

**Some Revisions for the Beginner's
Tutorial and Notes: 02/19/22
Version: 5.2.2GA**

[http://xtrkcad-fork.sourceforge.net/
Wikka/BeginnerTutorial](http://xtrkcad-fork.sourceforge.net/Wikka/BeginnerTutorial)

Using this PDF tutorial requires only a basic knowledge of how computer programs work. The user must be familiar with the use of a mouse and how it works in other computer programs. How to use a computer-aided design, CAD, program is **NOT** required.

The only unfamiliar term is “coordinates”, but how the term is used is explained during the tutorial.

This tutorial PDF document was written on a Mac, therefore, the screen captures look slightly different than on a Windows operating system computer.

It is **very highly** recommended that the user reads through the **Problems and Workarounds** section. **LEFT-Click** [this bookmark link to go there](#). There is a return bookmark link, at the end of the section, to return here.

Open xtrkcad. Select **File>New** to follow along with the tutorial.

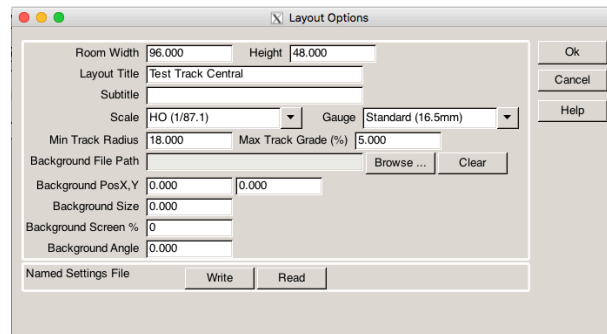
Concepts Page (No return link to the “Beginner Tutorial” - Return in sidebar)
[http://xtrkcad-fork.sourceforge.net/
Wikka/Concepts](http://xtrkcad-fork.sourceforge.net/Wikka/Concepts)

Layout: (Revision and notes)
Usually, the Layout in XtrkCAD is the whole surface area of the floor, or ground, over which tracks are placed in a

given area such as a room, or rooms, or an outdoor area. It can be re-sized at any time (**Options>Layout**).

It is rectangular. For a non rectangular space, the “Room Width and Height” can be made large enough for the longest and widest part of the overall area and a background image, or drawing elements, can be used to show the actual boundaries of the track layout.

The terms “widest/width” and “tallest/



height” can be confusing in American English.

Room Width, as used in this program, means the **longest linear dimension** of the overall area, in inches, where the layout will be installed and **Height** means **the other** dimension, **or widest** overall linear dimension, in inches, going “across” that surface.

Note: For the tutorial, a 4’ x 8’ flat surface is created to demonstrate some techniques for creating a layout. To keep it simple, the room size area, where the 4’ by 8’ “Layout” is to be placed, is not demonstrated.

Tracks

Note: Only sectional track is used in the tutorial.

Draw Objects

Note: There are no draw objects in the tutorial.



Turnouts: Revision

Turnouts are collections of tracks (and possibly draw objects). They have the unique ability to have a dynamic property when used in Train Mode, when a train is being run on the partially completed, or completed, layout. The turnout can be “switched”, when the **SHIFT key is held down**, the **cursor is over** the turnout and a **LEFT-Click** mouse button is commanded, if there are alternative paths that go from one end-point to more than one other end-point. Turnouts can be created by grouping tracks and draw objects.

Structures

Note: There are no drawn structures in the tutorial.

Notes

Note: There are no notes created in the tutorial.

Cornus

Note: There are no cornu curves created in the tutorial.

Control Objects

Note: There are no control objects created in the tutorial.

Layers

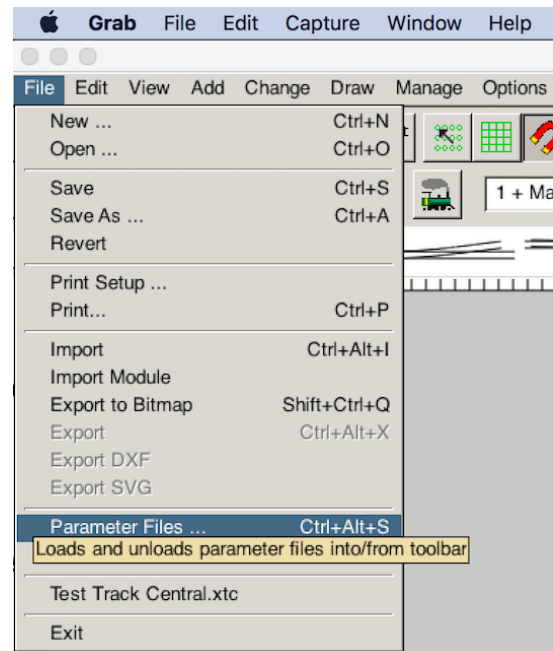
Note: There are no layers created in the tutorial.

Command Concepts

Hot Bar (noted across top of page)

The **Hot Bar** contains elements that can be selected and placed onto the layout.

Its contents are set using the

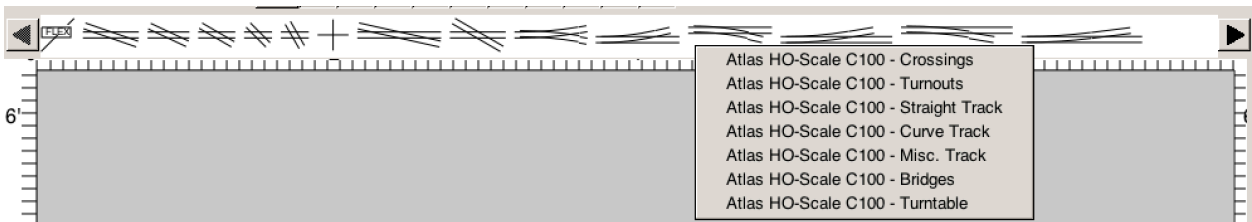


File>Parameter Files...

The only parameters shown are the ones that are in the currently selected Scale and Gauge (**Options>Layout**).

The same list is presented in **Add>Predefined Track** and **Add>Structure** menus.

Parameter files can be unloaded to hide them.



A mouse **RIGHT-Click** on the **Hot Bar** opens a pop-up menu that allows the user to jump to various sections of the **Hot Bar**. (Shown on previous page)

To select an object, **LEFT-click** on the desired object in the **Hot Bar** to highlight it, which selects it. Move the cursor to the layout drawing area and **LEFT-click**. **(Do NOT try to drag the object onto the drawing area!)**

The object is placed on the layout at the cursor's position and shown only as a group of lines in a color that is not black. As long as the object remains not black, or anchored, it can be dragged by the mouse to move it into a desired position or the cursor can be moved to specific X Y coordinates and the mouse **LEFT-Clicked** at those coordinates. After the mouse click, the object moves/jumps to the cursor's coordinates.

The orientation of a Turnout, or curved sectional track, can be changed via **Shift+LEFT-Click**. Once it is in the proper position, the **SPACE Key** or **ENTER Key** is pressed to anchor the object to the drawing area.

Joining

Track ends can be next to each other and not joined in XtrkCAD, just like real track without fishplates.

In **Train mode**, unjoined track joints cannot be traversed.

The Join **AND** Connect commands act to stick the track together when the **Magnetic Snap is on**. **View>Magnetic Snap** in the main menu bar is enabled.

Connect two tracks only works when the two tracks are **very close to each other** and aligned enough (equal angles).

Join two tracks tries to add a piece of flexible track to fill in a gap (large or small). It will attempt to use an easement (a piece of track that slowly moves from one radius to another, avoiding a quick jerk) if the Easement setting is **NOT** "None". Note that the default setting for Easement is **None**; used in the tutorial.

Elevations

There are no elevations created in the tutorial.

Inventory

The inventory is created automatically during the tutorial.

Train Mode

Train mode is used in this tutorial and explained later.

Introduction to the User Interface

<http://xtrkcad-fork.sourceforge.net/Wikka/FirstSteps>

Now, use the link to read the information on that page.

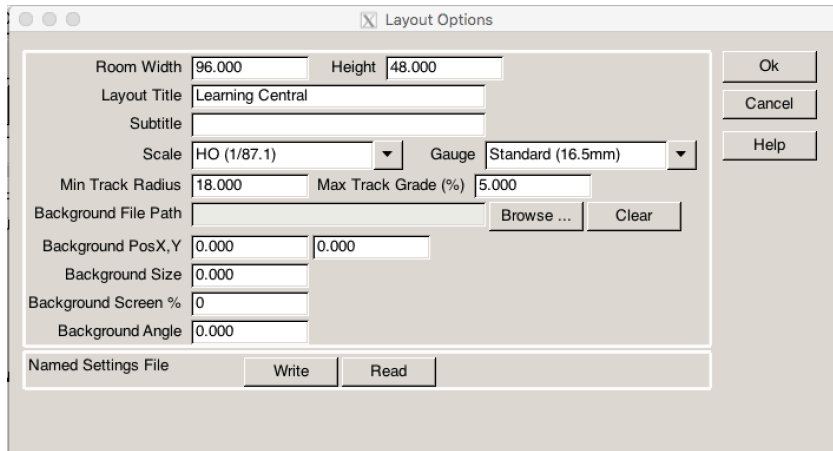
Starting a plan

<http://xtrkcad-fork.sourceforge.net/Wikka/FirstLayout>

Setting up size and scale

If this is **NOT** the first time the program has been run, choose **File>New...** to start a new layout plan.

To start a new track plan, enter the length and width dimensions of the area where the layout is planned to go. Select the scale and gauge of the track to be used. If the Layout window, named Layout Options, is not open, it can be done via the layout options at **Options>Layout**. The command opens the following dialog box.



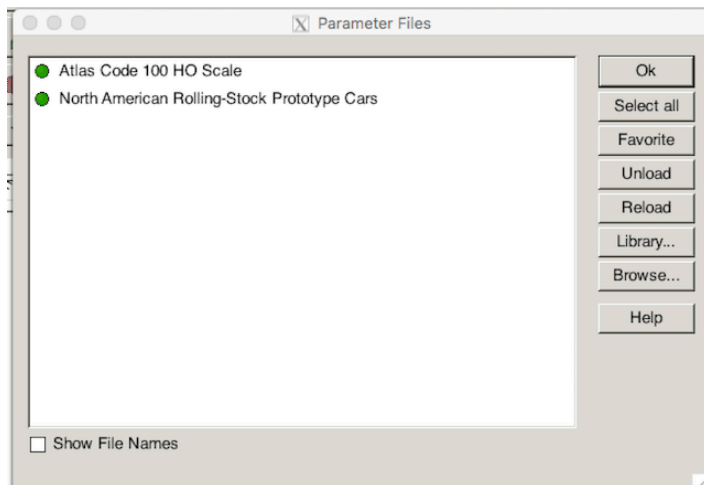
For this tutorial, set the layout size to a **Room Width** of 96" and a **Height** of 48". Enter a name for the **Layout Title**. Set the **Scale** to "HO (1/87.1)" and the **Gauge** to "Standard (16.5mm)".

To modify the units to metric, adapt the parameter in **Options>Preferences>Units : Metric**.

Finish the basic configuration by a **LEFT-Click** on the **Ok** button.

Using **File>Save**, create a name for the layout file and save it.

Selecting Track



XTrackCAD has libraries of many different brands of track available. **For this tutorial** use Atlas Code 100 Track.

Navigate to **File>Parameter Files** Select as many files as desired, but, to make things easier, it is best to unload all the parameter files that are not going to be used. Unload the files by selecting the file and clicking on the "**Unload**" button.

If no parameter files are listed in the window (and there won't be the first time the program is run), click the "**Browse...**" button and choose one or more parameter files to load. If the program was previously run for a HO layout, **LEFT-Click** the **Library...** button to select the brand(s) to use.

Important remark: The parameter file **ONLY** loads the libraries **ACCORDING** to the scale and gauge chosen in **Options>Layout**.

When the program starts for the first time, it is configured in N scale. It will **NOT** show HO tracks until the scale is set to HO and gauge to Standard.

For this tutorial, make sure that the "Atlas Code 100 HO Scale" parameter file is loaded. Also load the "North American Rolling Stock Prototype Cars", as it is used later. The loaded files can be seen in the screen capture.

There is a descriptive list of the parameter file names available on the

[ParameterFiles] page.

<http://xtrkcad-fork.sourceforge.net/Wikka/ParameterFiles>

If no files can be seen, make sure the file chooser is pointing at one of the following directories, depending on your operating system:

Mac OS X : /Applications/
XTrackCAD.app/Contents/Resources/
share/xtrkcad/params

Linux: /usr/lib/xtrkcad/params

Debian Linux: /usr/share/xtrkcad/params

Windows: (???)

Placing the first track piece

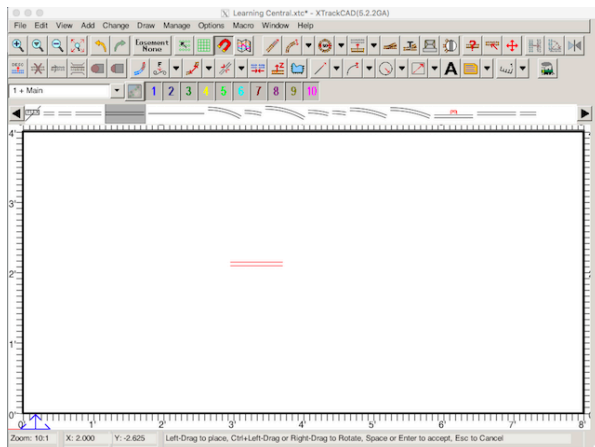
Once the Parameter files are selected, the **Hot Bar** shows a long row of Atlas track.

Use the **Scroll Arrows**, at each end of the **Hot Bar**, to move to the left or right until the fixed length pieces can be seen.

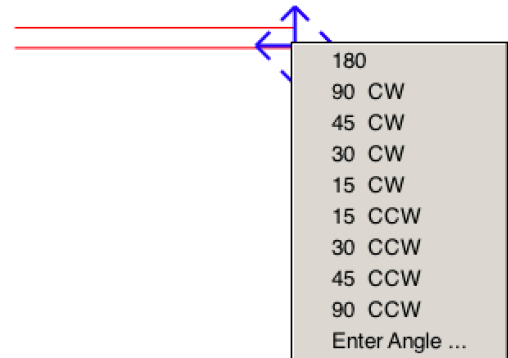
For the first piece, **LEFT-Click** in the **Hot Bar** to highlight an "Atlas #821, 9" Straight", which selects it.

To place it in the drawing area, **LEFT-Click** anywhere onto the drawing area.

The two "rails" of the 9" track piece appear as lines in a color other than black. As long as the lines are in color, the track can be moved around by a **LEFT-Click** on any position on the layout area.

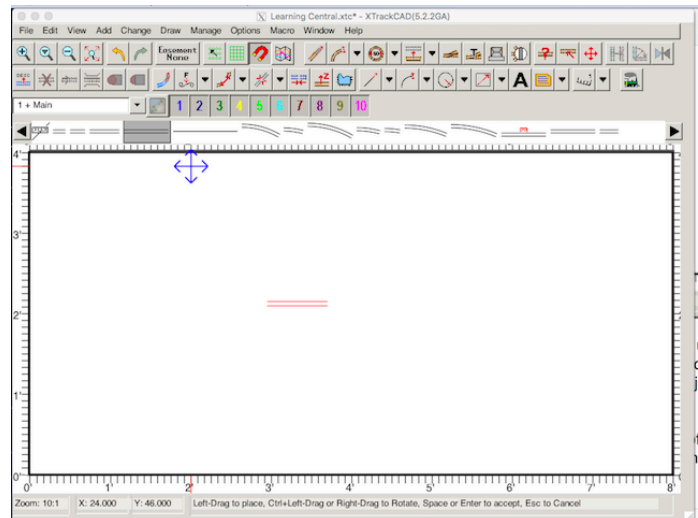


To coincide with the steps of this tutorial, the track section should anchor itself to the right side of the cursor. If it's not, and you won't know that until a try is made to move it to a specific location, **hold down the SHIFT key and then RIGHT-Click** to open the rotation menu.



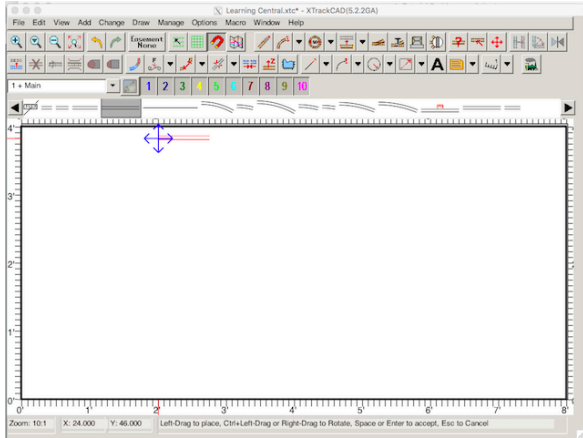
Select 180°. The track rotates 180° and anchors the cursor to the opposite end of the track.

Leave the straight piece, in color, where it is. Move the cursor pointer to the x-position 24" and y-position 46" towards the upper left of the drawing area.



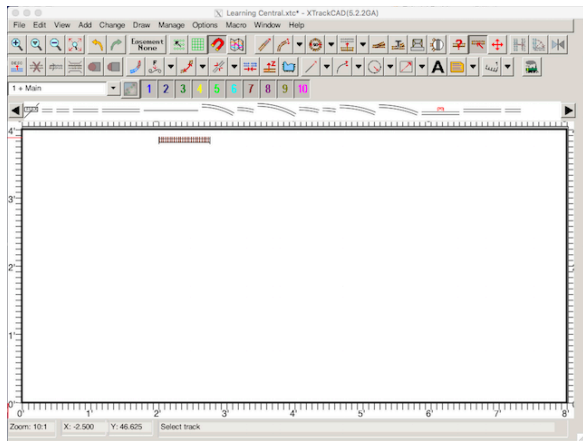
(Note that the X and Y coordinates are located at the bottom, left of the screen.)

Once the cursor is positioned at the x-position 24" and y-position 46", **LEFT-Click** the mouse and the track "jumps" to that position.



IMPORTANT: If the 9" straight track is between 1' and ends at the 2' mark, it has to be rotated, as previously noted. The correct position is when the 9" straight track starts at 2' and extends to the right towards the 3' mark.

In order to anchor the track piece in place, **press the SPACE or ENTER key.**

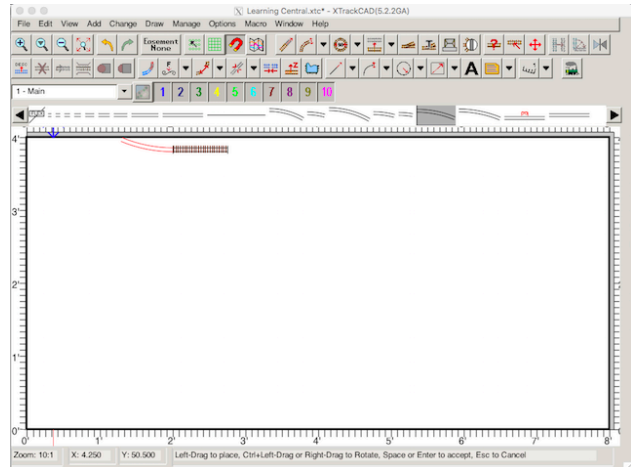


The color of the piece changes, the endpoints are drawn, and the layout looks like the screen capture above.

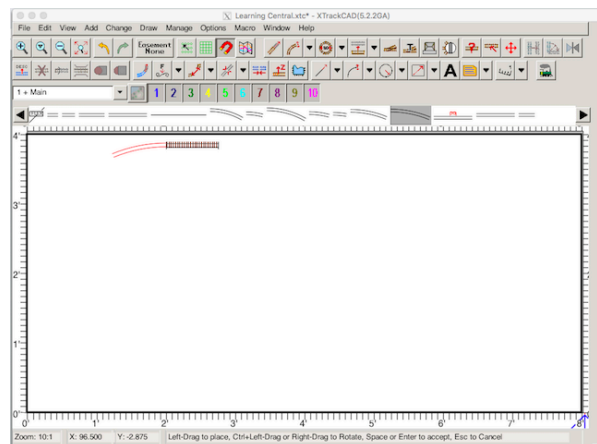
Getting around a curve

Set up the first curve. **LEFT-Click** to highlight an "Atlas #836, 22" 22.5D Curve", which selects it.

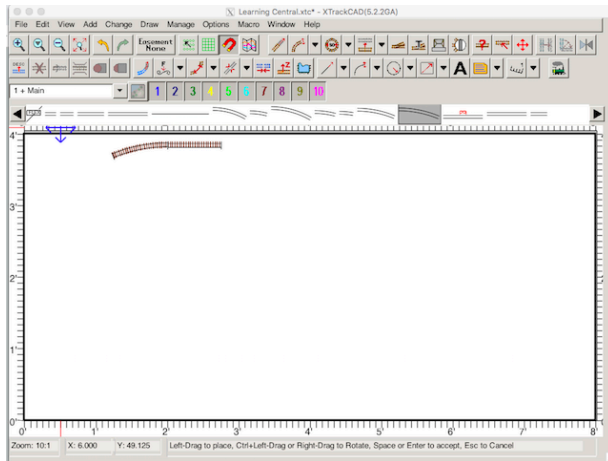
Move the cursor close to the left end of the 9" straight track. Once the cursor is at the left end of the 9" straight track, **LEFT-Click** the mouse. The track snaps into place.



If the curve is going the "wrong" way, with the cursor near the curve, **press and hold the SHIFT Key** and then **LEFT-Click** while the track is still colored. The curved track jumps to the other direction.



Once the position is correct, **press the SPACE or ENTER Key.**



The track plan should look like this.

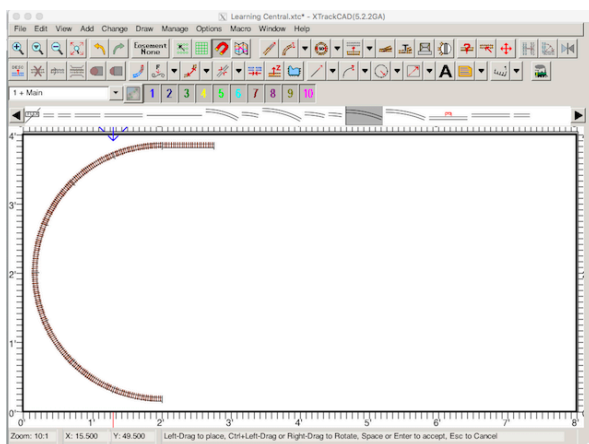
Complete the half circle. **Left-Click** onto the unconnected end of the curve and the next 22" curved piece appears.

Press the SPACE or ENTER key to anchor the track section.

Move the cursor to the open end of the just anchored piece and **LEFT-Click**.

Press the SPACE or ENTER key to anchor the track section.

Repeat until the curve reaches 180 degrees, as shown below.



Should the new piece not snap into place, drag it (hold the left mouse button down while moving the mouse pointer)

closer to the unconnected end before **pressing the SPACE or ENTER key**.

Now is a good time to do a Save.

From Loop to Oval

<http://xtrkcad-fork.sourceforge.net/Wikka/LoopOval>

The following instructions are a guide through the selection and placement of the sectional track pieces required to transform the loop of track, created in the previous exercise, into an oval layout.

Work on the loop starts in the upper left quadrant and progresses, in a clockwise manner, around the layout until an oval layout exists.

Extend Mainline

The first step is the extension of the mainline track from the top of the loop to the right side of layout. This is achieved through selection and placement of **four pieces** of Atlas 9" sectional track.

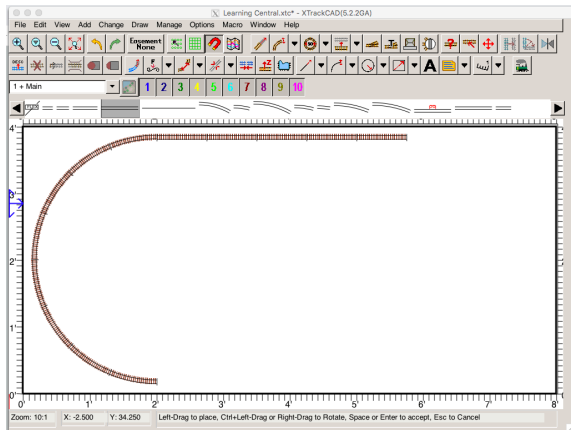
LEFT-Click in the **Hot Bar** to highlight, an "Atlas #821, 9" Straight, which selects it.

Move the cursor into the drawing area so that it aligns with the right end of the previously positioned 9" straight track.

Once the cursor is in position, **LEFT-Click** and then **press the SPACE or ENTER key** to anchor the track into position.

Use the same method as used for completing the half circle to complete the mainline by placing **three** additional sections of "Atlas #821, 9" Straight" track next to the piece that was just laid.

When finished, the track plan looks like the following screen capture.

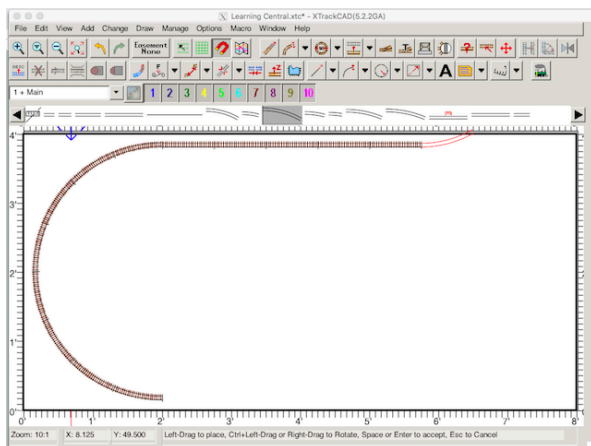


Looping Back

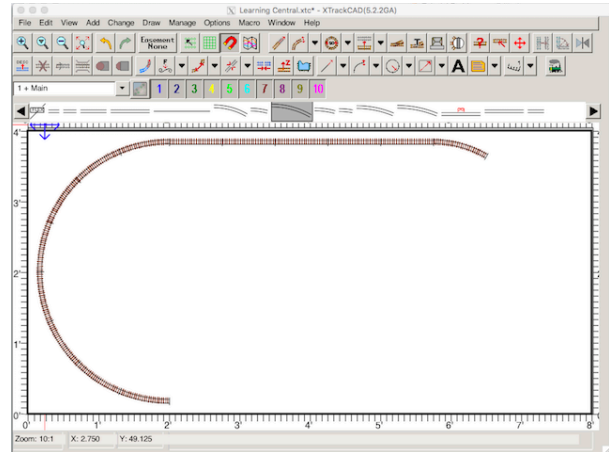
A curved section of track is constructed from the end point of the straight section back toward the point of origin of the first loop. This is achieved through the addition of **five** sections of 18", 30D curved track.

LEFT-Click in the **Hot Bar** to highlight an "Atlas #833, 18" 30D Curved" track, which selects it.

Move the cursor and place it adjacent to the right end of the last placed 9" straight track. **LEFT-Click** the mouse button and the track should snap into place at the end of the straight track.

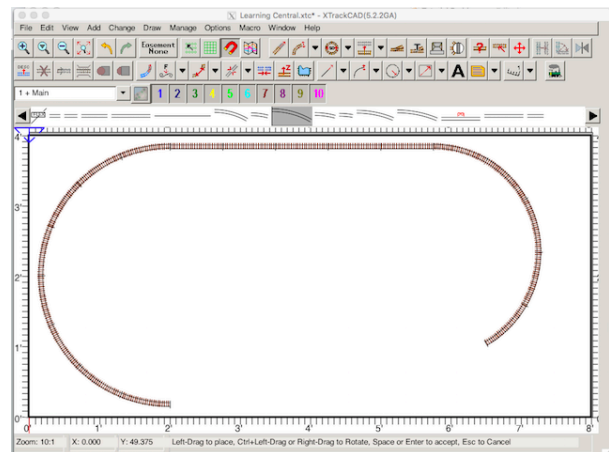


If the track curves the wrong way, **press and hold the SHIFT key** down and **LEFT-Click** on the curved section of track.



Once the curved section of track is reoriented, **press the SPACE or ENTER Key** to anchor the track into position.

Continue building the loop by adding **four** additional sections of "Atlas #833, 18" 30D Curved" track. Don't be concerned about the loop not extending to 180 degrees. Additional track sections are added during the next step.



The Alignment Process Begins

The loop of track, on the left side of this layout, was constructed using "Atlas 836 22" 22.5D Curved" track. In order to join

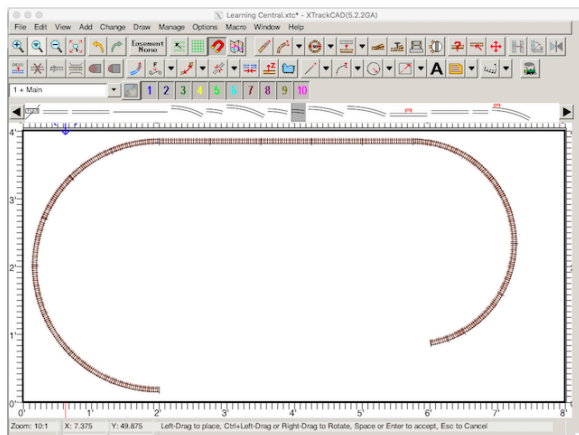
the loop being created in this exercise, with the loop on the left side of the layout, it is necessary to bring the unconnected sections of track into alignment. This is achieved through the placement of **three short pieces** of 18" 10D curved track, **but NOT ALL THREE ATTACH TO EACH OTHER.**

LEFT-Click in the **Hot Bar** to highlight an "Atlas #835, 18" 10D Curved", which selects it.

Move the cursor to the open end of the 18" curved track and **Left-Click** to place the curve. If the track section curves the wrong way, **hold down the SHIFT key, LEFT-click** on that track section.

Once the track is oriented correctly, **press the SPACE or ENTER key** to anchor the track in position.

Add a second piece of 18" 10D track to complete this step of the exercise.

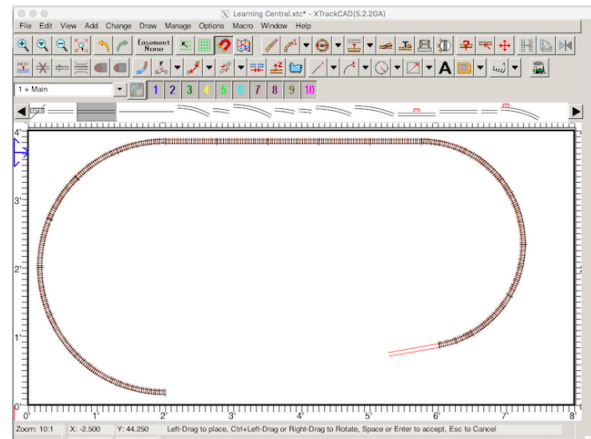


Heading Home!

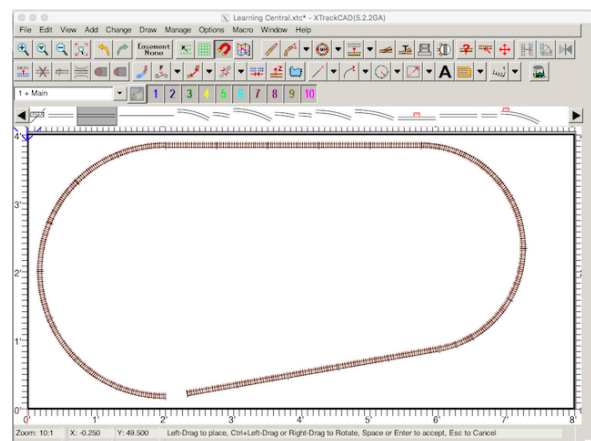
LEFT-Click on the **Hot Bar** to highlight an "Atlas #821, 9" Straight", which selects it.

Move the cursor next to the open end of the last "Atlas #835, 18" 10D Curved" and **Left-Click** to place it.

Once the track is in position, **press the SPACE or ENTER key** to anchor the track in position.



Complete this section of mainline track by placing **four additional sections** of "Atlas #821, 9" Straight" track next to the 18" 10D that was just laid.



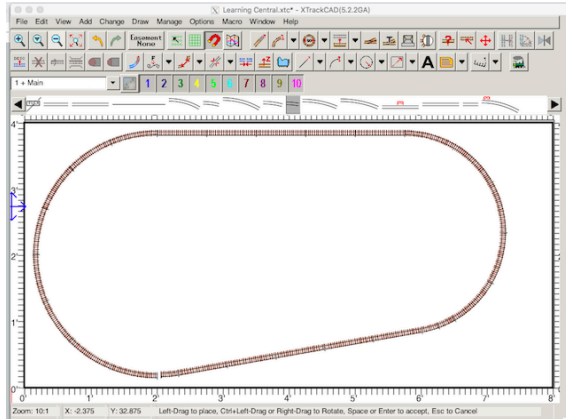
The Alignment Process Ends

The alignment process started with the placement of two 18" 10D curved tracks at the bottom of the right hand loop.

In this step, the **third section** of 18" 10D track is added to complete the alignment process.

LEFT-Click in the **Hot Bar** to highlight an "Atlas #835, 18" 10D Curved", which selects it.

Move the cursor to the open end of the last 9" section. **Left-Click** the mouse to place the track.



Once the track is positioned, **press the SPACE or ENTER key** to anchor it into position.

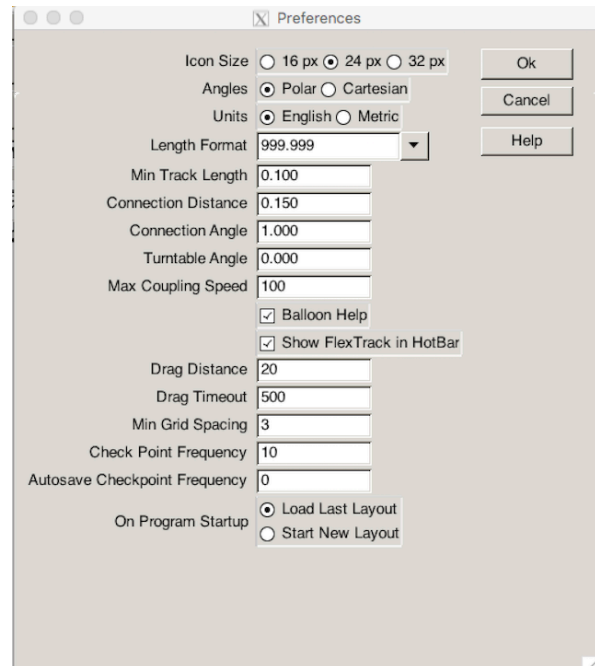
If the default setting for "Connection Distance" has not been changed, then the last section of track **may not connect** to the 22" curved section of track to its left.

If this happens, follow the instruction in the next section; "Making Things Connect".

Making Things Connect

If the left side of the 18" 10D Curved" track didn't connect to the right side of the existing 22" curved section of track don't worry. Sectional track has enough "play" to overcome the slight space that remains between the two tracks and can be pulled together for a final connection.

To achieve the same affect with XTrkCad, a slight change to the "Connection Distance" parameter is required.



Open the Preferences window by using the **Options>Preferences...** menu.

In the field titled "Connection Distance", **change the default entry from 0.100 to read 0.150** (.38 MM) then **LEFT-Click** the Ok button to save the change.

Connect the two tracks using "**Change>Connect Two Tracks**", the "Connect two tracks" button or the **<Ctrl+Shift+J>** command.

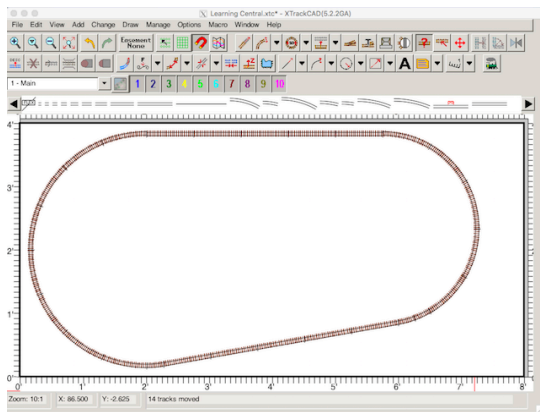
Note that this is the **Connect command**. It is **NOT** the **Join command**!

Note that the message in the status bar asks the user to "Select first End-Point to connect." **LEFT-Click** on the **unconnected end of 22" 22.5D** curved track.

Once the first End-Point has been selected, the message in the status bar changes to read "Select second End-Point to connect." **LEFT-Click** on the unconnected end of 18" 10D curved track.

If the "Connection Distance" is set correctly, the track sections move slightly and the 18" and 22" curved sections of track connect together.

If they don't, go back to the Preferences window and increase the "Connection Distance" by 0.05" (1.27 MM). If the "Connection Distance" must be increased to a value greater than 0.25" (6.35 MM), re-check the layout to ensure the correct sectional track pieces have been utilized.



Do a Save now.

AddSidings

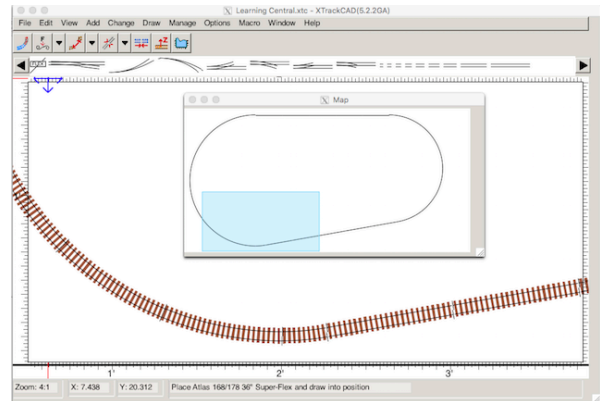
<http://xtrkcad-fork.sourceforge.net/Wikka/AddSidings>

To facilitate the placement of the two turnouts (Atlas Snap Switches) required to create the siding, it's necessary to split the track of the oval layout into two sections.

To make the task of doing so easier, use **View>Zoom** from the Menu Bar or the "Change drawing scale" ICON Tool Bar button to change the drawing scale to a ratio of 4:1. If a mouse has a **SCROLL** function, it can also be used to change the Zoom ratio.

If the Map is not open, open it by using **View>Show/Hide Map** or **Ctrl+SPACE**, or the **"Map ICON Button"**.

To make the first split, drag the transparent rectangle in the Map viewing area to the lower left quadrant.

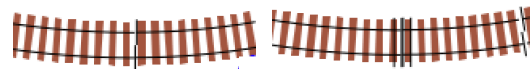


Split the track between the bottom left 22" curve radius piece and the 18" 10D curve.

To split the two tracks, select **Change>Split Track**, **Shift+Ctrl+S**, or the **"Split a track ICON button"**.

With the command active, place the cursor over the indicated track joint and **Left-Click** the mouse.

To show when the track sections have split, the single black line, that indicated the joint, turns into three lines, the split.



To create the second split, drag the map viewing area to the upper right quadrant and move the Map window out of the way. The split command is still active. Place the X of the split between the 9" straight and the first 18" curve radius

track to its right. With cursor over that joint, **LEFT-Click** that joint.

The indication when the track split is the single black line turned into three lines.

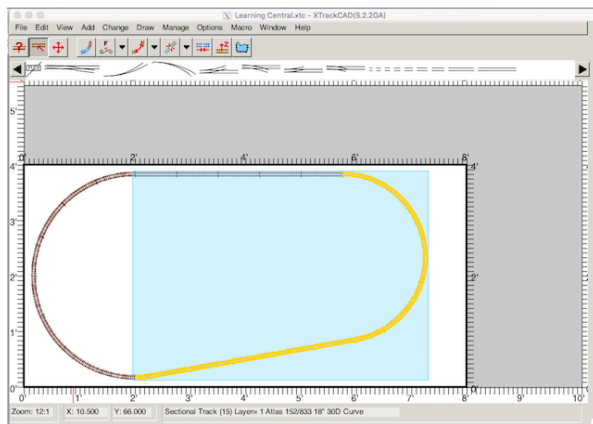
Close the Map window.

Change the drawing scale to a ratio of 12:1. Once the drawing scale is set, the entire layout should be visible in the Main Window.

Choose the "Select" Tool.

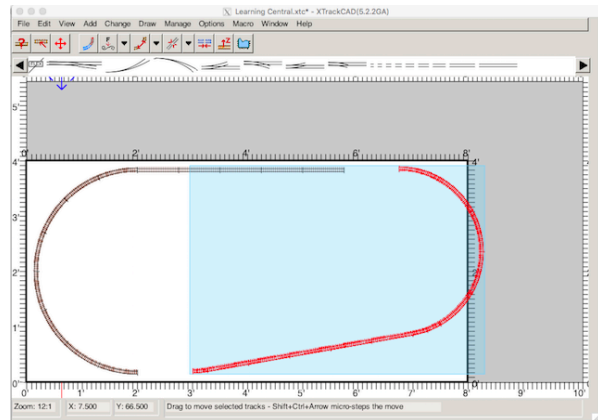
Change>Select, Ctrl+E or the "Select objects" button from the Tool Bar.

Move the cursor over the top of one of the curved sections of track located on the right side of the Layout drawing window. While **holding the cursor over this track** section, **press and hold the SHIFT key** then **LEFT-Click** the mouse button. Completing this action causes the track segment, on the right side and across the bottom of the Main Window, to be highlighted.



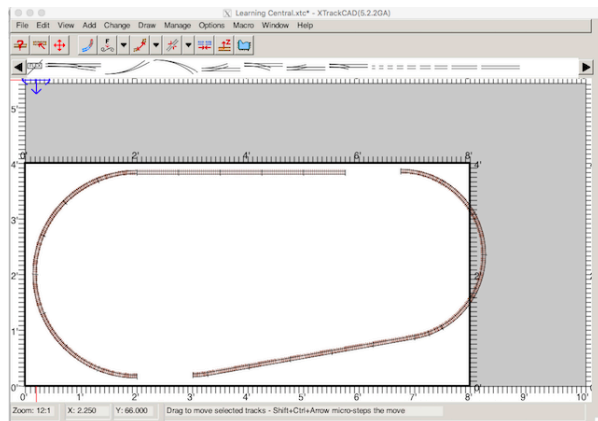
If the entire track plan highlights when the "Select objects" command is issued, this indicates one of the previous steps wasn't completed correctly.

The Move function is used to relocate the highlighted segment of track approximately 9" to the right.



Select the "Move" tool by using the **Change>Move** function from the Menu Bar or **Shift+Ctrl+M**, the shortcut keys. Place the cursor over any piece of track located in the highlighted section, **press and hold the LEFT mouse button**.

Watch the highlighted section of track as the mouse is dragged to the right. The entire highlighted section of track follows the mouse movement. Continue dragging the section to the right until there's an approximate 9" opening between it and the stationary section of track to the left. Release the mouse button.



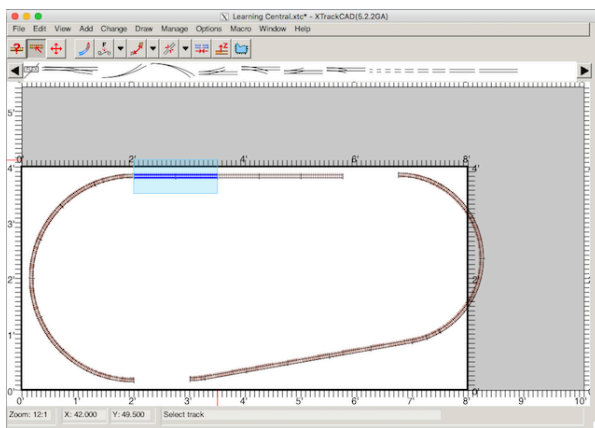
Use **Edit>Deselect All** from the menu bar to "**Deselect All**" layout components once editing like this is completed. Doing this removes any chance of making unintentional changes.

Make Room for the Right Hand Turnout

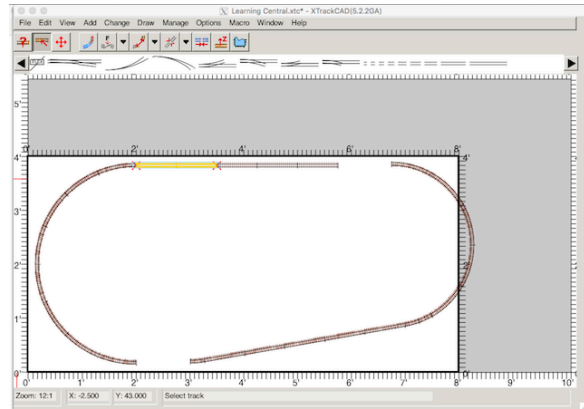
To facilitate installation of a right hand turnout, it is necessary to remove the **two sections** of the Atlas #821, 9" straight track located adjacent to the curved track section in the top left quadrant of the Main Window.

Pick the "Select" Tool by using the **Change>Select** function from the Menu Bar, the "Select objects" button from the ICON Bar or the shortcut keys.

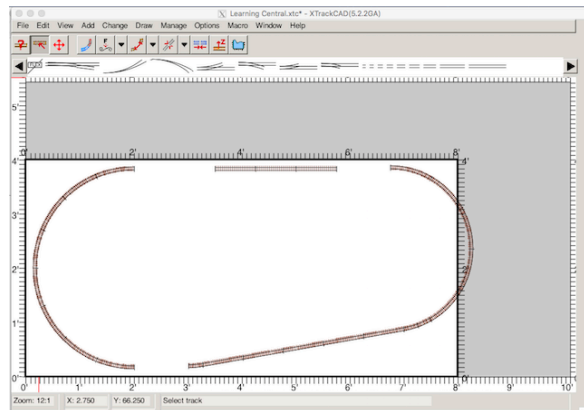
Move the cursor underneath the two 9" straight sections to be removed and at the left end of the left track section. **Hold down the LEFT mouse button** and drag upwards until both tracks are highlighted. Release the mouse button.



The two 9" straight tracks, to be removed, are highlighted.



Use the **Edit>Delete** function from the Menu Bar, the shortcut keys or the keyboard's **Delete key** to delete the previously selected 9" straight tracks.



Install the Right Hand Turnout

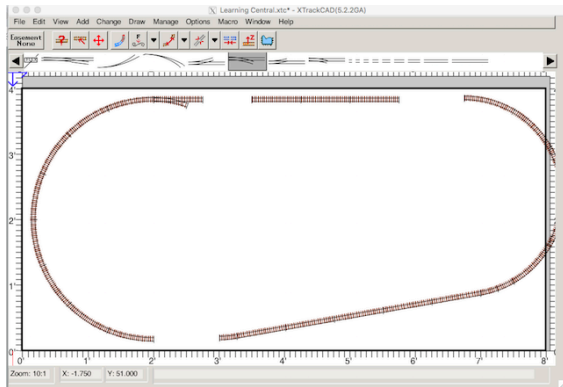
LEFT-Click in the **Hot Bar** to highlight an "Atlas #851, Right Snap Switch", which selects it.

Move the cursor to any open area of the drawing window and **LEFT-Click**. The turnout is placed in the drawing area.

Drag the turnout to the open end of the 22" curve piece, **hold down the LEFT mouse button**, with the cursor on the turnout's left end, and drag it into position.

Ensure the diverging route curves inward toward the center of the layout. If it

doesn't, hold **SHIFT** key and **Left Click** the mouse to change the orientation of the turnout.



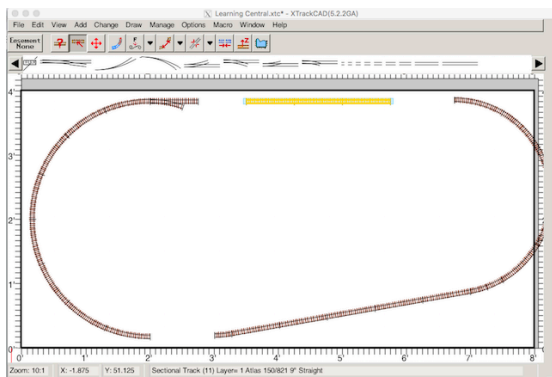
Once the turnout is positioned properly, **press the SPACE or ENTER** key to anchor it in position.

Re-connect Straight Track

Choose the "Select" Tool.

Change>Select function from the Menu Bar, the "Select objects" ICON button from the Tool Bar or the shortcut keys.

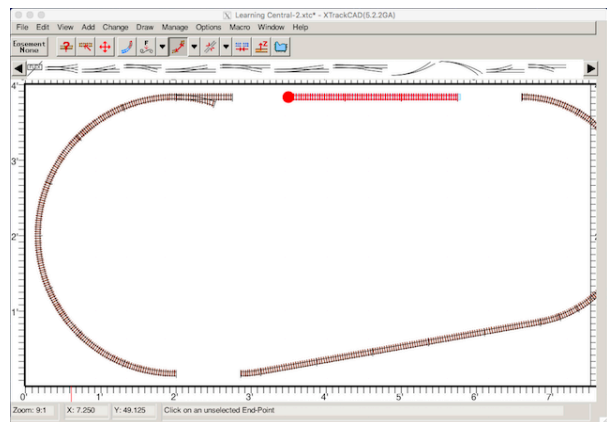
Move the cursor over top of one of the three sections of straight track located along the upper edge of the Main window. **While holding the cursor over this track section, press and hold the SHIFT** key then **LEFT-Click**. Completing this action causes the three sections of straight track to become highlighted.



If something other than this section of track highlights when the "Select objects" command is issued, this indicates one of the previous steps wasn't completed correctly.

While the tracks are still selected, pick the "Join" Tool by using the **Change>Join** function from the Menu Bar, the "Join two tracks" button from the ICON Tool Bar or the shortcut keys. **Do NOT choose Connect two tracks.** This is a "Join" command as the tracks are far apart.

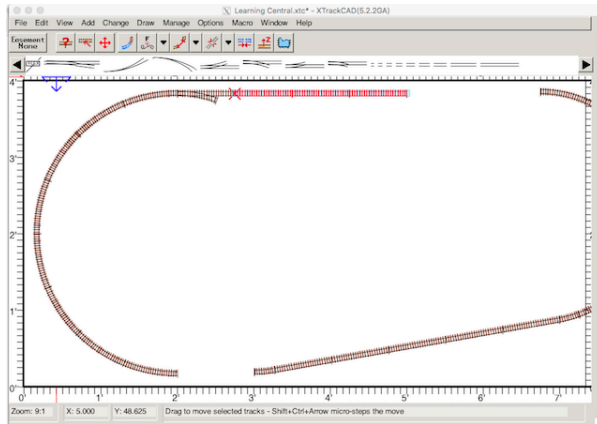
Move the cursor over top of the left most end of the straight track located along the upper edge of the Main window.



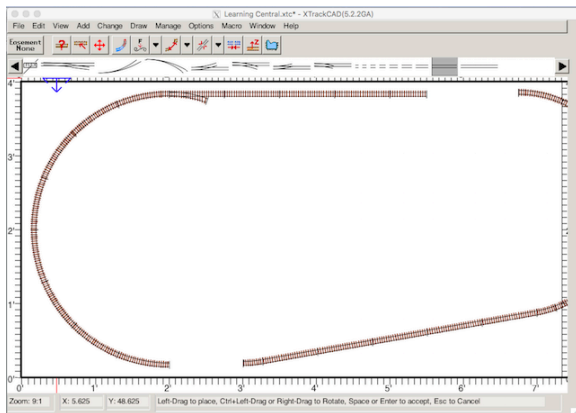
While holding the cursor in this position, press and hold the SHIFT key then **LEFT-Click** the mouse. Completing this action causes a circle to appear at the left end of the straight track and the phrase "Click on an unselected End-Point" to appear in the status bar. Complete the second step of the "Join function".

Move the cursor over the end-point of the right hand turnout and **while holding the cursor in that position, LEFT-Click** the mouse button. This action causes the straight section of track to move from it's

previous location and become joined with the turnout.



Note: This is not the same as extending the tracks to the new turnout. If the action puts a longer track in place of the original track, the **SHIFT-Click** action might not have been carried out correctly to move the tracks. A piece of track was added to extend them instead of moving the three tracks.



Press the SPACE or ENTER key too anchor the tracks in position.

Extending tracks is also possible and is explained further later.

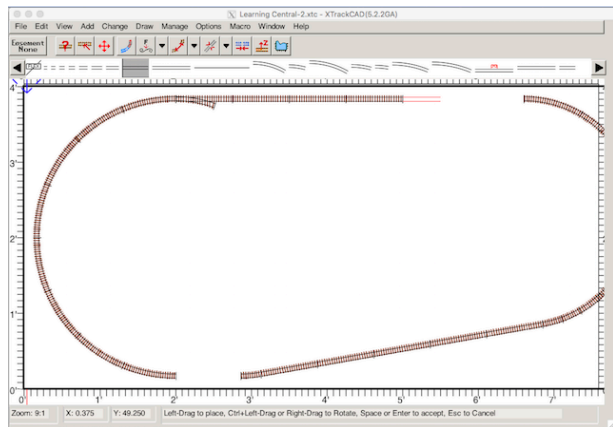
Use the **Edit>Deselect All** function from the Menu Bar or the shortcut keys, to deselect all previously selected components.

Adding a Little Length

The “room size” of this layout was set at 48" x 96" (4' x 8'). The layout, as it exists presently, has an overall dimension of 45" x 85.5". If a 2" border is maintained between the left edge of the “room/table” and the left edge of the layout, then there's sufficient room to add at least another 6" of running length without compromising a similar border on the right side of the layout.

LEFT-Click in the **Hot Bar** to highlight an "Atlas #822, 6" Straight", which selects it.

Move the cursor next to the open end of the "Atlas #821, 9" Straight" track and **Left-Click** the mouse.



Once the track is in position, **press the SPACE or ENTER key** to anchor the track in position.

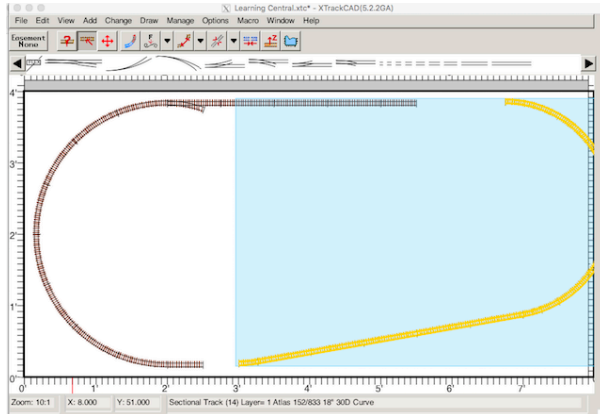
For the second 6" straight, near the 22" curve radius piece **in the lower left quadrant**, move the cursor next to the "Atlas #836 22" 22.5D Curved" and **LEFT-Click** the mouse.

Once the track is in position, **press the SPACE bar** to anchor the track in position.

Reconnect The Right Hand Loop

Choose the "Select" Tool.

Change>Select function from the Menu Bar, the "Select objects" button from the Tool Bar or the shortcut keys.

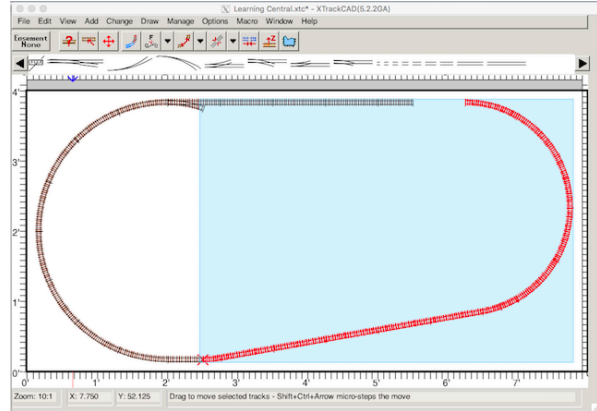


Move the cursor over the top of one of the curved track sections located along the right edge of the Main window. While holding the cursor over this track section, **press and hold the SHIFT key** then **LEFT-Click** the mouse. Completing this action causes the right hand Loop of track to become highlighted. If something other than this section of track highlights, when the "Select objects" command is issued, this indicates one of the previous steps wasn't completed correctly.

First, make sure the Easement Value is set to "None". This stops the program from adding "easements" to transition between straight and curved tracks.

Select the "Move" Tool by using the **Change>Move** function from the Menu Bar, the "Move" button from the ICON Tool Bar or the shortcut keys. This highlights the section to be moved and turns the track to be moved to become a solid color.

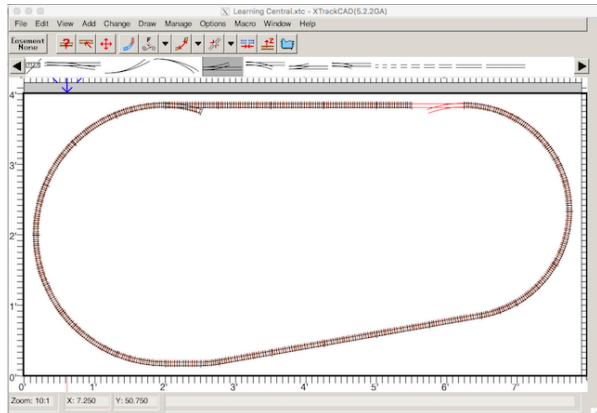
Complete the second step of the Move function by dragging the 18" 10D curved piece to the "Atlas #822, 6" Straight" track and release the mouse button.



Install the Left Hand Turnout

LEFT-Click in the **Hot Bar** to highlight an "Atlas #850, Left Snap Switch", which selects it.

Move the cursor to the end of the 18" curve track opening between the 18" curve track and the "Atlas #822, 6" Straight" track.



LEFT-Click the mouse.

Ensure the diverging route curves inward toward the center of the layout. If the diverging route curves away from the center of the layout, **hold the SHIFT key** and **LEFT-Click** on the turnout. This

action causes the next End-Point to become active and makes placing the turnout easier.

Press the Space or ENTER key to anchor the turnout into position.

The Alignment Process

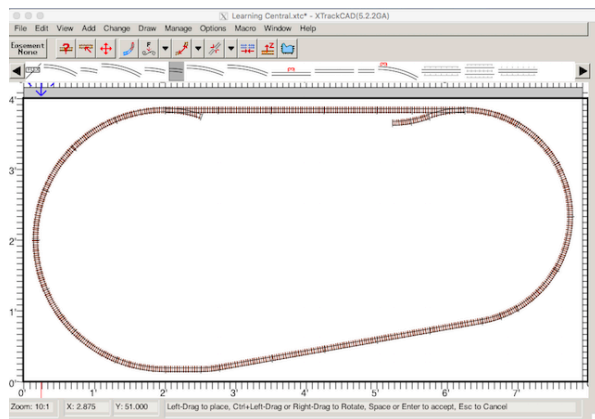
In order to bring **the siding** into parallel alignment with the mainline, it is necessary to place two short pieces of 18" 10D curved track next to the diverging leg of the "Atlas #850, Left Snap Switch".

LEFT-Click in the **Hot Bar** to highlight an "Atlas #835, 18" 10D Curved", which selects it.

Move the cursor to the end of the switch in the upper right quadrant. **Left-Click** the mouse. The 18" 10D curve snaps into place.

Press the Space or ENTER key to anchor that piece.

Repeat the process for the second piece of 18" 10D curved track.



Complete the Siding

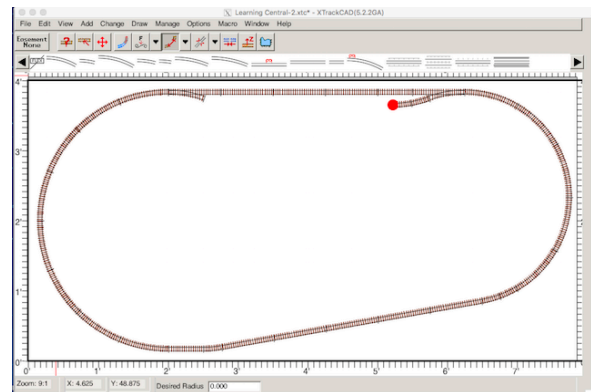
The open end-points within the siding are joined using **flex track** rather than

sectional track. Flex track is **NOT** selected in the **Hot Bar**.

Because of the limited space for the curve near the "Snap Switch" on the left side, **easements must be turned off**. Look at the 'Easement' button on the ICON Tool Bar. It should display 'Easement None'. If this is not the case, open the Easement Menu dialog by either, clicking the Easement button in the Tool Bar, Selecting **Options>Easements** in the Menu Bar and select 'None'.

Flex track is added by using the **Change>Join** function from the Menu Bar, the "Join two tracks" button from the ICON Tool Bar or the command **Ctrl+J**.

LEFT-Click the end-point of the "Atlas #835, 18" 10D Curved" track located on the right side of the layout. A dot appear once this point is selected.

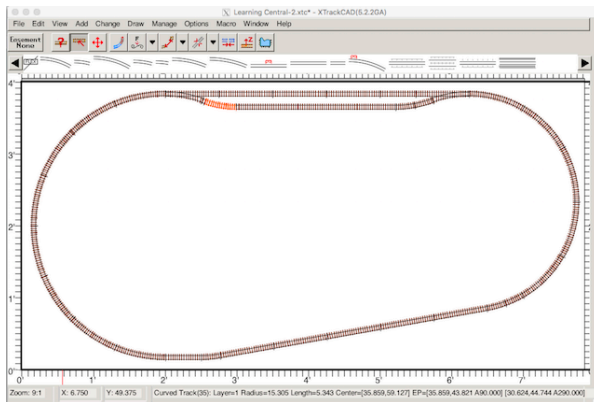


Move the cursor over the diverging end of the "Atlas #851, Right Snap Switch"

Left-Click and **hold the mouse button down**, AND while **holding the left mouse button down**, slowly move the mouse left and/or right to adjust the

radius of the curve that develops until a desired radius is obtained.

The radius is displayed in the status line, which is on the lower edge of Main Window. In this example, a given radius its set in inches once the left mouse button is released. Release the mouse button once the desired radius is obtained.



In this example, the curve section of flex track has a radius of less than the default value of 18". As a result the curve is shown in red to warn of the smaller radius.

Add a Couple of Spurs

Two spur lines emanate from the siding created in the previous exercise, thus it is necessary to add two turnouts (Atlas Snap Switches) to the siding.

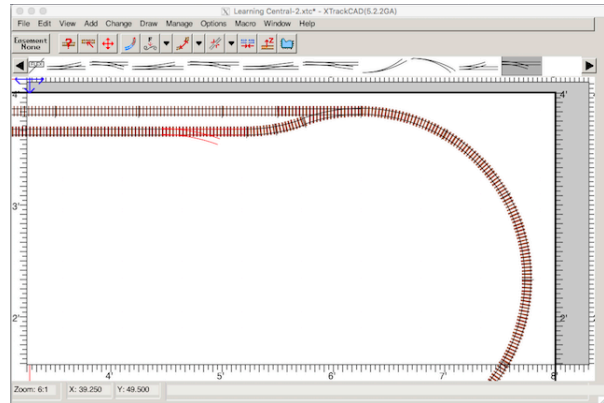
To make the task of placing these turnouts easier, use **View>Zoom** from the Menu Bar or the "Change drawing scale" ICON Tool Bar button to change the drawing scale to a ratio of 6:1.

Add Two Right Hand Turnouts

LEFT-Click on the **Hot Bar** to highlight an "Atlas #851, Right Snap Switch", which selects it.

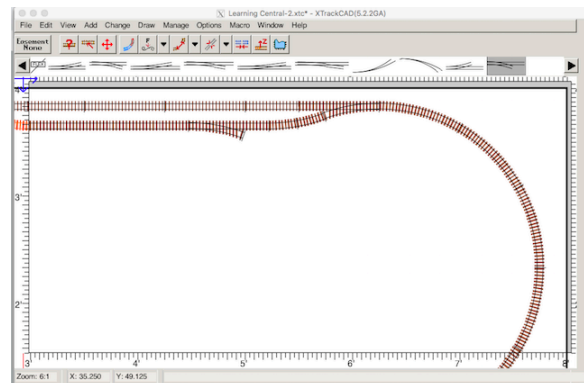
Move the cursor next to the second 'Atlas #835, 18" 10D Curved' track that was placed in the last exercise.

Don't worry about disconnecting or modifying the underlying flex track, as once the turnout is anchored in place, XTrkCad performs this task.



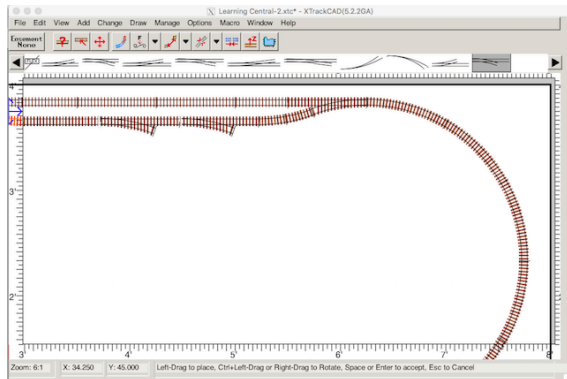
LEFT-Click and then ensure the diverging route curves inward toward the center of the layout. If the diverging route curves away from the center of the layout, **hold the SHIFT key and LEFT-Click** on the turnout. This action causes the next End-Point to become active and makes placing the turnout easier.

When the turnout is placed exactly on top of the existing track, the message in the info bar at the bottom of the window will note that two connections have been made.



Once oriented correctly, **press the Space or ENTER key** to anchor the turnout.

Move the cursor to the immediate left of the first turnout. **LEFT-Click** and a second turnout is placed.



Once oriented correctly, **press the SPACE or ENTER key** to anchor the turnout in position.

Extend the Diverging Routes

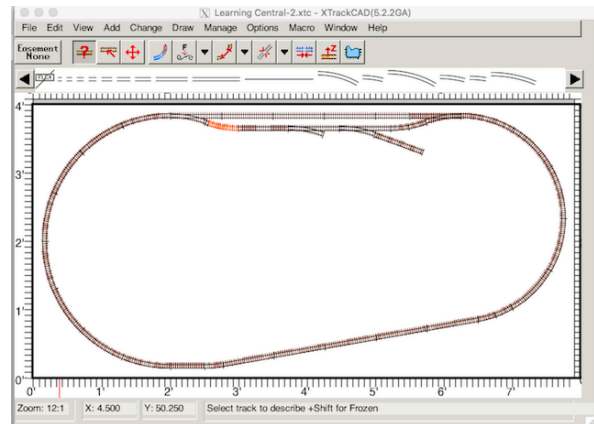
The diverging routes could be extended by drawing two separate pieces of flex track on the Main Window, then connecting such to the diverging leg of each turnout. There is however a simpler way.

Start the process by zooming out of the drawing area using **View>Zoom** from the Menu Bar or the "Change drawing scale" Tool Bar button to change the drawing scale to a **ratio of 12:1**.

LEFT-Click on the **Hot Bar** to highlight an "Atlas 150/821 9" Straight", which selects it.

Move the cursor over the end of the diverging leg of the turnout that's located

on the right most side of the siding; the first turnout that was placed during this exercise.



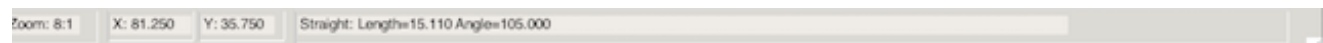
LEFT-Click and then **press the SPACE or ENTER key** to anchor the 9" straight track.

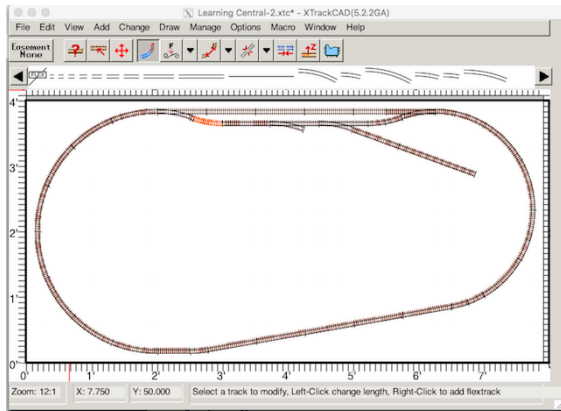
Select **Change>Modify** from the Menu Bar, the "Modify or extend track" ICON Tool Bar button or the press the **<Ctrl+M>** keys to issue a "Modify or extend track" command.

Position the cursor over the open end of the 9" straight track.

HOLD the LEFT mouse button down while moving the cursor to the right and downward. As the cursor is moved away from the 9" straight track the diverging leg will extend.

Continue extending the leg until it reaches a **length of approximately 15"**. The track length can be viewed in the status bar located along the bottom edge of the Main Window. **Release the mouse button** once the desired track length has been achieved. Seen below.

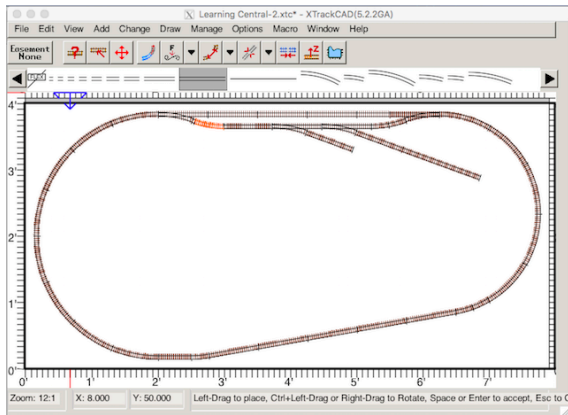




Next, **LEFT-Click** on the **Hot Bar** to highlight an "Atlas 150/821 9" Straight", which selects it.

Move cursor over the end of the diverging leg of the turnout that's located to the left of the turnout that was just modified; the second turnout that was placed during this exercise.

LEFT-Click and then press the **SPACE** or **ENTER** key to anchor the 9" straight track.

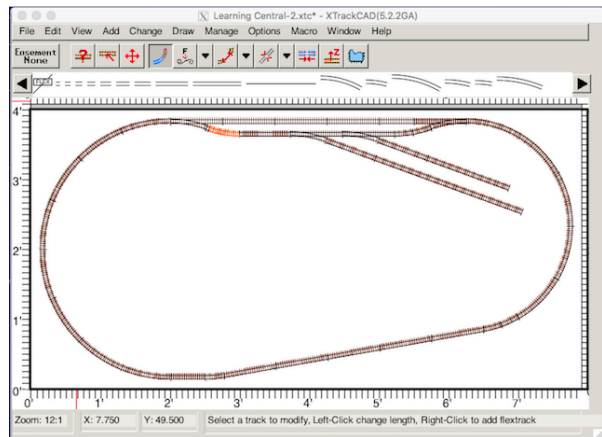


Select **Change>Modify** from the Menu Bar, the "Modify or extend track" Tool Bar button or the press the **<Ctrl+M>** keys to issue a "Modify or extend track" command.

Position the cursor over the open end of the 9" straight track.

HOLD the **LEFT** mouse button down while moving the cursor to the right and downward. As the cursor is moved away from the 9" straight the diverging leg extends.

Continue extending the leg until it reaches a length of **approximately 27"**. The track length can be viewed in the status bar located along the bottom edge of the Main Window. **Release the mouse button** once the desired track length has been achieved.



Establish the Specific Spur Lengths

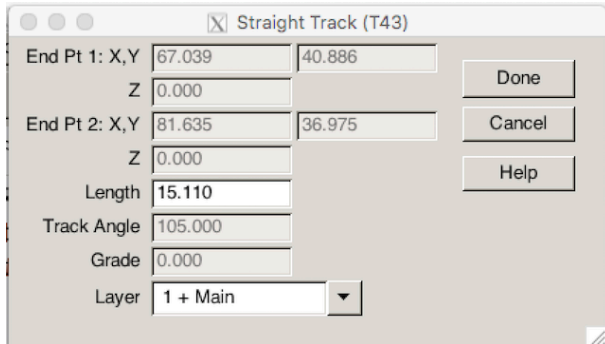
The "Describe" mode can be used to change many of the attributes associated with a track element.

For example; "Describe" mode can be used to change the length or position of a section of flex track. When using the "Describe" mode, one must be aware that if a track is connected to other tracks, some values (ie. End Point positions) cannot be changed.

In this step of the exercise, the "Describe" mode is used to set an exact length for each spur line.

Select **Change>Properties** from the Menu Bar, the "Describe objects" Tool Bar button or the press the <Ctrl+?> keys to select "Describe" mode.

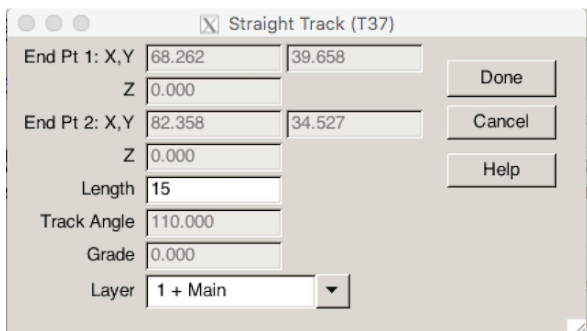
Move the cursor over the section of flex track that forms the short spur line and then **Left-Click the mouse button**.



The Property Sheet for this section of flex track opens.

Position the cursor in the "Length" field and then modify the existing entry of 15.110, in this case, to read 15.

Watch the section of flex track in Main Window as the field is updated. Its length is modified shortly after making the change.



Once the correct value has been entered in the "Length" field, **LEFT-Click** on the **Done button** to close the Property Sheet.

Next, move the cursor over the section of flex track that forms the long spur line and **LEFT-Click** the mouse button.

The Property Sheet for this section of flex track opens.

Position the cursor in the "Length" field then modify the existing entry to read 27.

Watch the section of flex track in Main Window as the field is updated. Its length is modified shortly after making the change.

Once the correct value has been entered in the "Length" field, click on the **"Done" button** to close the Property Sheet.

Do a Save now.

Into the Hills

<http://xtrkcad-fork.sourceforge.net/Wikka/IntoHills>

This elevation tutorial does not apply directly to the layout in this tutorial, therefore nothing was added here.

Running A Train (Noted as Under Construction in the Online Tutorial)

<http://xtrkcad-fork.sourceforge.net/Wikka/RunningTrain>

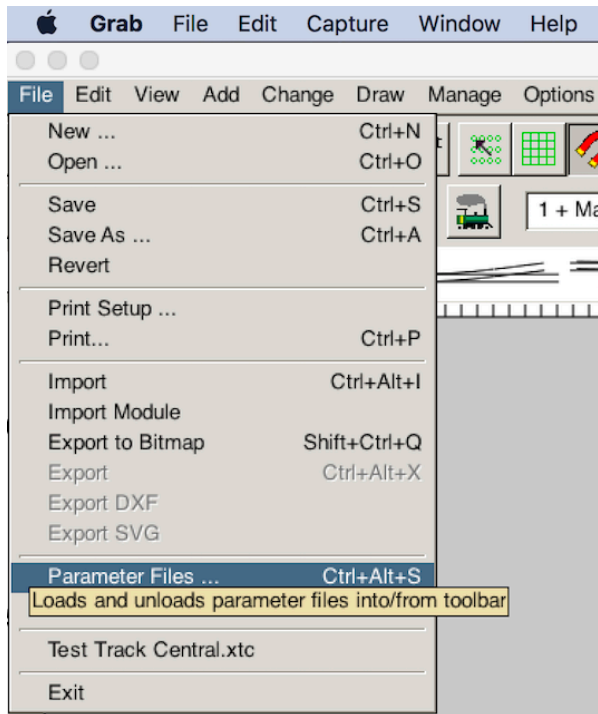
A Car Inventory must exist before the Run Train feature can be used. If this tutorial was followed from the beginning, the "North American Rolling Stock Prototype Cars" should already be in the Parameters listing.

The following demonstrates how to add the Car Inventory, if it doesn't already exist.

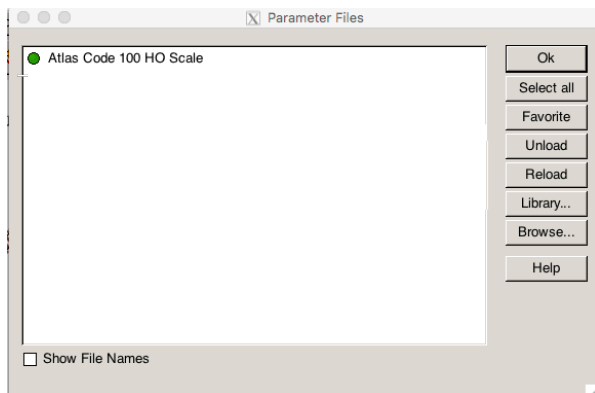
Defining a Prototype

Model Cars (aka "Parts") are based on Prototype Cars.

To add a model car/locomotive, one or more Prototypes must be either loaded from the Parameter Files or defined from scratch.



Loading Prototype Cars from a Parameter File if it doesn't already exist.

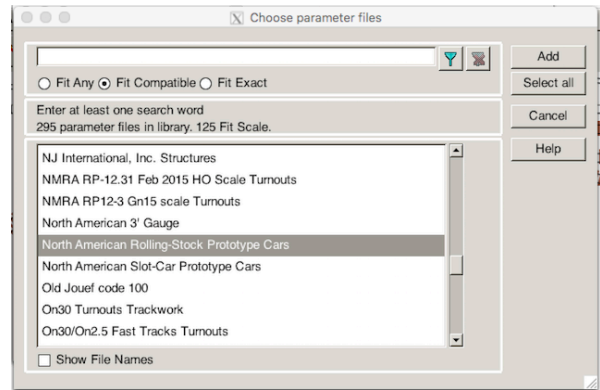


From the menu bar open

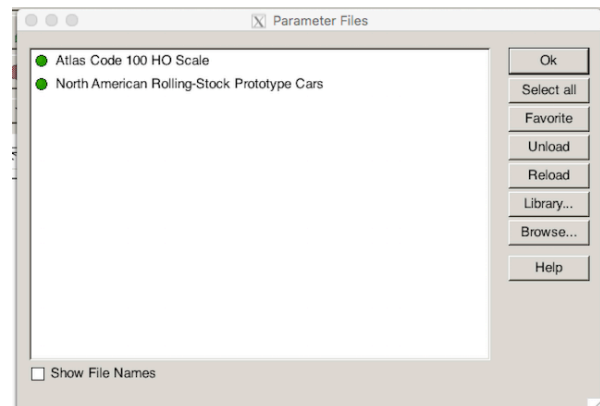
File>Parameter Files...

The Parameter Files window opens.

Select the **Library** button and then the Choose parameters files window opens.



Select the file "North American Rolling Stock Prototype Cars" and then **LEFT-Click** the **Add** button.



The Parameters Files window now shows the "North American Rolling Stock Prototype Cars" added to the list.

Left-Click the **Ok** button on the Parameter Files window.

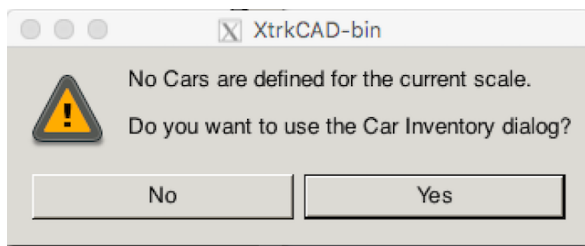
The Prototype cars are now loaded.

Defining Custom Prototype Cars" can be skipped, and was for this tutorial.

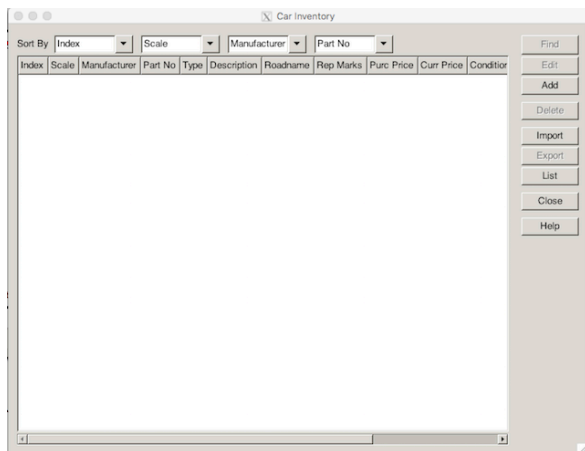
Adding An Engine

Before a train can be run, a Car Part must be defined and added to the inventory.

Select **Manage>Run Trans** from the main menu, or **LEFT-click** on the **ICON** that looks like an old steam engine. That brings up a warning window that states, "There are no cars defined in the current Scale. Do you want to use the Car Inventory dialog?"



LEFT-Click Yes.

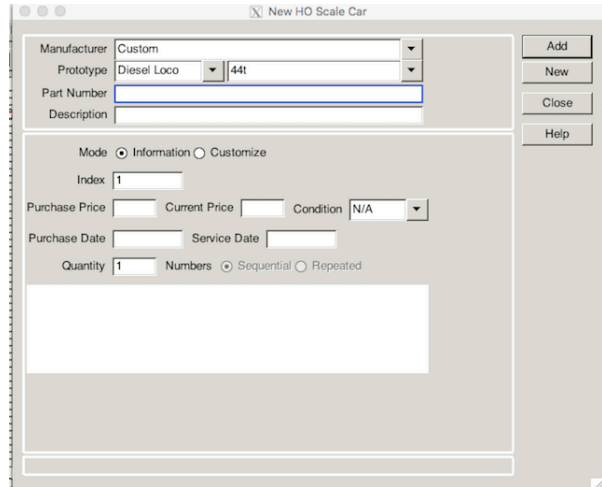


An empty window opens with only a few buttons, on the right side of the window, highlighted. The upper most highlighted button says: Add.

LEFT-Click the Add button.

A new window opens named New HO Scale Car.

There are two drop down menus in the Prototype line.



The drop down menu on the left has only three choices; Diesel Loco, Freight Car and Psngr Car.

The one on the right opens a list of the specific locomotives or cars available for the "car" types.

Choose a locomotive from the drop down menu. (A GP 35 was chosen.)

With the part number unknown, 12345 was entered as the Part Number. **A Part Number is REQUIRED!** If a part number is not available, make one up.

While the Description is NOT a required field, Diesel Loco GP35 was input.

Once an engine is selected, **LEFT-Click** the **Add button**.

Note: Nothing appears to happen, but the locomotive was added to the Car Inventory.

Adding More Cars

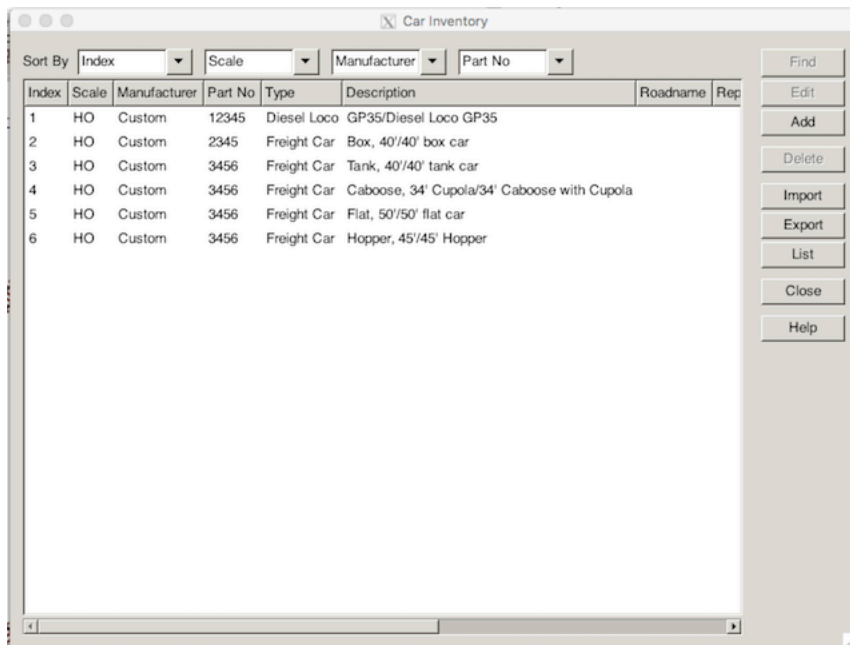
Choose between 4 to 6 cars of any length.

Select either Freight Car or Psngr Car.

Continue using **LEFT-Clicks and the Add button** to add more cars. Give each one a part number, or just use the same part number, as that is a required field. A Description can be added if desired.

Once the cars are all selected, **LEFT-Click the Close button** when finished.

The Car Inventory window is displayed and should look something like this:



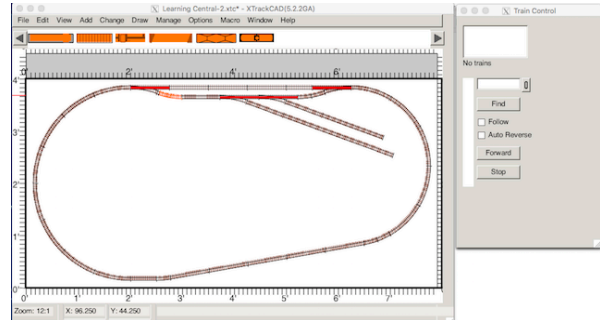
LEFT-Click the Close Button.

The car inventory can be opened at anytime using the menu bar **Manage>Car Inventory.**

Placing Cars onto the Layout

Once the **Close button** is clicked, the chosen “cars” appear in the **Hot Bar** and the Train Control Opens.

To select a car from the **Hot Bar**, **LEFT-Click** on any car to highlight it.

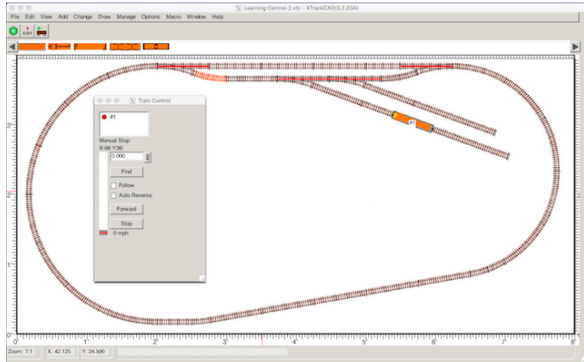


(**Note:** This gets tricky because, at first, it does not seem like it is working.)

After highlighting a “car” in the **Hot Bar**, one of which one **MUST** be a locomotive to run the train, place the cursor anywhere over the layout area, **press and hold the LEFT mouse button and, while holding down the LEFT mouse button, start dragging to the location where the car is to be placed on the tracks.** The car

won't show until the dragging starts. The car can be dragged to any track location.

The GP35 was dragged to the long spur and it automatically aligned to the track.



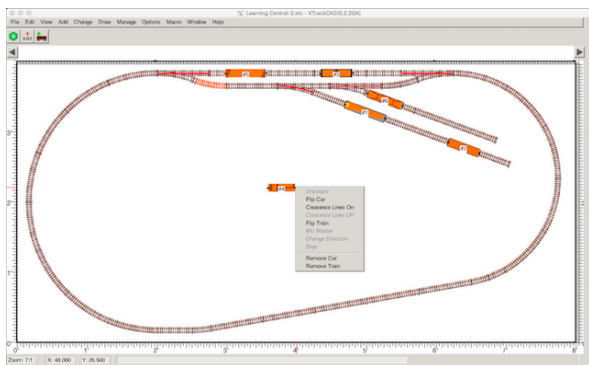
The **Hot Bar** showed five cars left to be placed on the tracks with the GP35 sitting on the innermost spur.

Using the same method, the remaining cars, except the caboose, were placed on the tracks.

When the caboose was placed on the layout, its direction needed to be changed.

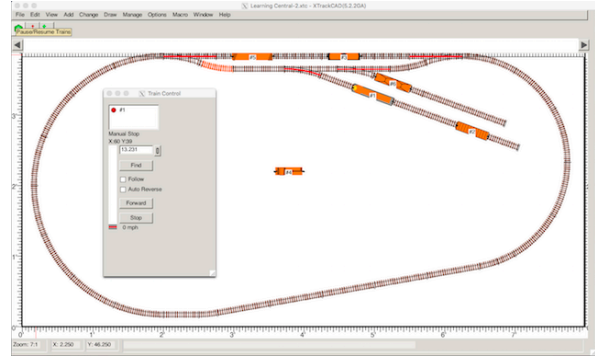
For clarity, while demonstrating the rotate command, the caboose was placed in an open area on the layout, rotated, and then moved to its track position.

To change the car's orientation **RIGHT-Click** the end of the car and a menu opens.

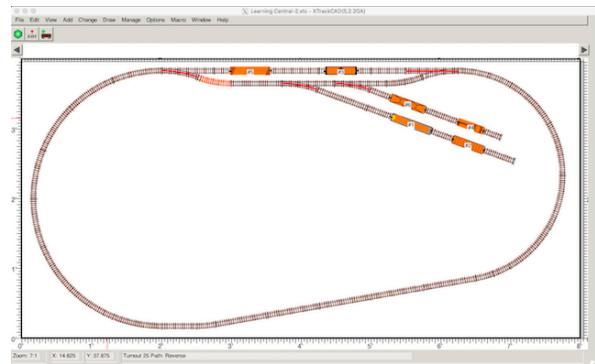


LEFT-Click Flip in the menu list and the car flips orientation.

Once the caboose was flipped it was dragged to the end of the far right spur.



The turnouts were changed to the best starting position to make up a train, based on where the cars were placed.



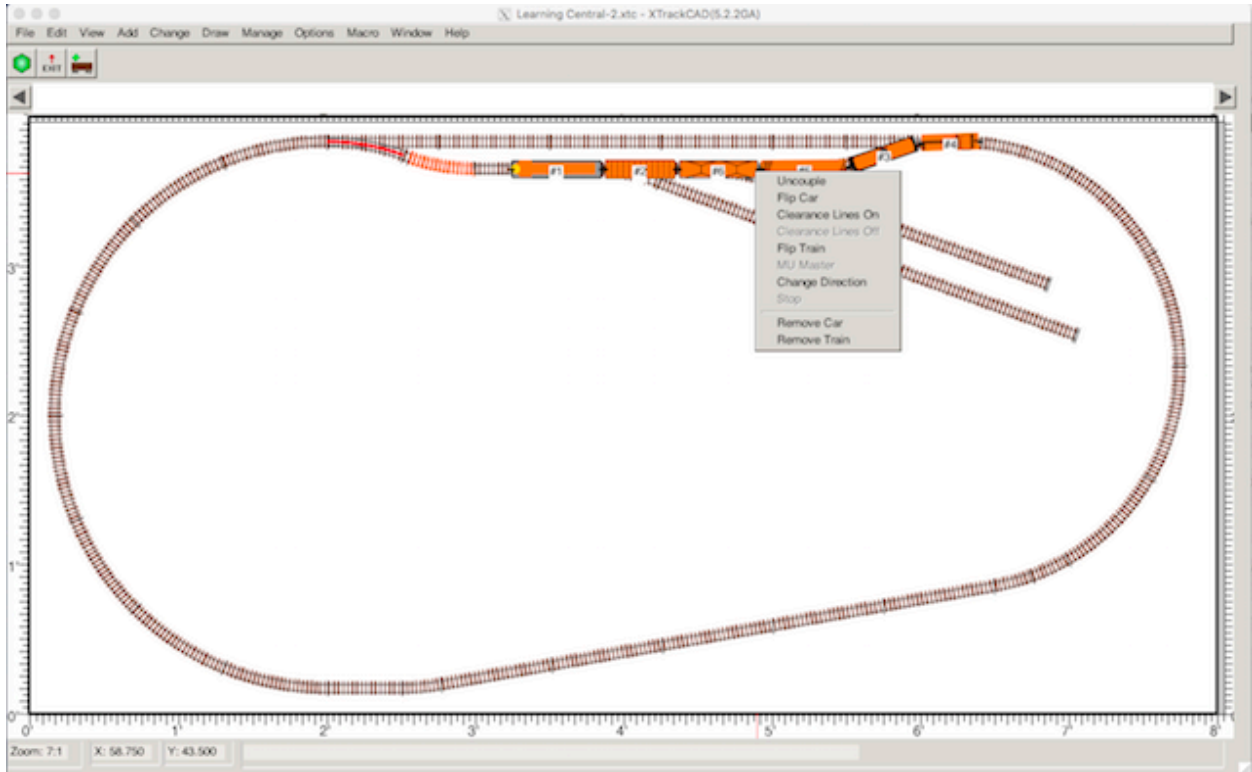
To change the turnout points, the **SHIFT key is held down** while the cursor hovers over the turnout and a **LEFT-Click** is executed.

The coupling/uncoupling points are located at either end of the car or locomotive.

The cars couple automatically when another car, or the locomotive, is extremely close, like "bumped into".

In order to leave the cars on the spurs, the cars have to be uncoupled.

To uncouple cars, **hold the Shift button down** and **RIGHT-Click** at the end of the car that needs to be uncoupled.

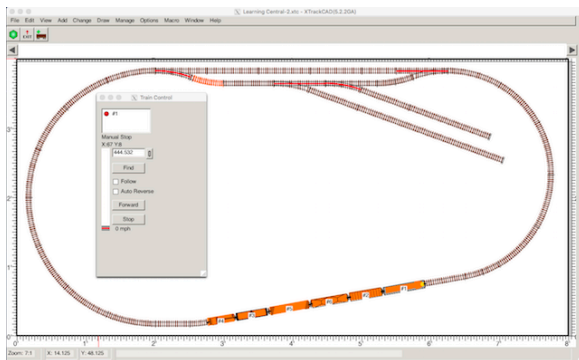
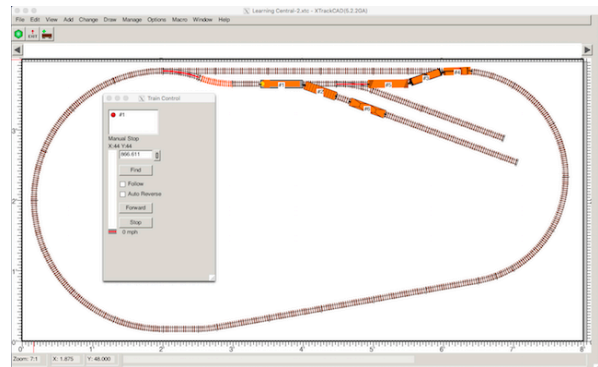


A menu opens and Uncouple can be selected from the list.

Cars were switched onto spurs and left there.

LEFT-Click Uncouple and the cars are uncoupled and the rest of the train is pulled away.

The train was made up and run.



The screen capture was made while the train was stopped during its run.

Save File Now.

Problems and Workarounds

1. Some of the screen captures of the processes in the online tutorial did not look like what was happening on a Mac screen while the tutorial was being followed.

Solution: Accept that the Tutorial uses Windows' screen captures and the Mac screen captures are a bit different.

2. The color blue is mentioned when a track element is moved to the layout from the **Hot Bar**. The initial rail lines are red on the Mac.

Solution: Deleted color references and noted them as colored lines other than black in this tutorial.

3. When the explained process was followed exactly in the online tutorial, it did not always work, but a workaround was found.

Solution: Change the process to one that worked.

4. There are too many Icon Buttons in the ICON menu bar above the **Hot Bar** for a beginner to start with. It is intimidating and confusing.

Solution: Allow only the ICON Buttons, useful for the tutorial, to be displayed in the ICON menu. All others were de-selected in **View>Tool Bar**. The ICON Buttons used for the tutorial were; Easement Button, Modify Track Buttons, Properties/Select, Train Group Buttons, and the **Hot Bar**.

5. Locating an exact X Y coordinate position in the layout drawing area is difficult to do with the mouse.

Solution: Zooming the layout drawing area helps some. It also helps to put the object in the drawing area for the layout and then move the cursor to the exact coordinates, a **LEFT-Click** allows the object to move/jump to that exact location.

6. Creating a 4' x 8' area, as in the online tutorial, misses an important point about this program. The manual notes, on

page 11, "The **Options>Layout** menu specifies the working scale and **overall room size**." That is an important concept.

Solution: Note it here.

7. **Ctrl+Alt+letter** commands cause the program to crash on a Mac when **Ctrl+Opt+P** is commanded.

Solution: Delete any references to Ctrl+Alt+letter short cut combination in this version of the tutorial.

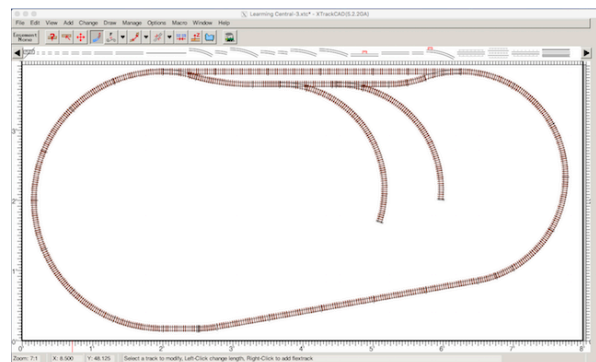
8. The terms "Join two tracks" and "Connect two tracks" can be confused with each other.

Solution: Remember that "**Join** is for tracks that are far apart from each other and "**Connect**" is for when they are very close together, but not connected.

9. The Extend the Diverging Routes, noted in the online tutorial does not work in version 5.2.2GA

What is wrong? and the Solution

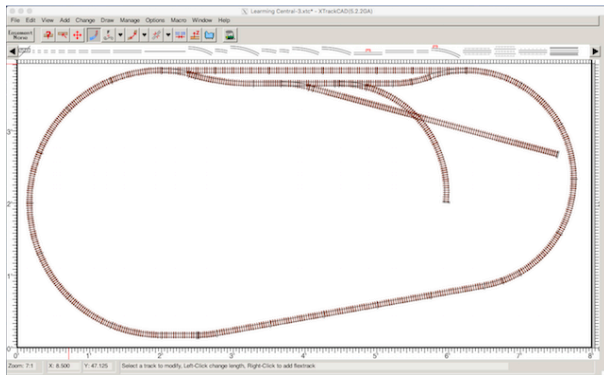
When **Change>Modify** is chosen from the **Menu Bar**, or the "Modify or extend track" ICON Tool Bar button", or the <Ctrl+M> keys to issue a "Modify or extend track" command is used, it appears that the track is extended using the radius of the switch.



No matter how the mouse is dragged, while holding down the **LEFT mouse button and dragging**, it will **NOT** create a straight track for the spur.

A 9" straight was used in this tutorial to connect to the open end of the turnout in this tutorial, and then the **Change>Modify** command worked to produce a straight siding of flex track.

Any length of Atlas straight track would work, but a 9" straight was chosen for the tutorial.



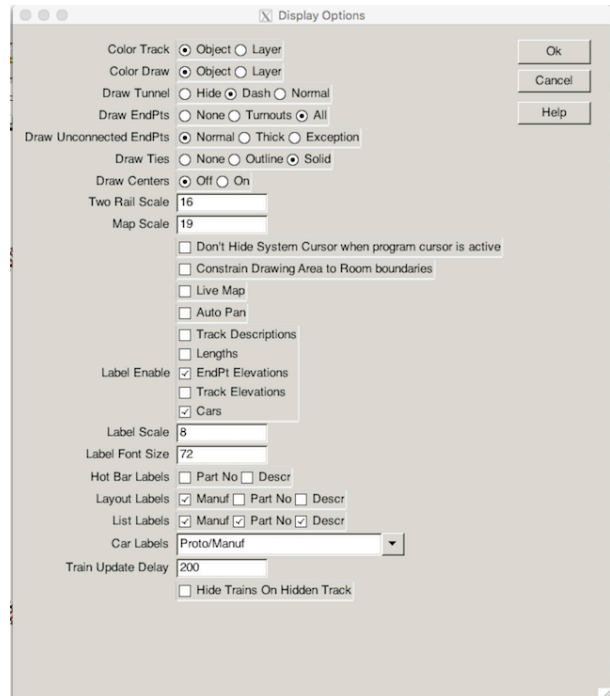
This screen capture of the layout shows what happens when a 0.75" straight, Atlas' smallest, was joined to the open end of the left most turnout and then the **Modify/Extend** command was used to add the spur with flex track.

The straight piece is just used to suggest to the program to extend the flex track in a straight line.

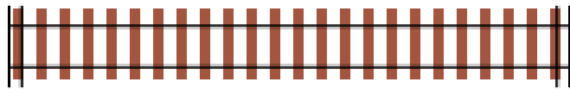
Solution: Change the method for use in this tutorial.

10. The Draw Ties, line 6 radio button, is set to Solid by default in the **Options>Display...** menu.

It is not a problem for the tutorial, as the layout is small, but it could require a lot of computing power for larger layouts and take a long time to load a layout.

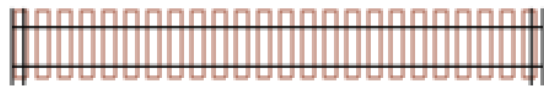


Once anchored, **Solid**, the default, looks like this:



and is used in the tutorial.

Outline looks like this when anchored:



None looks like this when anchored:



Solution: Note it here.

11. Yahoo Groups no longer exists. References to Yahoo groups, in the XTrackCAD Wiki, like <http://xtrkcad-fork.sourceforge.net/Wikka/GettingHelp> are no longer active. The homepage, <http://xtrkcad-fork.sourceforge.net/Wikka/HomePage>, does have a link to a current email/User group link at <https://xtrackcad.groups.io/g/main>
Solution: Note it here.

12. Either the **SPACE key** or the **Enter key** can be used to anchor an object, like track, to the layout. Only the **Space key** was mentioned in the original Beginner's Tutorial on the Wiki site. <http://xtrkcad-fork.sourceforge.net/Wikka/BeginnerTutorial>

13. The “Make Room for Right Hand Turnout” in the online tutorial, found in the “Add a Siding” section did not work.
Solution: A different method was created that does work.

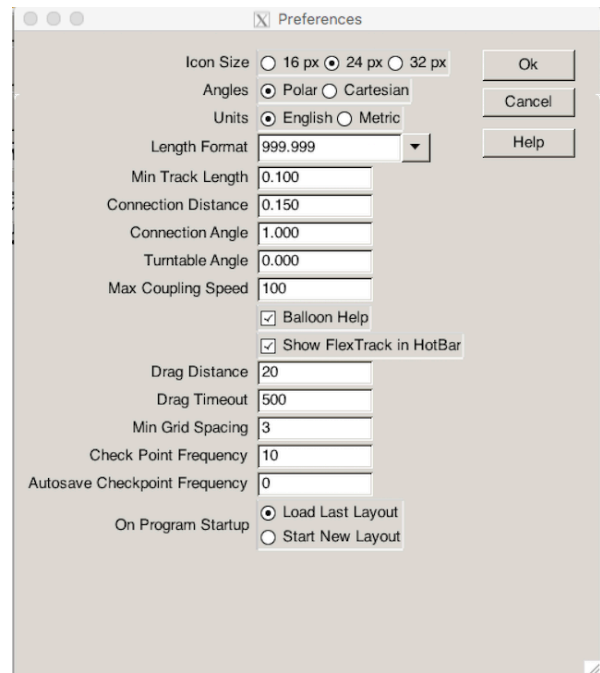
14. Most of the videos on YouTube, about using xtrkcad, are either out of date or poorly produced and contain out of date information. The only useful video found, was “A Beginners guide to: Using XTrkCAD for designing layouts” by user Gosport Railworks dated Mar 26, 2021 using version 5.1.2a of the program. <https://youtu.be/C7XxCi3Eb68> Unfortunately, the sound level is not too good, and, at times, the presenter mumbles.

Solution: Watch the video **AFTER completing this tutorial.**

15. How to return to a user's layout from viewing an example layout, found in **Help>Examples...**, is not apparent.

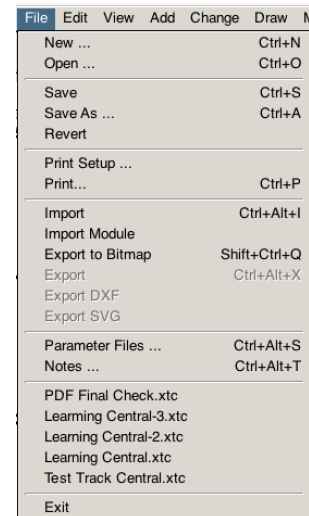
When an example layout is opened, it is actively using the program.

If xtrkcad is closed using **File>Exit**, the next time the program is opened, the example layout appears. That is because in **Options>Preferences** the **On Program Startup** radio button, located at the bottom of the Preferences window is, by default, set to **Load Last Layout**.

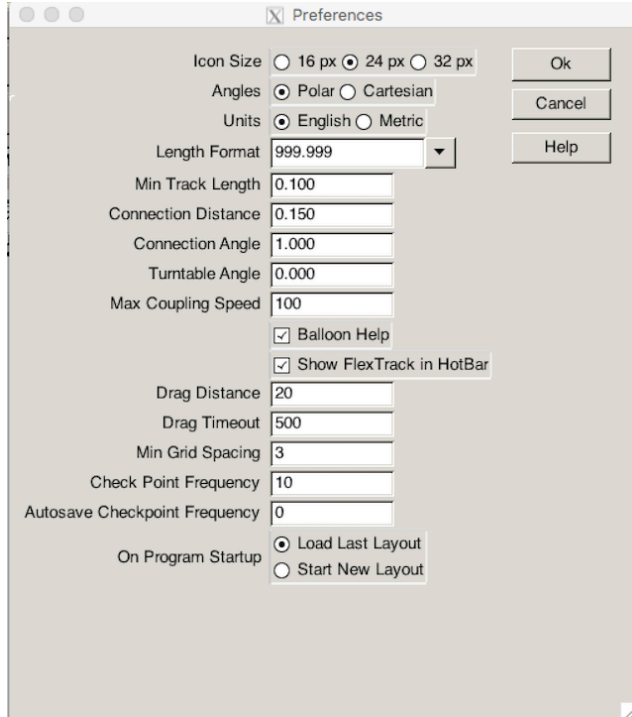


To open a user's choice of layout, open the **File** menu. The user's saved layouts appear in the section just above the **Exit** choice.

The user may **LEFT-Click** any of those files to open it.



Solution: Note it here



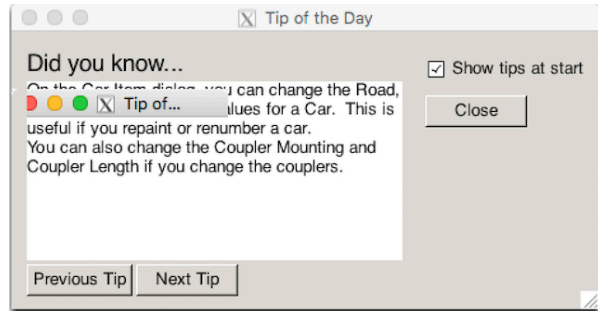
16. The ICONs in the ICON tool bar may be too small to read/see/use comfortably.

The ICON size, by default, is set to 16px, that is 16 pixels.

The **Options>Preferences...** selection opens the Preferences dialog box. The pixel size, located at the very top of the dialog box, can be changed, using a radio button, to either 24px or 32px.

Solution: Note it here.

17. Occasionally, when the program is opened and the Tip of the Day window opens, there is a spurious menu bar across the text.



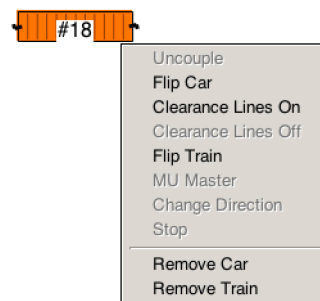
Solution: Close the spurious window. The text of the Tip of the Day can then be read and then closed.

18. On occasion, a user may choose the wrong track section/object from the **Hot Bar** while track planning or the wrong car in the **Manage>Run Trains Hot Bar**. How to fix that oops is not noted in the online tutorial.

Solution:

For the wrong track section/object selected, press the **ESC key** and that track section/object closes before being anchored.

If the wrong car was selected from the Run Trains **Hot Bar** and dragging has **NOT** started, press the **ESC key** and that car closes before being anchored.



If dragging of the car was started, and the wrong car has already appeared in the drawing area, **Right-Click** on the car and a

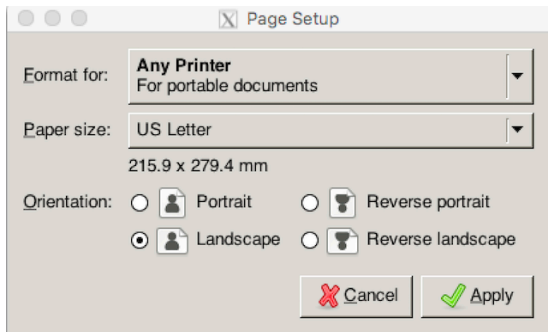
menu opens. Select **Remove Car** from the menu.

19. **How to print a track plan** is not mentioned in the online tutorial.

Solution:

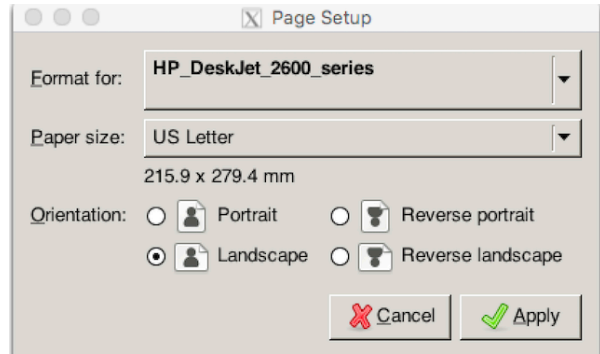
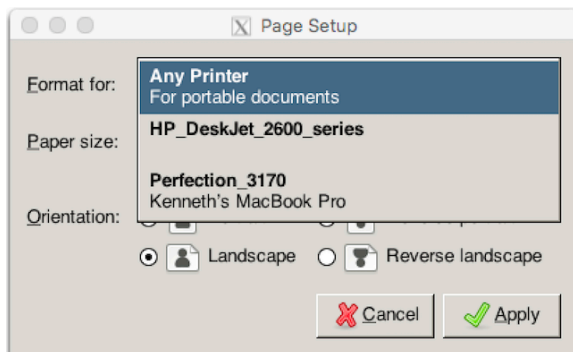
If the current manual has not been downloaded, download it from TheXTrackCAD Wiki HomePage. <http://xtrkcad-fork.sourceforge.net/Wikka/HomePage> as a reference.

Open the Printer Setup, File>Print Setup...



DO NOT ACCEPT THE DEFAULT of Any Printer!!!

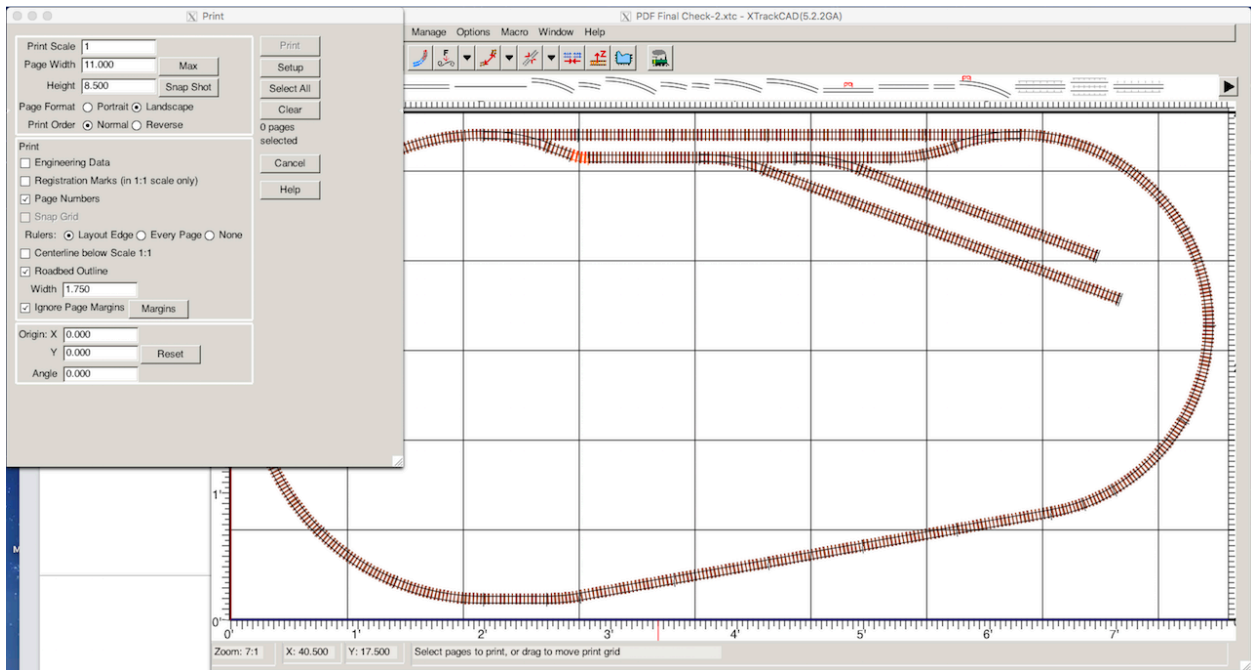
IMMEDIATELY change the Format for: line, using the drop down menu opened with the arrow on the right side of the Any Printer line to your printer.



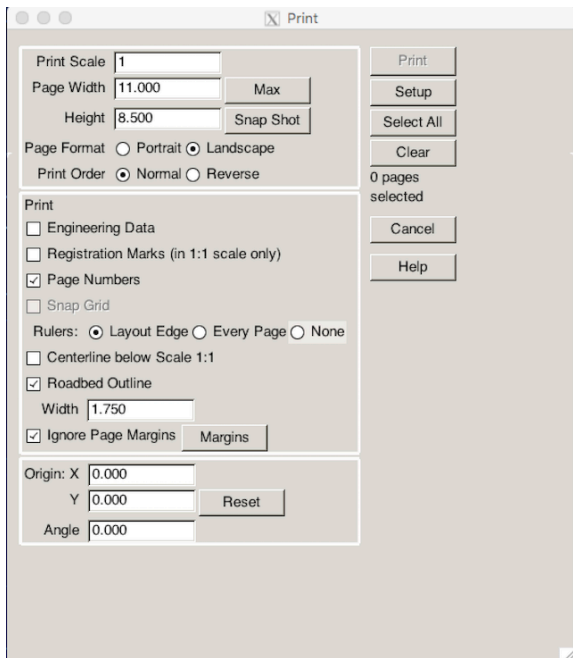
The printer selected for this tutorial is shown in the Format for: line.

LEFT-Click the **Apply** button to choose that printer, as nothing else needs to be done on this window.

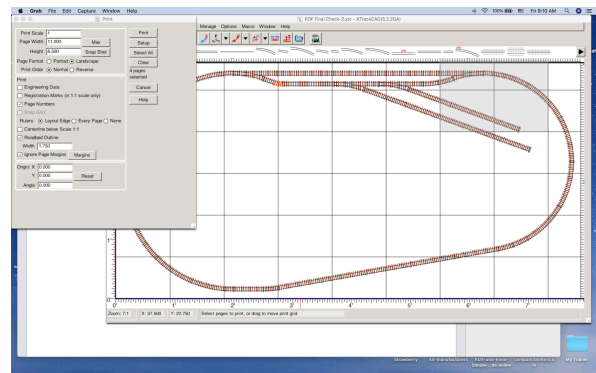
If a small printer test is desired, just to learn how, open **File>Print...** and the track layout shows a grid superimposed on it. Both the **Print window** AND the **layout drawing screen** are visible at this time.



For a small printer test, set up the **Print window** as shown below.

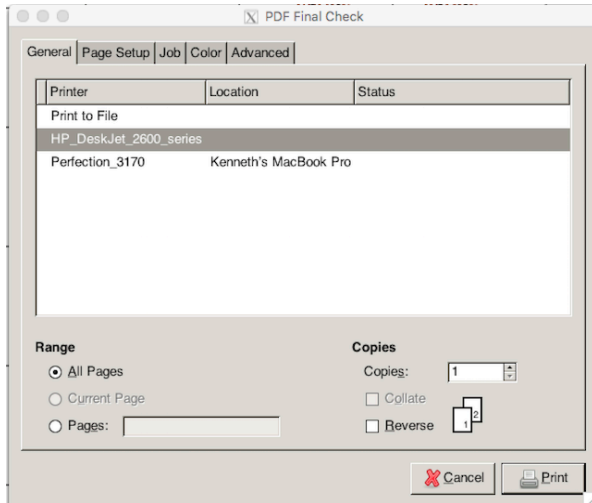


After the Print window is set up as shown in the screen capture, **LEFT-Click** the four squares in the upper, right quadrant of the layout screen, as shown in the next screen capture.



Note that the **Roadbed Outline** check box was checked and its Width set to 1.750. That number is in inches and is the width of Midwest HO cork roadbed. When the four selected grid sections are printed, the cork roadbed lines are also printed. If the roadbed lines are not desired, de-select the Roadbed Outline check box.

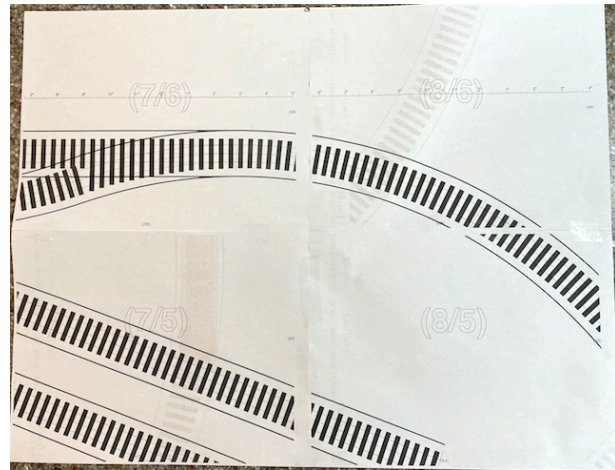
A **LEFT-Click** of the **Print** button does **NOT** send the print job directly to the printer. It opens another window named **PDF Final Check**. For this tutorial, the only change was to select Grayscale, which is found in the Color tab.



If the same Printer setup for this tutorial was followed, the four sheets of paper can be butt joined and taped together.

While printing, the program calculates the slight “missing” gap correctly and no cutting is necessary to join the sheets.

The non-printed gaps are calculated to make no difference when the paper is butt joined. The center line of the track is printed as well as the outlines of the cork roadbed.



The current manual has a lot more information about printing starting at section 2.5.7 Printing.

20. In the parts list, **Manage>Parts List...**, the **number** of flex track sections is **NOT noted** but, the number **56.744**, preceding the text HO Flex Track in the list, is the number of inches needed.

Solution: Note it here.

Return to the beginning of the tutorial.

