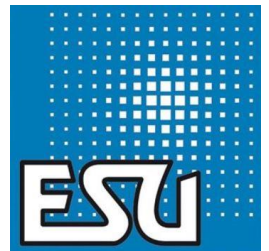# ESU ECoS COMMAND STATION 50200

Tutorial Guide

Creating your own locomotive icons with GIMP
*October 2016*

Creating your own locomotive icons with GIMP

In this manual, you will learn how to use the graphics program GIMP to create your own locomotive icons for the ECoS 50200. We recommend GIMP (www.gimp.org) as an image processing program since it is available free of charge and allows professional image processing. How to install GIMP on your PC is explained in the "Installation of GIMP" manual on their website. For this tutorial we use GIMP 2.8.18, other versions of GIMP can differ slightly in the processing steps.

The prerequisite for creating your own locomotive icons is a photo of the prototype or model of the desired locomotive. This should be a side-on shot.

Tip: If you are photographing a model, place it on a solid colored piece of paper with another piece of the same paper used as a backdrop, OR use a photo box if you have one. (*Illustration 1*)

In this way, you achieve a uniform illumination against a neutral background.
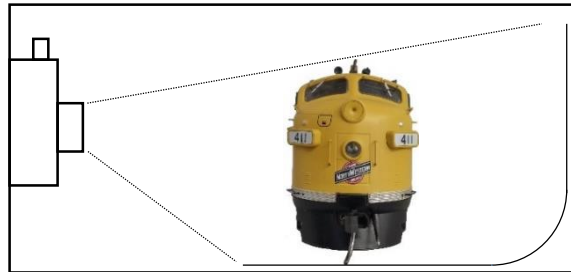
Illustration 1

In this tutorial we will be using a model of an F7 locomotive. We will need to make sure the loco is straight, the background is deleted and the picture size is correct for your ECoS.

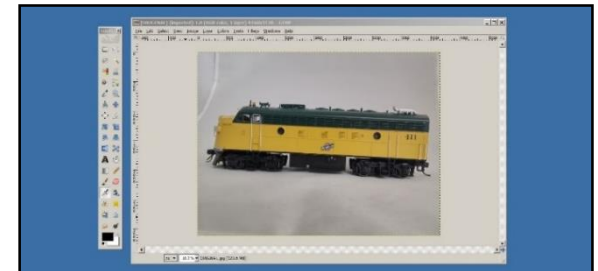In the raw, unedited state, the photo should look like this… (*Illustration 2*)

Illustration 2

Magnification tool

Now start GIMP and load the image. Your desktop should look similar to this… (*Illustration 3*)

Illustration 3

On the left-hand side is the "toolbox" in which tools for editing the image can be selected. You can double-click on any tool to see the options that are available for that tool.

The main window with the image to be edited can be seen in the middle.

To enlarge the displayed image, press the "**CTRL**" key on the keyboard and zoom in/out with the mouse wheel OR select the "**Magnification**" tool from the toolbox – click to zoom in and "CTRL"-click to zoom out.

By means of the "**Edit**" menu, you can choose "**Undo**" (or the shortcut "**CTRL-Z**") to undo the last editing steps.

1. Check color depth

Make sure that "RGB" is selected in the "**Image**" menu under the "**Mode**" menu. If this is not the case, please select **RGB** from the list. (*Illustration 4*)
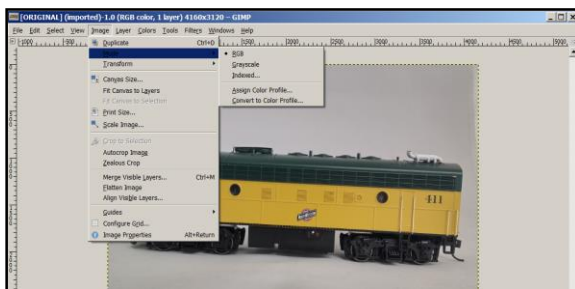
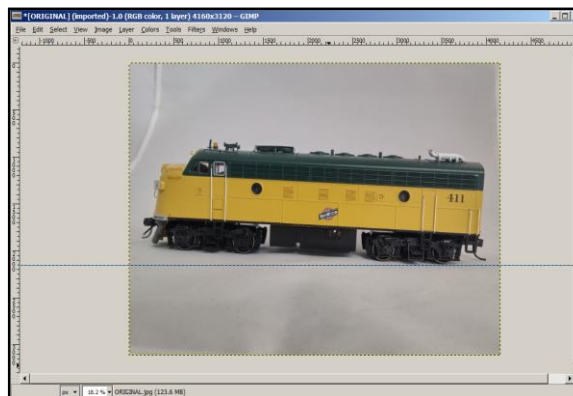*Illustration 4*

 Move tool

 Rotate tool

2. Rotate the image

You only need to perform this step if the locomotive is not horizontal in the original image, as in the picture in this tutorial. If your original image is horizontal, proceed to step 3.

First insert a reference line. Reference lines are orientation lines that are not stored in the image. Click on the horizontal ruler at the top of the screen and drag the line into the image area.

Drag the reference line to a point in the image that represents the track under the locomotive wheels. The line can be adjusted with the "**Move**" tool. (*Illustration 5*)

Illustration 5

To rotate the image, click on the "**Rotate**" tool. Click on the image. A grid should appear on top of your image and a rotate dialog box should be displayed. Click on the image, hold the left mouse button down and drag to rotate. Rotate the image to a point where the locomotive's wheels are horizontal. Use the reference line you created to assist you. Click the Rotate button in the rotate dialog box when you are finished. (*Illustration 6*)
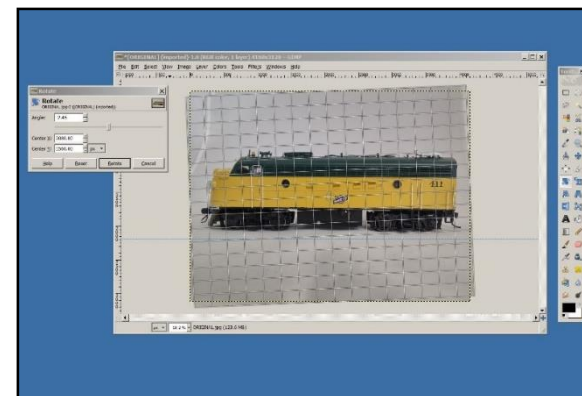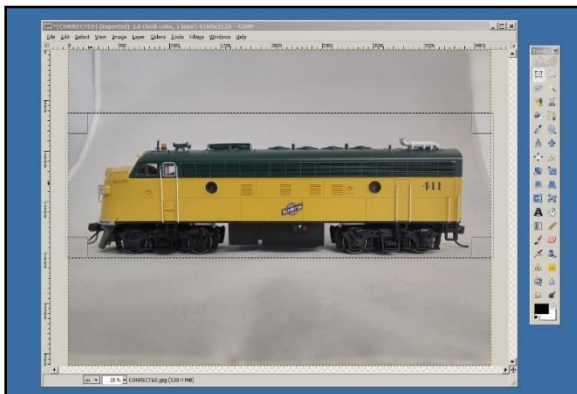

Illustration 6

The reference line is no longer needed. Use the "**Move**" tool to push the line back up to the horizontal ruler at the top of the window.

3. Cropping the image

Use the "**Rectangle Select**" tool to click and drag a rectangle around the locomotive. From the "**Image**" menu choose "**Crop to Selection**". (*Illustration 7*)
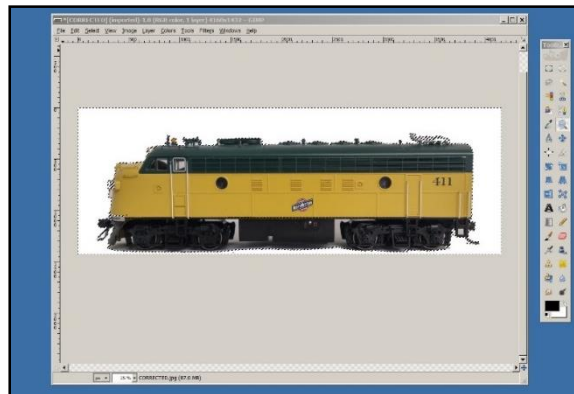

Illustration 7

Rectangle Select tool

Fuzzy Select tool

4. Cleaning up the background

Use a combination of the "**Fuzzy Select**" tool and the "**Rectangle Select**" tool to select the background.

Using the "**Ctrl**" key while selecting will subtract from the current selection. Using the "**Shift**" key while selecting will add to the current selection.

The selection does not have to be perfect since we will later resize the image, but do the best you can. When finished press the "**Del**" (delete) key to erase the selection. Choose the "**Select**" menu, then "**None**" to see the results. (*Illustration 8*)
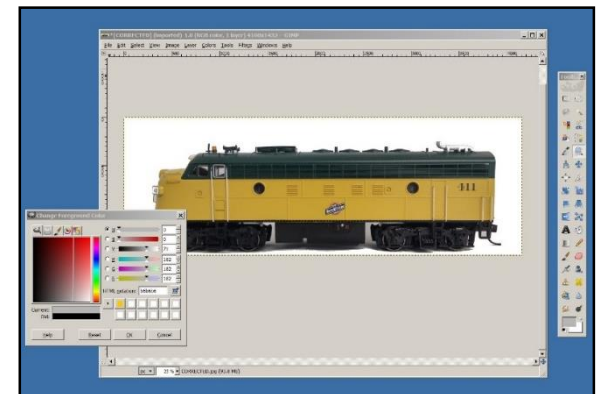

Illustration 8

5. Change background color to match the ECoS

Now that we have isolated the background, we want to fill it with the same gray color that the ECoS uses. This will help our icon to blend in better.

First click on the "**Foreground Color**" swatch in the tool bar. The "**Change Foreground Color**" dialog box will appear. In the box labeled "**HTML notation**" type "**b6b6b6**", then click "**OK**". Your foreground color should now be gray. (*Illustration 9*)

Illustration 9

Foreground Color tool

6. Filling the background to match the ECoS

Now that we have our gray color chosen, click on the "**Bucket Fill**" tool. Click anywhere on the white background with the "Bucket Fill" tool to fill it with the current foreground color. (Illustration 10)
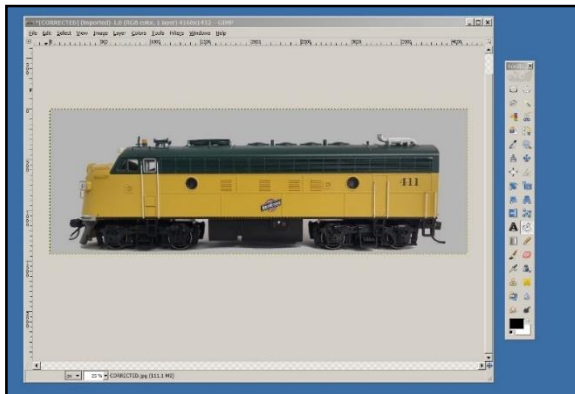

Illustration 10

Bucket Fill tool

Link icon

7. Cropping the Image

The next step is to crop the image so that there is no extra space around the locomotive.

In the "**Image**" menu, choose "**Autocrop Image**". The image should snap to the edges of the locomotive. (*Illustration 11*)
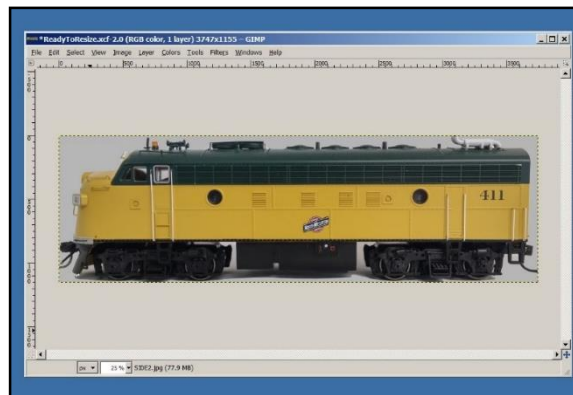

Illustration 11

8. Resizing the image

After cropping, we need to resize the image to the size used in the ECoS (which is a very small icon, so we will loose a lot of detail in this step, but that is normal).

From the "**Image**" menu, choose "**Scale Image**". In the "**Scale Image**" dialog box, make sure the "**Link**" icon is closed (this will make sure the aspect ratio of our image does not change). In the "**Height**" box, type in 40 and press the "**Tab**" key. The "**Width**" box will automatically change. Make sure it is less than 190. If it is not, enter 190 in the "**Width**" box and make sure the "**Height**" box is less than 40. Click on the "**Scale**" button. The image will shrink drastically. Press the "**Ctrl**" key while using the scroll button on your mouse to zoom in. (Illustration 12)
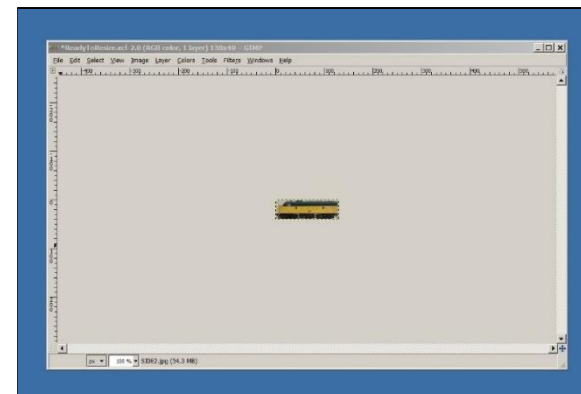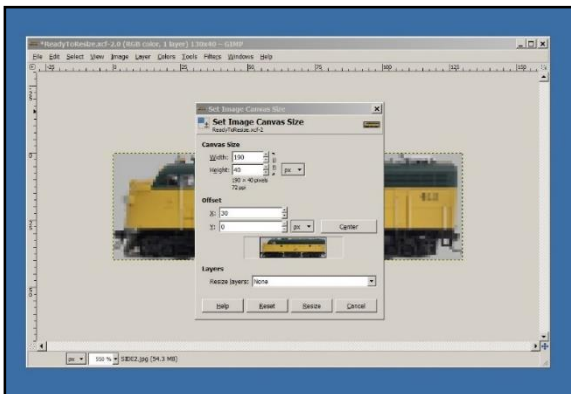

Illustration 12

9. Resizing the canvas

Our image is now the right size, but we need to change the canvas size so that it is exactly 190x40 for use with the ECoS. From the "**Image**" menu, choose "**Canvas Size**". The "**Set Image Canvas Size**" dialog box will appear. Make sure the "**Link**" icon is open (we are not worried about the aspect ratio of the image here, we are just adjusting our canvas). Enter 190 into the "**Width**" box and 40 into the "**Height**" box. Under the "**Offset**" section, click on "**Center**". Now click on "**Resize**". (*Illustration 13*)
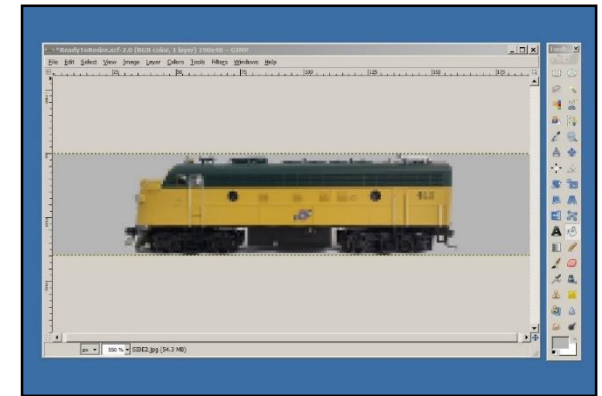

Illustration 13

10. Filling in the voids

As you can see from *Illustration 14*, our image and our canvas are now the right size for the ECoS. The last thing we need to do is fill the empty regions (shown as a checkerboard) with the same color gray that we used earlier. First, from the "**Image**" menu, choose "**Flatten Image**" (the checker board patter should be replaced with whatever your background color is and the entire canvas should now be selected. (*If your current foreground color is not gray, refer to step 5.*) Use the "**Bucket Fill**" tool and click in the empty regions to fill them with gray. Your final image show look similar to *Illustration 15*.
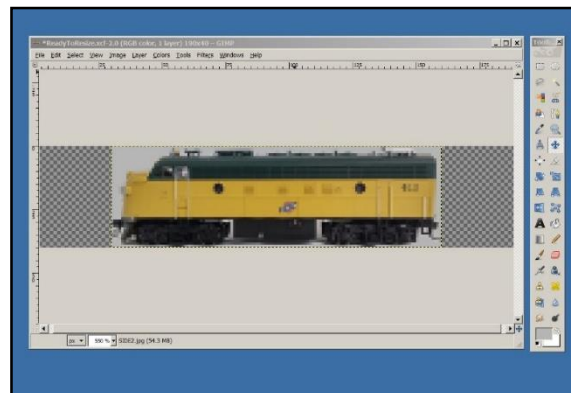
Illustration 14

Illustration 15

11. Saving your image

We can now save our newly created ECoS icon. From the "**File**" menu, choose "**Export**". Under "**Places**" choose where you would like to save the file. In the bottom right corner you will see the "**File Type**" box. Press the down arrow and choose "**Windows BMP image**". At the top of the page you will see the "**Name**" box. Type in the desired file name followed by the ".bmp" extension. Press the "**Export**" button (*Illustration 16*). You with get the "**Export Image as BMP**" dialog box, just press the "**Export**" button again. You may now close out of GIMP. You may save your original file if you wish, but it is not necessary.

Creating your own locomotive icons with GIMP
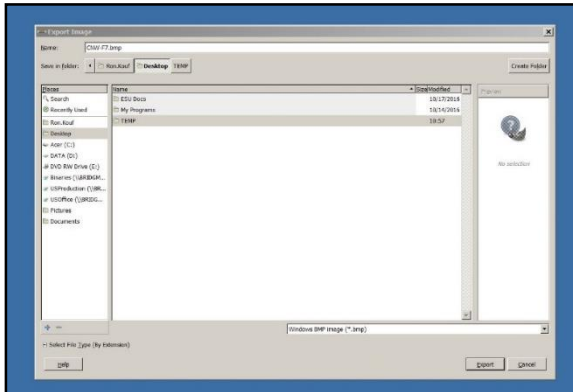
12. Importing the new icon to ECoS

Illustration 16

Before we can import our newly created icon into the ECoS, make sure the ECoS is plugged into your home network via the RJ45 jack on the back of the unit. Click the "**Setup**" button on your ECoS, click on the "**Setup 1**" tab, click on the "**IP**" icon. Write down the IP address of your ECoS. (*Illustration 17*)

Go to your computer, open a web browser. Type in the ECoS IP address into your browser's address bar and press "Enter". The ECoS browser interface should appear. (*Illustration 18*)
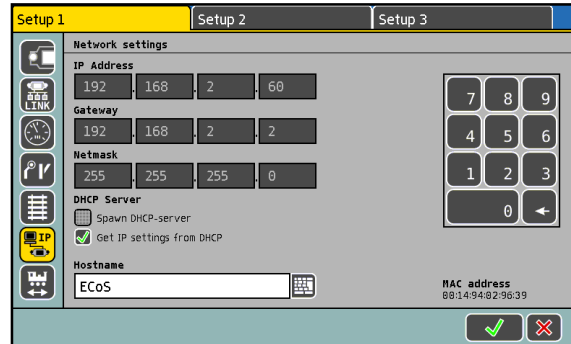
Illustration 17

Illustration 18

Click on the "**Loco images**" tab on the left. On the Loco Images page, click on "**User defined images**". (*Illustration 19*)
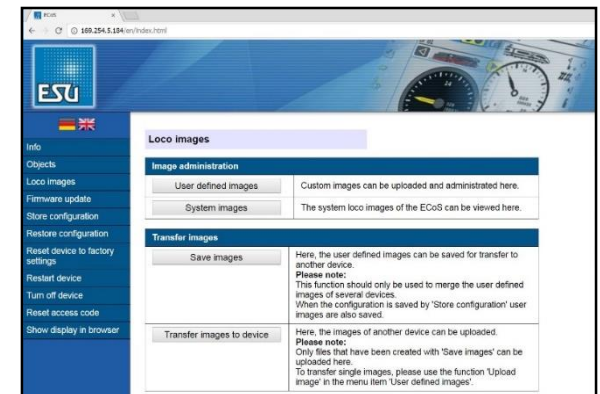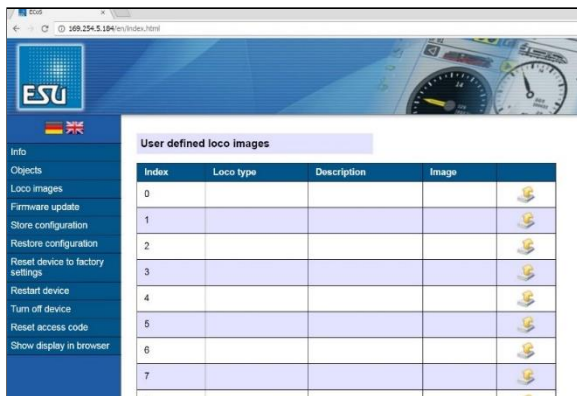

Illustration 19

On the "**User defined loco images**" page, click on one of the "**Upload**" icons to enter an image in that slot. (*Illustration 20*).
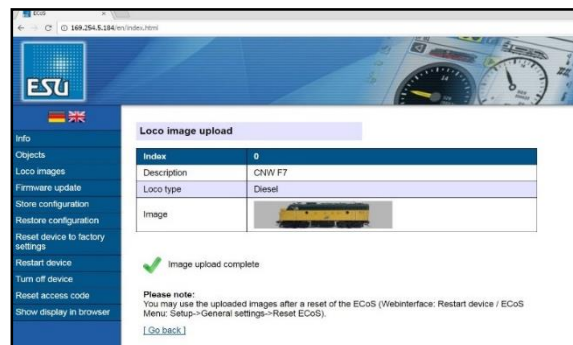

Illustration 20

Upload icon

On the "**Loco image upload**" page, fill in the "**Description**" box and choose the "**Loco type**", then click on "**Choose File**". An "**Open**" dialog box will appear. Use it to browse and select the .bmp image you created. Click the "Open" button. Click the "Submit" button. (*Illustration 21*)
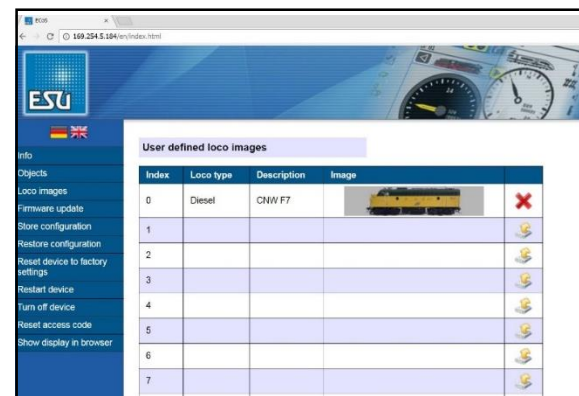

Illustration 21

Once the image is uploaded to your ECoS, a confirmation page will appear. (Illustration 22)

Illustration 22

Click on "**Go Back**" and you will be returned to the "**User defined loco images**" page where you will now see your new icon. (*Illustration 23*)

Illustration 23

To assign the icon to a locomotive in your ECoS, you first need to shut your ECoS down properly and restart it. (Hold down the "**STOP**" button until the ECoS tells you to unplug it.
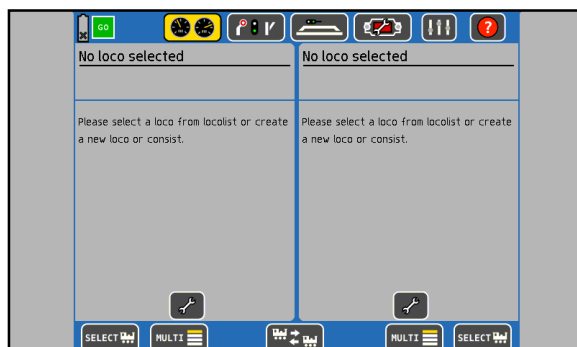
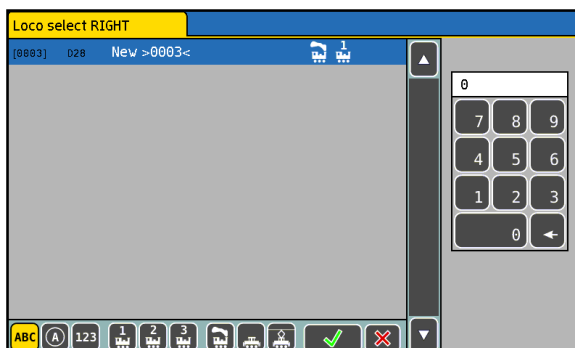*(DO NOT just pull the plug on your ECoS!)*

13. Assigning the icon to a loco

After you have reset your ECoS, from the main screen, press one of the "**SELECT**" buttons. (*Illustration 24*)

Illustration 24

From the "**Loco Select**" screen choose the loco you wish to assign the new icon to then press the green check mark. (*Illustration 25*)
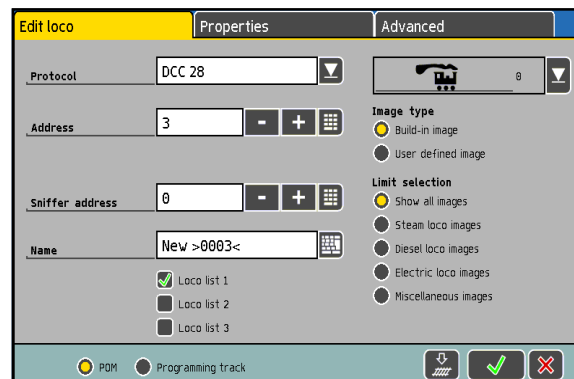

Illustration 25

You will be returned to the main screen. You will see the default loco icon above the speedometer. (*Illustration 26*)
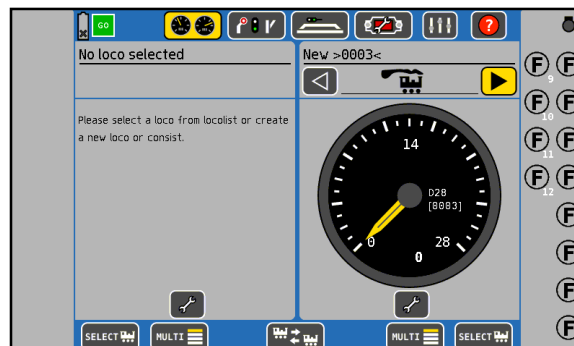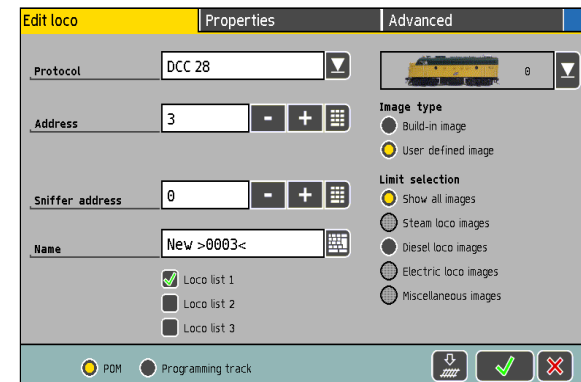

Illustration 26

Click on the "**Wrench**" icon under the speedometer and select "**Edit Loco**". The "**Edit Loco**" screen will appear. (*Illustration 27*)
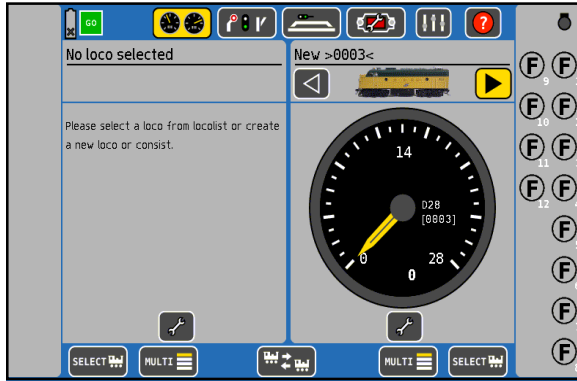

Illustration 27

Illustration 28

From the "**Edit Loco**" page, click on the "**user defined image**" radio button under "**Image Type**". You can now select your newly created icon from the drop down list above. Choose it then click the green check mark to return to the main ECoS screen. (*Illustration 28*)

  Wrench icon

Illustration 29

Once you return to the main ECoS screen you will notice that your new icon appears above the speedometer. (*Illustration 29*)

This ends our "*Creating your own locomotive icons with GIMP*" tutorial.

Be sure to shut down your ECoS properly to save your changes.