

# **THE RAILROAD WORKS™**

Build Your Own Railroad Empire  
Across 12 Screens of Tracks, Towns and Terrain.



# THE RAILROAD WORKS™

## GETTING STARTED

### What You Need

- Apple® IIc, IIe, or II+ (64K minimum); Commodore 64™ or 128™ (in 64 mode); or IBM® PC/PCjr™, Tandy® 1000 family, or 100% IBM compatible computer (128K minimum)
- Monitor or TV (color recommended)
- Single disk drive
- Joystick (required for Commodore; optional for Apple and IBM)
- Enhanced or Color Graphics Adaptor (required for IBM PC and some compatibles)
- Optional formatted disk for saving games

### Loading Instructions

#### Apple

1. If you plan to use a joystick, make sure it's plugged into the game port of your computer.
2. Insert the program disk into the disk drive and close the drive door.
3. Turn on your monitor or TV and computer.
4. The program will load automatically into your computer's memory and the title screen will appear, followed by the Main Menu.
5. Apple IIc/IIe users: **CAPS LOCK** must be down.

#### Commodore

1. Make sure your joystick is plugged into port 2 of the computer.
2. Insert the program disk into the disk drive and close the drive door.
3. Turn on your monitor or TV, disk drive, and computer.
4. Type **LOAD "RAIL", 8** and press **Return**. Then type **RUN** and press **Return** again.
5. The program will load into the computer's memory and the title screen will appear, followed by the Main Menu.

#### IBM

This program requires a minimum of 128K. On the IBM PC you may use DOS 1.1 or higher. On the IBM PCjr, you must use DOS 2.1.

1. If you plan to use a joystick, make sure it's plugged into the game port of your computer.
2. Insert the DOS disk into drive A.
3. Turn on your monitor or TV and the computer.
4. Respond to the date and time prompts.
5. When an **A>** prompt appears on the screen, replace the DOS disk with the game disk.
6. Type **RAILROAD** and press the **Enter** key. The program will load into your computer's memory and the title screen will appear.

### Installing DOS on the Program Disk

Note: Use DOS 2.1 or lower. There is not enough room on the program disk for a higher version of DOS.

#### One Disk Drive

1. Place the DOS disk in drive A and turn on the monitor or TV and your computer.
2. When the request to enter the date and time appears, press the **Enter** key twice.
3. At the **A>** prompt, type **SYSB:** and press the **Return** key. Follow the instructions on the screen, using the DOS disk as the "diskette for drive A" and the program disk as the "diskette for drive B." You will see a message telling you that the system has been transferred.
4. At the next **A>** prompt, insert the DOS disk in drive A and type **COPY COMMAND.COM B:** and press the **Enter** key. Follow the instructions on the screen, using the DOS disk as the "diskette for drive A" and the program disk as the "diskette for drive B."
5. From now on when you want to load the game, just insert the program disk into drive A, turn on the monitor or TV and your computer, and respond to the date and time prompts. In a few moments the game will load into your computer's memory and the title screen will appear.

#### Two Disk Drives

1. Place the DOS disk in drive A and the program disk in drive B. Turn on the monitor or TV and your computer.
2. When the request to enter the date and time appears, press the **Enter** key twice.
3. At the **A>** prompt, type **SYSB:** and press the **Enter** key. You will see a message telling you that the system has been transferred.
4. At the next **A>** prompt, insert the DOS disk in drive A and type **COPY COMMAND.COM B:** and press the **Return** key.
5. From now on when you want to load the game, just insert the program disk into drive A, turn on the monitor or TV and your computer, and respond to the date and time prompts. In a few moments the game will load into your computer's memory and the title screen will appear.

## Game Control

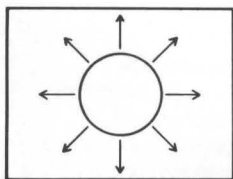
Depending on the type of computer you're using, you have the option of using a joystick, a mouse, or the keyboard as a controller.

**Apple**—joystick, mouse or keyboard

**IBM**—joystick or keyboard (use either letters listed below or numeric keypad)

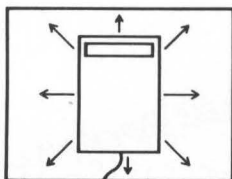
**Commodore**—joystick

Your controller governs the position of the on-screen cursor and arrows used in laying down and erasing segments of track and scenery. The controllers operate as follows:



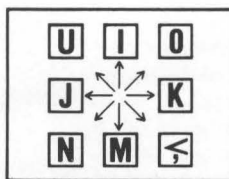
#### JOYSTICK

Your controller button is the red button on the joystick.



#### MOUSE

Your controller button is the gray button on the Mouse.



#### KEYBOARD

Your controller button is the space bar or **RETURN** on your keyboard.

# PLAYING THE GAME

## Game Sequence

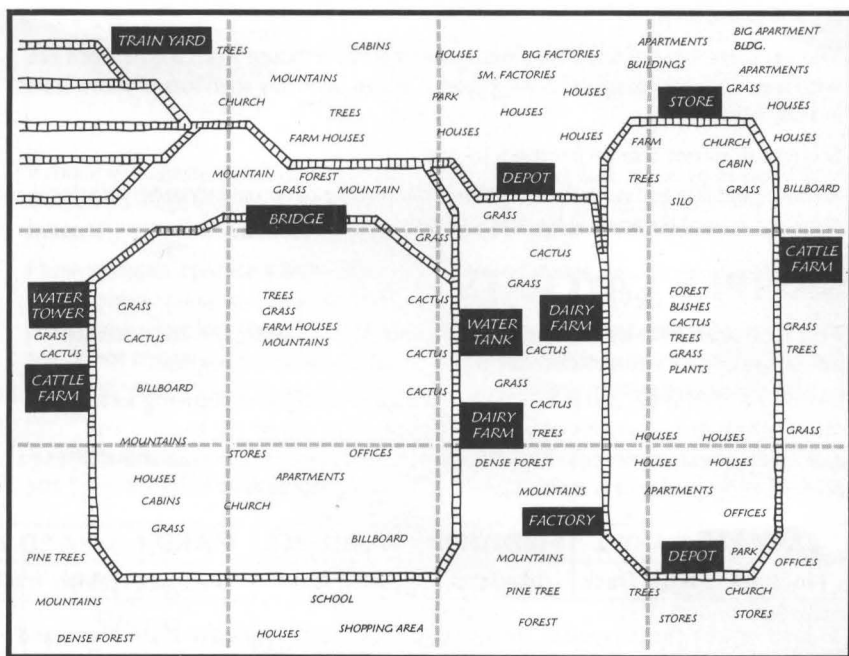
Your railroading experience begins as you create a layout by laying track and adding scenery—trees, grass, mountains, bridges, towns, depots, and shipping and receiving sites. Be sure to include overpasses where tracks intersect, and don't forget sidings and switches! The **Railroad Works** layout is unique in that it encompasses not just the screen in front of you but twelve full screens—use your controls to move between them or call up the Map to see all 12 together. The program disk includes 9 completed sample layouts for you to experiment with and modify if you like (favorite layouts can be saved to a disk and re-loaded at a later time).

When your layout is complete, choose the type of engine you want (antique or modern) and start assembling your train. Several different types of rolling stock are available; custom design your train as you see fit. Will you carry passengers, or is this going to be strictly a commercial venture? When your train is complete, take control of the Engine Throttle for manual operation or put it on "automatic" and chug along full steam ahead! If you're really daring, try running two trains on the same layout. As you play the game, earn points and move up in rank from lowly Coal Chipper to top-notch Engineer by successfully loading and unloading cargo, picking up and delivering passengers. All aboard for fun and excitement as the world of model railroading moves to your computer screen!

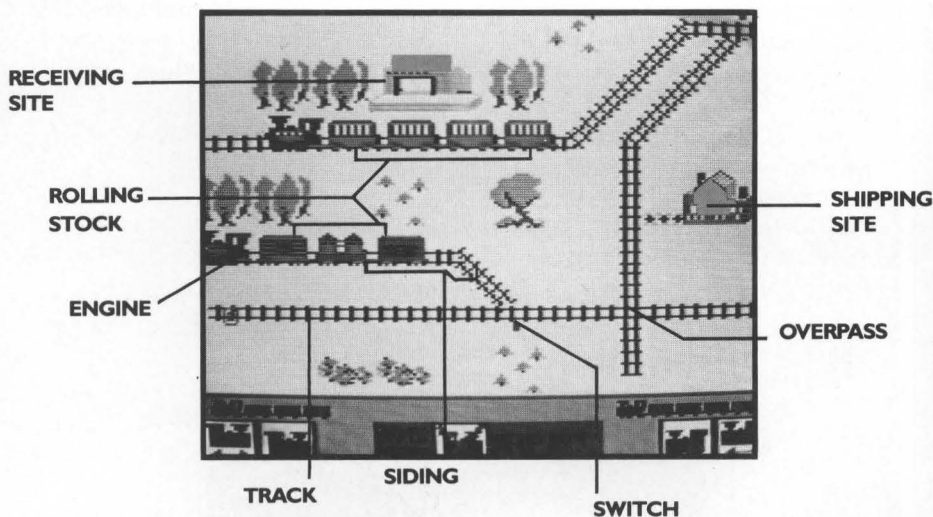
## BEFORE YOU BEGIN

### Making a Map

Preparing a rough map will help you keep "track" of your layout as you begin to lay down the rails and insert scenery and buildings at key locations. Since **The Railroad Works** allows you to build your railroad across 12 screens, you may wish to divide your map as shown in the sample below. You may also wish to use graph paper to help organize your thinking.



## Definitions



### Engine

The "star" of any train, real engines—also called *locomotives*—are self-propelled units and pull all the freight and passenger cars attached to them. There are two engine types featured in **The Railroad Works**: Old-fashioned *steam engines*, complete with cowcatcher; and modern *diesel engines*.

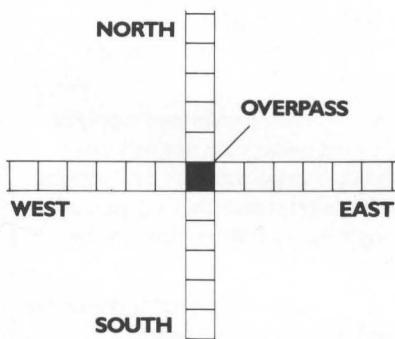
### Layout

A layout is a complete railroad scenario in miniature. While it may consist exclusively of track, it also includes any buildings, trees, mountains, bridges and other scenery that you may add. In **The Railroad Works**, you can save your best layouts on your program disk or another disk to enjoy again and again.

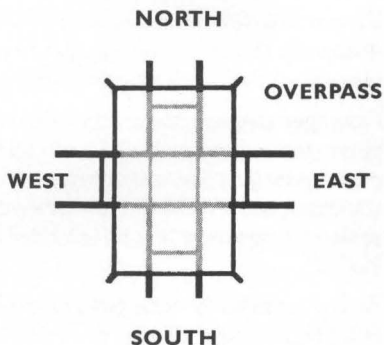
### Overpass

When two sections of track intersect at 90° angles, an overpass is created. In the examples shown, the north-south track passes over the east-west track. If two trains were to travel along these two track segments at the same time, it would appear as if they were passing through each other.

Apple & IBM



Commodore 64



### Receiving Site

In **The Railroad Works**, a building that accepts cargo from a rolling stock car is called a Receiving Site.

### Rolling Stock

Wheeled cars that make up a railroad are called rolling stock. There are five types of rolling stock featured in **The Railroad Works**:

Boxcars:	completely enclosed rolling stock designed to carry freight. Also called <i>freight cars</i> .
Cattle Cars:*	boxcars designed to carry livestock. Also called <i>stockcars</i> .
Tank Cars:	specially designed rolling stock made for transporting liquids such as water and oil. Similar cars attached to steam locomotives for carrying fuel and water were called <i>tenders</i> .
Passenger Cars:	rolling stock with seats and, sometimes, air conditioning, designed to transport people from station to station.
Caboose:	the last car of a freight train, designed for the use of the crew.

\*Not included in Apple version.

The engine itself is also an example of rolling stock.

### **Shipping Site**

In **The Railroad Works**, a building that loads cargo onto a rolling stock car is called a Shipping Site.

### **Siding**

A siding is a short stretch of railroad track onto which one of two meeting trains is switched until the other has passed. If you plan on having two trains travel along the same set of tracks, it is suggested that you create sidings within your layouts to avoid collisions.

### **Switch**

Switches are specially designed structures that appear at track intersections in **The Railroad Works**. When thrown, they divert moving trains from one track to another.

### **Tracks**

Tracks make up the "roads" your trains run along and serve as the basis of your layouts. Most tracks are composed of rails spiked to beams of wood called *ties*. On actual railroads, ties are held in place by being embedded in gravel called *ballast*.

There are no curved track segments in **The Railroad Works**, although tracks can be laid down at 45° angles to simulate curves.

Intersecting segments of track are governed by switches.

## **THE MAIN MENU**

The Main Menu features eight options with which you can create and command your railroad empire.

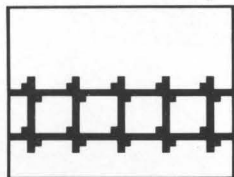
<input type="checkbox"/>	<b>CONSTRUCT</b>
<input type="checkbox"/>	<b>OPERATE</b>
<input checked="" type="checkbox"/>	<b>PLAY GAME</b>
<input type="checkbox"/>	<b>SAVE TO DISK</b>
<input type="checkbox"/>	<b>LOAD FROM DISK</b>
<input type="checkbox"/>	<b>CLEAR LAYOUT</b>
<input type="checkbox"/>	<b>CHANGE BACKGROUND COLOR</b>
<input type="checkbox"/>	<b>CHANGE ENGINE AND CARS</b>

# CONSTRUCT

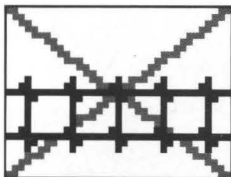
Construction of your layout is governed by the nine icons located at the bottom of your screen.

When you first select Construct, an arrow will appear in the center of the "train yard," the first screen of all track layouts, and the Lay Track icon will automatically be engaged.

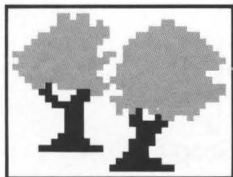
To select any one of the options shown, use your controller to move the arrow over that icon and press the controller button.



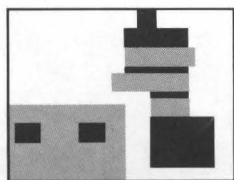
**LAY TRACK**



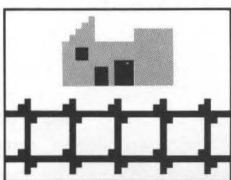
**ERASE TRACK**



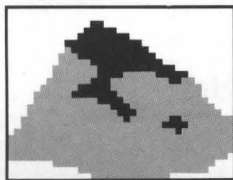
**SCENERY MENU 1**  
Bushes & Trees



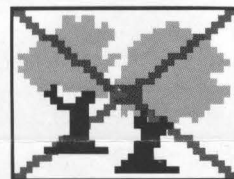
**SCENERY MENU 2**  
Buildings



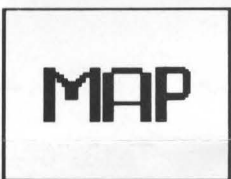
**SCENERY MENU 3**  
Shipping & Receiving Sites



**\*SCENERY MENU 4**  
Mountains & Bridges



**ERASE SCENERY**



**MAP OF ENTIRE LAYOUT**



**EXIT CONSTRUCT**

**\*Not included in Apple version.**

## Lay Track

Lay Track is automatically engaged as soon as you enter Construct from the Main Menu. Use your controller to move the arrow to any location on any one of the 12 sections of your layout. Press the controller button and the arrow will lock into position. Now use your controller to point the arrow in the direction you wish the track segment to be laid down. Press the controller button again and the track segment will appear.

The arrow will reappear at the other end of your track segment. This simplifies linking track segments across the entire layout area. Of course, you can lay track from any point on the layout.

## Erase Track

To erase track segments, use your controller in the same manner as when you laid down track segments.

First select the Erase Track icon from the bottom of the screen. Then move the arrow to the segment of track you wish to erase and press the controller button. Make sure the arrow is pointing in the same direction as the track segment, and then press the button again. The track segment will disappear.

**Note:** The track in the "train yard" cannot be erased.

To return to Lay Track or any other option, move the arrow over the proper icon and press the controller button.

## Scenery

To add scenery to your layouts, select one of the Scenery icons and a menu of scenery will appear. Use your controller to move the cursor over the type of scenery you want and press the controller button. You will automatically return to your layout screen. Now use your controller to move the cursor to the location where you want the scenery to be placed and press the controller button to make it appear.

To repeat the piece of scenery on your layout, you do not have to return to the Scenery icons. Simply move the cursor to another location anywhere on the 12 sections of your layout area and press the controller button again. This way, you can, for example, create an entire forest by selecting just one tree.

To get different scenery or return to laying track, select the appropriate icon from the choices at the bottom of your screen.

## Erase Scenery

After selecting the Erase Scenery icon, a cursor box will appear on your layout screen. Use your controller to move it over the scenery you wish to erase and then press the controller button to complete the task.

## Scenery Notes:

- ☐ While tracks can be laid over scenery, scenery cannot be laid over tracks. To do so, you will first have to erase the tracks at that location and then lay down the scenery.
- ☐ Mountains, bridges and Shipping and Receiving Sites can be laid over all other items of scenery without having to first erase those items. Grass can be overlaid by any item of scenery.
- ☐ If there is not enough room at a particular location for a particular piece of scenery, the computer will let you know with either a beep or no response. Move the scenery to another location or get rid of some track.
- ☐ Shipping and Receiving Sites appear on your layout with required segments of track. Since part of the fun of **The Railroad Works** is loading and unloading cargo and passengers at these sites, do not erase these track segments if you plan on servicing these sites when you put your trains into operation.
- ☐ If desired, Shipping and Receiving Sites can serve as non-operating decorations anywhere in your layout outside of the track route. In these cases erase the track segments that appear with each site when you first lay them down.

## Map

Map displays a bird's-eye view of your entire layout—all 12 screens together. You can use it in many ways. In this mode use it to monitor how well your actual layout is shaping up as compared to the layout you have on your written map or in your mind. You can return to building your railroad by using your controller to move the cursor into any of the 12 sections of the layout area. When you press the controller button, you will return to that section and may resume work.

## Exit

Select this option when you are finished with your layout and/or want to return to the Main Menu.

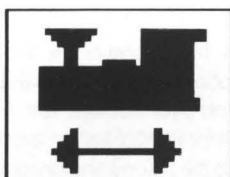
# OPERATE

Operate allows you to practice coupling rolling stock to engines and experiment with acceleration, deceleration and stopping. Once you've mastered these skills you can use Operate to simply run your trains along your tracks, without worrying about servicing the businesses you've placed along your route, or to test your ability in the Play Game mode.

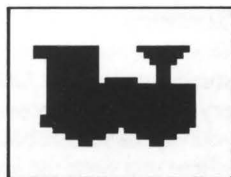
When you select Operate, the bottom of the screen will display eight icons.



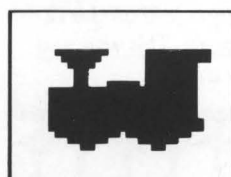
FIRST ENGINE THROTTLE



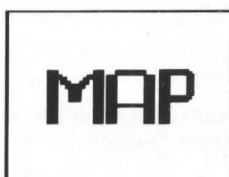
SECOND ENGINE THROTTLE



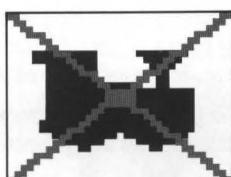
FOLLOW FIRST ENGINE



FOLLOW SECOND ENGINE



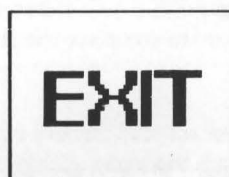
MAP



STOP FOLLOW



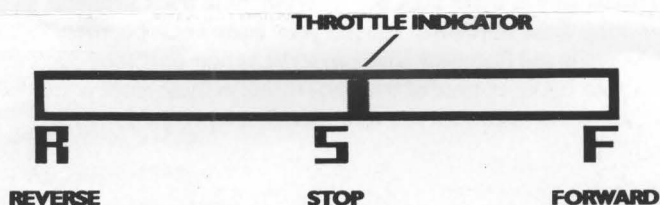
HELP



EXIT

## Engine Throttles

Select either of the Engine Throttle icons to move either one of the two train engines shown in the "train yard." Once selected, all icons disappear and are replaced by throttles.



Suppose you want to work with the first train engine. After selecting First Engine Throttle, move your controller to the left. The flashing Throttle Indicator will also move to the left and cause the first engine to move in reverse.

When the engine comes into contact with a rolling stock car, it will automatically couple with it and stop. Now you can move your controller to the right and the entire train will begin to move forward.

The further the flashing Throttle Indicator is pushed in either direction, the faster the train will move in that direction.

At this point, you can either continue to control your train manually, getting the "feel" of how to speed up, slow down and stop, or, once you are satisfied with your speed, you can press the controller button and your train will run automatically. To make adjustments in speed, simply select the proper Engine Throttle icon and move the Throttle Indicator.

## Follow Engines

When your train begins to proceed along your layout, you'll notice that you'll begin to lose "track" of it once it moves off the first screen section of your layout. You can either use your controller to move the cursor over

a screen to the next section, or you can select the proper Follow Engine icon and you will automatically follow the train as it moves across your layout.

## Map

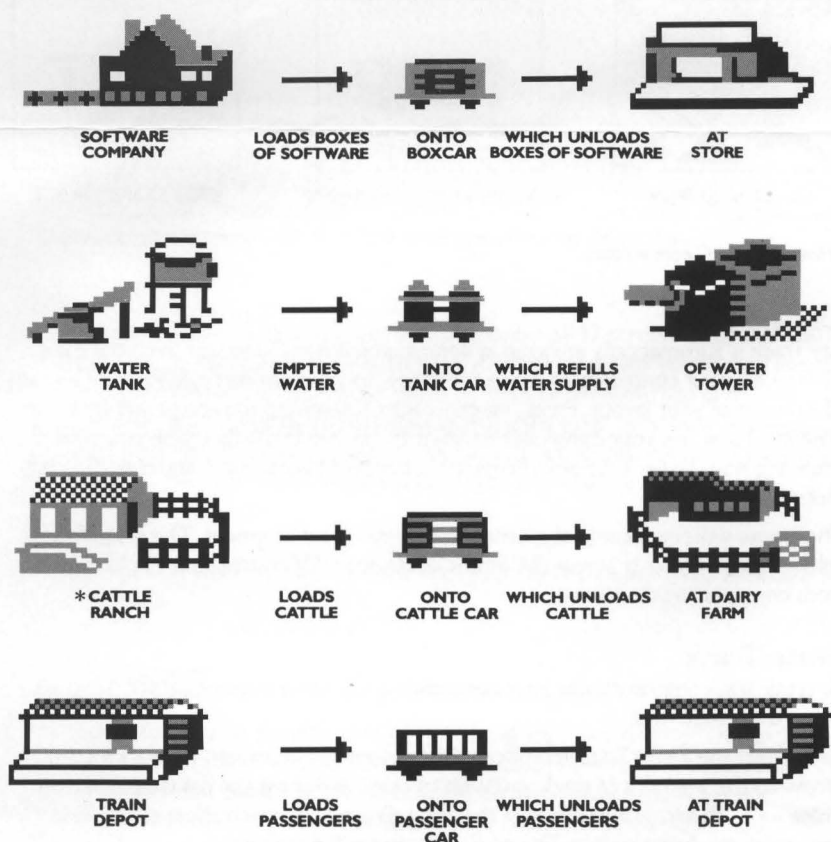
Once again, Map gives you a bird's-eye view of your entire layout. Here, however, you can see your train move along the track and also practice making out where your Shipping and Receiving Sites are (as indicated by colored rectangles) in relation to your train, an important skill necessary for making pickups and deliveries during the Play Game mode. Again, pressing the controller button will return you to the more detailed perspectives of individual layout sections.

## Stop Follow

Selecting this icon cancels any commands to follow either of the two train engines. This feature frees you up to "run ahead" of your trains to check on any Shipping or Receiving Sites that may be coming up, giving you time to plan on where and when to stop your train should you decide to do so.

## Help

Help displays which Shipping Sites load cargo into what rolling stock and what rolling stock unload cargo at which Receiving Sites. Consult this chart when you're planning your layouts and when you're playing the game. The chart is reprinted here to help you become familiar with car and building types, as well as with railroad terminology.



\*Not included in Apple version.

## Exit

This option returns you to the Main Menu.

## Coupling and Uncoupling Rolling Stock Cars

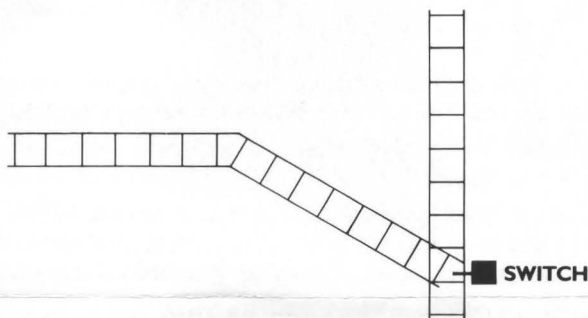
Linking cars to engines and other cars is called *coupling*. As mentioned earlier, to couple an engine to a car simply back your engine into it. Of course, any other cars already coupled to that car will also become part of your train. To uncouple cars, use your controller to move your cursor onto the car you want removed *closest to the engine*. Press the controller button and the cars will uncouple. You may only uncouple cars that are attached to your engine; i.e., to separate any cars, they must first be part of your train.

## Completing Your Train

Through an interplay of throttle forward, throttle reverse, and the use of switches, you will be able to custom design your own trains to meet the needs of the specific Shipping and Receiving Sites you've placed within your layout. As you become a more experienced engineer, you'll quickly learn which cars should be in which locations in your train in order to efficiently service the businesses that depend upon you.

## Switches

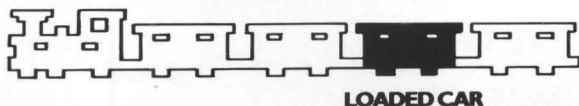
To change switches, place the cursor over the track intersection and press the controller button. A tone will sound as you do this, as well as when an engine runs through the intersection and *automatically* flips the switch.



## Loading and Unloading Cars

To load a car, stop your train (using Engine Throttle) so that the car is positioned next to the appropriate Shipping Site as displayed on the Help Chart. This is where a steady brakeman's hand becomes crucial to timing. Once the train is stopped, position the cursor *over the Shipping Site*, press the controller button and watch the cargo load.

When a car is loaded, that car's position in the train diagram at the bottom of the screen will change color. As your trains move along your layout, this reminder will help you stay on schedule. Otherwise, you might stop to load a car that is already carrying a full payload.



To unload a car, stop your train so that the car is positioned next to the appropriate Receiving Site. Once again, position the cursor *over the Receiving Site*, press the controller button and deliver your cargo!

Important: Do not position the cursor *over the car you're unloading!* This will only cause the car to uncouple from the train and waste valuable time as you have to first recouple and *then* unload.

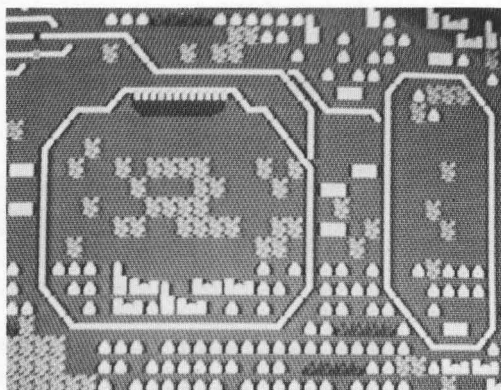
# PLAY GAME

The game mentioned in this option is a fully operational railroad simulation in which you run your trains along a layout of your own creation and score points as you successfully receive and discharge passengers and/or cargo while staying on schedule.

You may play the game immediately after creating a layout or after loading a layout already saved.

As discussed earlier, where to pick up cargo and where to deliver it depends on the types of cars in your train. Use Help or the chart in this manual to remind yourself of what goes where.

Carloads of cargo are periodically produced at each of the Shipping Sites on your layout. The number of carloads waiting for pickup at each site can be determined by looking at the Map.



Each Shipping Site is indicated by a rectangle. The color of the rectangle indicates how many carloads of cargo are waiting at that site.

Amount of Cargo	Apple & IBM	Commodore 64
No Cargo	White	Yellow
1, 2 or 3 Carloads	Green	Green
4, 5 or 6 Carloads	Orange	Red
7 Carloads	Flashing Orange	Flashing Red

If more than seven carloads accumulate at any Shipping Site, all cargo at that site disappears (it gets shipped by plane instead of rail) and points are subtracted because you've lost business for your railroad company.

Passenger cars operate a little differently. There is always an unlimited supply of passengers waiting to board the train and there is no penalty for not delivering passengers. (Just like real commuter railroads!) A passenger car may be loaded at any depot and unloaded at any other depot. When a train pulls into a depot, all passenger cars must first be unloaded before any empty passenger cars can be loaded.

As you successfully make pickups and deliveries, not only will you score points, but you'll be ranked as to your professionalism. The rankings are as follows.

Rank	Earned Points
Coal Chipper	0-100 points
Fireman	101-200 points
Brakeman	201-300 points
Conductor	301-400 points
Engineer	401 points and up

# SAVE AND LOAD LAYOUTS

If you like any of your layouts enough that you want to save them, **The Railroad Works** makes it simple. Simply select Save To Disk when you're finished with a layout, insert a new formatted disk, type in a name for the layout and press **Return**.

To load that layout at a later time, select Load From Disk, insert the disk you've saved your layout on, type in the name and press **Return**. You can use these features to not only save your best layouts but modify them later on.

## OTHER FEATURES

### Clear Layout

If you want to erase the layout you're working on, select Clear Layout and you'll be back at the "train yard," where you can start from scratch.

**Clear Layout will only clear the layout you're working on and will not erase any saved layouts from the disk. Saved layouts cannot be erased.**

### Change Background Color *(Commodore 64 only)*

You can choose to run your trains during the day, at twilight or at night.

### Sound

As your trains move through your layout they will "chug" along the tracks. If you prefer a quieter ride, press the **[S]** key to turn the sound off. Press it again to turn the sound back on.

### Change Engine and Cars

**The Railroad Works** features engines and rolling stock representative of two important eras in the history of American railroading.

The type of train that automatically appears when you first load your program is a steam-powered Iron Horse from the turn of the century. The rolling stock has been designed to match actual cars from that era and many of these types of cars are still in use today.

The alternate type of train is a diesel-powered Powerhouse from the modern era with appropriately designed rolling stock. You've probably seen lots of these trains in your hometown.

Scenery does not change from era to era.

If you would like to find out more about the history of actual railroads, your local public or school library will be happy to help.

## SAMPLE LAYOUTS

**The Railroad Works** includes nine sample layouts designed to illustrate just some of the endless railroading possibilities of this program.

SAMPLE 1, SAMPLE 2 and SAMPLE 3 are general layouts showing examples of different combinations of scenery figures. The other six layouts are examples of game screens. The names of these layouts describe the challenge level of each game.

EASY 1	EASY 2	MEDIUM 1	MEDIUM 2	HARD 1	HARD 2
No Track	With Track	No Track	With Track	No Track	With Track

To load one of these layouts, select Load From Disk from the Main Menu and type in the specific name. *Do not include a space between the name and number.*

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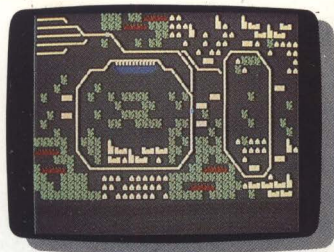
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# THE RAILROAD WORKS™

**Creativity/Strategy – Ages 10 and up**



The popular hobby of model railroading has entered the computer age. Use the “construction kit” to lay down track and create a landscape as you design your own model railroad system. When construction is complete, you take the controls as engineer. Chug along in a turn-of-the-century, steam-driven Iron Horse, or zip by in a modern, diesel-fueled Powerhouse. Score points as you successfully transport cargo and passengers to their destinations... on schedule, of course!

## **Features**

- Experiment with sample layout screens
- Run 2 trains on the same layout—but watch out for collisions!
- Create your railroad system across 12 screens—view each section individually, or get a bird’s-eye view of the entire landscape
- Save layouts to be enjoyed over and over

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