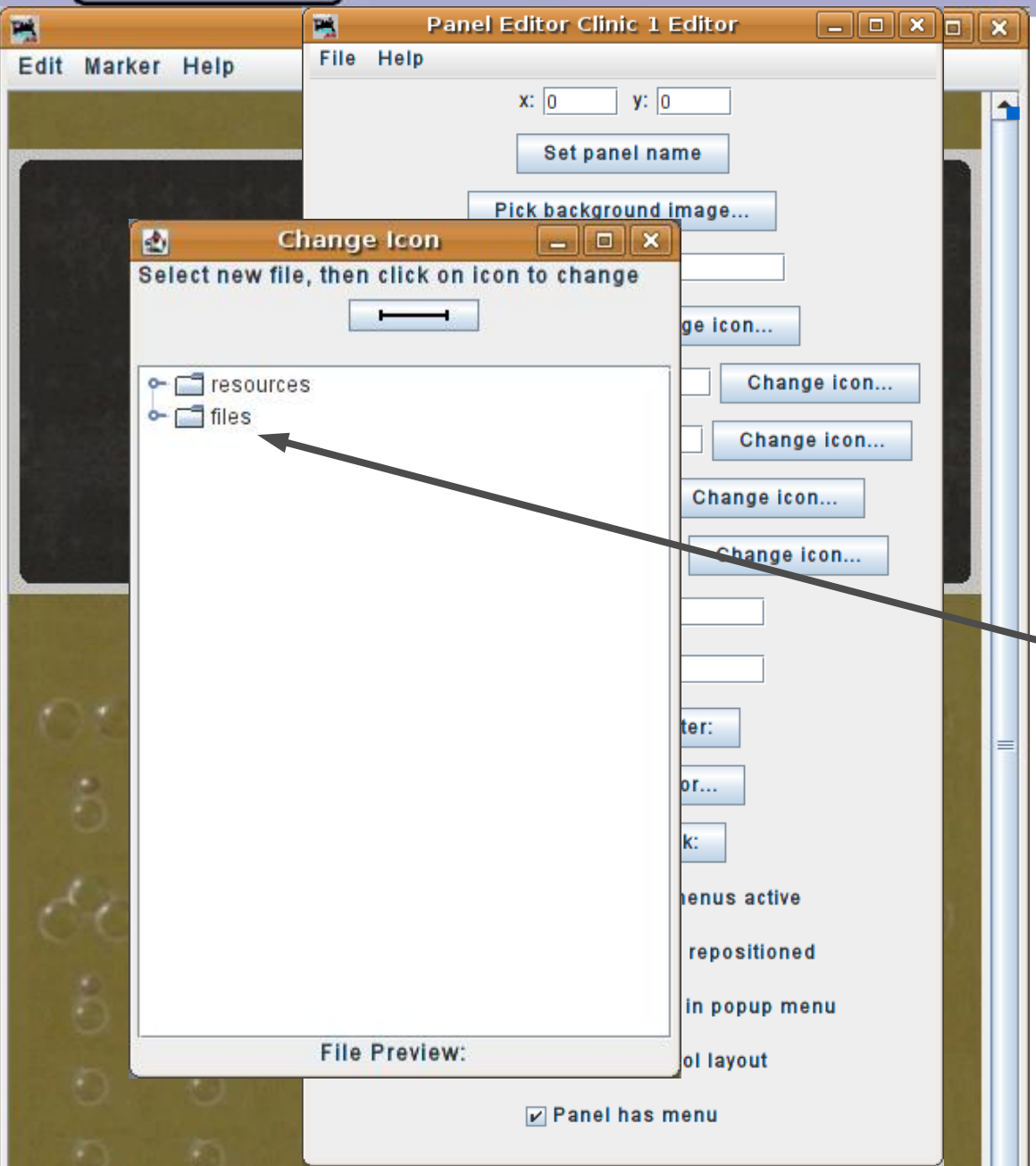

## Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

- 'resources' are the files included with JMRI.

# Panel Editor

## Adding Icons



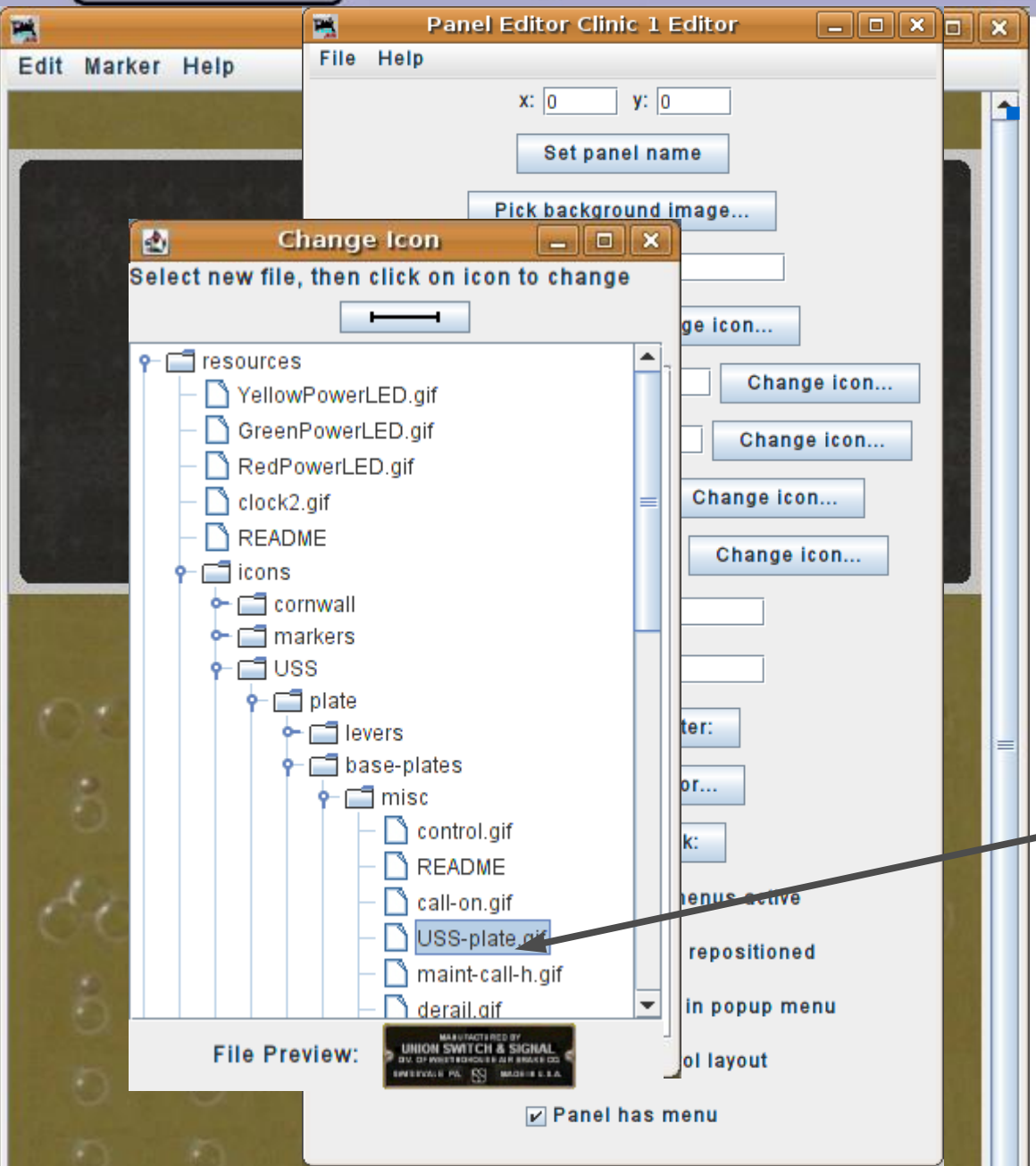

## Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

- 'resources' are the resource files included with JMRI.
- 'files' are any files that you may add into your local 'resources' folder.

# Panel Editor

## Adding Icons



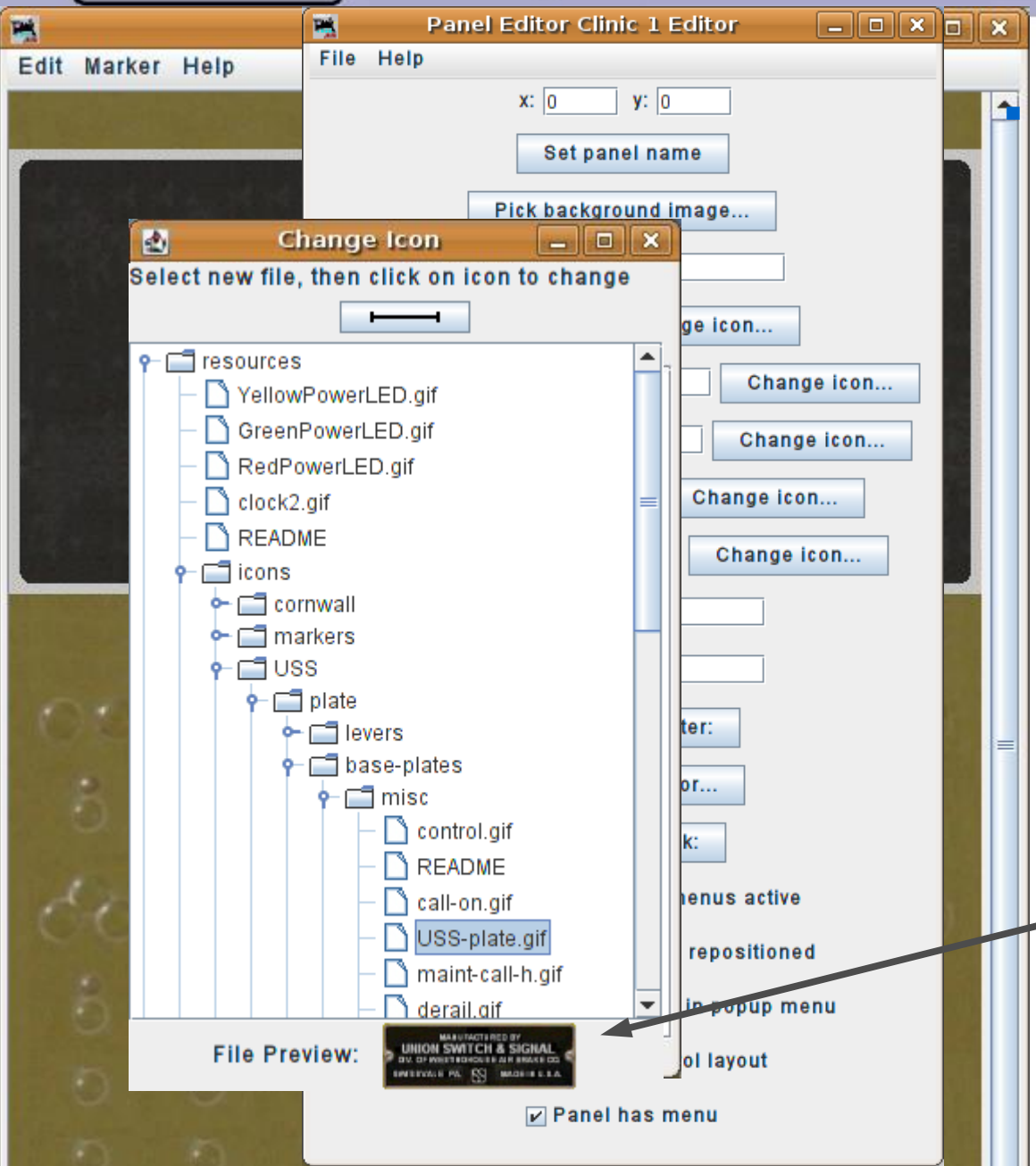

## Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

- 'resources' are the resource files included with JMRI.
- 'files' are any files that you may add into your local 'resources' folder.
- Drill down to the USS-plate image.

# Panel Editor

## Adding Icons



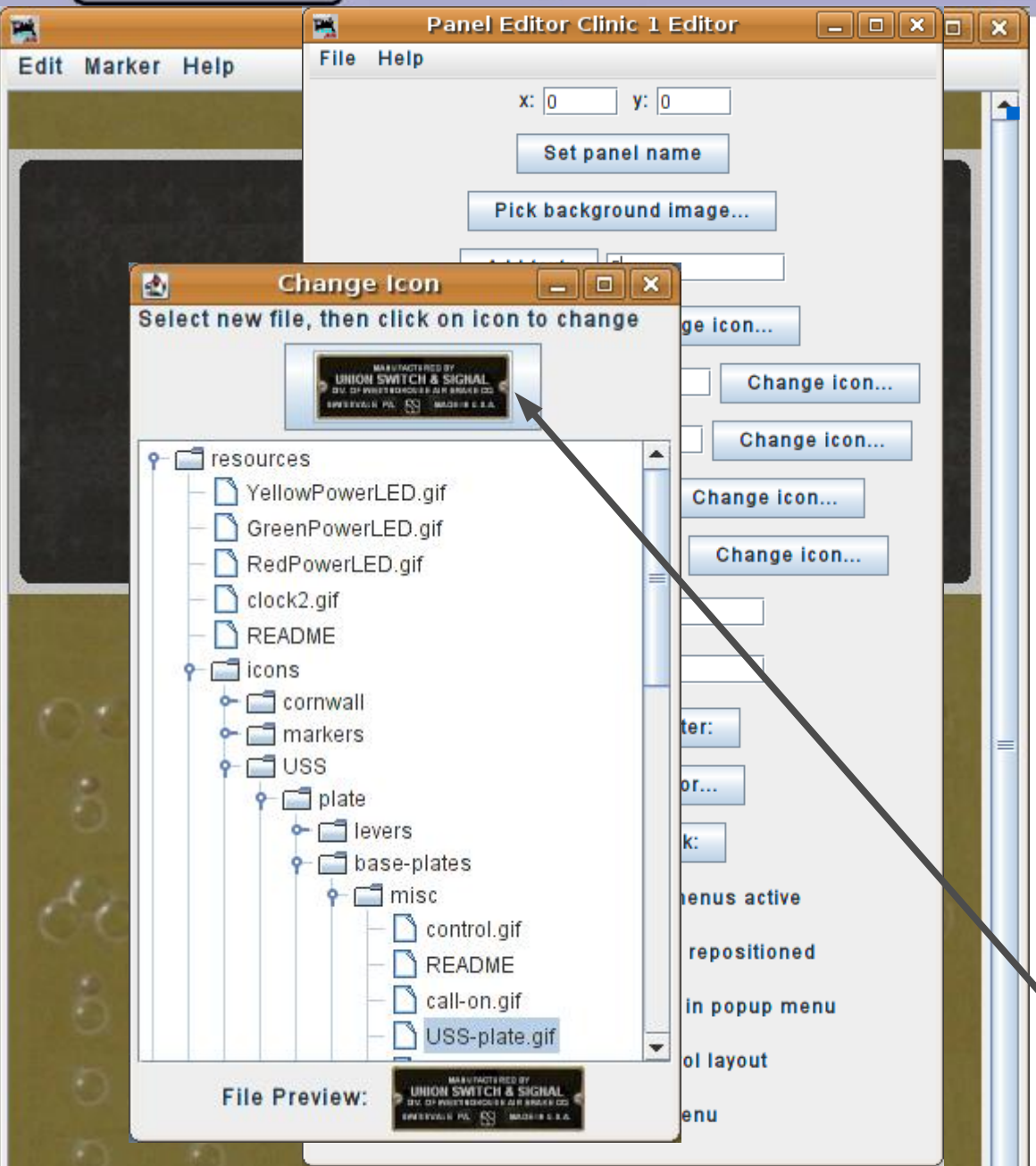

# Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

- 'resources' are the resource files included with JMRI.
- 'files' are any files that you may add into your local 'resources' folder.
- Drill down to the USS-plate image.
- A preview of the selected image shows at the bottom of the window.

# Panel Editor

## Adding Icons



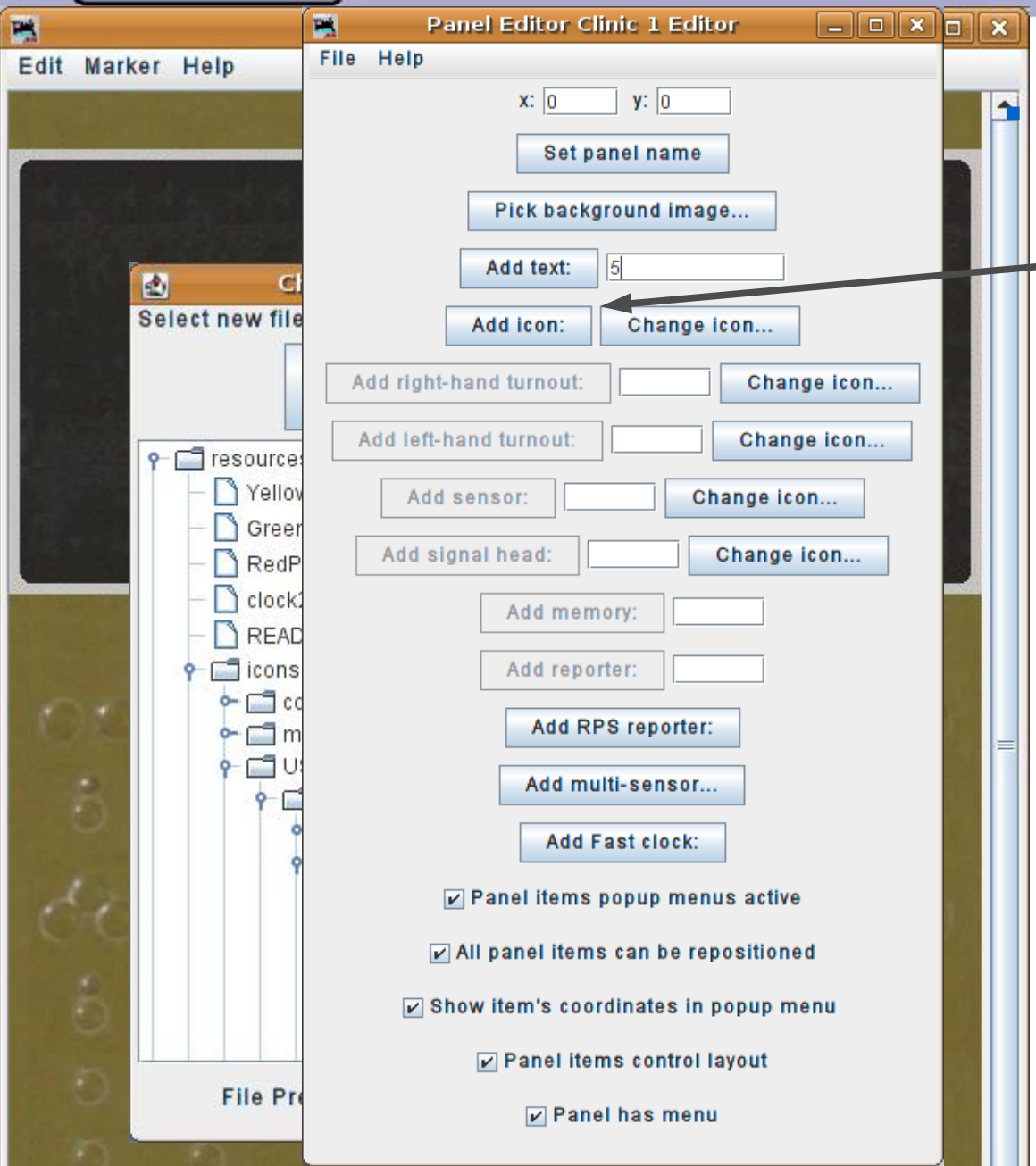

## Icons

Our panel needs a builders plate, so bring up the editor again and click on 'Change Icon' (next to 'Add Icon:') to select one.

- 'resources' are the resource files included with JMRI.
- 'files' are any files that you may add into your local 'resources' folder.
- Drill down to the USS-plate image.
- A preview of the selected image shows at the bottom of the window.
- Click on the upper icon image to change it into your new selection.

# Panel Editor

## Adding Icons

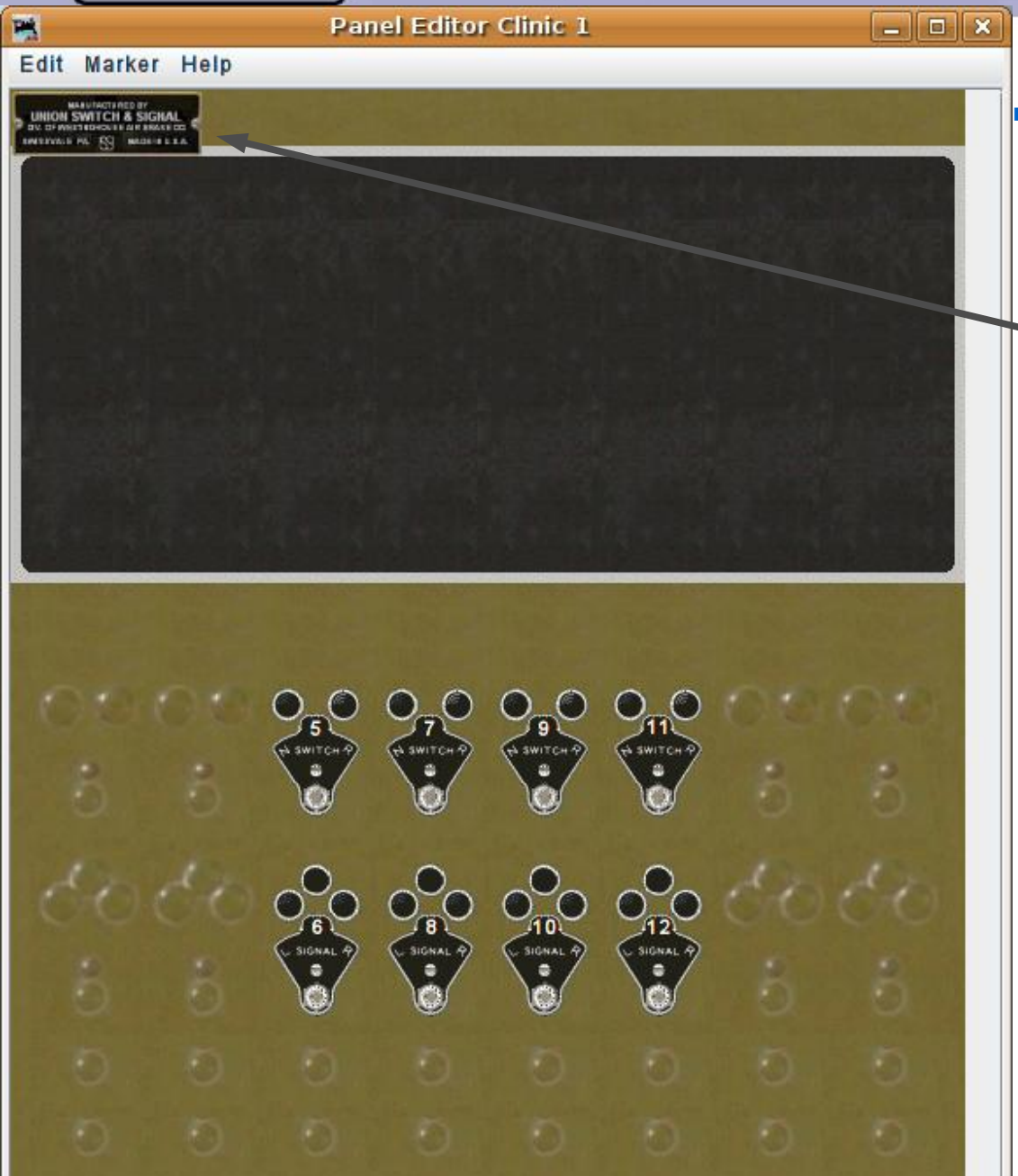



## Icons

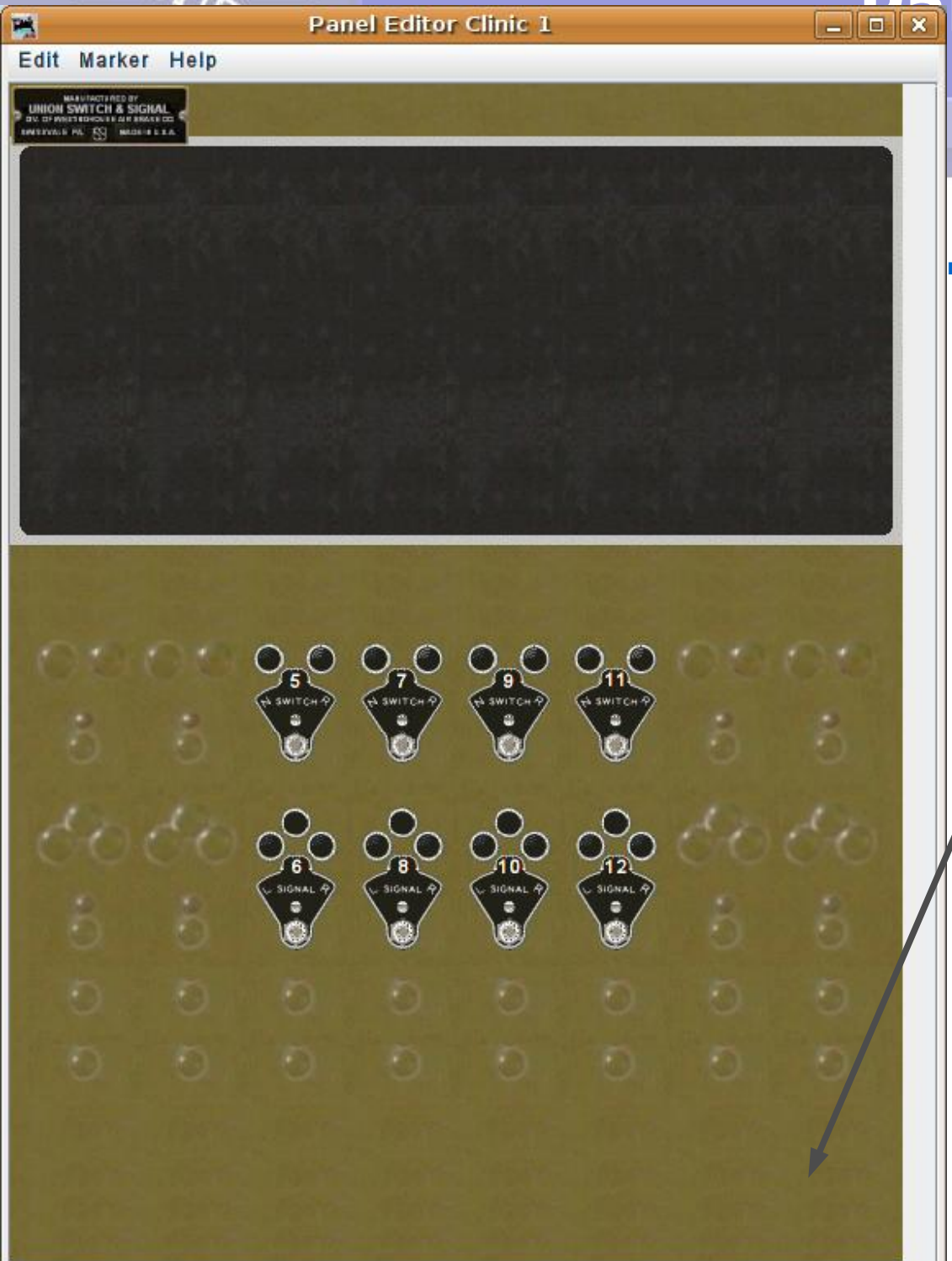
- Now click on 'Add icon:' to add a copy onto your panel.

# Panel Editor

## Adding Icons



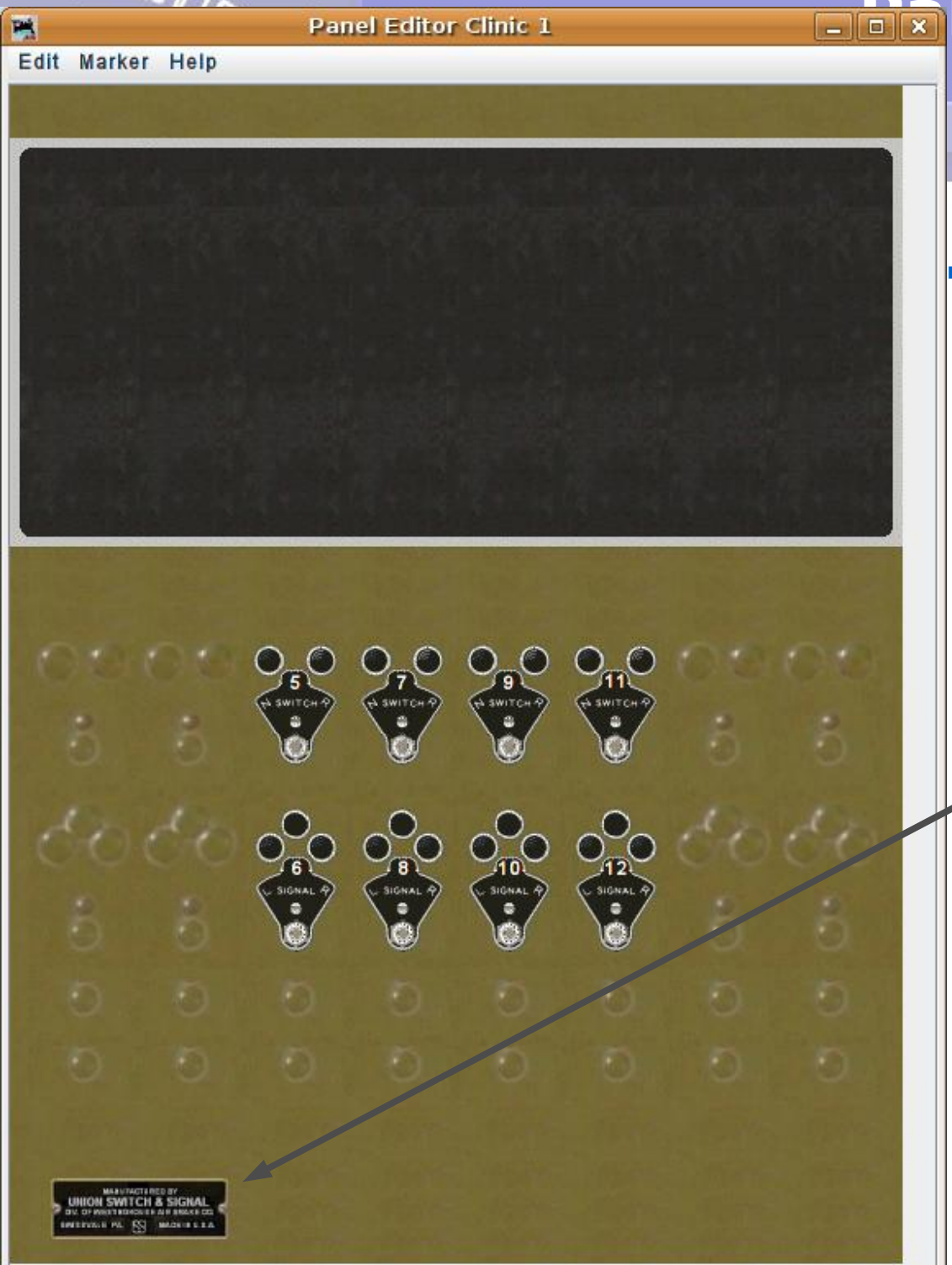

- **Icons**
  - Now click on 'Add icon:' to add a copy onto your panel.
  - It will appear at (0, 0) unless you change the coordinates.




- **Icons**
  - Now click on 'Add icon:' to add a copy onto your panel.
  - It will appear at (0, 0) unless you change the coordinates.
  - The actual panel image is taller than I have been showing in this presentation window.

# Panel Editor

## Adding Icons




- **Icons**
  - Now click on 'Add icon:' to add a copy onto your panel.
  - It will appear at (0, 0) unless you change the coordinates.
  - The actual panel image is taller than I have been showing in this presentation window.
  - Move the image down to the lower part of the panel and 'bolt' it in place by checking the 'Fixed' checkbox.

# Panel Editor

- What we have covered so far:
  - Getting started – Panel Editor
  - Adding a background image
  - Adding text
  - Adding fixed images
- Where we are going:
  - Active images - Direct layout control (PP-clinic-2)
  - Active images - Indirect layout control (PP-clinic-3)