



XML Editing

Dick Bronson - *RR-CirKits, Inc.*

Further Clinics in this series:

- Create a Detailed CTC Machine Model with JMRI/PanelPro
10:00 PM, Monday, July 6th
- Introduction to Layout Control with JMRI/PanelPro
 - This Clinic is a Repeat 4:00 PM, Friday, July 10th

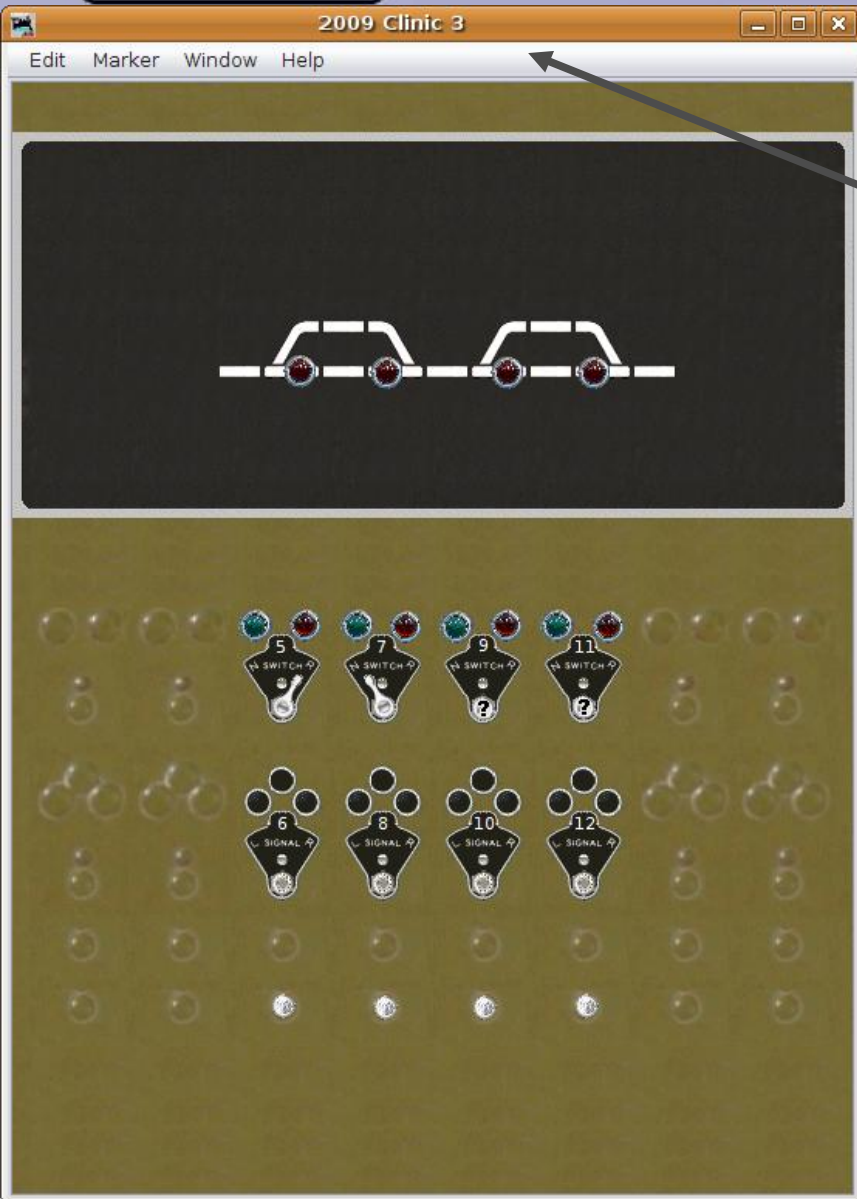


Where we are going:

- New graphical editing options for Logix and Panels
- SSL – Simple Signal Logic (SSL-clinic-2)

Indirect Layout Control

Logix copy

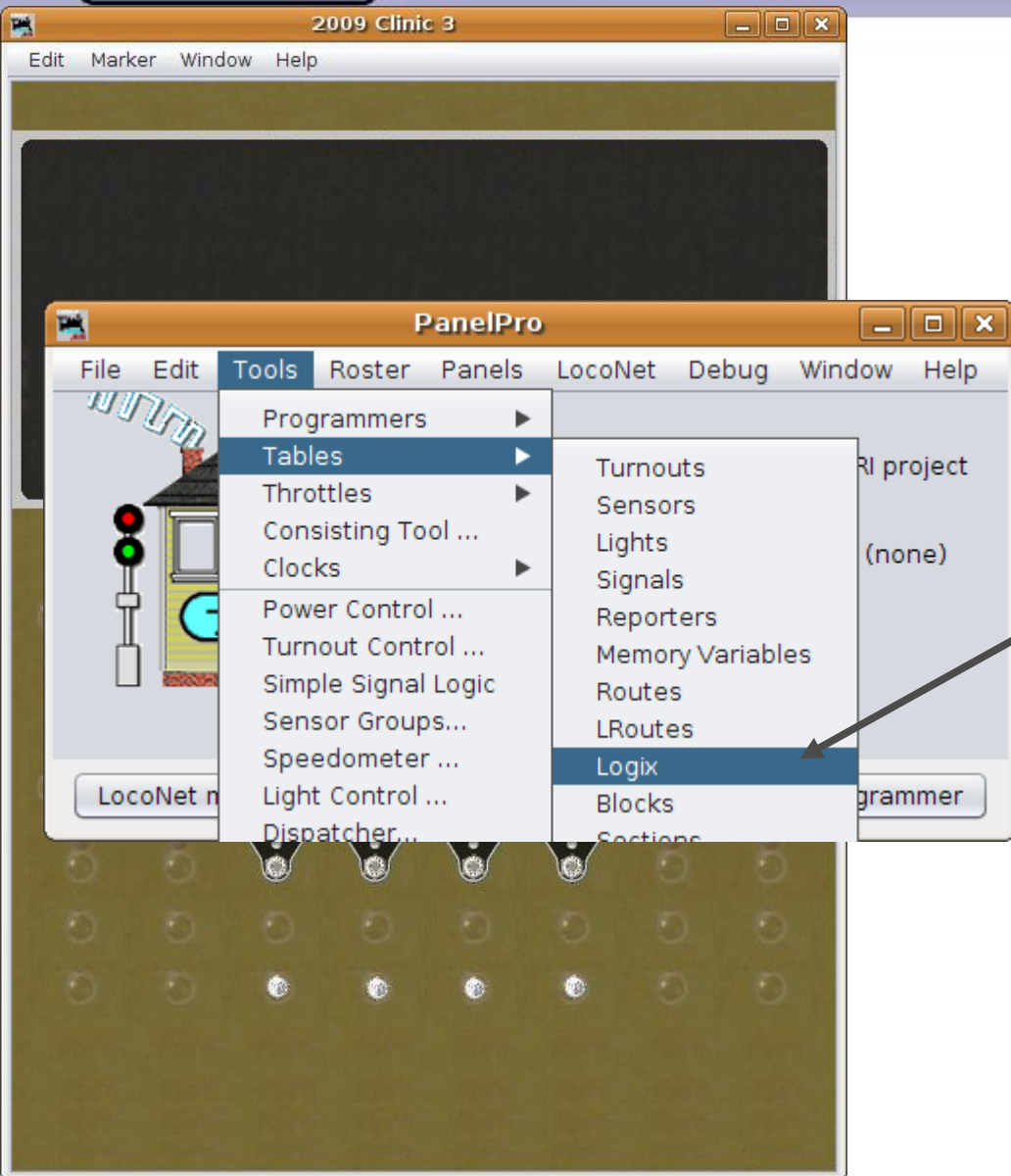


Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.

Indirect Layout Control

Logix copy

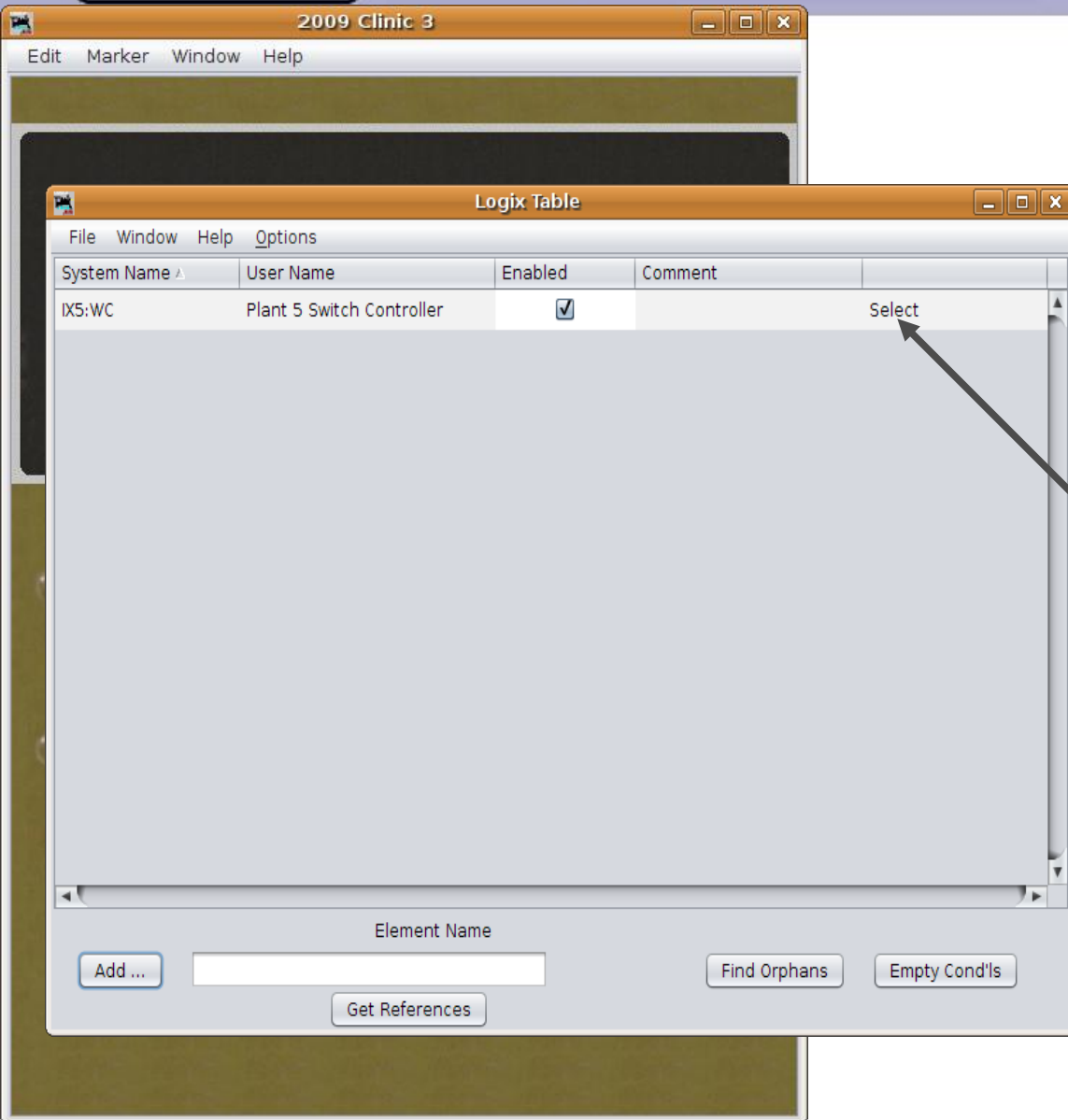


Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.
- Select 'Tools - Logix' to reopen our Logix for this panel.

Indirect Layout Control

Logix copy



2009 Clinic 3

Edit Marker Window Help

Logix Table

File Window Help Options

System Name	User Name	Enabled	Comment
IX5:WC	Plant 5 Switch Controller	<input checked="" type="checkbox"/>	Select

Element Name

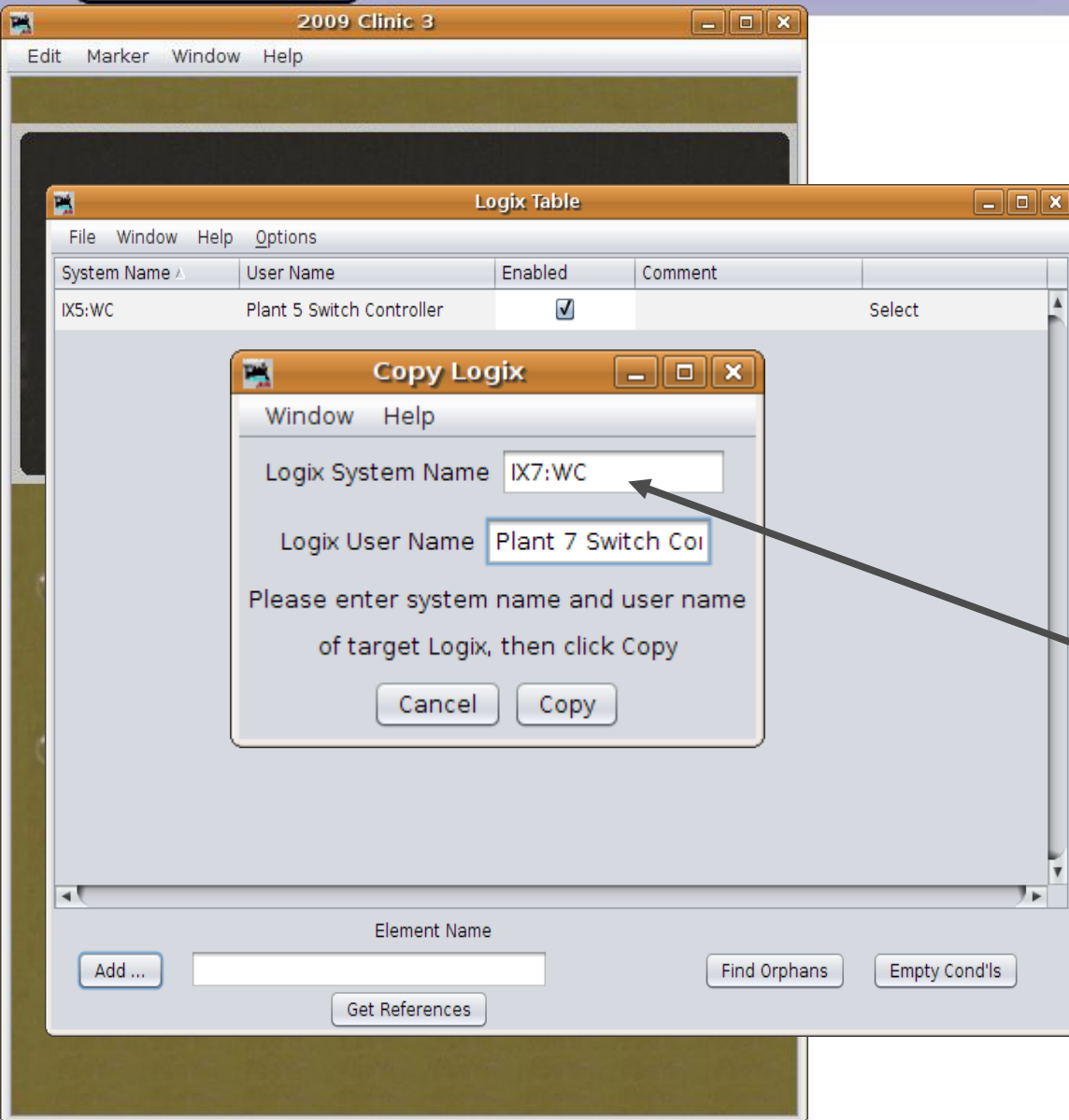
Add ... Find Orphans Empty Cond'ls Get References

Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.
- Select 'Tools - Logix' to reopen our Logix for this panel.
- Click 'Select' and choose 'Copy'

Indirect Layout Control

Logix copy

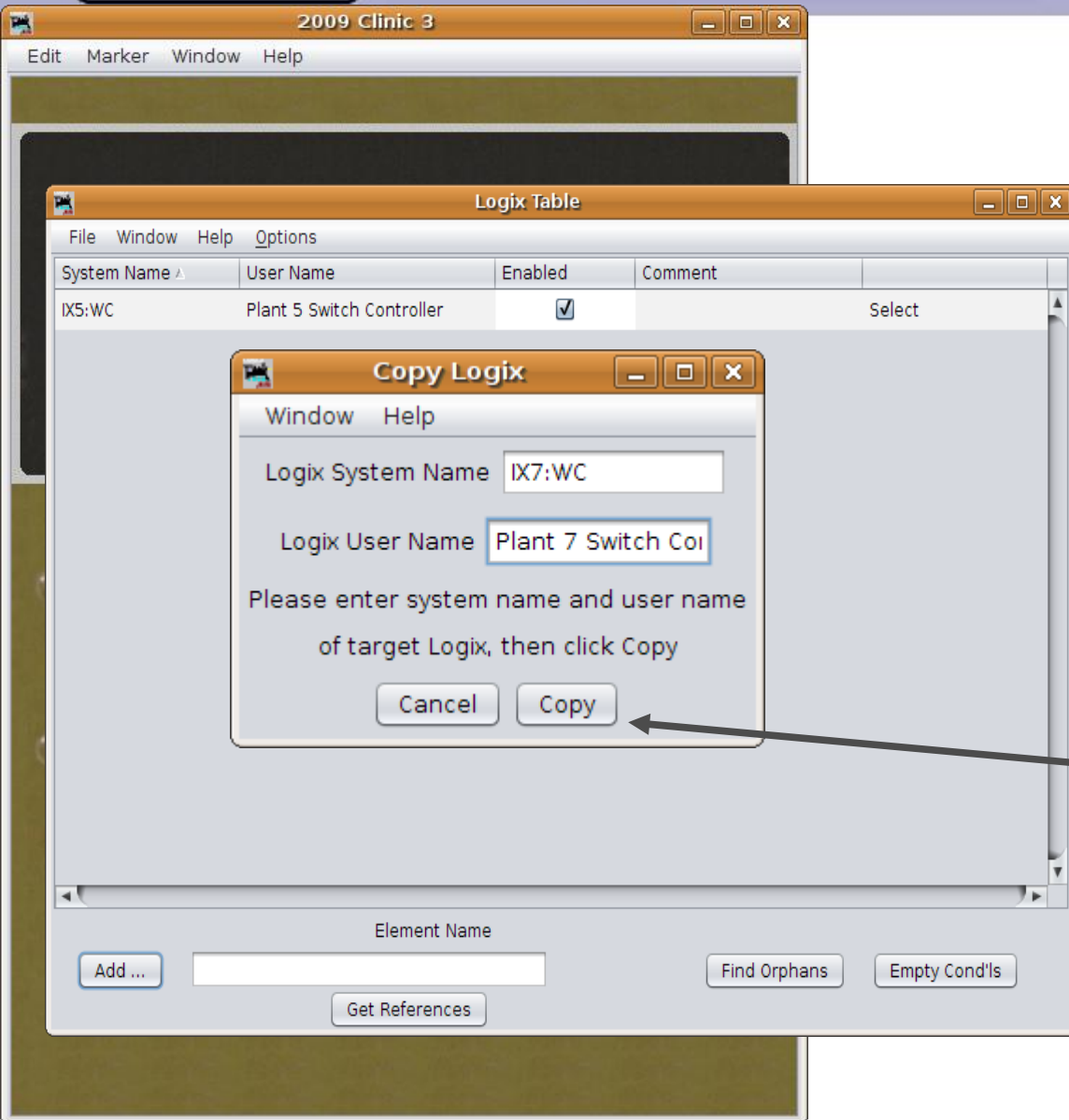


Logix copy

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- Select 'Tools - Logix' to reopen our Logix for this panel.
- Click 'Select' and choose 'Copy'
- Enter the new Logix names.

Indirect Layout Control

Logix copy

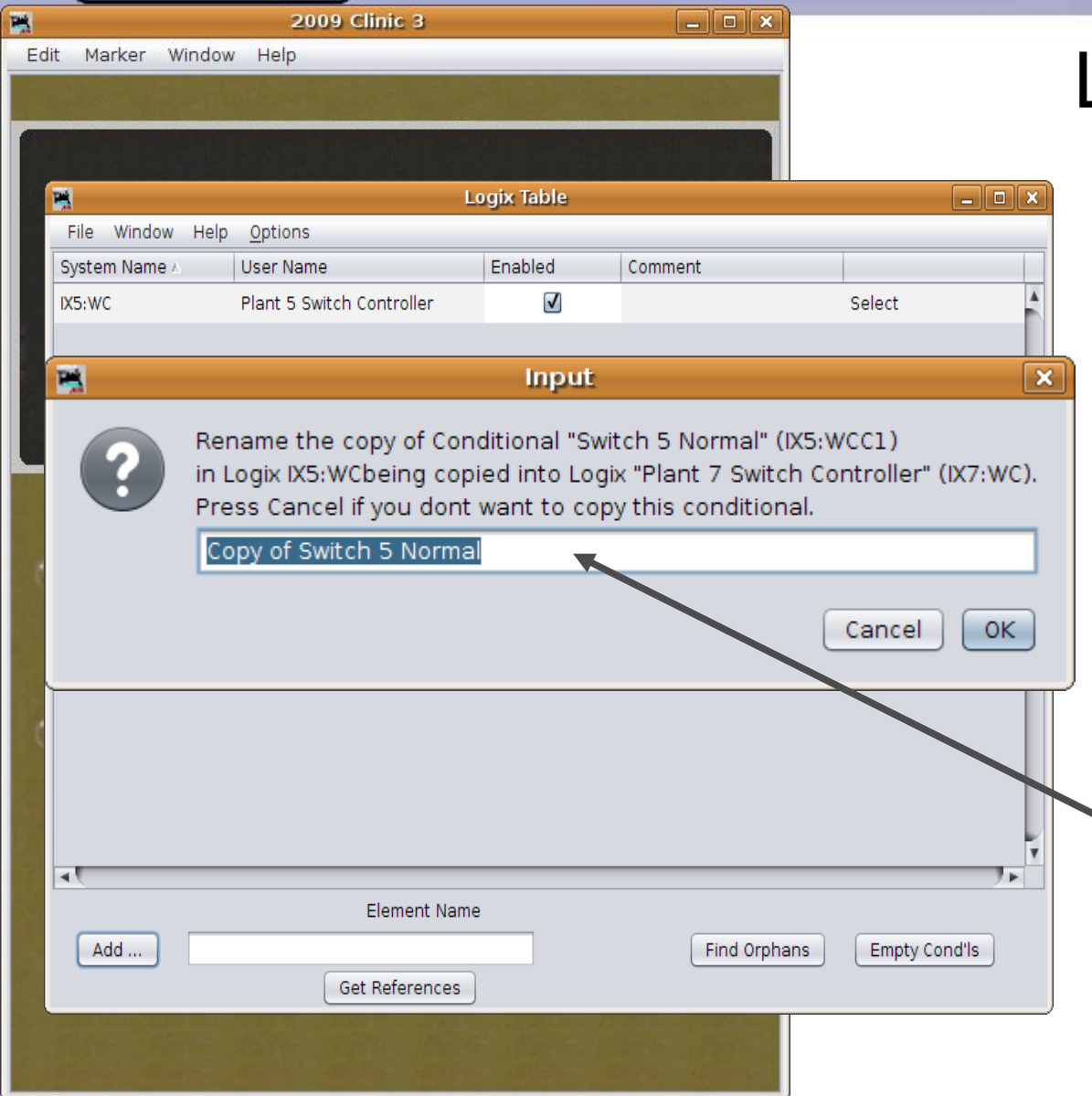


Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.
- Select 'Tools - Logix' to reopen our Logix for this panel.
- Click 'Select' and choose 'Copy'
- Enter the new Logix names.
- Then 'Copy'

Indirect Layout Control

Logix copy

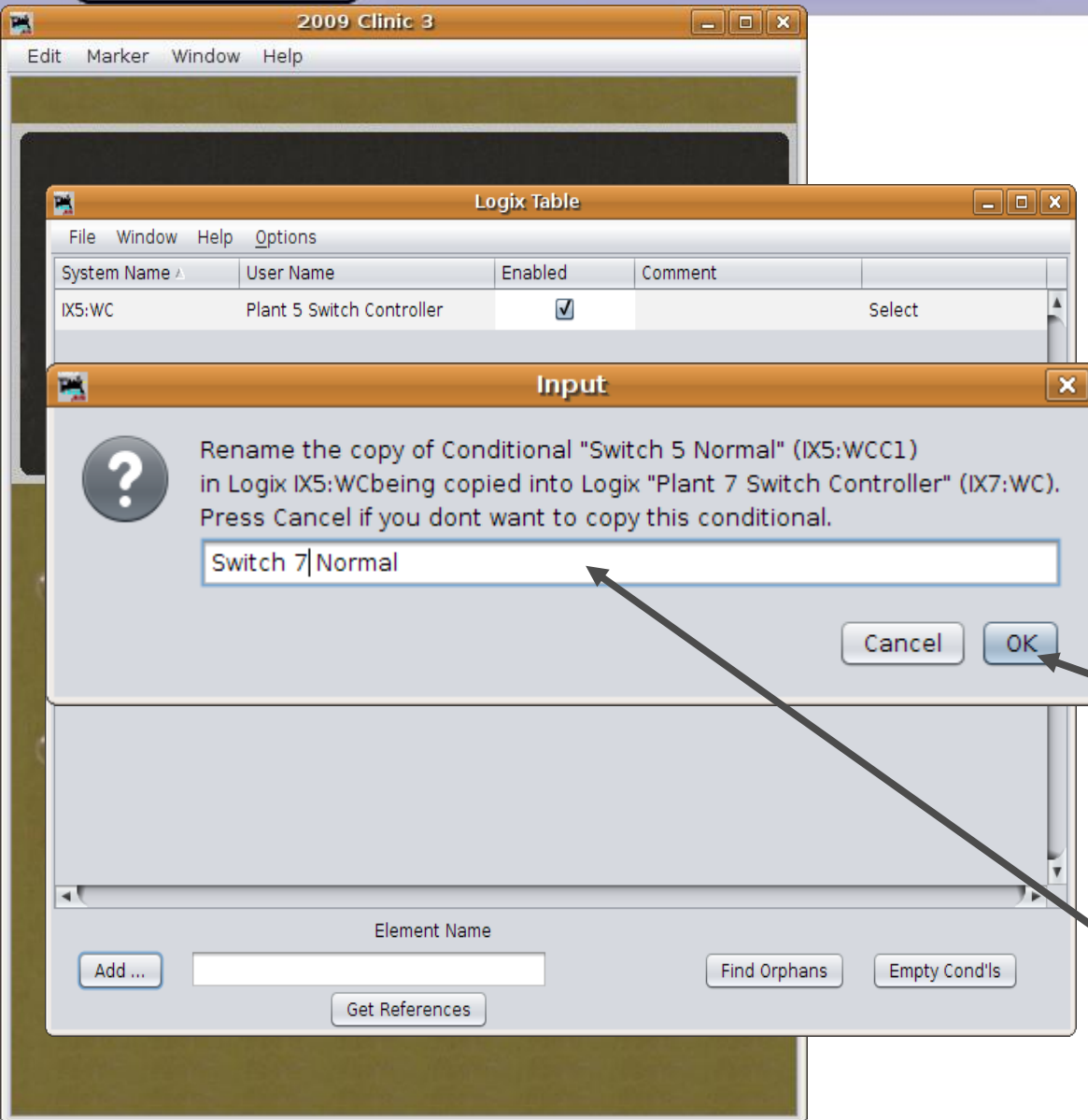


Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.
- Select 'Tools - Logix' to reopen our Logix for this panel.
- Click 'Select' and choose 'Copy'
- Enter the new Logix names.
- Then 'Copy'
- Change the names of each conditional you want to copy.

Indirect Layout Control

Logix copy

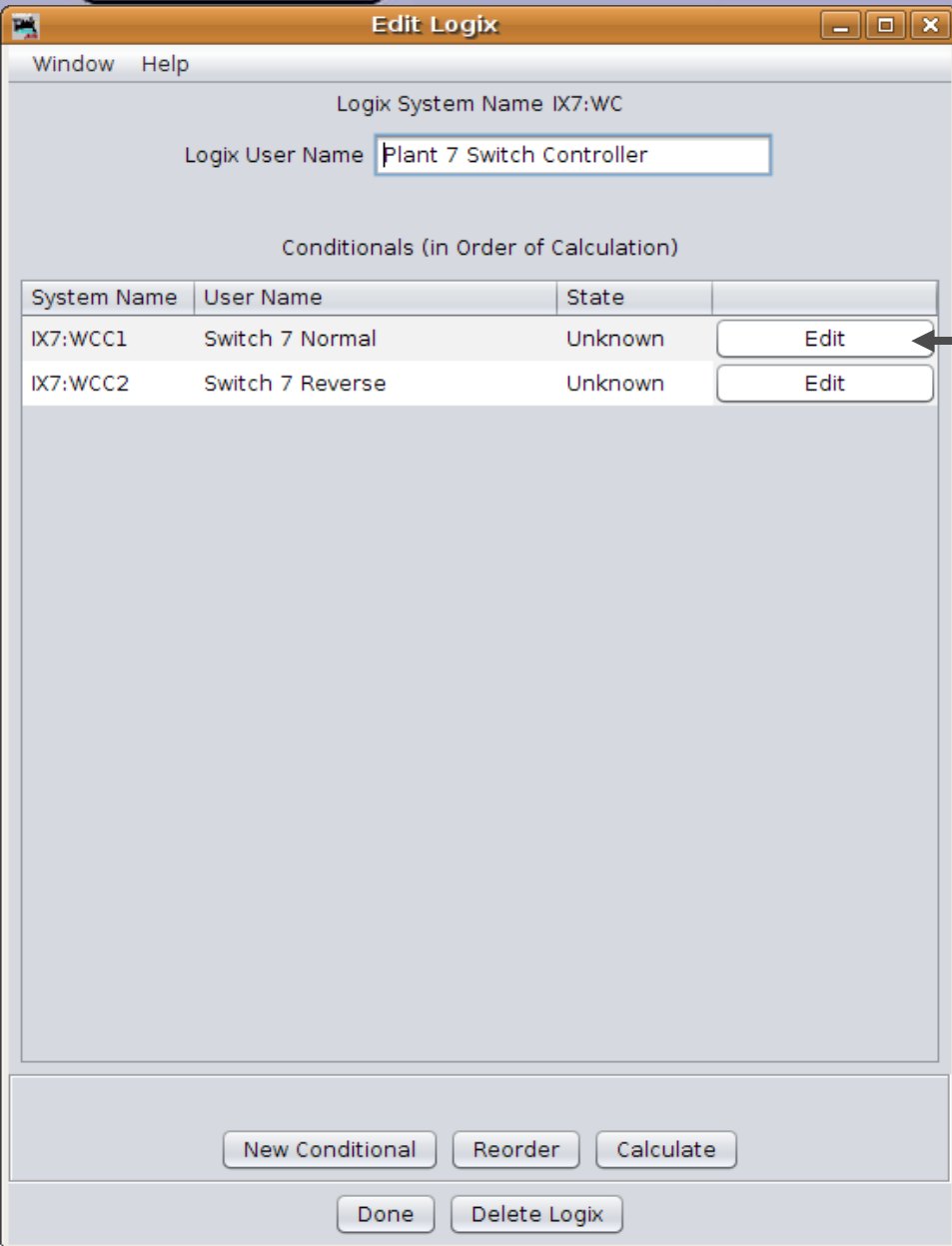


Logix copy

- At the end of the last section we had some Logix for a single lever. Reload 2009Clinic3.xml if you do not already have it open.
- Select 'Tools - Logix' to reopen our Logix for this panel.
- Click 'Select' and choose 'Copy'
- Enter the new Logix names.
- Then 'Copy'
- Change the names of each conditional you want to copy.
- To their new values, then click 'OK'

Indirect Layout Control

Logix copy



Logix copy

- This copied the full structure of the Logix under a new name but of course you must still edit each conditional and enter its proper new values.

Indirect Layout Control

Logix copy



Window Help

Conditional System Name IX7:WCC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable Description	State	Trigg...		
R1			Sensor, LS6, for Sensor Inactive	True	<input type="checkbox"/>	Edit	Delete
R2	AND		Sensor, IS8:CB, for Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R3	AND	NOT	Turnout, LT2, for Turnout Closed	True	<input type="checkbox"/>	Edit	Delete
R4	AND		Sensor, IS7:WL, for Sensor Active	True	<input type="checkbox"/>	Edit	Delete

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-...	Edit	Delete
On Change To True, Delayed Set Turnout, LT2 to Closed, after 5 seconds.	Edit	Delete

Logix copy

- This copied the full structure of the Logix under a new name but of course you must still edit each conditional and enter its proper new values.
- This is much faster than making a new entry from scratch as many times only one number must change per entry.

Indirect Layout Control

Logix copy



Window Help

Conditional System Name IX7:WCC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable Description	State	Trigg...		
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R2	AND		Sensor, IS8:CB, for Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R3	AND	NOT	Turnout, LT2, for Turnout Closed	True	<input type="checkbox"/>	Edit	Delete
R4	AND		Sensor, IS7:WL, for Sensor Active	True	<input type="checkbox"/>	Edit	Delete

Logic Operator

▼

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-...	Edit	Delete
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- This copies the full structure of the Logix under a new name but of course you must still edit each conditional and enter its proper new values.
- This is much faster than making a new entry from scratch as many times only one number must change per entry.
- Click Edit to change each line.

Indirect Layout Control

Logix copy



Logix copy

- This copies the full structure of the Logix under a new name but of course you must still edit each conditional and enter its proper new values.
- This is much faster than making a new entry from scratch as many times only one number must change per entry.
- Click Edit to change each line.
- In this case correct the sensor name for plant 7, then 'Update'.

Edit Conditional

Conditional System Name IX7:WCC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State	Variable	Description	State	Trigg...		
R1				Sensor, LS6, for Sensor Inactive		True	<input type="checkbox"/>	Edit	Delete

Edit Variable

Antecedent Variable

Variable Type:

System / User Name:

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-...	Edit	Delete
On Change To True, Delayed Set Turnout, LT2 to Closed, after 5 seconds.	Edit	Delete

Indirect Layout Control

Logix copy



Conditional System Name IX7:WCC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable Description	State	Trigg...		
R1			Sensor, LS6, for Sensor Inactive	True	<input type="checkbox"/>	Edit	Delete
R2	AND		Sensor, IS8:CB, for Sensor Active	False	<input checked="" type="checkbox"/>	Edit	Delete
R3	AND	NOT	Turnout, LT2, for Turnout Closed	True	<input type="checkbox"/>	Edit	Delete
R4	AND		Sensor, IS7:WL, for Sensor Active	True	<input type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator
AND

Actions

Consequent Actions (the 'then' part)

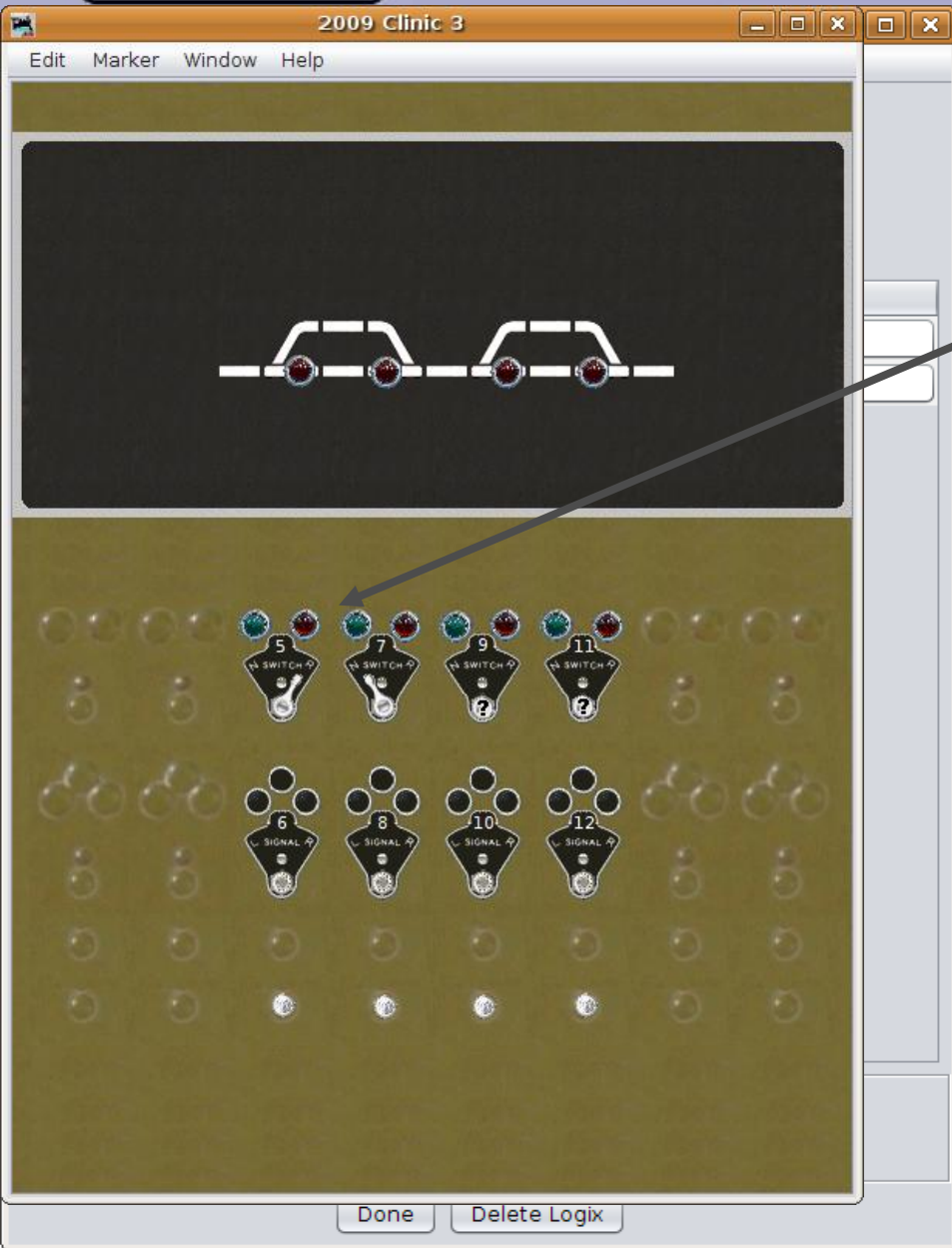
Action Description		
On Change To True, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-...	Edit	Delete
On Change To True, Delayed Set Turnout, LT2 to Closed, after 5 seconds.	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

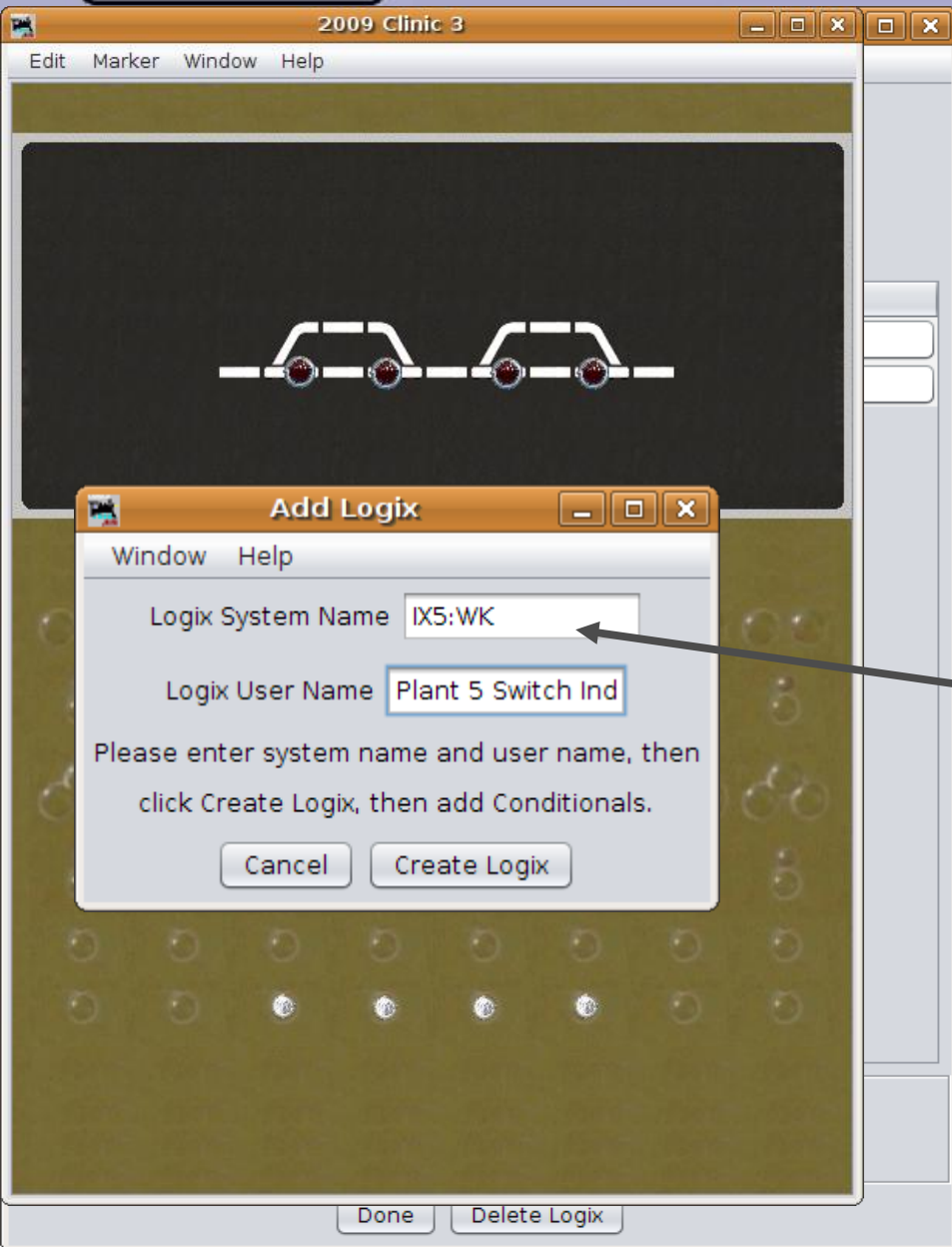
Logix copy

- This copies the full structure of the Logix under a new name but of course you must still edit each conditional and enter its proper new values.
- This is much faster than making a new entry from scratch as many times only one number must change per entry.
- Click Edit to change each line.
- In this case correct the sensor name for plant 7, then 'Update'.
- Click 'Update Conditional' and then 'Done' when all the copied conditionals have been changed to their new values.



Logix for Interface

- We left our last clinic with some Logix that couldn't be fully tested because we didn't have any visual turnout feedback.



Logix for Interface

- We left our last clinic with some Logix that couldn't be fully tested because we didn't have any visual turnout feedback.
- Lets solve this by connecting the turnout state with the panel indicators, again with sound and delay. The Logix name is: IX5:WK (plant **5**:, s**W**itch, indi**K**ator)

Indirect Layout Control

Logix for Interface



Logix for Interface

- We left our last clinic with some Logix that couldn't be fully tested because we didn't have any visual turnout feedback.
- Lets solve this by connecting the turnout state with the panel indicators, again with sound and delay. The Logix name is: IX5:WK (plant 5:, sWitch, indiKator)
- This Conditional has only one variable, the turnout 'LT1'

Window Help

Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for	Turnout Thrown	True	<input checked="" type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Logix for Interface

- We left our last clinic with some Logix that couldn't be fully tested because we didn't have any visual turnout feedback.
- Lets solve this by connecting the turnout state with the panel indicators, again with sound and delay. The Logix name is: IX5:WK (plant 5:, sWitch, indiKator)
- This Conditional has only one variable, the turnout 'LT1'
- However it has lots of actions. New in 2.6 is the capability of having as many actions as we require, not just two as originally allowed.

Window Help

Conditional System Name IX5:WK

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for Turnout Thrown		True	<input checked="" type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Logix for Interface

- This change allows us to do all the required actions for both thrown and closed actions in one single conditional.

Window Help

Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...	
R1			Turnout, LT1, for	Turnout Thrown	True	<input checked="" type="checkbox"/>	Edit Delete

Add State Variable Check State Variables

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Logix for Interface

- This change allows us to do all the required actions for both thrown and closed actions in one single conditional.
- First we do the actions that happen when the turnout is 'Thrown'. Turn off the 'N' lamp, then after 5 seconds turn on the 'R' lamp.

Window Help

Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for	Turnout Thrown	True	<input checked="" type="checkbox"/>	Edit	Delete

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Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Logix for Interface

- This change allows us to do all the required actions for both thrown and closed actions in one single conditional.
- First we do the actions that happen when the turnout is 'Thrown'. Turn off the 'N' lamp, then after 5 seconds turn on the 'R' lamp.
- Next we do the actions when the turnout is 'Un-thrown' (Closed). Turn off the 'R' lamp, then after 5 seconds turn on the 'N' lamp.

Window Help

Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for	Turnout Thrown	True	<input checked="" type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for Turnout	Thrown	True	<input checked="" type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator
AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive...	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Logix for Interface

- This change allows us to do all the required actions for both thrown and closed actions in one single conditional.
- First we do the actions that happen when the turnout is 'Thrown'. Turn off the 'N' lamp, then after 5 seconds turn on the 'R' lamp.
- Next we do the actions when the turnout is 'Un-thrown' (Closed). Turn off the 'R' lamp, then after 5 seconds turn on the 'N' lamp.
- Finally we do the actions that happen on any change. i.e. play the 'Sound of relays.'

Indirect Layout Control

Logix for Interface



Logix for Interface

- This change allows us to do all the required actions for both thrown and closed actions in one single conditional.
- First we do the actions that happen when the turnout is 'Thrown'. Turn off the 'N' lamp, then after 5 seconds turn on the 'R' lamp.
- Next we do the actions when the turnout is 'Un-thrown' (Closed). Turn off the 'R' lamp, then after 5 seconds turn on the 'N' lamp.
- Finally we do the actions that happen on any change. i.e. play the 'Sound of relays.'
- 'Update Conditional' to finish.

Conditional System Name IX5:WKC1

Conditional User Name

Logical Expression:

Antecedent Variables (the 'if' part)

Row	Oper	Neg	State Variable	Description	State	Trigg...		
R1			Turnout, LT1, for Turnout	Thrown	True	<input checked="" type="checkbox"/>	Edit	Delete

Add State Variable Check State Variables

Logic Operator

AND

Actions

Consequent Actions (the 'then' part)

Action Description		
On Change To True, Delayed Set Sensor, IS5:RWK to Active, after 5 seconds.	Edit	Delete
On Change To True, Set Sensor, IS5:NWK to Inactive	Edit	Delete
On Change To False, Set Sensor, IS5:RWK to Inactive	Edit	Delete
On Change To False, Delayed Set Sensor, IS5:NWK to Active, after 5 seconds.	Edit	Delete
On Change, Play Sound File from file, /usr/local/JMRI/resources/sounds/Code-receive....	Edit	Delete

Add Action Reorder

Update Conditional Cancel Delete Conditional

Indirect Layout Control

Logix for Interface



Logix for Interface

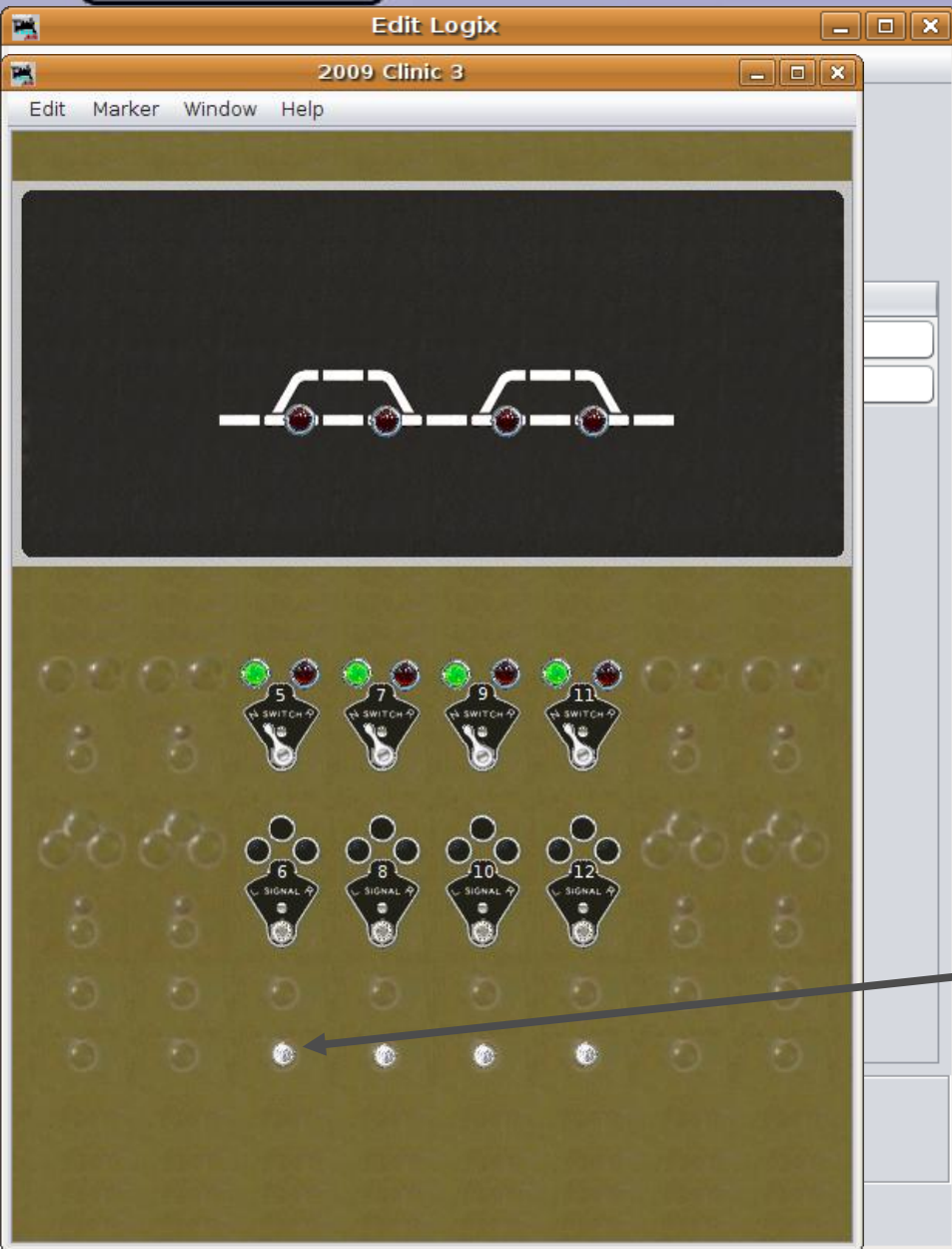
- Now after using the 'Copy' option and editing to match our panel items, we have sound and light for each position.

System Name	User Name	Enabled	Comment
IX5:WC	Plant 5 Switch Controller	<input checked="" type="checkbox"/>	Select
IX5:WK	Plant 5 Switch Indication	<input checked="" type="checkbox"/>	Select
IX7:WC	Plant 7 Switch Controller	<input checked="" type="checkbox"/>	Select
IX7:WK	Plant 7 Switch Indication	<input checked="" type="checkbox"/>	Select
IX9:WC	Plant 9 Switch Controller	<input checked="" type="checkbox"/>	Select
IX9:WK	Plant 9 Switch Indication	<input checked="" type="checkbox"/>	Select
IX11:WC	Plant 11 Switch Controller	<input checked="" type="checkbox"/>	Select
IX11:WK	Plant 11 Switch Indication	<input checked="" type="checkbox"/>	Select

Element Name

Add ... Find Orphans Empty Cond'ls

Get References



Logix for Interface

- Now after using the 'Copy' option and editing to match our panel items, we have sound and light for each position.
- Quick tests show that the panel now has animation and sounds, as well as basic interlocking.

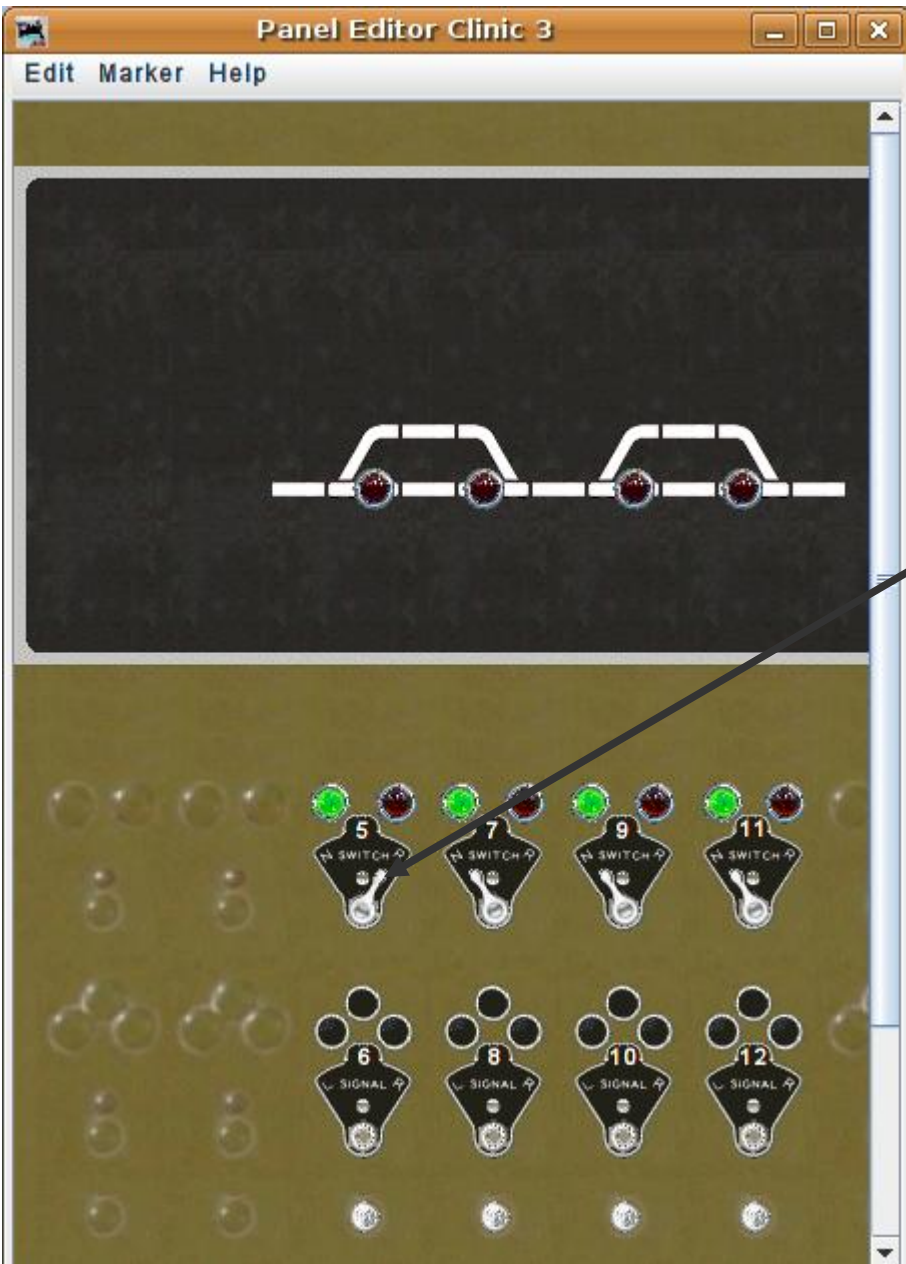
Indirect Layout Control

Logix test



Logix test

- Now change the lever.



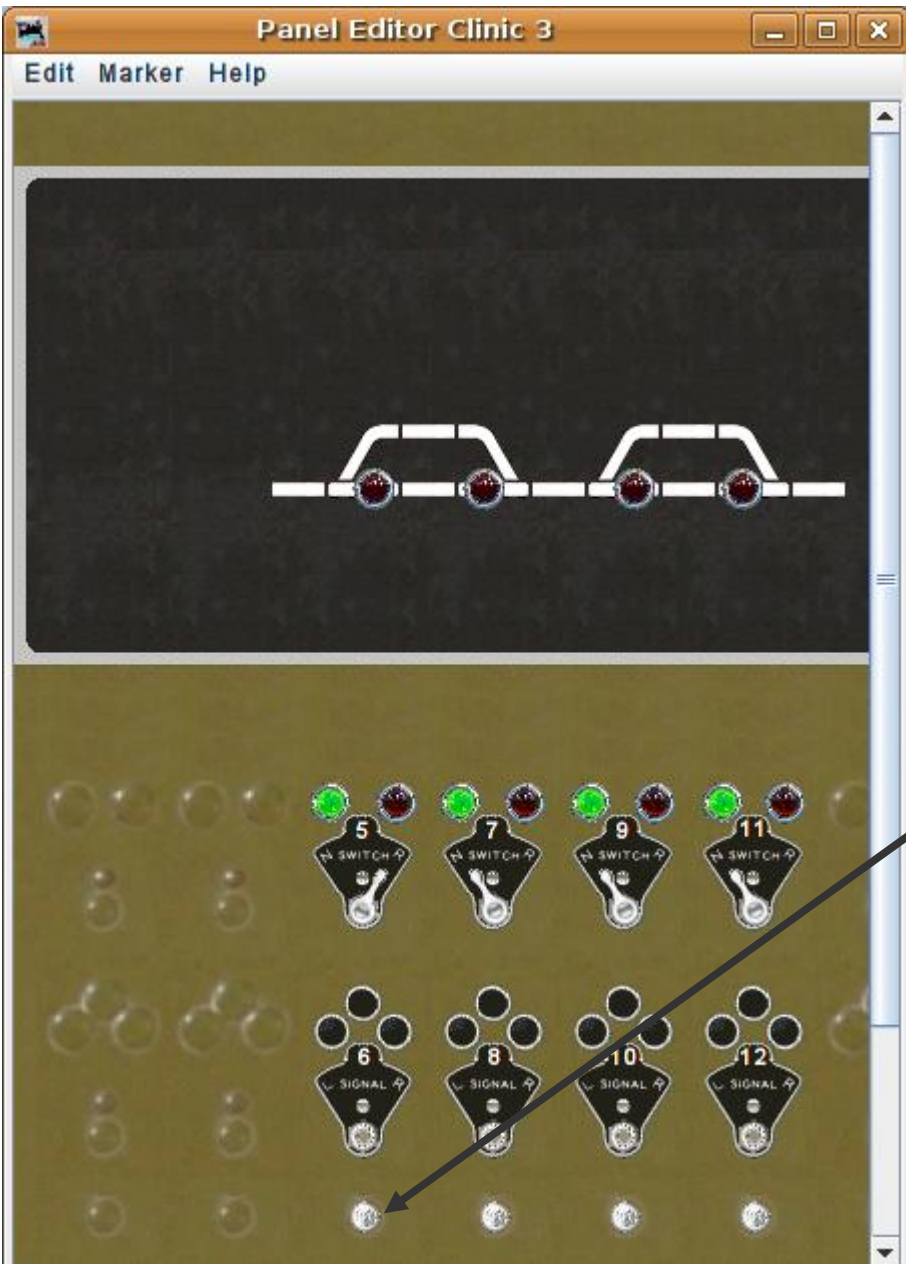
Indirect Layout Control

Logix test



Logix test

- Now change the lever.
- Push the Code Button.



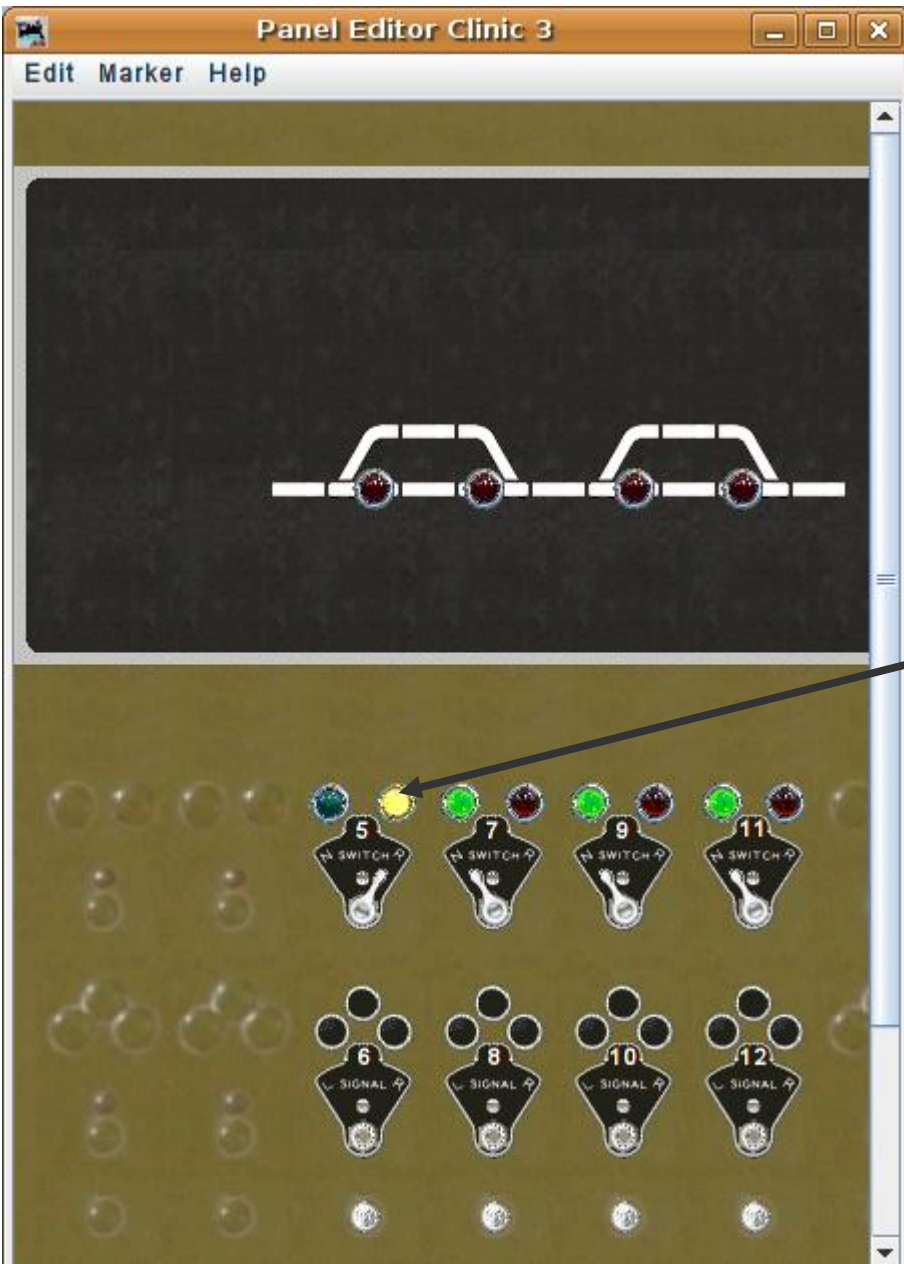
Indirect Layout Control

Logix entry



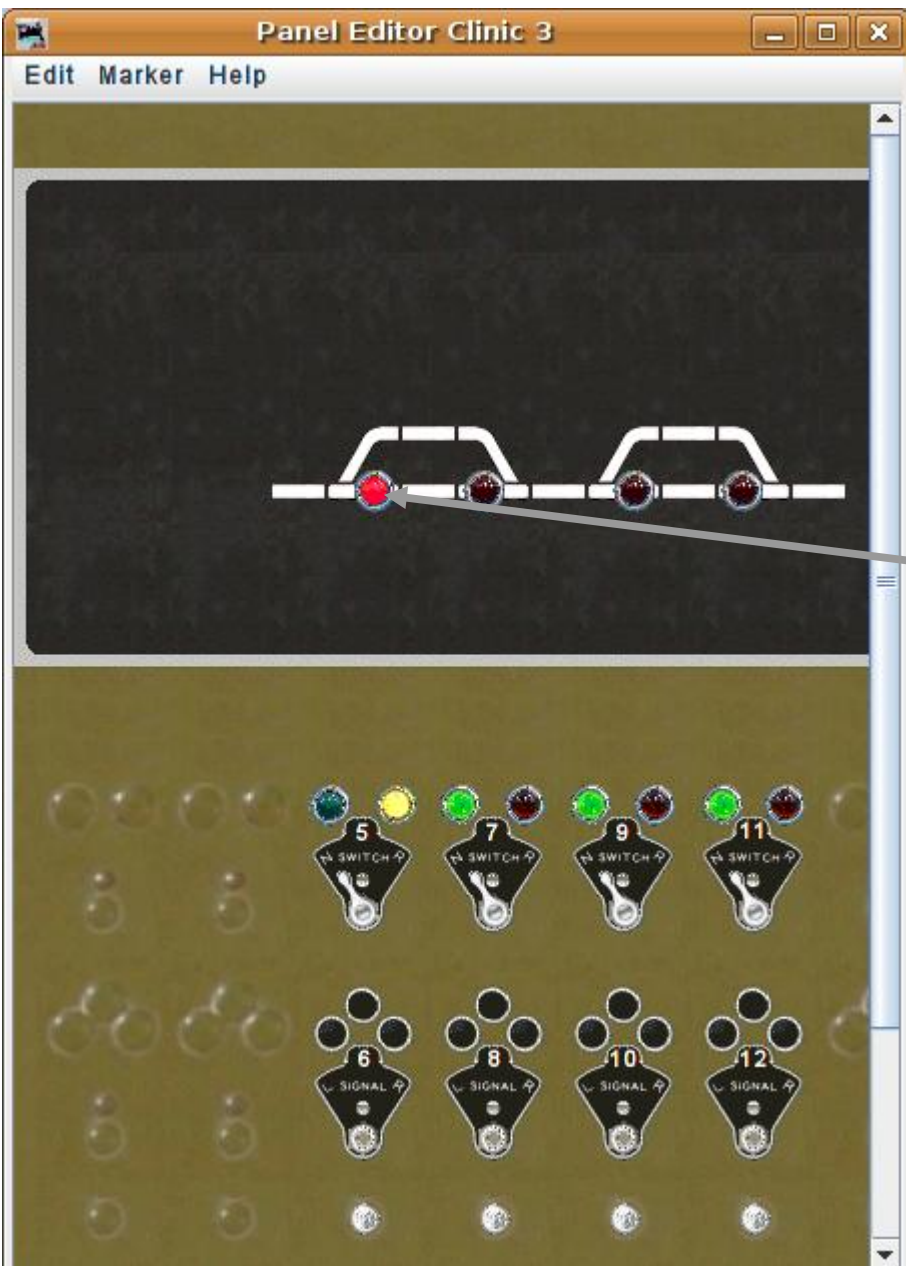
Logix entry

- Now change the lever.
- Push the Code Button.
- And Our turnout changes.



Indirect Layout Control

Logix entry

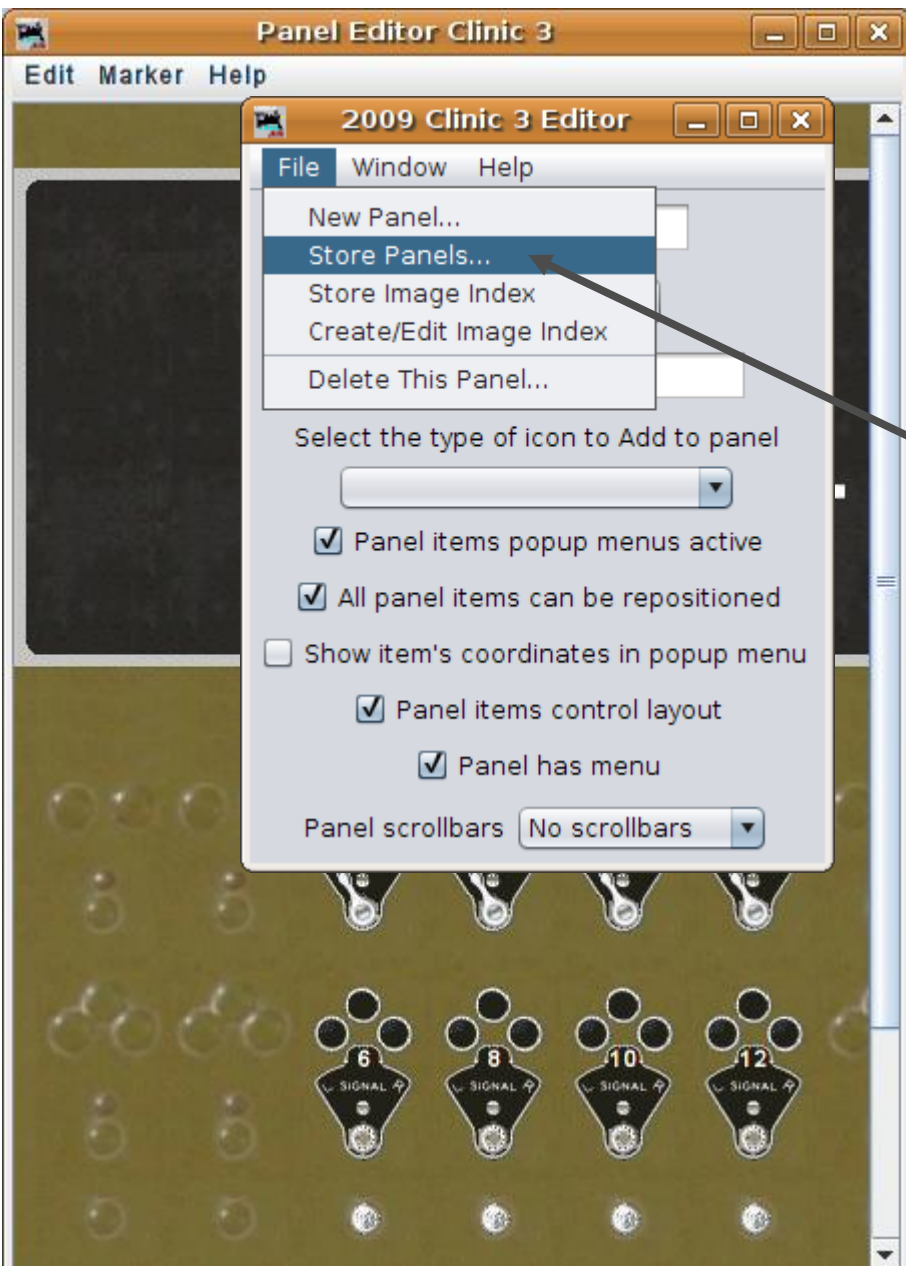


Logix entry

- Now change the lever.
- Push the Code Button.
- And Our turnout changes.
- But not if the OS shows occupied.

Indirect Layout Control

Logix entry



Logix entry

- Now change the lever.
- Push the Code Button.
- And Our turnout changes.
- But not if the OS shows occupied.
- Save our work as

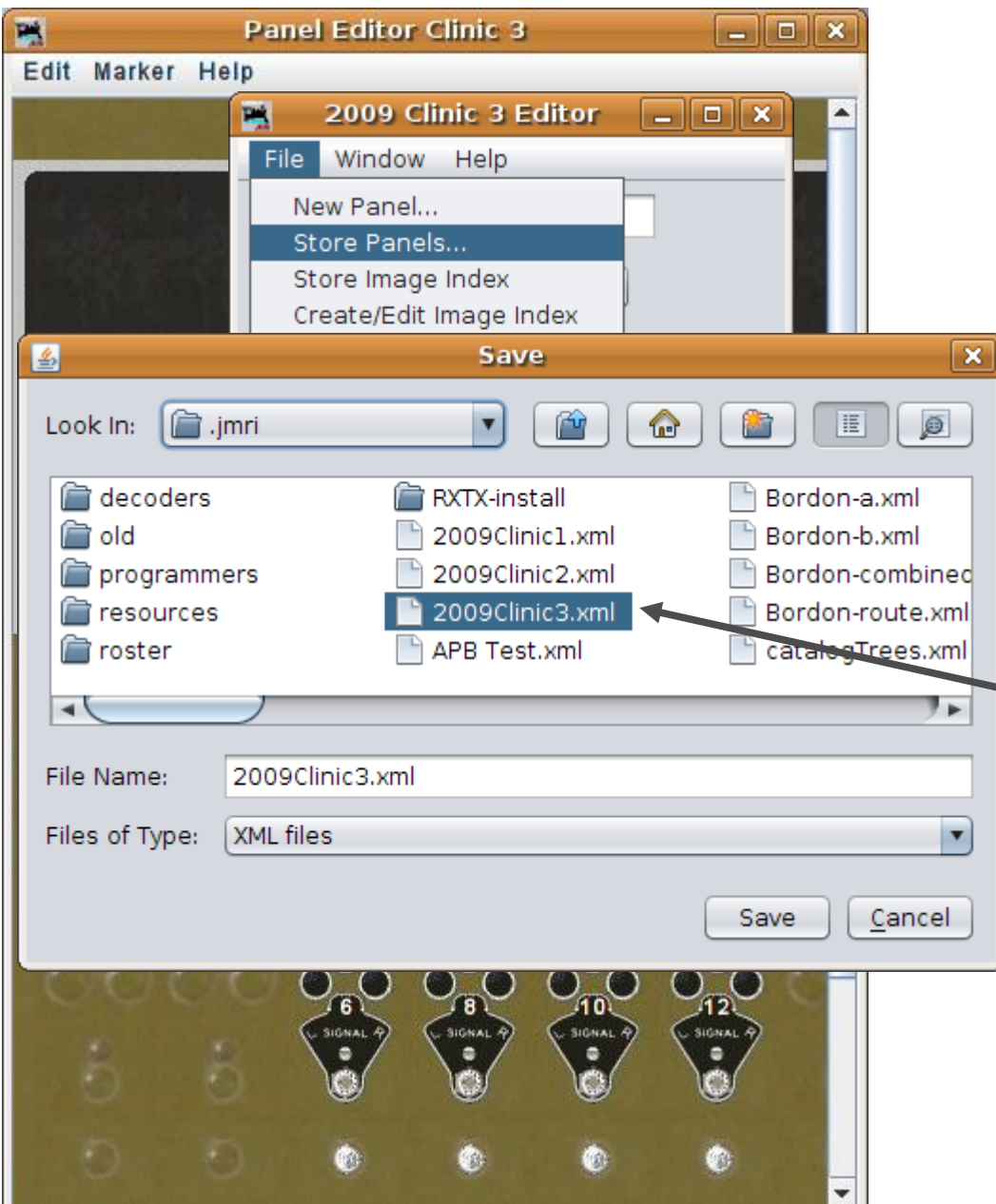
Indirect Layout Control

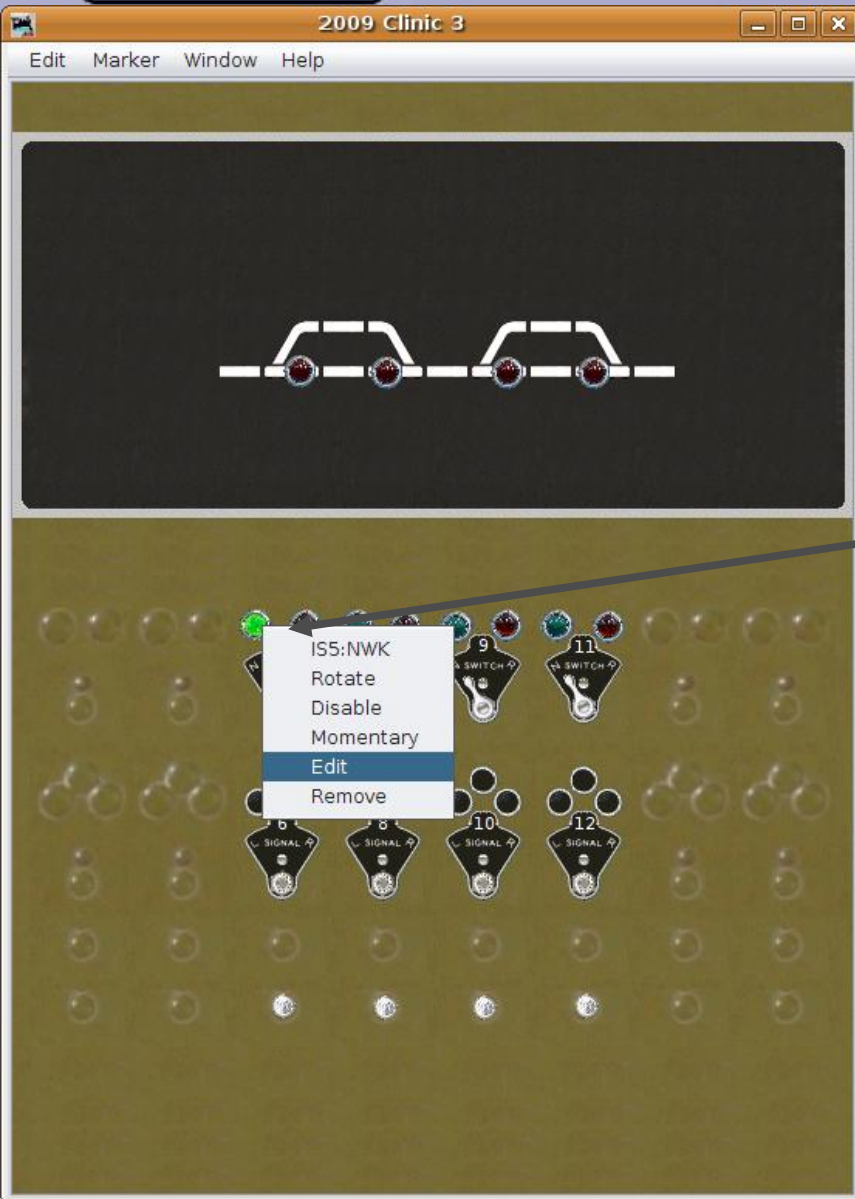
Logix entry



Logix entry

- Now change the lever.
- Push the Code Button.
- And Our turnout changes.
- But not if the OS shows occupied.
- Save our work.
- As 2009Clinic4.xml

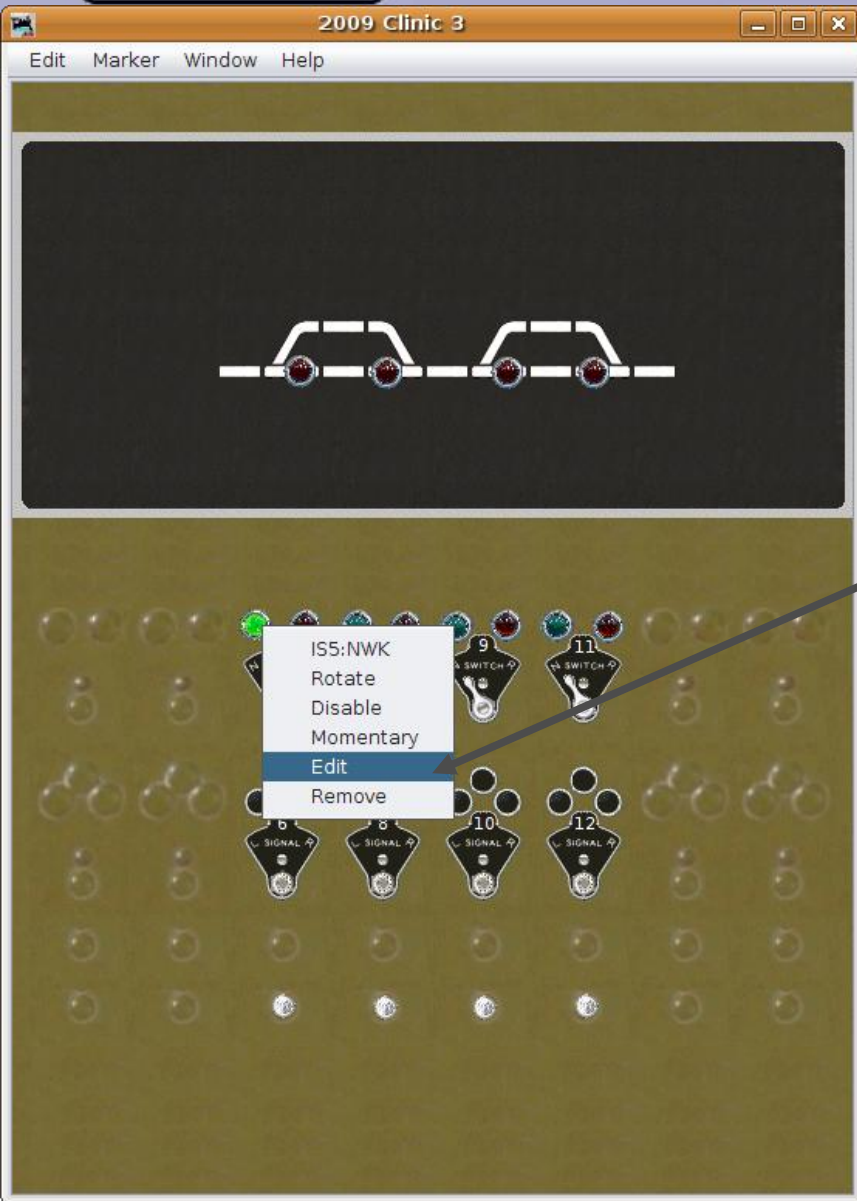




Icon editing

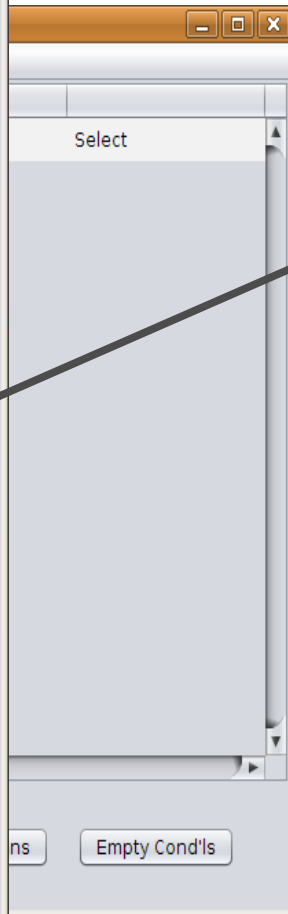
- Also new in 2.6 is the ability to graphically edit the icon data. Right click on an icon to bring up its popup menu.

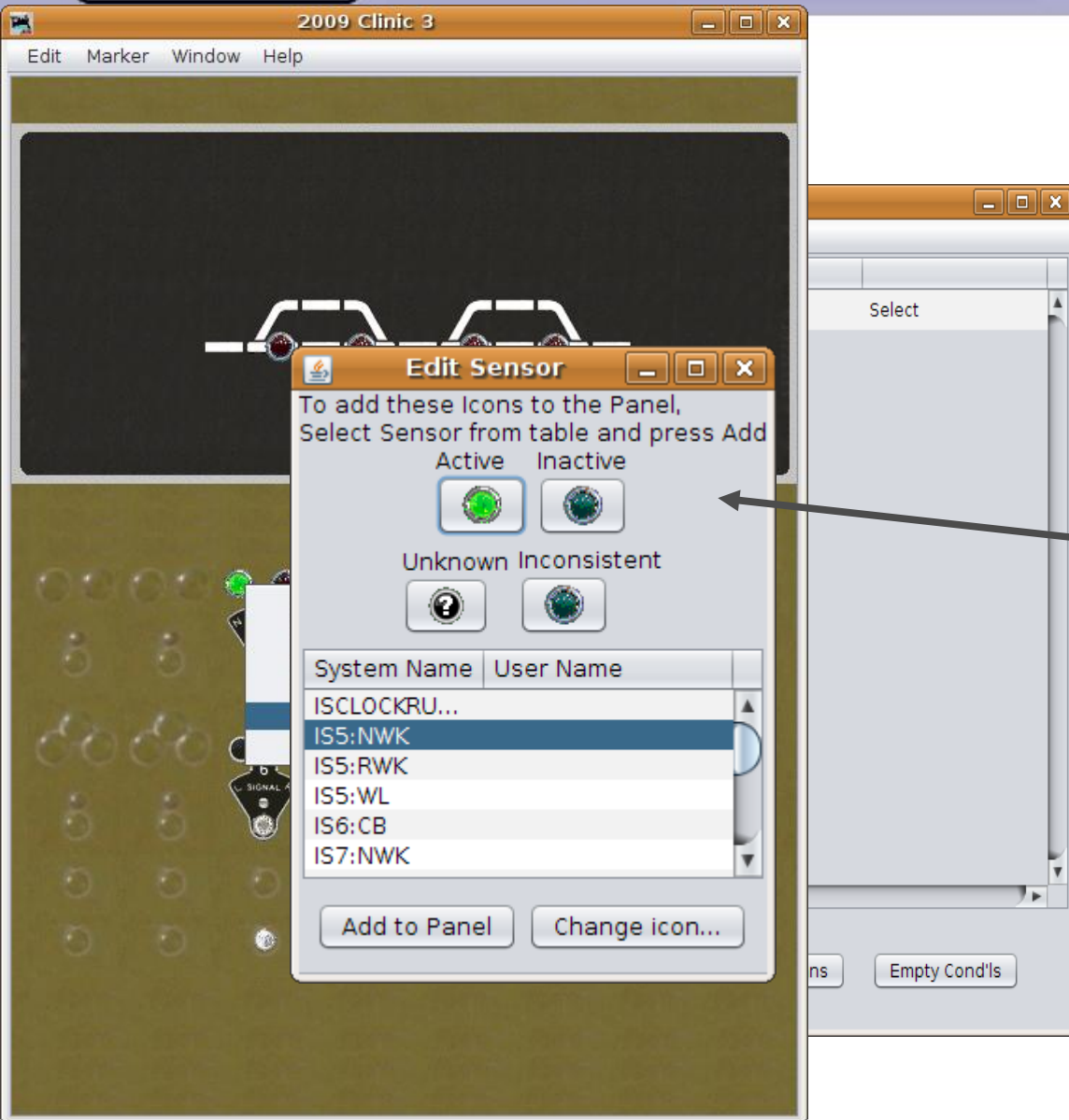




Icon editing

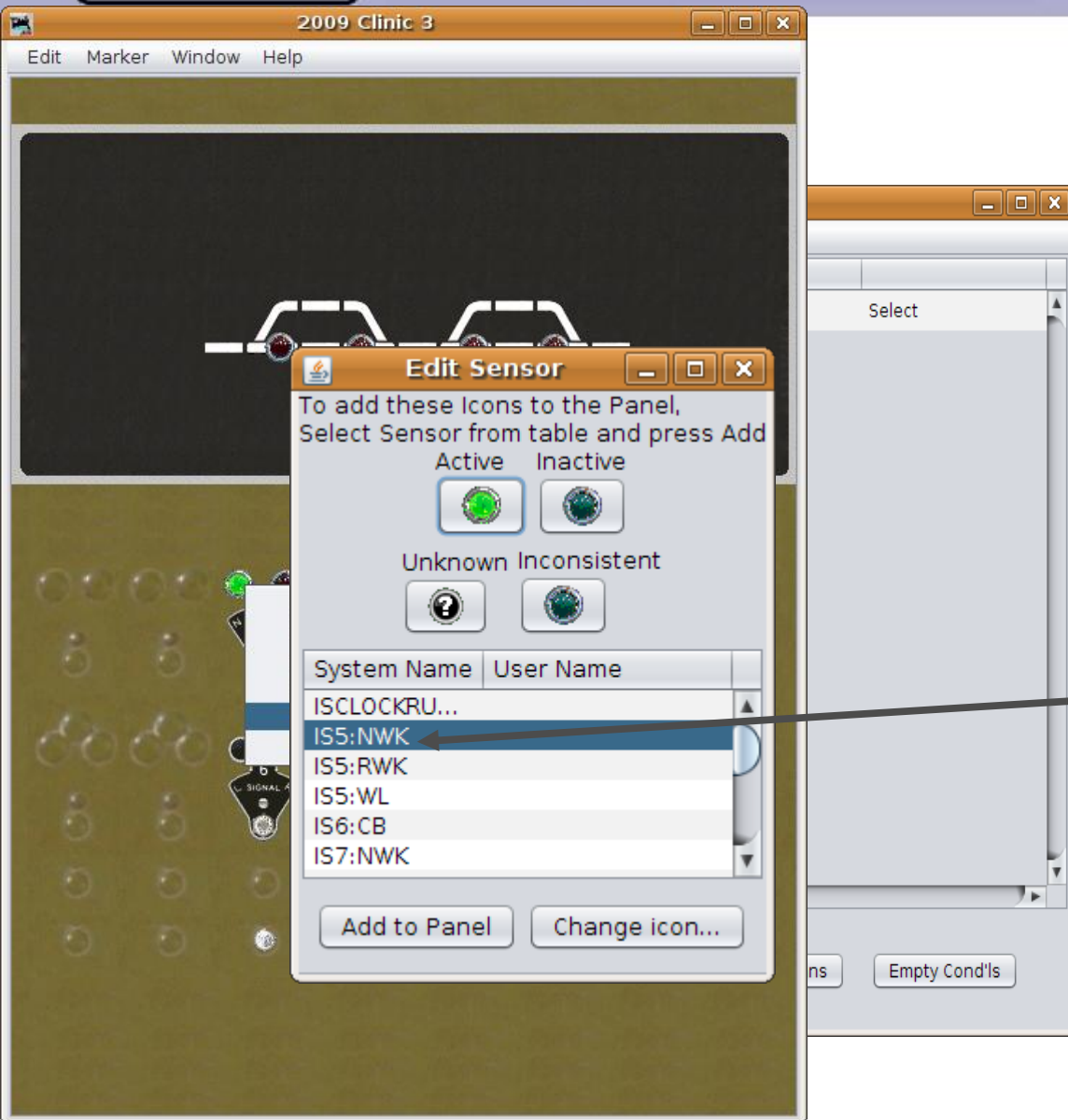
- Also new in 2.6 is the ability to graphically edit the icon data. Right click on an icon to bring up its popup menu.
- Click on 'Edit'





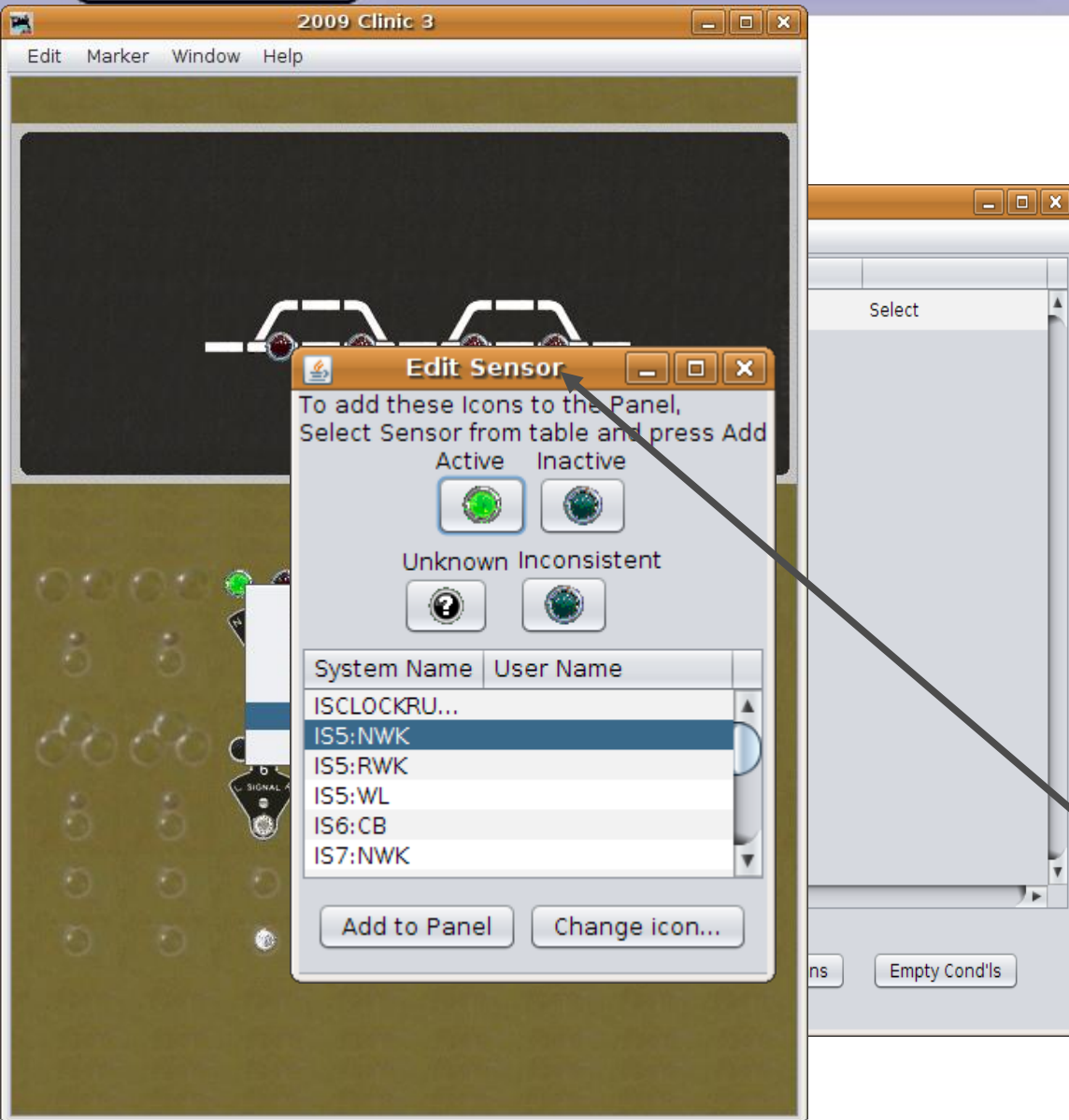
Icon editing

- Also new in 2.6 is the ability to graphically edit the icon data. Right click on an icon to bring up its popup menu.
- Click on 'Edit'
- This opens the 'Edit Sensor' window.



Icon editing

- Also new in 2.6 is the ability to graphically edit the icon data. Right click on an icon to bring up its popup menu.
- Click on 'Edit'
- This opens the 'Edit Sensor' window.
- You may change the icon images or re-connect the sensor to a different sensor number.



Icon editing

- Also new in 2.6 is the ability to graphically edit the icon data. Right click on an icon to bring up its popup menu.
- Click on 'Edit'
- This opens the 'Edit Sensor' window.
- You may change the icon images or re-connect the sensor to a different sensor number.
- You may not change the icon type. For that drastic a change you must delete the old and add the new type.



Manual Editing

- In the last section we created the 2nd, 3rd, and 4th sections of our panel by using the new 'Copy' function of the Logix, then correcting individual values as required.
- The same thing could have been accomplished manually using an XML text editor with copy and replace. However, this requires a detailed understanding of the .XML file format, and is error prone.



Manual Editing

- Another reason to use manual editing has been to edit icon information that needs to be changed without completely re-entering them.
- Again the current version 2.6 has new features that can help by providing graphical editing of icon data.
- If you still require the ability to do manual editing of the .XML files the following may be helpful.

XML Editing



- Manual editing of the Panel.xml files.
 - Select an editor that will NOT reformat your files.
 - Select an editor that does NOT think it automatically knows how to edit any file with a .xml extension.
 - For Windows users, 'XML Marker' available from <http://symbolclick.com/> is an excellent option.
 - On Linux I am use Bluefish which is a standard programming editor with a cute logo.



XML Editing



- What we have covered so far:
 - Basic manual editing of the panel .xml file.
- Where we are going next:
 - Simple Signal Logic (SSL-clinic-2)