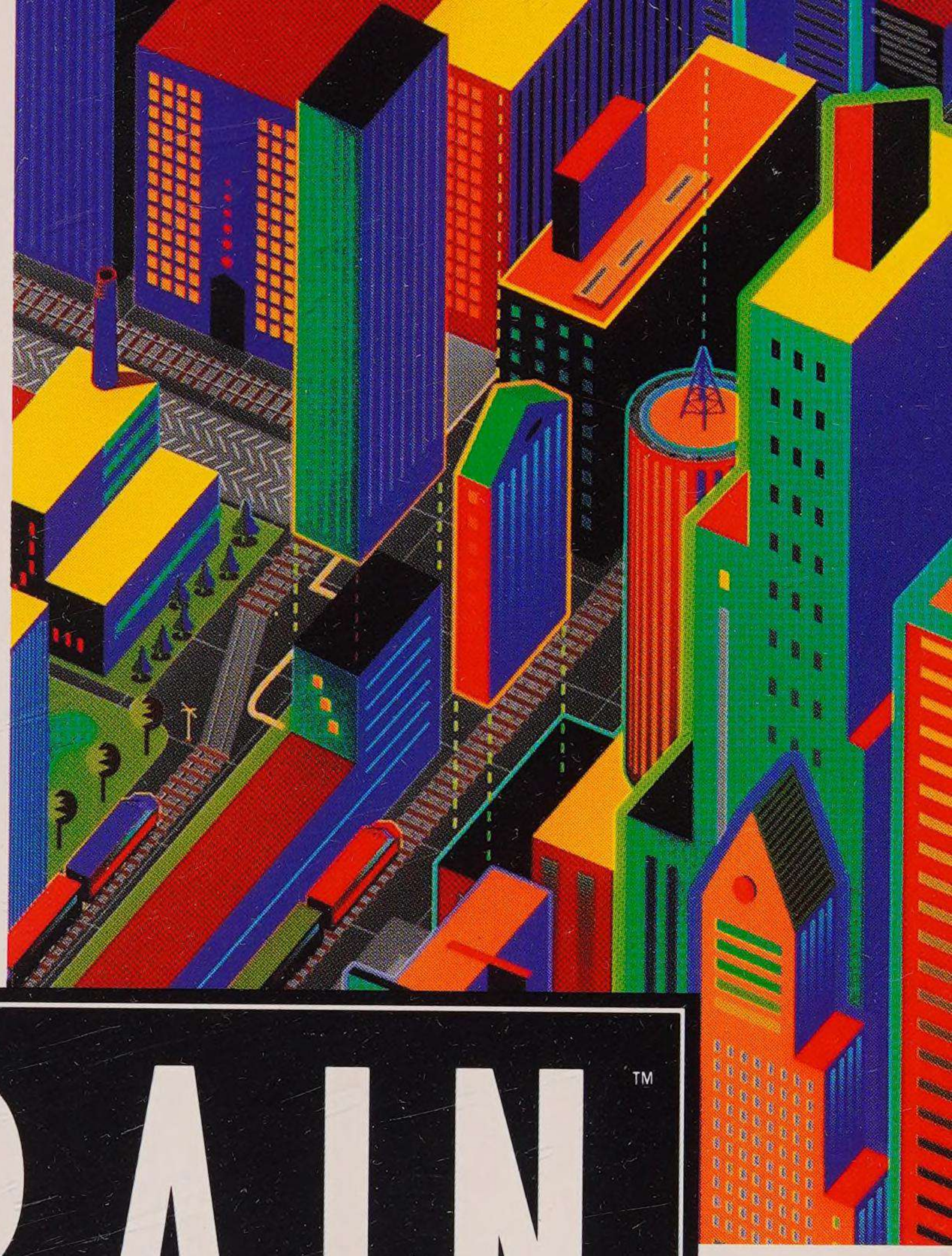
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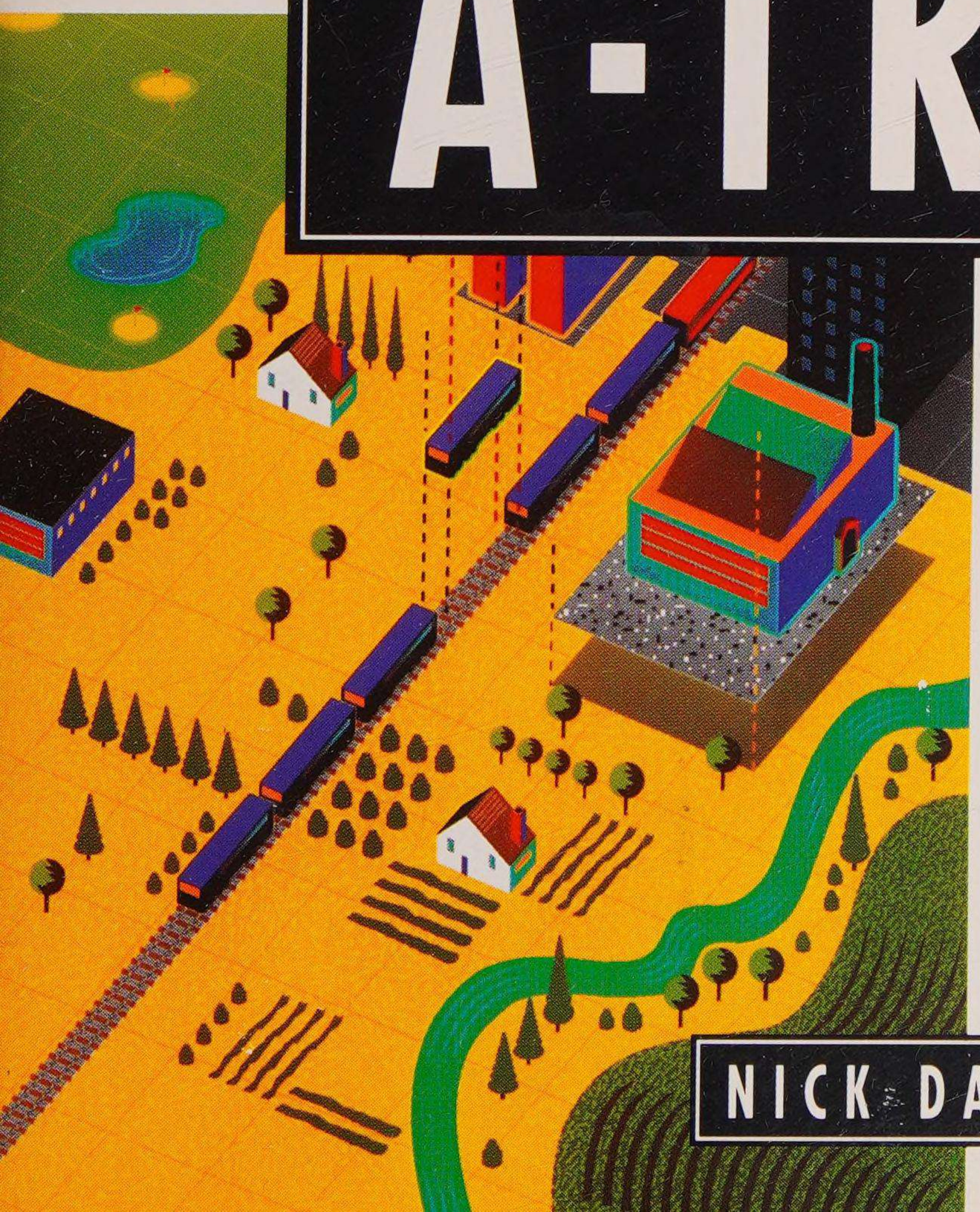
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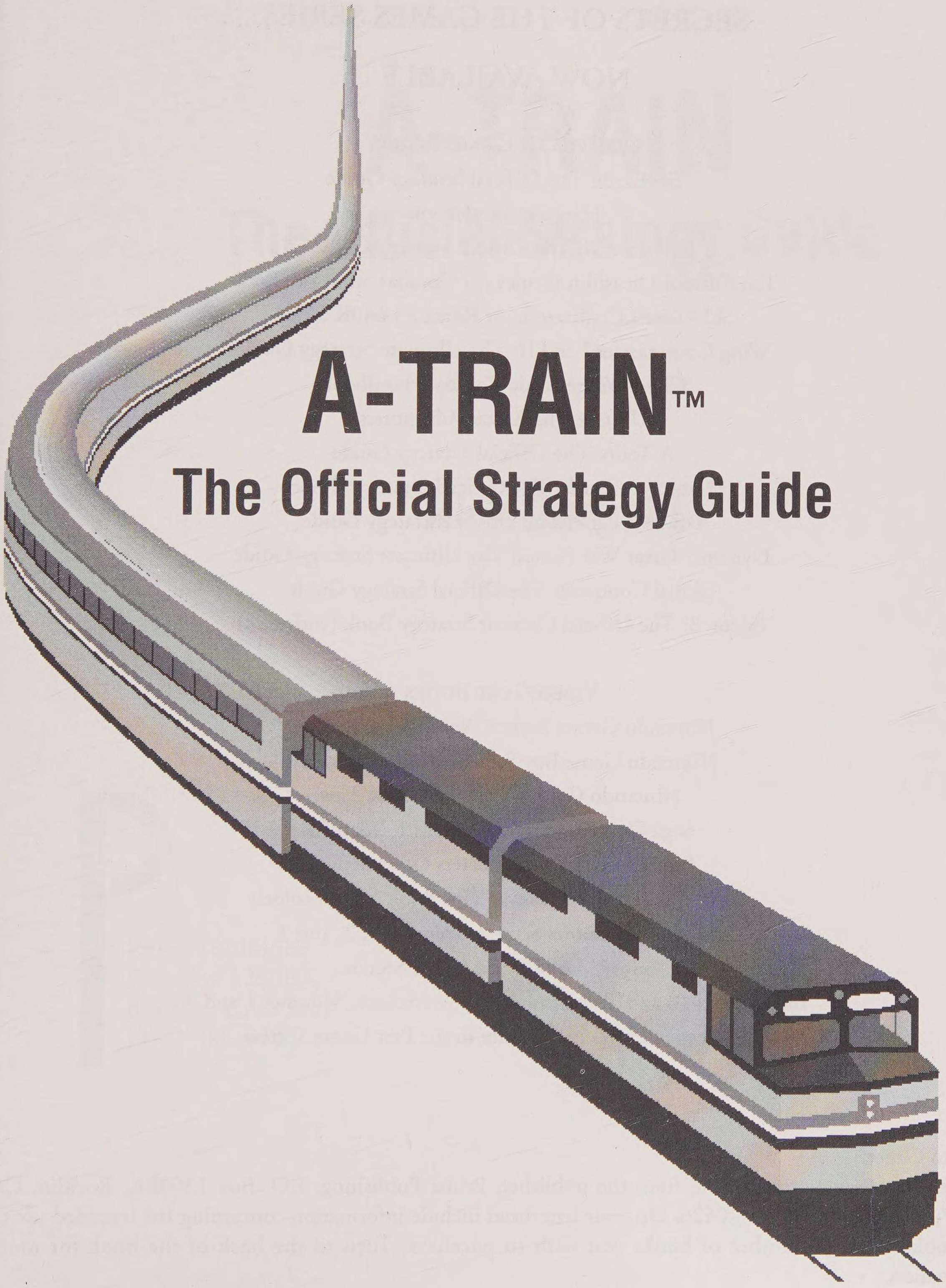
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A-TRAIN

The Official Strategy Guide

Nick Dargahi

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PREFACE

A-TRAIN HISTORY

A-Train was originally conceived and designed in Japan by Artdink in April 1986, and was an immediate success. Over the years, Artdink updated *A-Train* by releasing two other versions: *A-Train II* in July 1988 and *Take the A-Train III* in December 1990. *A-Train II* was later translated and published as *Railroad Empire* in the U.S. by Seika Corporation, but Maxis was given the rights to import *Take the A-Train III* in 1991. Maxis decided to drop the original title and rename the game *A-Train* because *A-Train III* differed so much from *A-Train II*, and also because the previous versions had never been published in the U.S. under the name *A-Train*. Another consideration in the name change was the fact that "Take the 'A' Train" was already the title of a copyrighted song by Billy Strayhorn, of the Duke Ellington Orchestra, and belonged to Twentieth Century Fox.

In Japan, *Take the A-Train III* has been in the top-ten category of best-selling simulation games, and has tied with *SimCity* for first place in the Best Simulation of the Year Award from the Japanese computer game magazine *Login*. Readers of the magazine have consistently rated *Take the A-Train III* as one of their favorite games to play.

So original and impressive was *Take the A-Train III* that Maxis decided that the game deserved to be published in the U.S. Jeff Braun, president of Maxis, flew to Japan to persuade Artdink to allow Maxis the rights to translate and publish the game. In a humorous misunderstanding, Artdink originally thought Jeff was traveling to Japan not to acquire the rights to *A-Train*, but rather to complain to them about *A-Train's* similarities to *SimCity*. Fortunately for both sides, the miscommunication was quickly cleared up, a major trade war was averted, and Maxis reached an agreement with Artdink to bring the game to the U.S.

Much work had to be done to bring the U.S. version of *A-Train* to fruition. The Japanese version of the game ran only on Japanese personal computers, which used incompatible variations of DOS and other operating systems. For this work, Maxis enlisted the support of RaxSoft to convert the program's code so that it would work with American PCs running under the DOS operating system. This complex undertaking was made even more difficult not only by the language difficulties, but also incompatibilities between the display standards of Japanese and American computers. In addition, to make *A-Train* more palatable to savvy American game players, some new features had to be added that were not present in the original program. Originally, the Japanese version of the game did not allow you to save your cities to disk in directories that you specified and with names that you could modify. You could not customize the animation and graphics to suit your preferences. There were no keyboard equivalents to using a mouse, and sound effects were missing. All of these deficiencies, along with some culturally incompatible graphics, were corrected in the American version of the game. The game you now have before you is vastly improved from what it was.

You will notice that almost all the trains in *A-Train* are of Japanese origin, the sole exceptions being the Maxis Lines GP-40 freight train and the FP-45 passenger locomotive train. Both trains are based on a General Motors diesel-electric locomotive design, and were substituted for their Japanese counterparts for visual reasons (the originals were identified by Japanese characters).

In other, less obvious ways, you will find cultural differences that highlight the Japanese way of life, business practices, and ethics. For example, scant attention is paid to the environment, even though, in a more realistic model, massive development and industrialization would have a negative impact by increasing pollution levels. In the Japanese model, the more development, the more positive your situation is financially. Making profits through land speculation is frowned upon in Japan, so *A-Train* taxes your capital gains at a whopping 50% tax rate. Also, in Japan, almost all the railroad companies derive only 50% of their revenue, from their railroad operations; the rest is obtained from commercial ventures, real estate, ancillary businesses, and other subsidiaries. So it is in *A-Train*, where your company must venture into other businesses (called subsidiaries)

in order to be successful. You cannot depend only on your train business to vault your company to the mega-bucks level, you must also acquire the skills of wheeling and dealing with other aspects of your company. In addition, bank financing and stock market speculation are included to help accelerate your company's rapid ascension to maximum profits.

Along these lines, in Japan, defaulting on your debts is unthinkable, unconscionable, and loathsome. Furthermore, credit is much harder to come by there, because there are no easily obtainable credit cards. Debts and other financial obligations are taken much more seriously than they are in the West, where people cavalierly bounce checks and run up huge credit card bills. Most Japanese have large savings accounts, because they are used to paying for everything in cash. Declaring bankruptcy is almost unheard of. Therefore, if you can't pay your loans or your taxes when they fall due, you are in deep trouble. In *A-Train*, it's much simpler: If you can't pay your taxes or your bank debts, you will lose the game.

A-Train also simulates the customary Japanese practice of jam-packing commuters into a train like sardines in a can. Trains have a stated seating/standing-room capacity, which is routinely ignored by the simulator by a factor of 200%. This means that trains can carry as many as twice the number of passengers that they are rated for. In Japan, there are so many people trying to cram into the trains that special "pushers" are employed just to shove people into the trains so that the doors can close.

The pictures of the many managers who work for your railroad company, as well as the messages that they convey to you, have been redone in Maxis' version. It was thought that a more multicultural palette of characters would better reflect America's population diversity. Music and sound are also original, giving *A-Train* a distinctly Western flavor. Despite these Americanized cosmetic changes, cultural traces of the original Japanese program continue to seep through in interesting ways. For example, the Japanese have a predilection for golf and baseball, which they consider national pastimes. In *A-Train*, golf courses and stadiums are not especially big money-makers, but they are worth millions because the Japanese attach so much importance to these two sports. All over the world, in fact, the Japanese are buying golf courses (including the famed Pebble Beach golf course in Monterey, California and innumerable golf

courses in Hawaii), or constructing new ones, because of their obsession with the game.

Originally, *Take the A-Train III* was named after the famous Billy Strayhorn song "Take the 'A' Train," recorded by the Duke Ellington Orchestra in the 1930s. At the time, the song celebrated the completion of a major subway line in New York, and was so popular that Ellington adopted it as one of his band's theme songs. Because of Japanese society's love of all things western, especially American pop culture, Artdink adopted the title of this well-known jazz piece for its new simulation train game.

"Take the 'A' Train" immortalized the IND's new "A" train, which was actually the Eighth Avenue express train that ran from Manhattan Island's 207th Street station south through Harlem, traveling through New York's upper West Side and midtown, and finally cutting across in a southeastern direction to Brooklyn's



'A' Train Express at Bergen Street Station in Brooklyn on the Independent Subway System (IND) in 1932 (courtesy of Brian J. Cudahy).

Rockaway. It was built in 1932, and although the subway cars have changed, the line still runs today. The IND line (Independent Subway System) used single letters (such as "A") to designate express trains, and double letters (such as "AA")to represent local trains. The older BMT line (Brooklyn Manhattan Transit Corporation) and the IRT (Interborough Rapid Transit Company) used a numbering system to identify trains that was completely different. Later, all three privately owned lines were bought out by the City of New York and consolidated under the MTA (Metropolitan Transit Authority), or the TA (Transit Authority) as many call it today. The three subway lines are still called by their former names and the trains retain their route identification characters. Hence, the "A" train still runs under the aegis of the IND line.

Throughout the book you will notice special railroad-train icons in the margins. These icons indicate points where you actually perform certain steps as you read along. By including the icons in the margins, I hope I've made it easier for you to follow along as features of the program are demonstrated.

Interspersed in the text, you will also find many interesting articles, pictures, and other trivia on railroads. I have included this background information as an educational primer on trains, as well as a convenient way to satisfy the curiosity of those interested in the latest developments in train technology around the world.

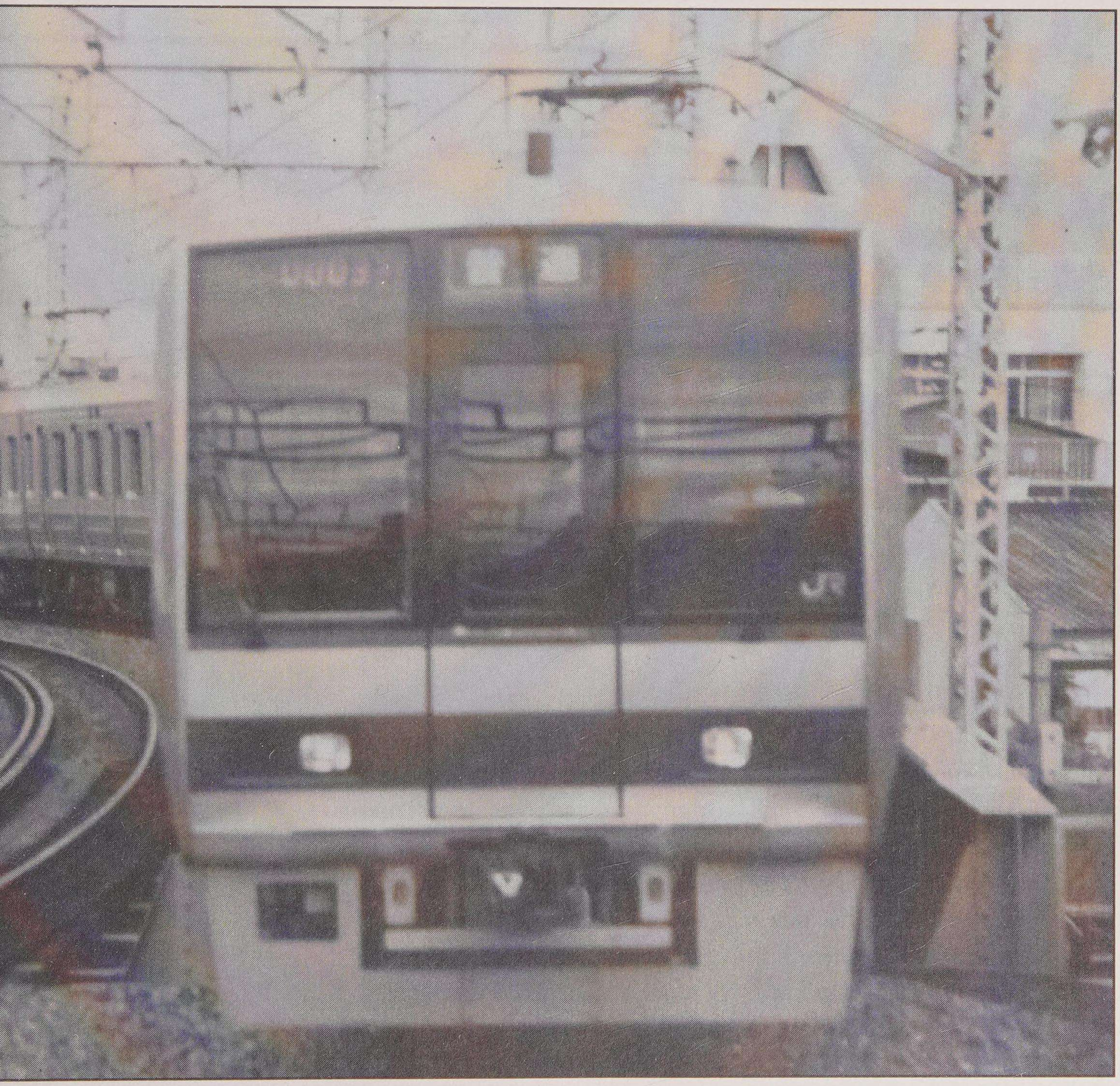
If you have never played *A-Train*, you will find this book helpful in learning the basics of the program. If you are already a seasoned player of *A-Train*, you will discover many new tips, tricks, and secrets that will enhance your enjoyment of *A-Train*. If you have ever been frustrated by not being able to win the scenarios, you will learn how to do so. The wealth of information presented here cannot be found in any other book.

A-Train

PART ONE

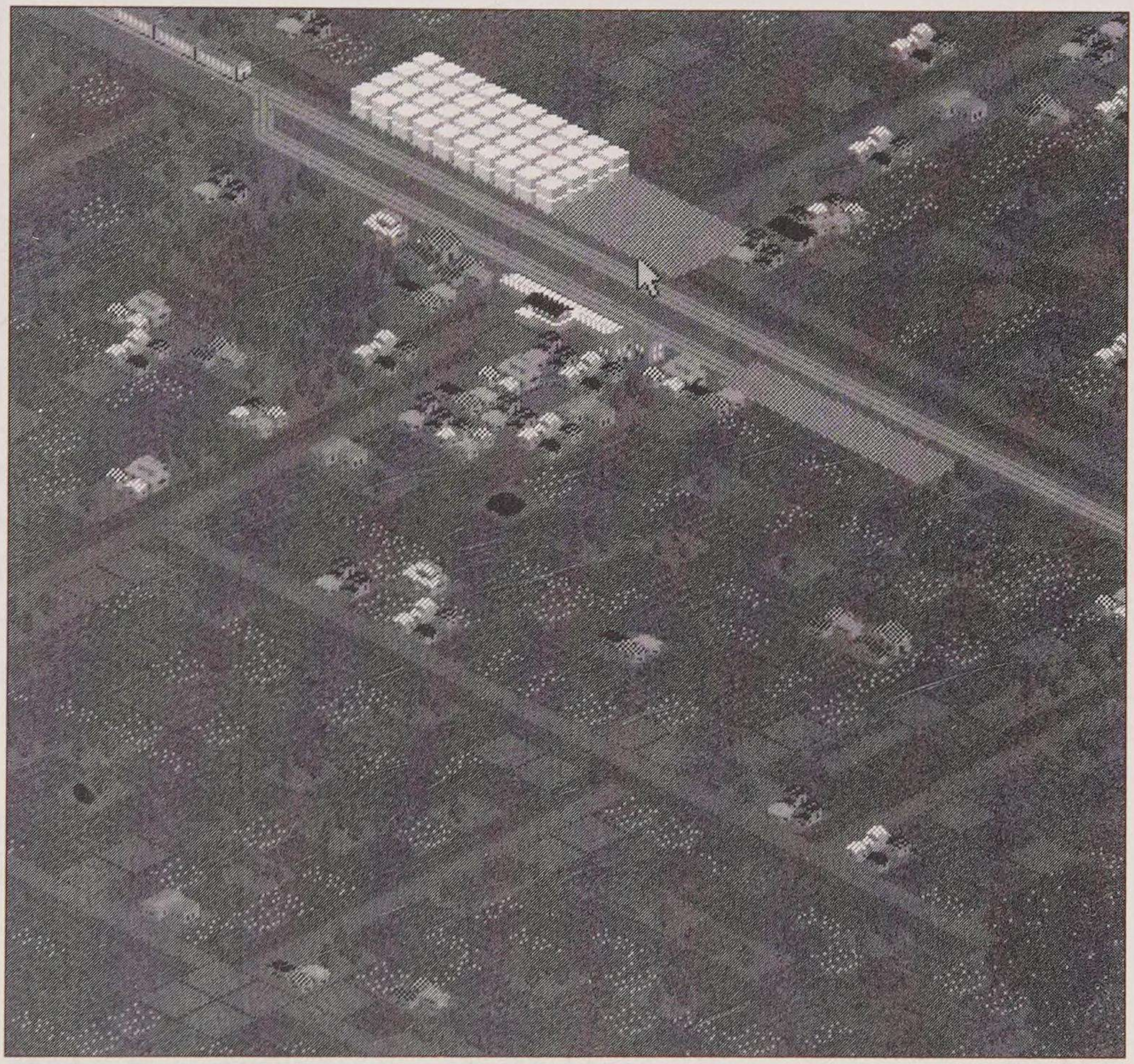
An Introduction to A-Train





CHAPTER 1

Playing A-Train



A-Train is the newest simulation software game from Maxis®, the same company that brought you SimCity® and SimEarth®. This chapter presents you with a brief overview of the mechanics of playing the game and also guides you through a sample game. In the guided demonstration city that you will build, you will touch upon the basics of operating your business, including railroad management, urban development, and high finance.

Later, when you have satiated some of your robber-baron instincts, you will learn how to monitor and evaluate your company's performance and see how your city is evolving. In later chapters, you will go into much greater detail about these and other elements of the simulation.

The best way to learn, as I have found from personal experience, is by doing. As you follow the examples presented herein, keep in mind that it's OK to make mistakes—in fact, some of my best insights into the game came from idiotic blunders and boo-boos that I made. Usually, the more embarrassing the gaffe, the more painfully profound the insight, so take heart. Now, let's get your feet wet and let the games begin . . .

WHAT IS A-TRAIN?

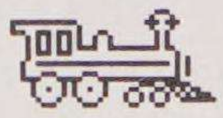
A-Train is a type of entertainment/educational software categorized not just as a game, but as a *system simulation*, a computer program that attempts to represent or reproduce "real world" conditions and phenomena under the governance of strict rules or laws. The simulator is a tool that enables users to model, under test conditions, phenomena that would likely occur in real life. By identifying and observing elementary processes and how they interact, programmers have been able to simulate very complex systems.

With the advent of sophisticated microprocessors, computing power for the masses has finally brought high-end simulation programs from the realm of the research laboratory to the province of the consumer in his or her home. What was previously impossible on an old PC, Commodore 64, or Apple II, is now quite feasible on an 80386 AT, Macintosh II, or other 32-bit CPU-based microprocessors. New technologies in the next two years will eventually make our present "state of the art" machines completely obsolete. For example, newer CPUs based on RISC (Reduced Instruction Set Computing) technology will offer over 100 MIPS (Millions of Instructions per Second) of raw computing horsepower, as compared to the measly 1 to 5 MIPS that conventional CISC (Complex Instruction Set Computing) CPUs offer today. This quantum leap in speed may allow more personal interaction with your computer,

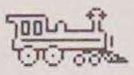
including, for example, speaker-independent voice recognition as well as virtual-reality type of visual displays with heretofore unimaginable details of the physical world.

By creating an artificial model of city life, the A-Train simulation demonstrates the potentially successful or disastrous consequences of managing a large conglomerate, with control over a city's transportation links, urban development, and economy. The system model is extremely complex, governed by many hundreds of rules, and is regulated by many variables, which can be controlled or influenced by your decisions. Although there is no opponent to match your company's size and power, there are smaller rival firms that try to muscle in on some of the action, so you must be ever vigilant to spot a profit-making trend before your competitors do. But you really don't have an "enemy" or computer opponent to grapple with over your main business, which is building and operating your railroad empire. As such, you are relatively free to explore, experiment with, and create new types of cities. You can make your own city with the help of the Construction Set, or you can attempt to master one of the six built-in scenarios, tackling specific growth problems that are inherent in each scenario. As in SimCity, there is no one way to win or succeed in A-Train, so you need not fear that you will be bored because you have discovered how to "beat the machine." Starting from scratch, you can watch the small town you've designed evolve into a thriving metropolis, all the while fine-tuning the process of growth. Or, using a pre-existing city model, you can attempt to rectify intractable problems before they become insurmountable and you are canned as Chief Executive Officer of the firm.

STARTING A NEW CITY



Hopefully, you have already installed A-Train and are presently seated in front of your computer with the familiar DOS prompt flashing in your face. If you have not yet installed A-Train, Appendix A will guide you through the installation process. To start, you must first change your current drive or directory so that you are in the directory that contains the A-Train files. This means, for example, that if



If you are like me and hate waiting for opening screens, music, and credits to finish, repeatedly press the spacebar (or any character key) to quickly cycle through the screens till you get the System menu to open up.

A-Train were located in the Directory called MAXIS\ATRAIN on the C drive, you would type C: then CD\MAXIS\ATRAIN and then ATRAIN to begin the game. Immediately thereafter, the opening screens for Maxis and Artdink should appear as pictured in Figures 1.1 and 1.2. After these screens disappear, you will see a title screen for A-Train along with some credits, and then finally the System menu will pop up. You can see the title screen in Figure 1.3 and the System menu in Figure 1.4. Somewhere in the System menu window you will also see your pointer icon, resembling an arrow tilted diagonally, which is used to select your menu choices as well as to lay railroad tracks and place trains and buildings.

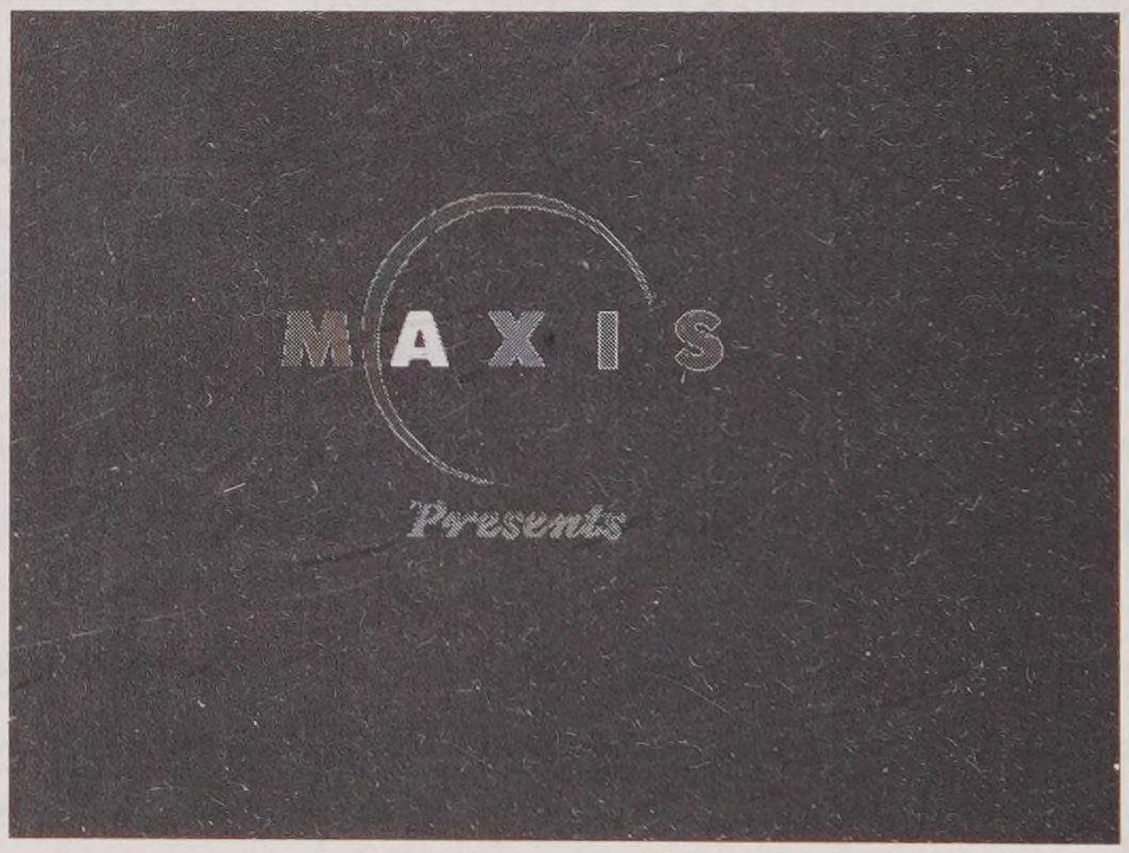


Figure 1.1 Opening introduction screen for Maxis

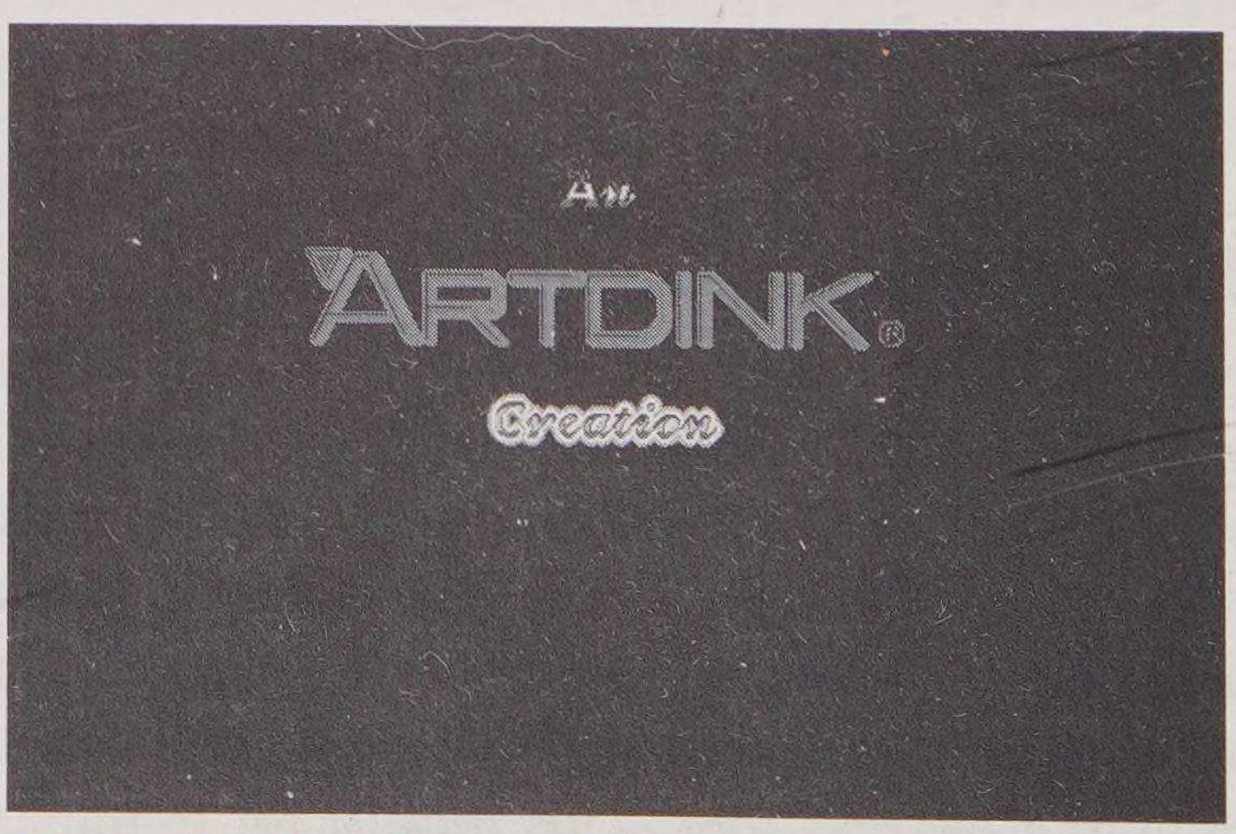


Figure 1.2 Opening introduction screen for Artdink

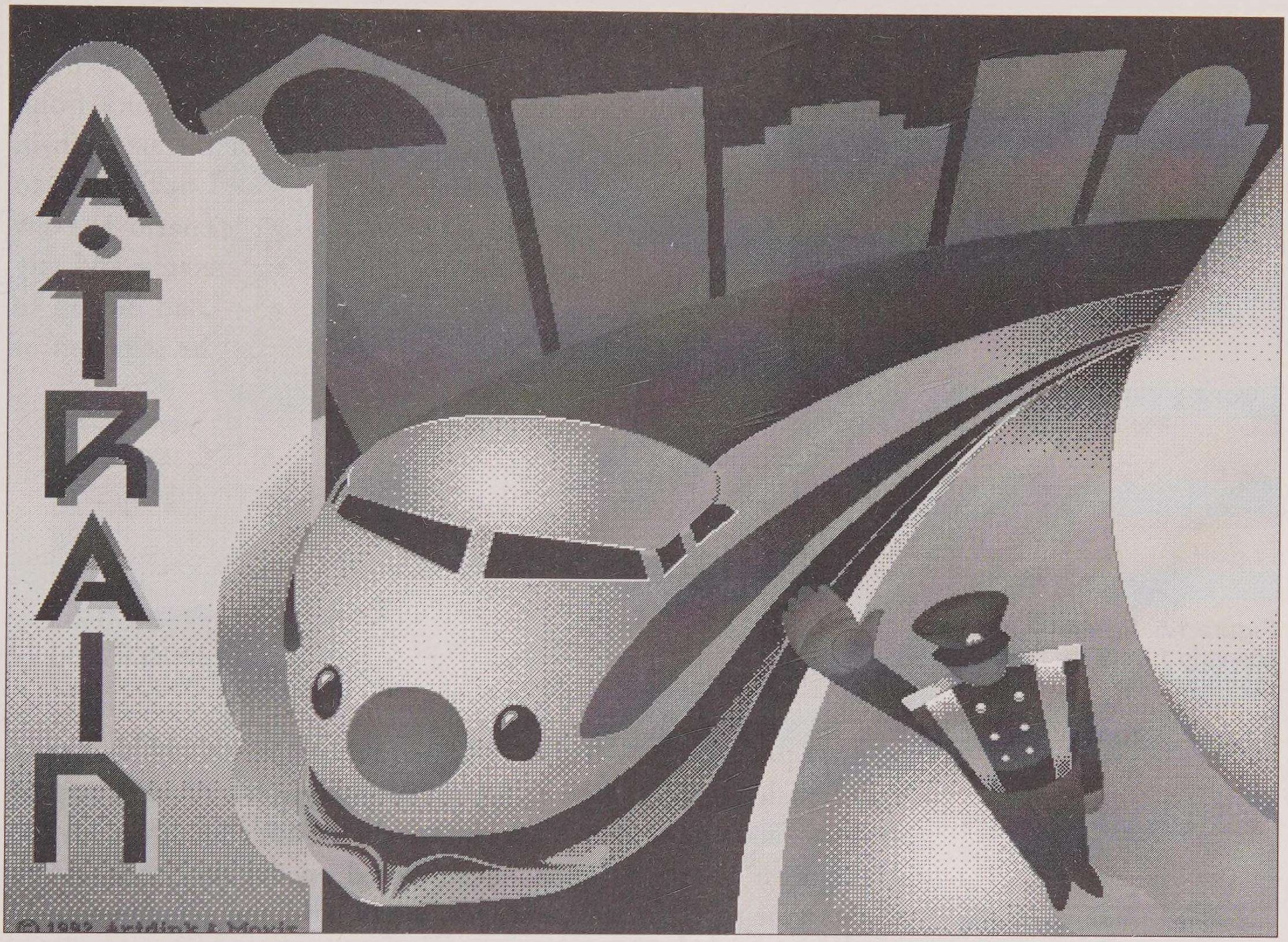


Figure 1.3 Title screen for A-Train

Selection Techniques

In the course of this book I use terms such as select, point, click on, double-click, or click and drag with regard to the pointer-arrow cursor icon on your screen. The pointer icon is controlled by the mouse or the keyboard.

Select means to position the pointer on a screen object and then click or press the left or main mouse button, the spacebar, or the Insert key. Point means to position the pointer by using the mouse or the cursor-arrow keys. Click on and double-click are essentially synonymous with select, except that double-clicking involves pressing the mouse button twice in quick succession. Click and drag refers to the process of clicking on something and then moving the pointer to another position, all the while holding down the mouse button, spacebar, or Insert key.



Figure 1.4 System menu

For now, let's start a new game by selecting the New Game option from the System menu. You will see the New Game window open up, from which you will have six different Map scenarios to pick from. The six numbers you see in this window represent the six built-in scenarios, each of which has unique landscapes and difficulties to master. For demonstration purposes, let's select scenario 1, New Town, to use in practicing the art of railroad engineering and city planning. Once you have selected 1, click on the Load button to commence loading the game. Figure 1.5 illustrates the selection of scenario 1 from this window.

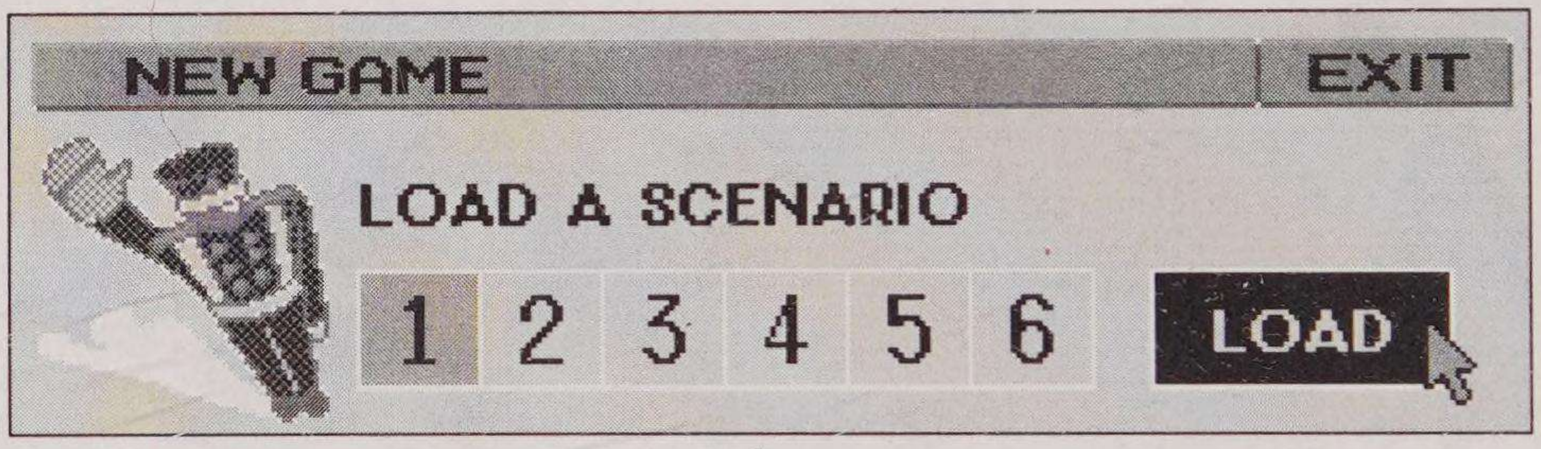


Figure 1.5 Selecting scenario 1 from the New Game window

At this point you will see your landscape in an axonometric 3-dimensional perspective. All rectangular solid objects appear inclined, and show three faces to give the optical illusion of depth. There is an orthogonal grid superimposed on the landscape, which allows you to estimate distances, areas, and the relative size of individual parcels of land.

If you are a die-hard keyboard fanatic, you will be pleased to know that the gray + and - keys on the numeric keypad section of your keyboard will cycle through and highlight the different menu options and icon tools that allow you to control the simulator. Once you have highlighted an icon tool, button, or other item, press Enter or the spacebar to initiate the corresponding action.

UNDERSTANDING THE MAIN MAP WINDOW

Looking at your Main Map window, as depicted in Figure 1.6, you can see a picture-frame-like window with menus adorning its edges. In the center of the window you see countryside interspersed with houses and buildings, along with a single railroad line. Every so often, trains will whisk back and forth from locations off the map, stopping a few moments at the station to disgorge cargo or passengers. On the right-hand side of the window are the scrolling arrow buttons that allow you to scroll the Main Map up, down, sideways, and diagonally. The map date and time are continuously updated in the upper right-hand corner of the Main Map window. The year is displayed first, then a three-letter abbreviation for the month, then the day, followed

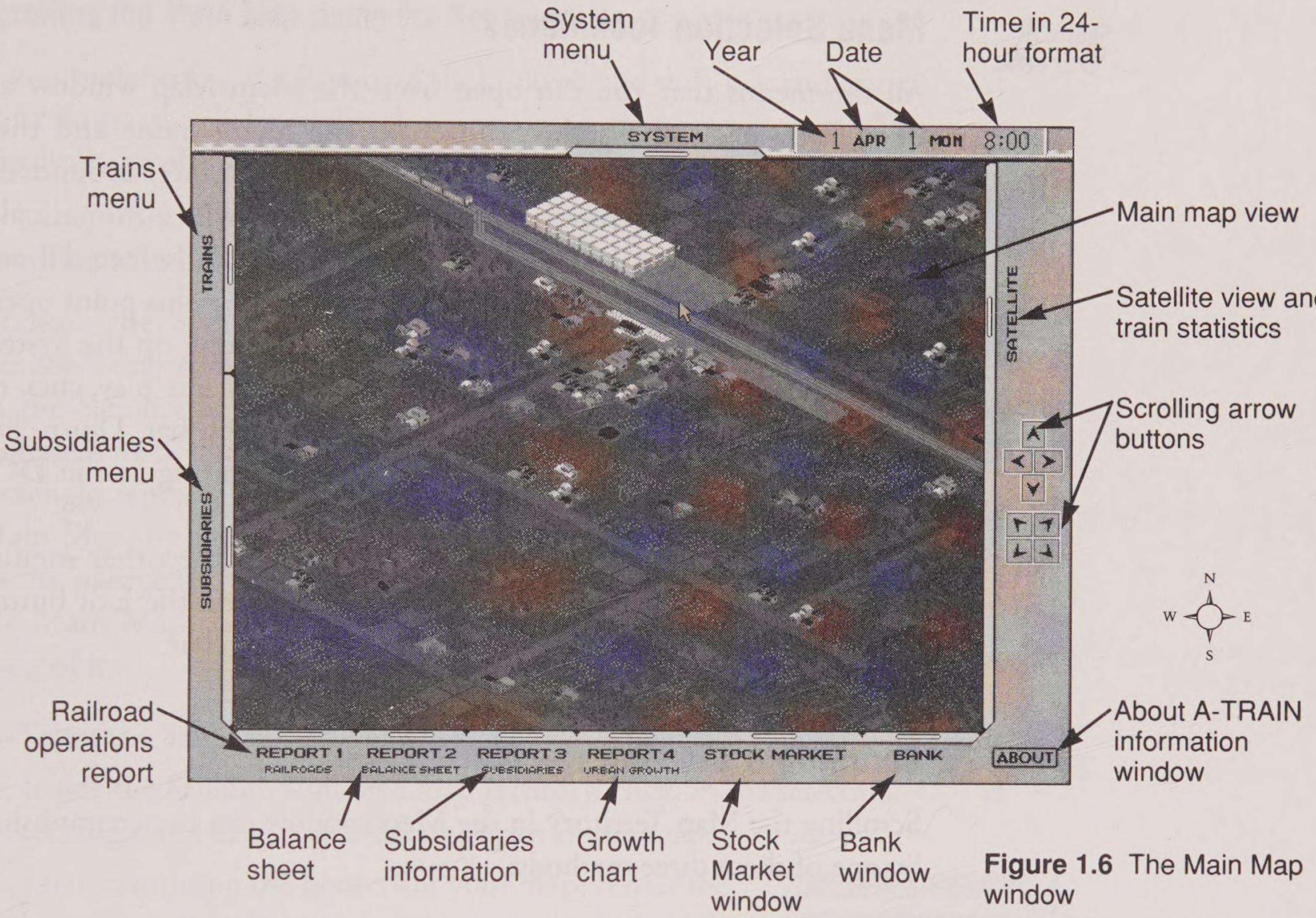
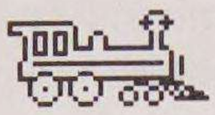


Figure 1.6 The Main Map window

by the time. The time, you will notice, is recorded in a 24-hour format, so that 1:00 PM becomes 13:00 and 1:00 AM becomes 1:00 (See Chapter 3 for a conversion table between 24- and 12-hour formats). If you have a VGA monitor, the passage of time is graphically depicted by a darkening of the map when it is night and a brightening of the map when it is day. You will also notice the change of seasons in the year. White snow blankets the landscape in winter, while autumn and spring bring their own colorful changes.

Since each new game begins in a new fiscal year starting April 1st, you will notice that the date always begins with Apr 1. Your newly loaded game always begins on a Monday at 8:00 AM, except for your previously saved games, which always begin at the date and time in which you last saved them. At the end of the fiscal year, March 31st, your accounts must be settled and a report issued by your accountants detailing your assets and liabilities in addition to your profits or losses. Although the fiscal year ends March 31st, your financial report is not issued until the following day, April 1st.



Menu Selection Techniques

All the menus that you can open from the Main Map window are opened by positioning the pointer on the menu name and then clicking. You will notice that as you move the pointer around the edges of the picture-frame screen, each menu will automatically highlight to let you know that it is the currently selected item. Clicking the mouse button or hitting the spacebar at this point opens the menu up for you to see. Try this now by opening up the System menu. When you are finished and wish to resume game play, click on the Exit button at the top right corner of the menu bar. Don't click the Quit button or else you will find yourself staring at the DOS prompt.

Go ahead and try opening and shutting all the other menus. Remember that to exit any menu you must click on the Exit button that appears in the upper right corner of each menu bar.

Scrolling & Viewing The Map

Scrolling the Map Territory in the Map window can be accomplished by one of these three methods:

1. You can click on the Scrolling Arrow button icons on the right-hand side of the Map window.
2. You can use your keyboard's cursor-arrow keys by holding down the shift key in combination with the cursor keys.
3. You can use the Satellite window's selection rectangle.

Scrolling the Main Map Using the Arrow Buttons

Using the first method, you simply click on one of the Scrolling Arrow buttons to incrementally nudge your map in a particular direction. The arrow inside the button indicates the direction the map will move if you click on it. Holding down the left mouse button or the spacebar while pointing on the button will sustain the motion until you release it. The upper four arrow buttons allow you to scroll up, down, left, or right, while the lower four arrow buttons allow diagonal motions.

Scrolling the Main Map Using the Keyboard

If you prefer using the keyboard, hold down the shift key and one of your four cursor keys simultaneously to move your map. The disadvantage of this method is that you cannot scroll diagonally.

Scrolling with the Satellite Window

Because the map is fairly large, it is better to use the Satellite window's selection rectangle for scrolling long distances on the map. In the Satellite window you can see a small bird's-eye view of your complete map, and inside this mini-map there is a movable selection rectangle representing the landscape that is being displayed on the Main Map. By moving the selection rectangle, you can quickly jump to any part of the entire map and have the new location displayed in the Main Map. Let's play with this method of scrolling to get the hang of it.

1. Select the Satellite menu and click.
2. Inside the Satellite window's map territory, click on the selection rectangle and drag it to a different part of the map.
3. After examining the borders of your map, center the selection rectangle on the train station in the middle of the map.
4. Exit the Satellite window by clicking on the Exit button.

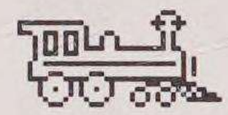


Figure 1.7 illustrates the repositioning of the Main Map window by clicking and dragging the selection rectangle in the Satellite window. As you move around the map inspecting your new quarters, take a moment to view the geography. The placement of your railroad lines and the layout of your cities is largely dependent on terrain features. For example, rivers, lakes, oceans, and mountains can block the passage of tracks and roads.

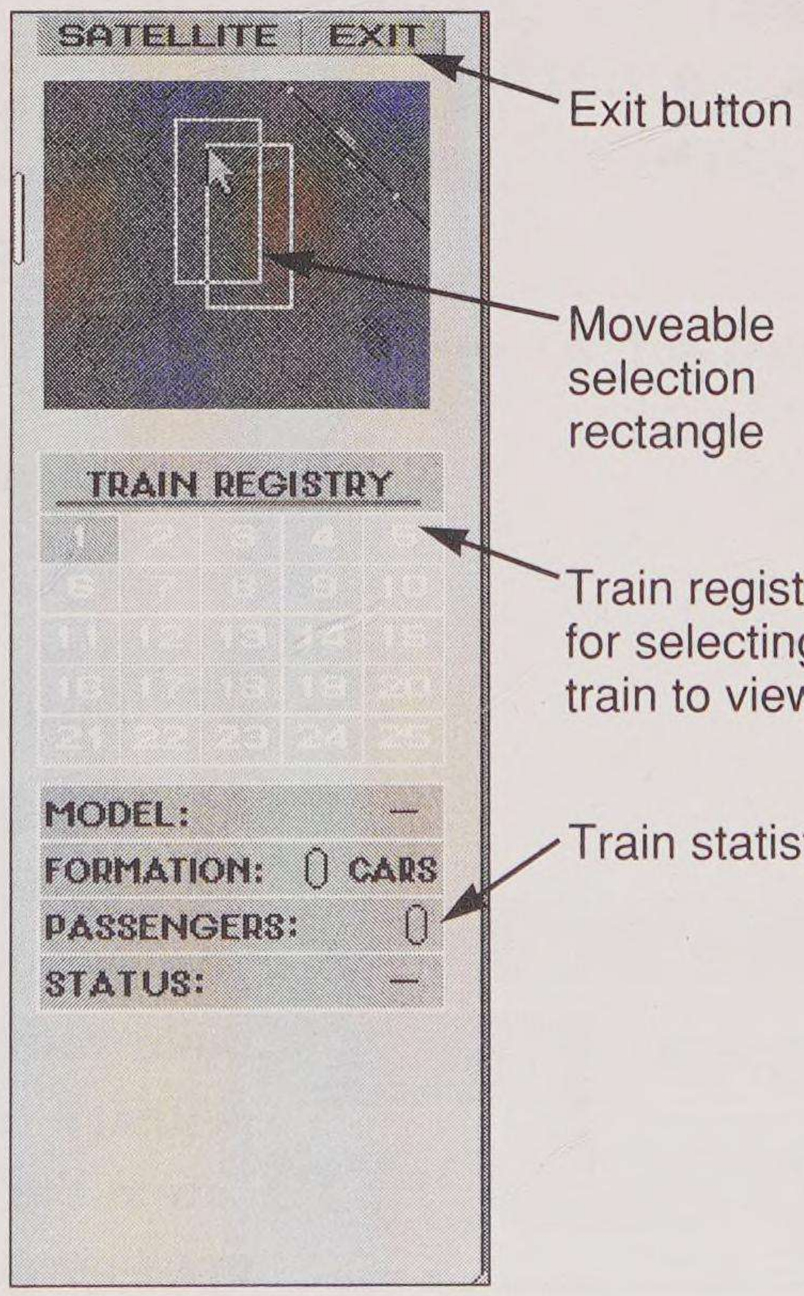
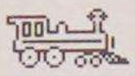


Figure 1.7 Scrolling the Main Map view by moving the selection rectangle in the Satellite window



For finer control in performing minute motions of the selection rectangle, click on the Scrolling Arrow buttons or, alternatively, use the Shift key in combination with the cursor keys on your keyboard. You can do this with or without the Satellite window open.

CREATING YOUR TRANSPORTATION SYSTEM

Returning to your Main Map view, you can see a large storage yard for construction materials in the center of your map across the tracks from the railroad station. Every so often, a freight train will come barreling down the line and dump its load of construction materials in an empty portion of the storage yard. Should the yard fill to capacity, the freight train will pass the station and continue on its merry way off the map without depositing its cargo. If the train is empty, it will pick up materials to be sold to the outside. Don't worry, you make a slight profit from the sale of each container. The trains you see on this initial line belong to you, but you have no authority over their scheduling, removal, or track-switching. You can only add new station stops, modify the track layout, and run new trains on the line. Don't worry about head-on collisions with these initial trains; any new trains you place on this primary line have the right of way and will "bump" the initial trains into the opposite direction.

Construction materials play á vital role in A-Train. They are the means by which residential buildings are built, commercial properties are developed, and roads are constructed. They are essential to the economy of your city. A shortage of materials can severely stunt growth in your city, while an overabundance can cause factory production lines to become unprofitable. A careful balance must be struck in providing just the right amount of materials at the right time for proper development to occur. One of your primary jobs in A-Train is to make sure construction materials are transported to the areas where they are needed.

Designing Your First Train Line

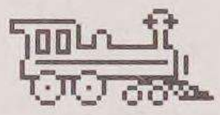
As Chief Engineer, you must decide where on earth you are going to lay your lines. A little foresight at this stage of the game can go a long way towards preventing major problems later on. You will want to build your first line so it has a station stop within eight blocks of the primary train line's storage yard. This way you can use materials "imported" from the outside to help found your new city. Materials must be stored within an eight-block radius of a station stop in order for them to be transported elsewhere by rail. Secondly, you will want to scout out the proposed line location to make sure that there is

enough room to lay the tracks and that there are no natural obstacles such as hills or water to impede your construction crews. When designing your tracks, keep in mind where your stations will need to be placed, and also plan for future expansion by reserving enough room for a second track to parallel your first line.

Let's go ahead and practice laying some track now, keeping in mind some of the things we've just discussed.

Laying Track

Laying your tracks is not really complicated, once you've fooled around with the mechanics of it. Highlight the Trains menu and open it up as illustrated in Figure 1.8. All the functions you will need for your railroad operations can be found under this menu.



Click on the Lay Tracks menu option and the Track menu window will then open as shown in Figure 1.9. Highlight the Lay portion of the Track window's menu bar, and you are all set to begin laying some track. Next, scroll the map over to some uninhabited land so that you can practice laying a few tracks without totally destroying your fledgling city.



Figure 1.8 The Trains menu

Position the pointer on a block of land and click once. This is your point of departure for your track. Now drag the pointer from this location in any direction. As you do this, a double white line will appear to follow your pointer around the map, and the estimated cost of the track construction (including land costs, purchase of right of way, and materials) will appear in the Track window. The double white lines indicate the proposed path for your railroad line and will curve if your pointer's path deviates from a straight line. When you have decided to commit yourself to the indicated path, click the left mouse button once (or press the spacebar). In place of the double white lines, a track will materialize. However, if you change your mind about the proposed track location before having clicked the mouse (or press the spacebar), click the right mouse button to cancel your lay command. You can then start the process of track laying anew by clicking and dragging your pointer somewhere else. Figure 1.10 shows this process in action.

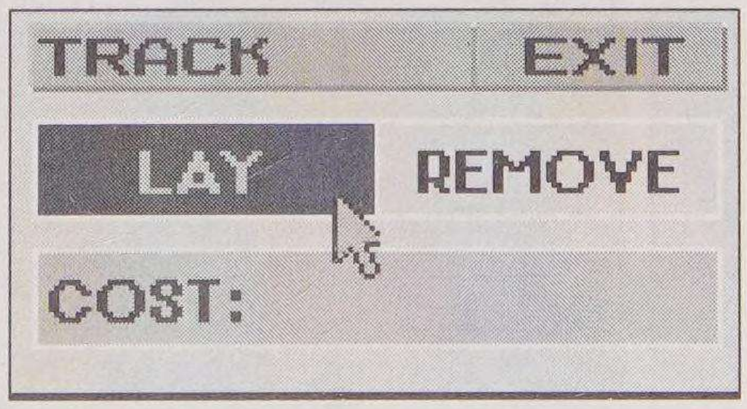
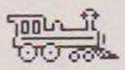


Figure 1.9 The Track menu

Experiment with laying some track that runs from left to right, up and down, and diagonally. A word of warning is in order, however. If your proposed track path crosses a hill, mountain, any water, certain buildings, or another track, you will



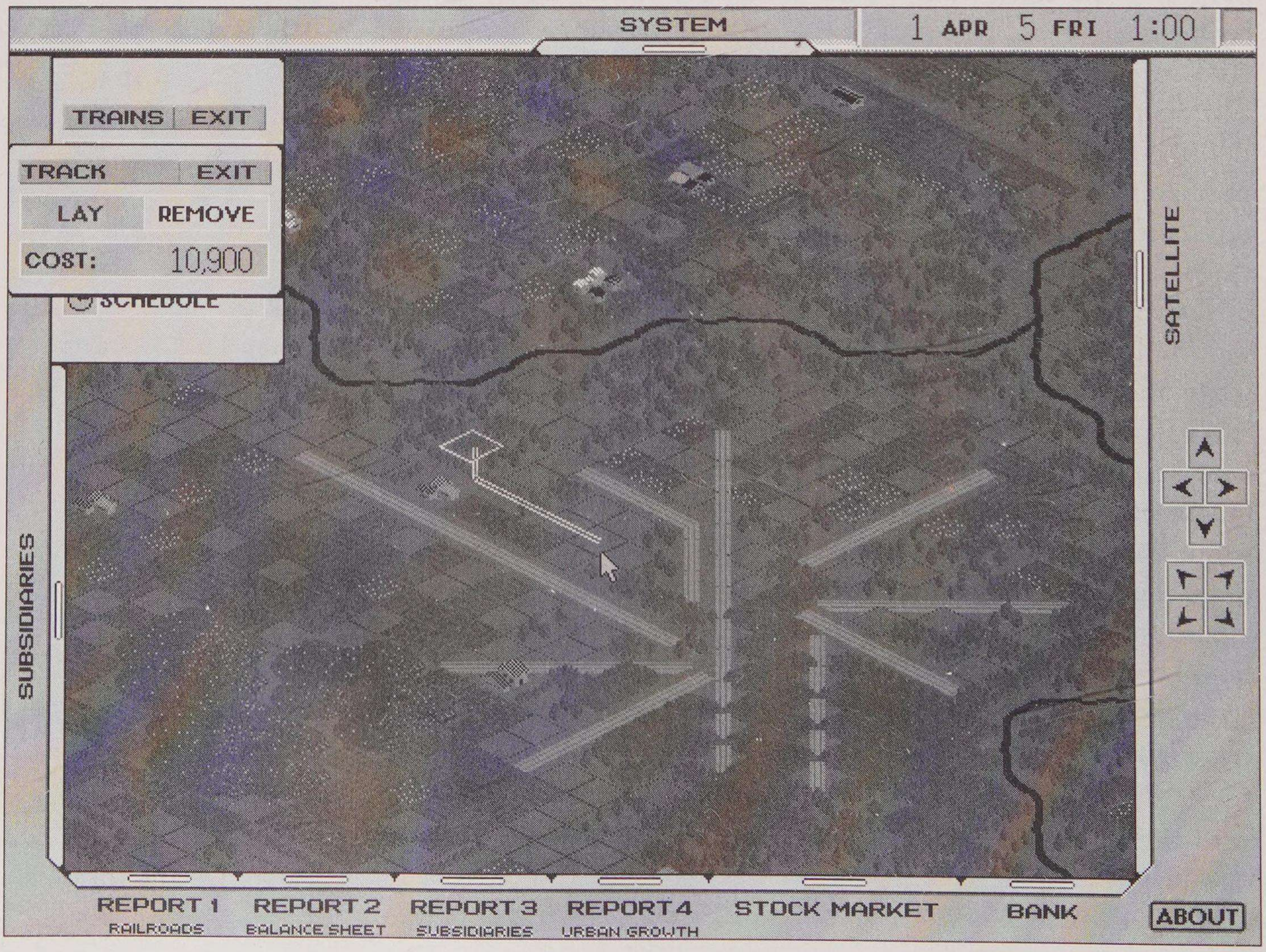
Click the right mouse button or press the Delete or Enter key to cancel any track-laying operations in midstream.

be warned that your track location is bad. Don't have a cow—-you can remedy this simply by clicking once to get rid of the message and then re-aligning your track to avoid the problem area. You can cross another track by intersecting the tracks at 45 degree angles in an "X" configuration.

Removing Track

Removing track is almost identical to laying track. Simply select the Remove option from the Track window's menu bar, and click and drag on the portion of the track that you wish to remove. As you do this, you will notice that there is a cost associated with ripping out your tracks, although it is much less than laying tracks. The land that is left after you remove the tracks still belongs to you, but it is now barren because you have, in effect, bulldozed the lot clear of all

Figure 1.10 Laying some track by clicking and dragging the pointer



surface features. The land exists in an unimproved state and will appear flat and devoid of any vegetation or structures.

In A-Train, empty land that belongs to others is distinguished from your land by a distinctive dotted border pattern circumscribing each block. Thus, if unimproved property belongs to you, it will not have any border, whereas if it belongs to somebody else, it will have a dotted border around each bulldozed parcel of land.

How To Build Curves

Curves are a little nastier than slight bends in the track. They involve changing the direction of the track by 45 degrees or more, and require a little more track-laying skill. Usually any bend greater than 45 degrees requires two separate steps:

1. Build the two straight sections of your line that need to be connected by a curved track (Figure 1.11a).
2. Try connecting up the curved section by cutting across in a 45 degree angle. (Figure 1.11b). Start your mouse pointer on the very last straight track block and then click and drag so that the point of departure is at an angle of 45 degrees. Finish the curve by hooking it up to the last block of the other straight track at the same 45 degree angle.

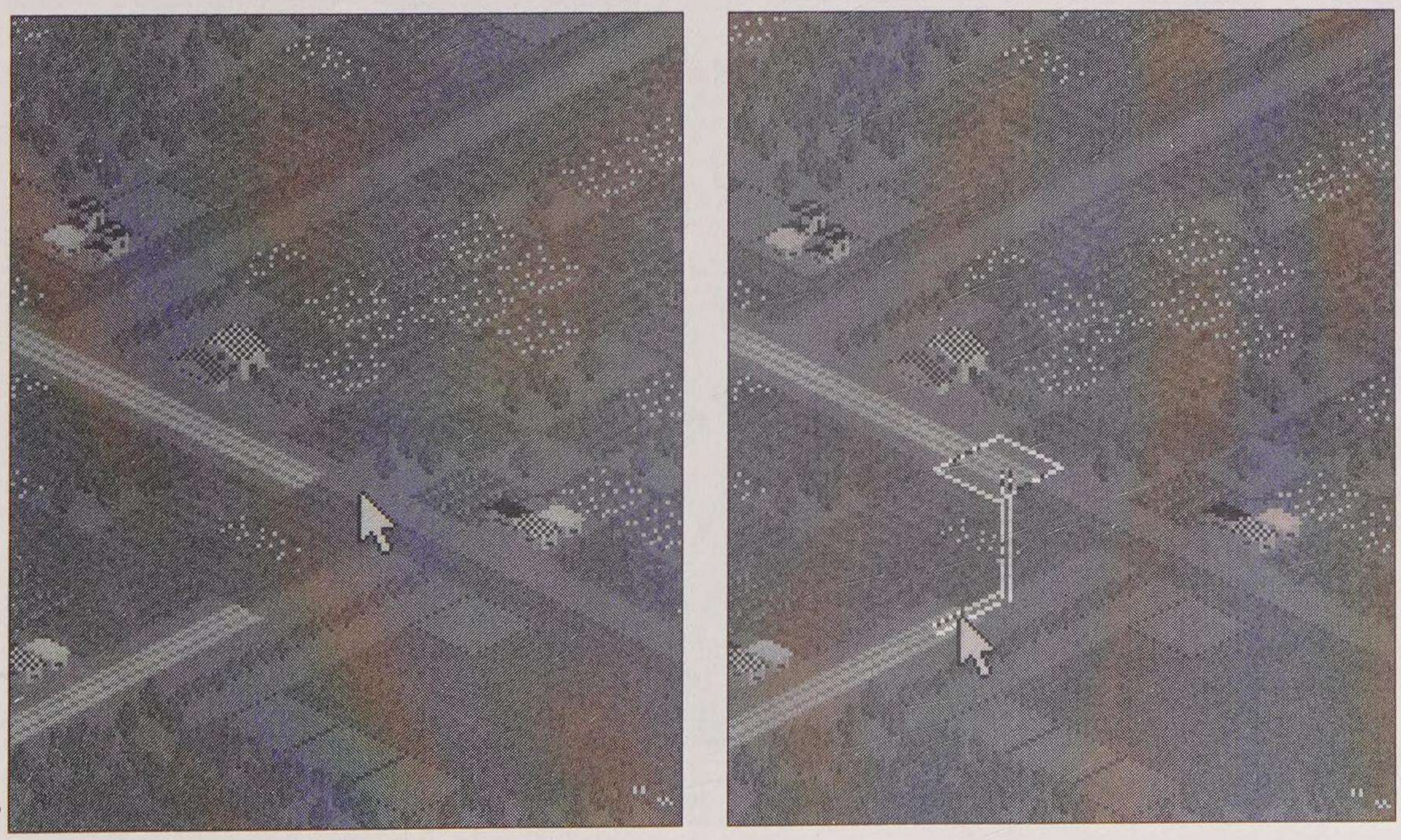


Figure 1.11 (a&b) Building a curve in two steps

If you are still having trouble building the curved section of track, try building it piece by piece; i.e., block by block. It takes longer, but you have better control over your zigs and zags.

Try building some 90-degree curves and perhaps even a complete turnaround so that you can deal with this trauma now.

Building Railroad Stations

Now that you have mastered track construction, let's go back and establish a money-making railroad line, with real stations and trains. Move the pointer over some non-developed land just below and to the left of the railroad station in the center of the map. Select the Lay Tracks command, and click and drag the pointer diagonally from the Northwest to the Southeast (i.e., upper right to lower left) for about 16 blocks. The reason you need to do this is that stations can only be built along tracks that have a diagonal orientation (see Figure 1.12). After you are satisfied with your track, click the Exit command to close the Track window.

Now, to complete the line, you need to construct a station to collect traffic at each terminus. Without stations, your trains will not be able to stop and pick up passengers and freight. In order to be able

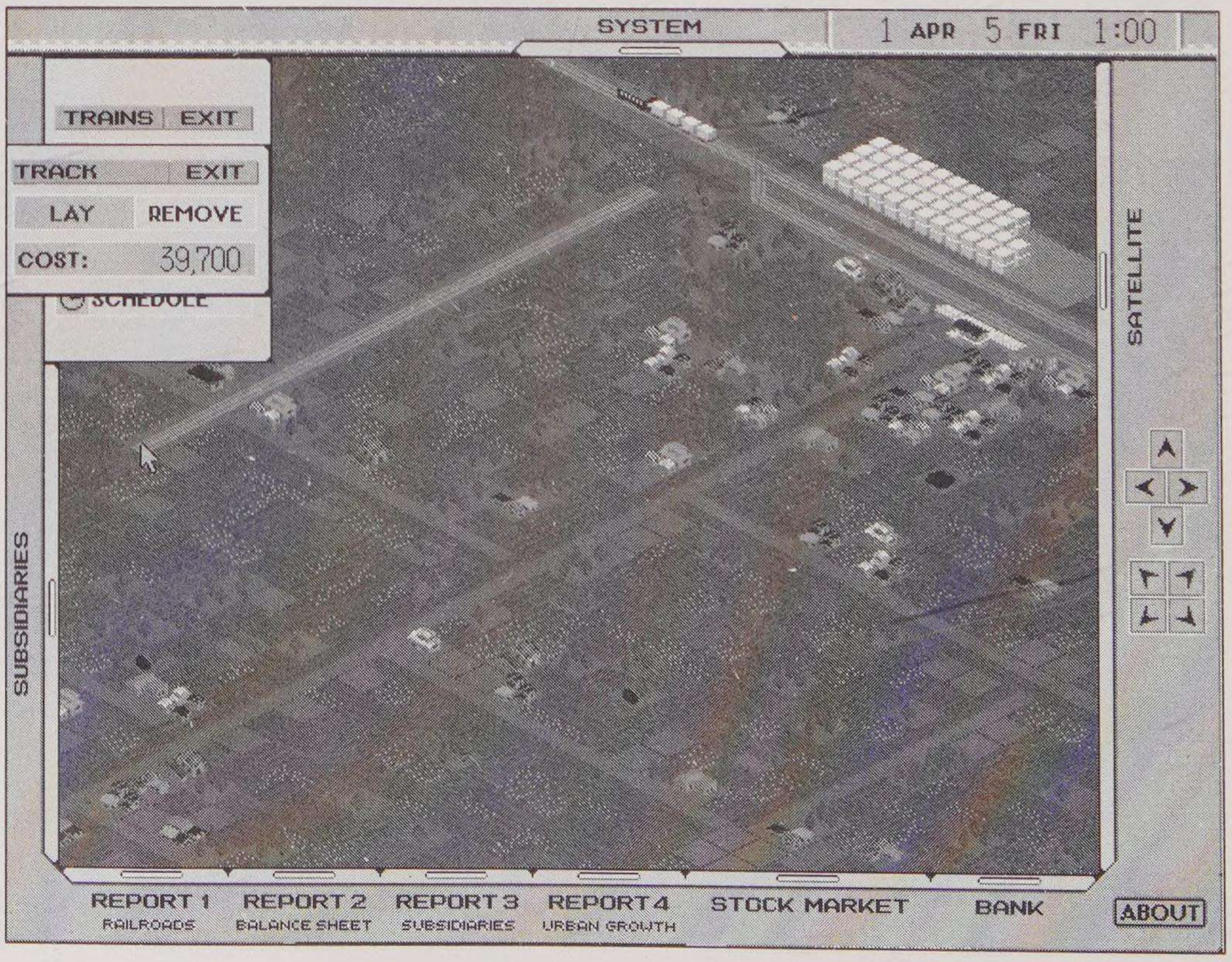
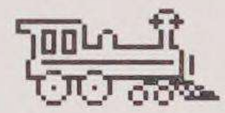


Figure 1.12 Establishing your first railroad line

to transport construction materials on your new line, your first station must be placed within an eight-block radius of the storage yards along the primary railroad line to the "outside." The first station will siphon off building materials from the primary line's freight business and allow you to redistribute them to your newly constructed secondary line. Your second station should be built at least 15 blocks away from your first in order to utilize the station's radius of coverage most efficiently. Closer placement of stations overlaps their coverage areas, needlessly adding extra cost for maintenance and operations. Later on in the game, when you have achieved higher urban densities, you can decrease the stations' minimum distance. At that point, the higher volume of passengers will generate more ticket revenues to offset the overhead of keeping the stations going. In general, though, the longer the distance the higher the ticket prices you can charge; while shorter distances, mean lower ticket prices. It is pretty complicated to figure all this out now, but suffice it to say that early in the game your stations should be at least 15 blocks apart.

Let's go ahead and construct the two stations. The Trains menus should still be open, so select the Build Station menu option. The Stations window will open, offering you four small and four large stations to pick from, as pictured in Figure 1.13.

Click the Build button and select the small station on the top right-hand corner of the Stations window. Next, position the pointer adjacent to the northernmost end of your newly established line. You should see a three-block-long highlight of the station outlining your proposed station location as you jockey your pointer to the correct position. Align the station outline as closely as possible to the right side of the track, making sure that the end of the station is flush with the end of the tracks, as illustrated in Figure 1.14. You must also be certain that the tracks run in front of the station platform and not behind the station, or the trains you run will not recognize the station and will fail to stop. Up to two separate lines can run in front of a station; any additional lines will not observe the station stop. When you are satisfied that all is as you intend it to be, click the mouse button (or press the spacebar) and your station will magically appear. If you misalign the station, don't worry. Just select the Remove command from the Stations window and click on the station to obliterate it from the map. Of course, all of this costs money, as you might imagine, and you will notice that the cost of building or



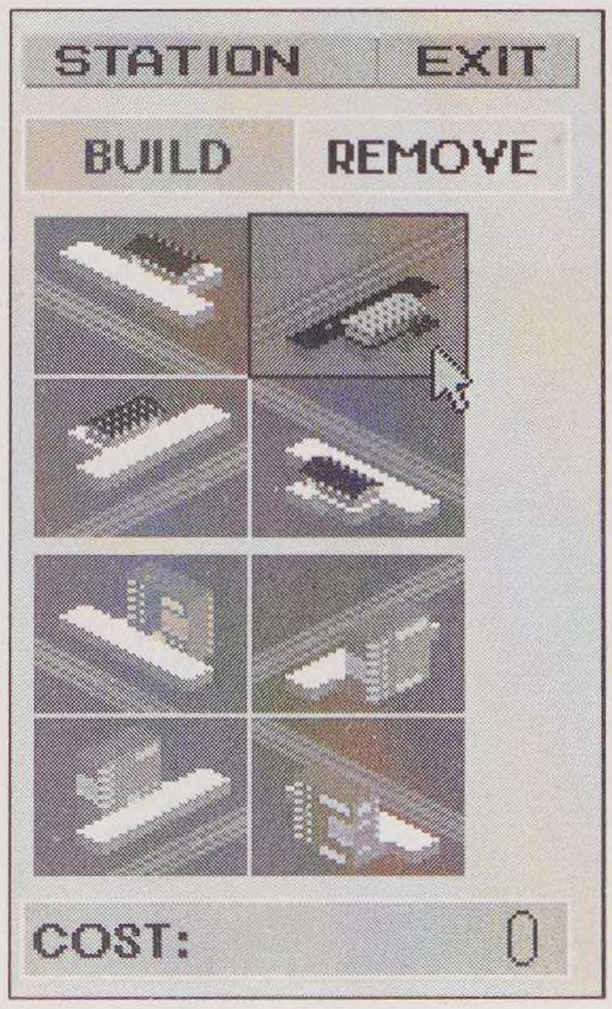
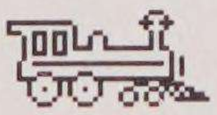


Figure 1.13 Build Station menu choices



Figure 1.14 Positioning your first station

removing your station is displayed at the bottom of the Stations window.



Repeat the station installation process for the southern terminus of your new line, until you have a setup that looks like Figure 1.15. When you are done, close the Stations window by clicking on the Exit command.

As we noted before, stations can only be built alongside tracks that are diagonally oriented. Stations are further restricted to straight segments of track; no curves or bends are allowed where they are placed. Remember, you don't want to plop down $40,000 of your hard-earned dough on a station that you mistakenly place next to a bend in the track. This costly mistake can easily be remedied, of course, but you will have to remove the station at a cost of another $4,000 and then reposition it, with another $40,000 of your money going down the tubes. With large stations, misplacing your station can mean financial disaster, since each large station costs $120,000 to place and $12,000 to remove.

Small Stations

Small stations are very useful in the early stages of urban development because they are relatively cheap, can be moved easily, and have low



Figure 1.15 Completing construction of your second station

operating expenses. Their disadvantage is that they tend to limit development around their periphery to a certain level due to their limited capacity to handle large numbers of passengers. Generally, when you have greater than 500 passengers a day, it is time to move up to a large station.

Large Stations

Large stations are more costly to build but have the advantage of generating 10 times the traffic that a small station does. In addition, large stations foster the construction of roads, large skyscrapers, and other high-density urban development. They are much more costly to operate, but they are indispensable to the creation of a large urban city. If a large station has enough passenger traffic and cargo to justify its existence, a road will start to be constructed immediately behind it. You cannot directly build the road. The simulation will do the work for you, but only if the large station is situated in an ideal location and there are readily available building materials nearby. Roads are beneficial because they tend to raise property values and attract hordes of new people to the area. Also, roads do not have negative consequences, such as creating traffic jams and pollution, as they do in the real world.

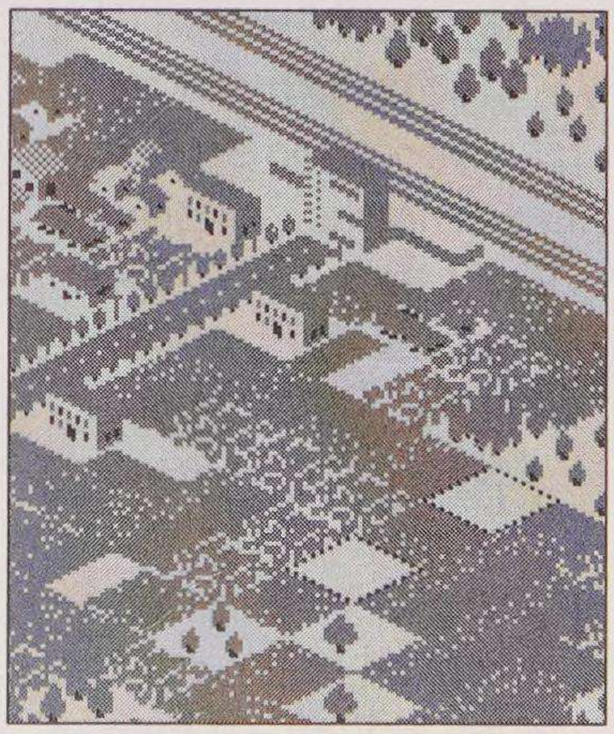


Figure 1.16 Only large stations enable roads to be built

Purchasing Your Rolling Stock

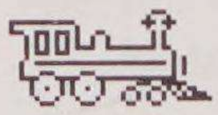
Your next step in your quest for global domination is to purchase some trains. As a budding Leland Stanford, you will be most interested in getting some freight trains to haul building materials to the resource-starved interior of your domain. Once construction starts heating up, people will be attracted to the economic activity, and you will be well-poised to start reaping some heavy-duty profits. After the freight line has been established, you will want to turn your attention towards creating a separate passenger line, so that all those people waiting to descend on your newly built town will have means of passage.

A-Train provides you with 19 possible trains to run. This includes 15 passenger and 4 freight train types. Each train has its advantages and disadvantages. Some are more costly to buy, but faster and more efficient to run. Others are cheaper to buy, but slower and less profitable. The tradeoffs are for you to decide; there are some important business decisions you have to make regarding your train operations. For your first freight train, however, you might try using the GP-40, which despite its high initial costs, is very fast and has a large cargo capacity.

Leland Stanford (1824–1893) was known as one of the "Big Four" founders of the Central Pacific Railroad, which formed the western portion of the United States' first transcontinental



railroad. C.P. Huntington, Mark Hopkins, and Charles Crocker were the other three members of the quartet, and they all owned mansions atop San Francisco's Nob Hill. Today, Leland Stanford is best remembered for having founded Stanford University as a memorial to his only son, who died of typhoid fever at the age of 15 in 1884. Stanford also served as Governor of California in 1862, and in 1885 was elected to the U.S. Senate. During this period, he became president of Southern Pacific Railroad, and was regarded as one of the most influential men of his time.



With the Trains menu still open, select the Buy Train menu option. In the window that opens up, you will see all the available trains that you have at your disposal, along with a Train Registry chart with which you register your fleet of trains. To assign your first train, click the unused train box #1 from the chart. Next, pick the GP-40 freight train that is found in the bottom of the second column by clicking on its picture icon, as seen in Figure 1.17. At the bottom of the Rolling Stock Market window, you will see the statistics of the GP-40 displayed, including its freight unit capacity, type of train, its car length formation, cost, and present status.

Since this is your first train purchase, the GP-40 is going to be the only train assigned under the Train Registry chart. As you can see, A-Train allows up to 25 trains running concurrently, and it is under this chart that you acquire new trains or sell off old trains. Select the Buy button and then click on the Confirm button to finalize the purchase of the GP-40. Notice that immediately afterward, a blue

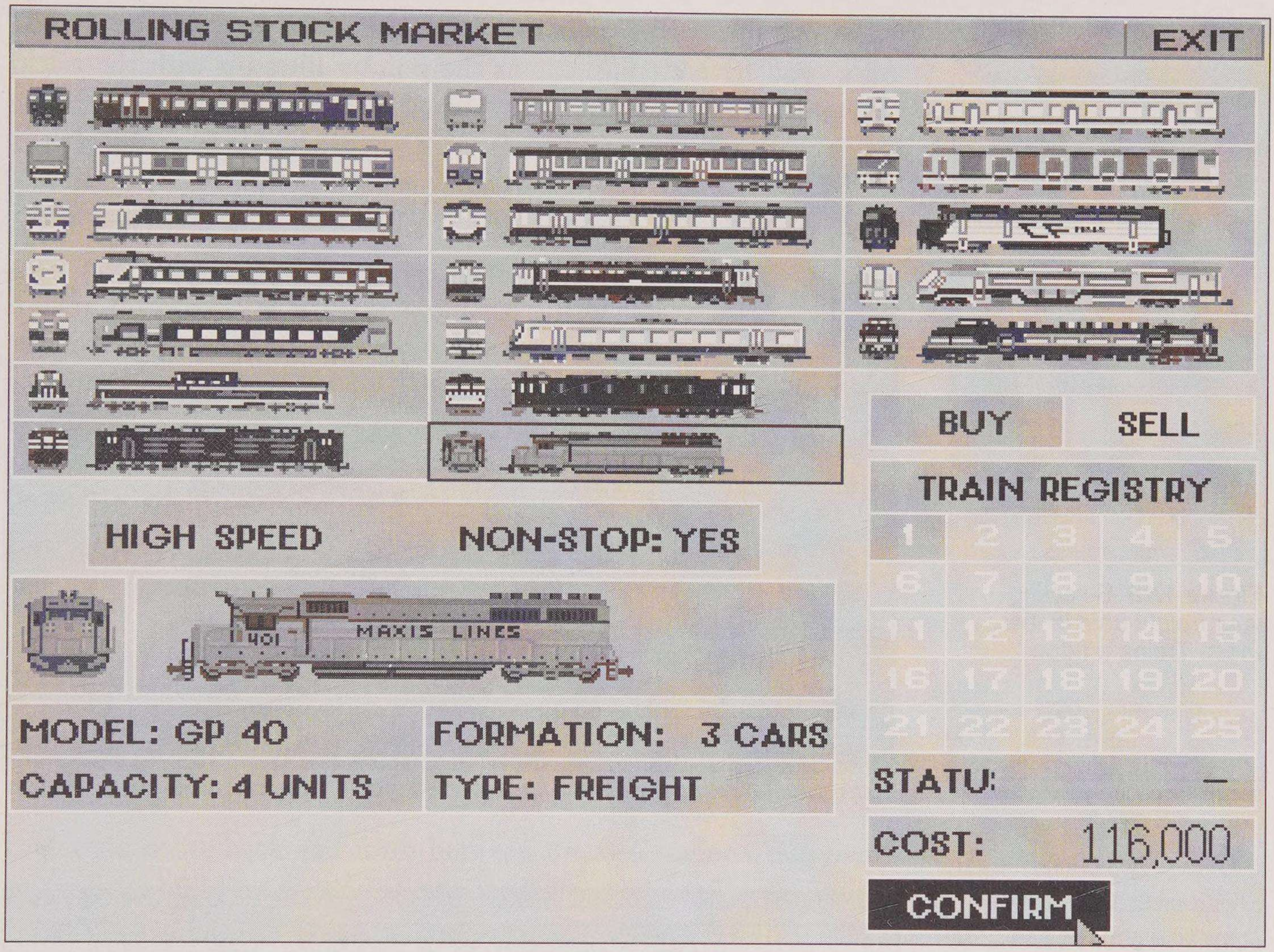


Figure 1.17 Purchasing the GP-40 freight train for your line in the Rolling Stock Market window

underscore appears beneath the number 1 box, signifying that Train #1 now has a train assigned to it. If you had other trains in operation, you would see a colored underline beneath the number corresponding to each train. After finishing this, exit the Rolling Stock Market window, and go on to the next section.

Placing Your Train



To begin your train service, you will need to place the train on the tracks. Select the Place Trains menu option and the Trains window should pop open. By default, the last train you have selected from the train registry calendar chart will be highlighted, so the train #1 box should be illuminated. The train statistics will be displayed below the chart, as you can see in Figure 1.18.

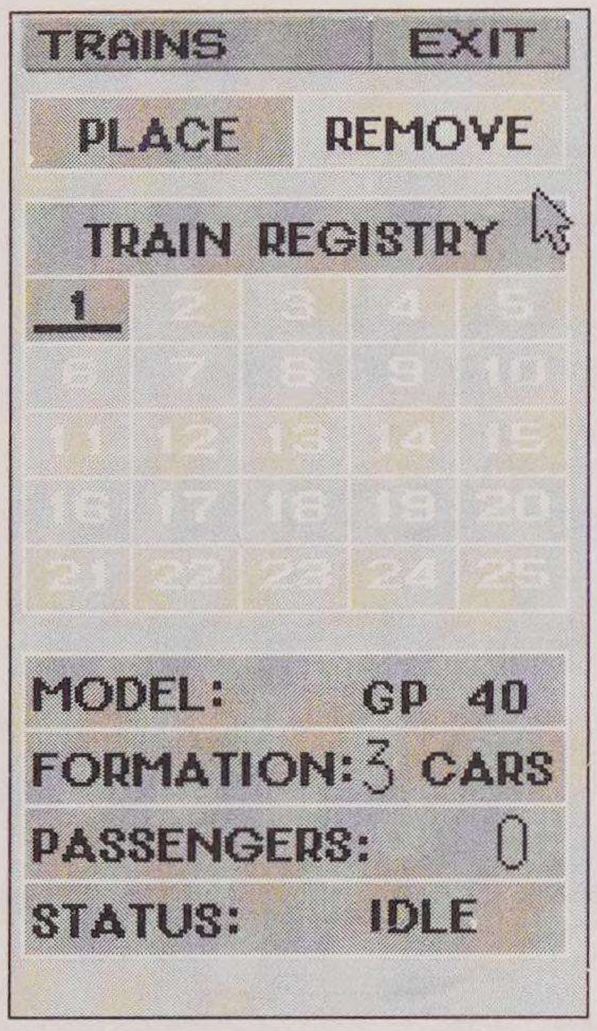


Figure 1.18 Selecting your freight train in the Place Trains window

Move the pointer over the map until it lies over the newly laid tracks you have established. As the pointer lines up with the track, you will see a square outline appear. This ghost image represents the site where the train will be placed if you click on the track. If the proposed spot is not good, a message box will appear to warn you that you need to try again in a more suitable location. Try clicking on the track now to see if you can correctly place the train. The train should become visible on the map, along with two arrows on its top. The arrows control the direction in which the train will first move, the white arrow represents the train's intended direction. You can toggle the direction of the train by clicking on these arrows. When you are working with more than one train on the same line, these arrows are also used to resolve head-on collision conflicts. Although trains are never damaged by collisions, they do come to a stop, and you must get them going again by altering their directions so that they are in unison.

Figure 1.19 shows your freight train being placed on the map, while Figure 1.20 shows your train's direction being selected.

Exit the Place Trains window, and your train will start to move. Congratulations, you have completed your first railroad line! Watch

Whenever two trains have a head-on collision, they will come to a grinding halt until you resolve the direction conflict between them. Use the **Place Trains** *command to redirect one train's direction arrows. This will allow the trains to start moving again. The only exception to this rule is when one of your registered trains bumps into one of the trains that runs on the "primary" line to the outside. In such a collision, these trains will always change direction automatically to match that of your registered train.*

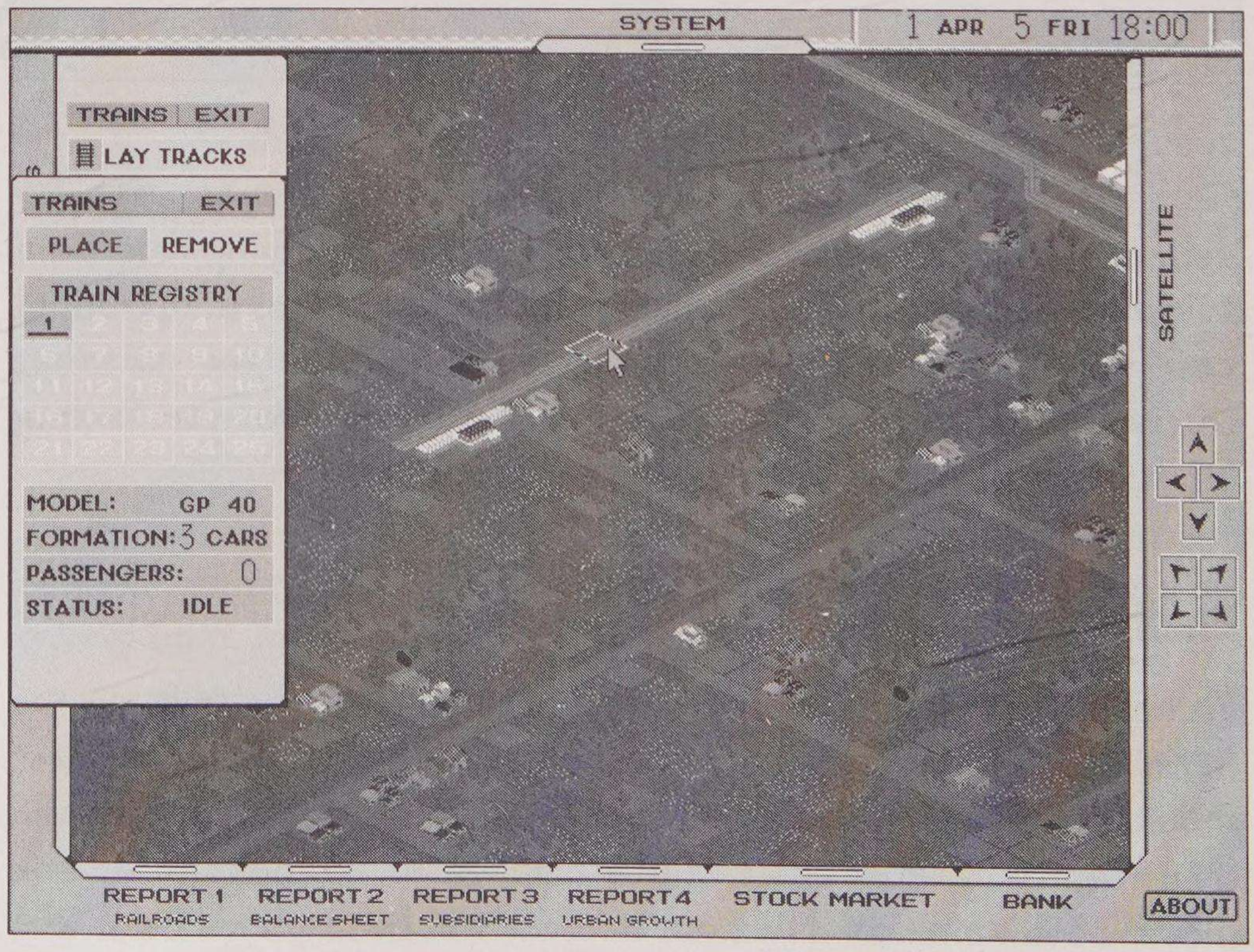


Figure 1.19 Placing your train on the map

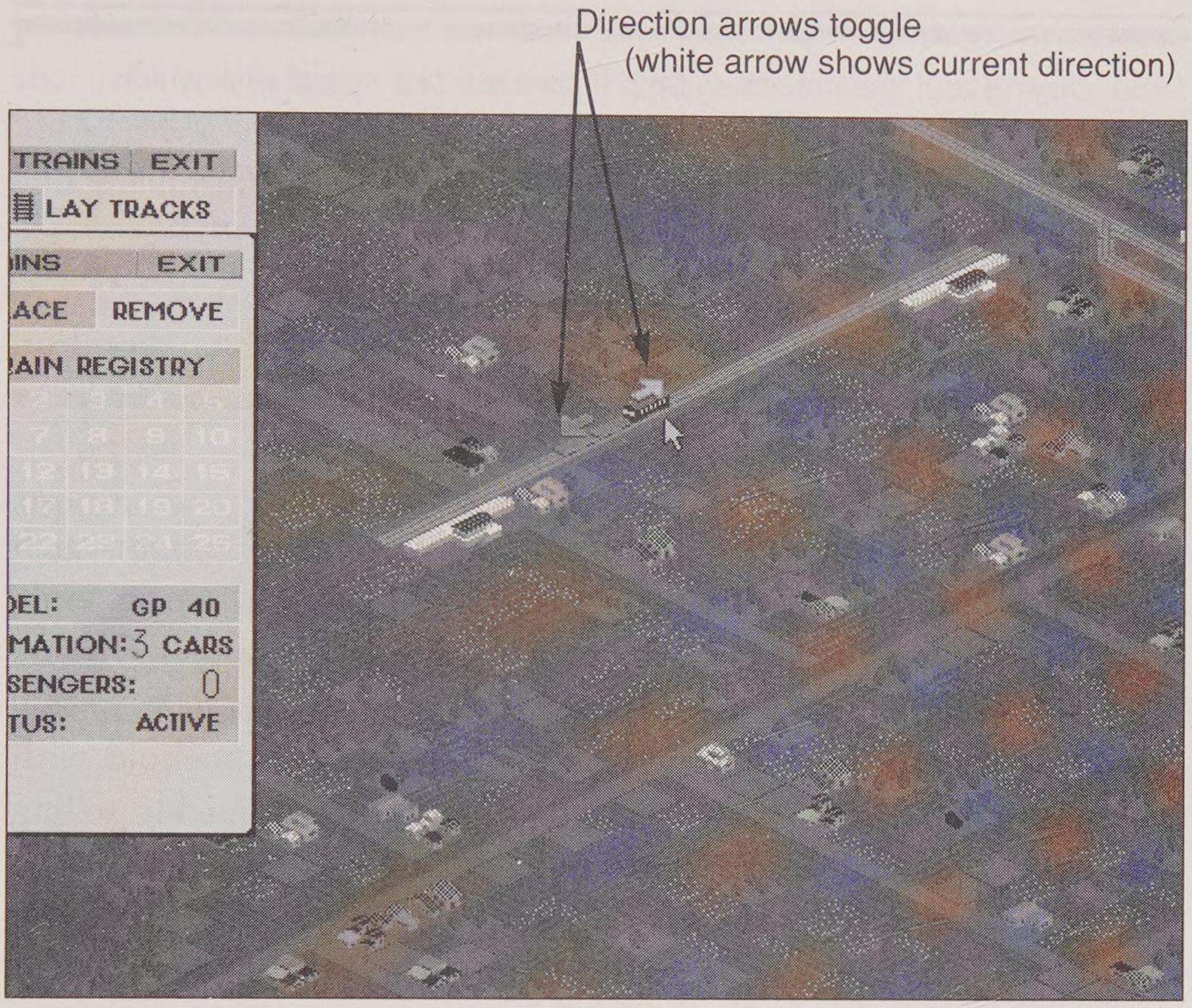


Figure 1.20 Choosing your train's initial movement direction

your train move back and forth between the two stations. Although you will see building materials being loaded onto the train, you might wonder why they are not being off-loaded at your second station. This situation arises out of a lack of storage space to dump the freight, so you will need to buy some land next to your second station for this purpose. To do this, go on to the next section to learn about subsidiaries.

MASTERMINDING URBAN DEVELOPMENT

In Japan, most railroad companies derive only half of their income from railroad operations. This economic reality is imitated in the A-Train simulation which allows you to run subsidiary businesses in addition to your railroad. Each business you start will hopefully encourage development and thus bring in more people. The more people, the more paying customers for your trains, so you must always be on the lookout for subsidiaries which can bring additional people to your budding city.

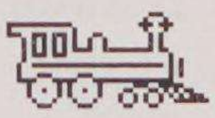
Buying and then reselling land increases the speed with which development occurs. Buy land around stations, rail lines, and other future development sites before the price soars, then sell at a profit. Tip: if you can plan ahead, buy the land before you put in the stations and rail lines, so that you can buy the land even more cheaply. After you sell the land, other developers will rush in to start building, suspecting that a construction boom is underway.

Because surrounding land value goes up when developments such as rail lines, stations, and roads are built, you should buy up some empty land around your stations to take advantage of its resale potential. Outside developers from rival companies will also be keenly interested in your land holdings once you establish a toehold with your transportation infrastructure. Buying and then quickly selling your land will speed up development much more rapidly than if you just wait for other developers to move in. This land speculation technique is one of the best ways to fatten your wallet and encourage growth with virtually no financial risk to you.



Figure 1.21 The Subsidiary menu

Subsidiaries



Open the Subsidiaries menu and you will see a window displaying all your subsidiary options, as illustrated in Figure 1.21. In this menu, you will find all the commands for buying and placing your land, income properties, and commercial developments. Click on Real Estate, and a sub-menu will open with Buy and Sell buttons, a count of your current land holdings in square blocks, and the cost of purchasing the parcel of land your pointer is over. Notice that all activity ceases with this menu open, yet you can still scroll the map via the Scrolling Arrow buttons or the Satellite window's selection rectangle. Figure 1.22 shows the Real Estate menu open.

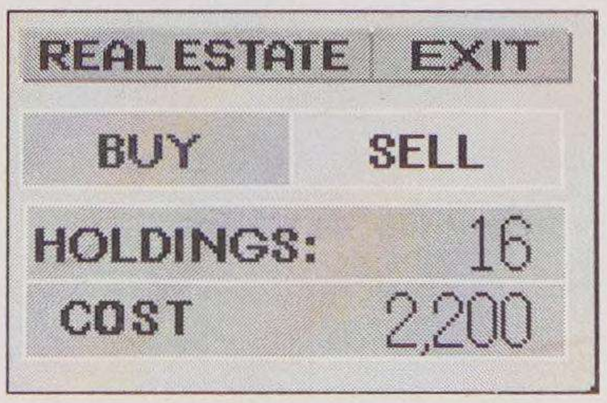


Figure 1.22 The Real Estate menu

Click on the Buy button and then move your pointer over some land adjacent to the second station. You won't need to build a storage yard for your first station since it will transport the building materials directly from the storage yard across from the primary rail line to the outside. Click the pointer on each block of land you wish to

purchase. Note that you can also buy land with buildings on it, but that it is much more expensive. If you accidentally click on a land holding you already own, you will get a message informing you that you are already the owner of the property. For now, just buy up some vacant land around the station, as depicted in Figure 1.23.

The land that you purchase will be cleared of any vegetation or buildings and the surface will appear bare. Cleared land which is owned by another company has a dotted black line circumscribing it. If you sell your land, you will see a dotted black line immediately appear, signifying that a rival firm has bought the land and taken possession of it.

Exit the Real Estate menu, and your freight train will soon start to deposit construction materials in a vacant lot next to your second station. Shortly thereafter, little houses will start sprouting up in the vicinity of the station. If this is not happening quickly enough, sell some land to help hasten the process.

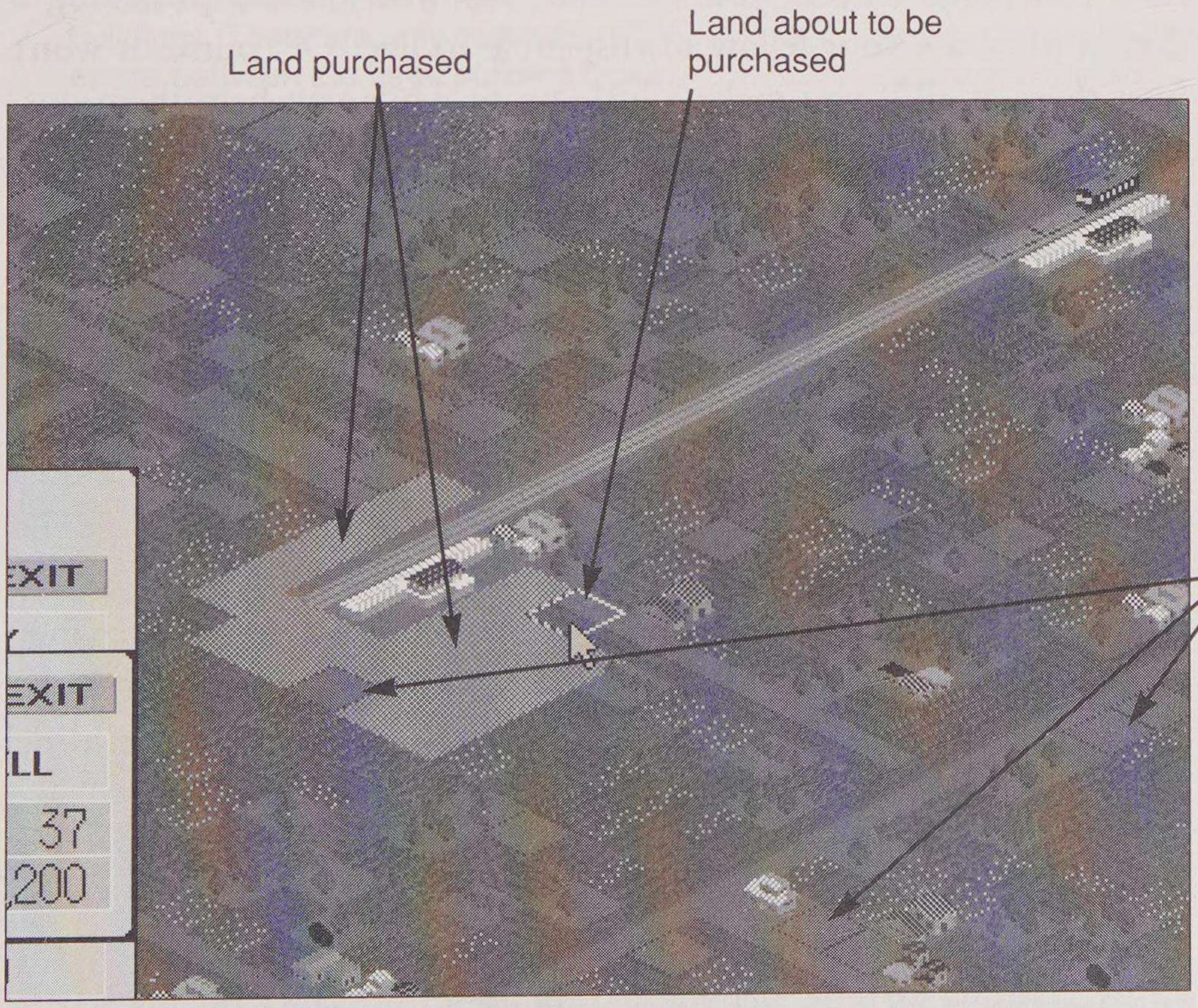
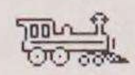


Figure 1.23 Buying land for materials storage next to your second station



Any cleared land with a dotted black border around it is land that is owned by a rival company. Land which you have previously sold will appear this way until some development occurs.

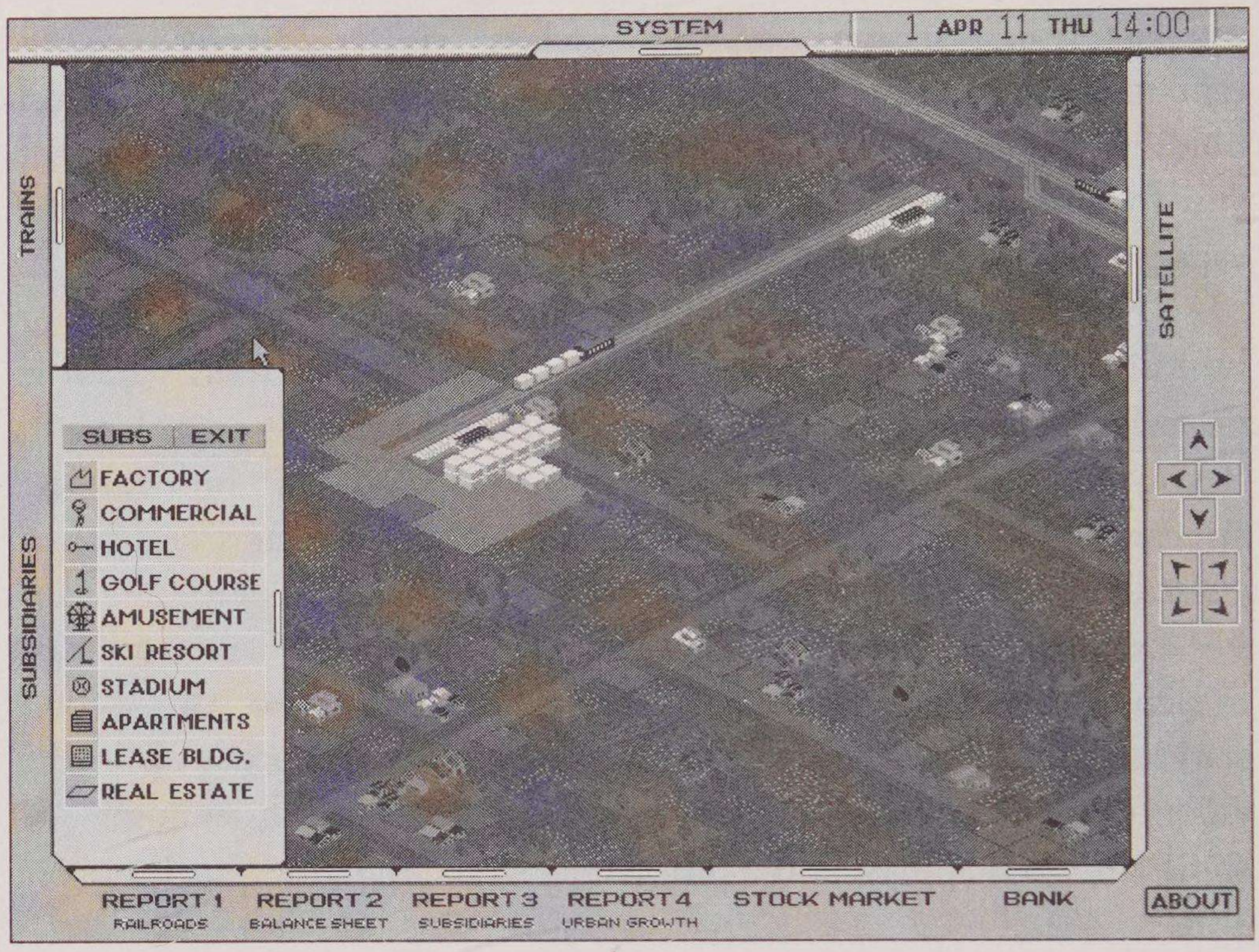


Figure 1.24 Building materials being stored in newly acquired storage yard next to second station

Become a Landlord

As a concerned citizen, you will naturally worry about providing a decent place for your fellow townspeople to live. Of course, it won't hurt them at all if you make a little profit while you help them out. Hey—-you have to pay your bills, too. You will provide your new town with its first high-rise apartment building. Just imagine how benevolent people will think you are.

To do this, you need to see how many building materials you have piled up at your new storage yard. Construction materials are the life blood of your empire. Without sufficient materials in the right place, you will not be able to build any subsidiaries, since they all depend on these for their construction. Your job is to manage the flow of materials to the areas that need them most. Even now you can watch your stash of materials swell and shrink in a dynamic exchange as new buildings are constructed and new materials are brought in by the freight train. Because constructing the apartment building requires eight material units to be built, you must wait until you have accumulated at least eight building-material blocks in the storage yard before you can place the building.



Once you have the necessary materials at hand, open the Apartments menu and click on the Build button. Move the pointer to

an empty lot behind the station and click to establish the apartment building. Notice, as you do so, that the cost of building the dwelling is reflected in the Apartments menu. Should the location be unsuitable or you don't have enough building materials, you will get a message advising you of this. Figure 1.25 shows the completed apartment building, along with the open Apartment menu. Take a moment to observe the small yellow neon sign on the top of the building, indicating your company's ownership. After your apartment building is finished, exit the Apartment window.

Building apartments not only helps to increase the number of people living in your city, but it also helps boost passenger traffic at the nearby station. So it is very beneficial to locate your high-density housing near rail stations. Another positive effect apartments have is that they tend to encourage or "prime" the simulator to develop other buildings in the neighborhood. Buying and selling apartment buildings does not increase development directly, but the additional funds you earn can enable you to buy more subsidiaries, thereby heating up the process of urbanization and promoting more population growth.



Some of your subsidiaries will display a yellow sign on their roof to indicate your company's ownership. When you sell the subsidiary, the sign is removed.

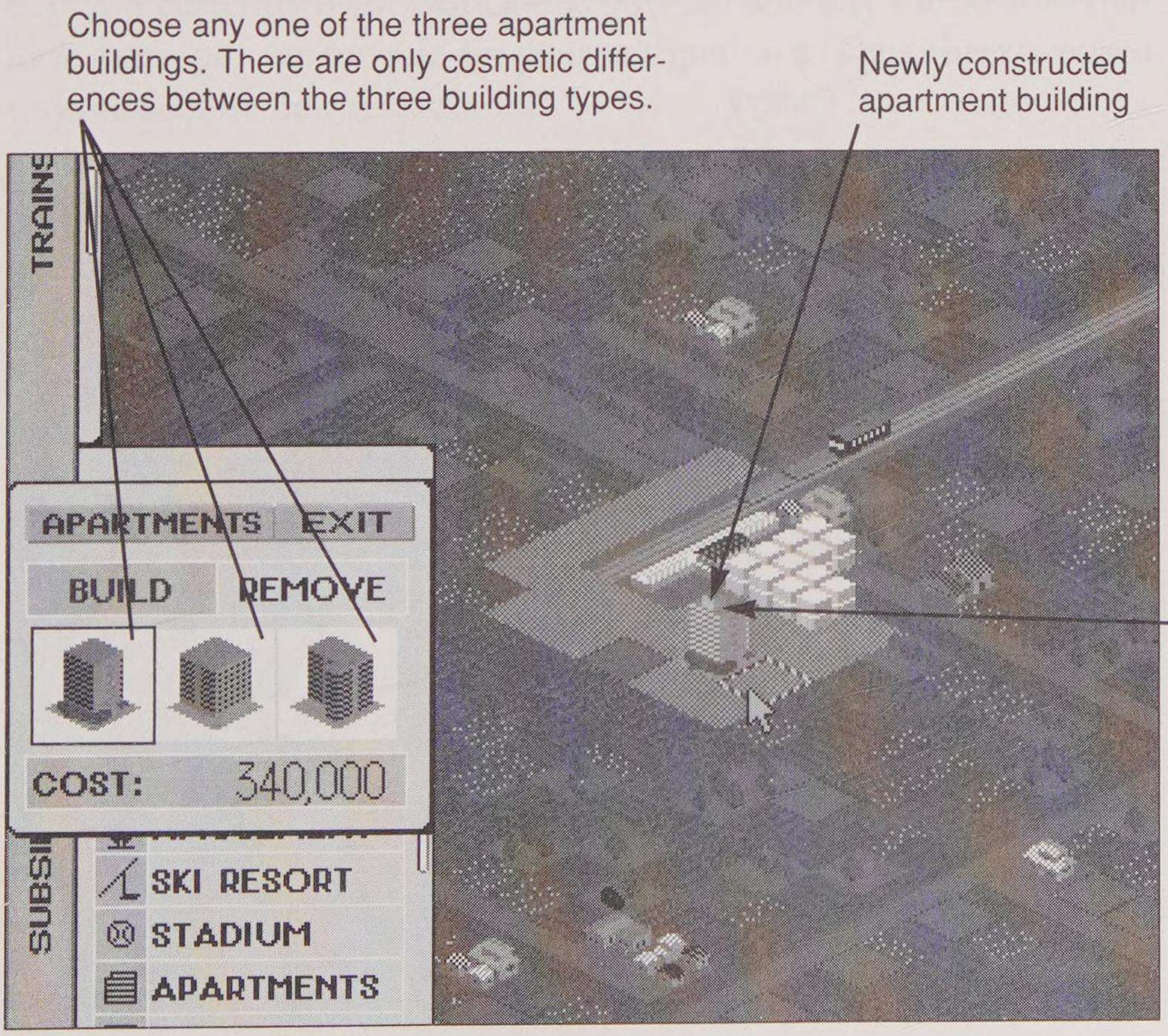
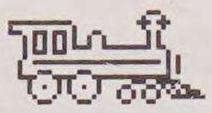


Figure 1.25 Constructing your first apartment building subsidiary

Become an Industrial Tycoon



To increase the pace of development, build a factory that will produce even more building materials. Because factories take twenty building-material units to be constructed, you will need to wait until you have the requisite materials in storage. When you have them available, open the Factory menu, click the Build button, and position the pointer on some empty land within eight blocks of the second station. Click to establish the factory. Again, if there are any problems with the site, or if there are not enough construction materials, an advisory message will pop up to warn you. Exit the Factory menu when you are finished.

You can use factory materials directly for construction purposes within a 10-block radius of the factory. However, rival companies and the simulator itself cannot use factory materials until they have first been transported by freight train to another location. For longer distances, you will first have to transport the materials aboard your freight trains to other stations with storage yards. In any case, make sure there is some "spillover" land adjacent to the factory for additional storage capacity. After the factory is in production, you will notice more building materials popping into view each day.

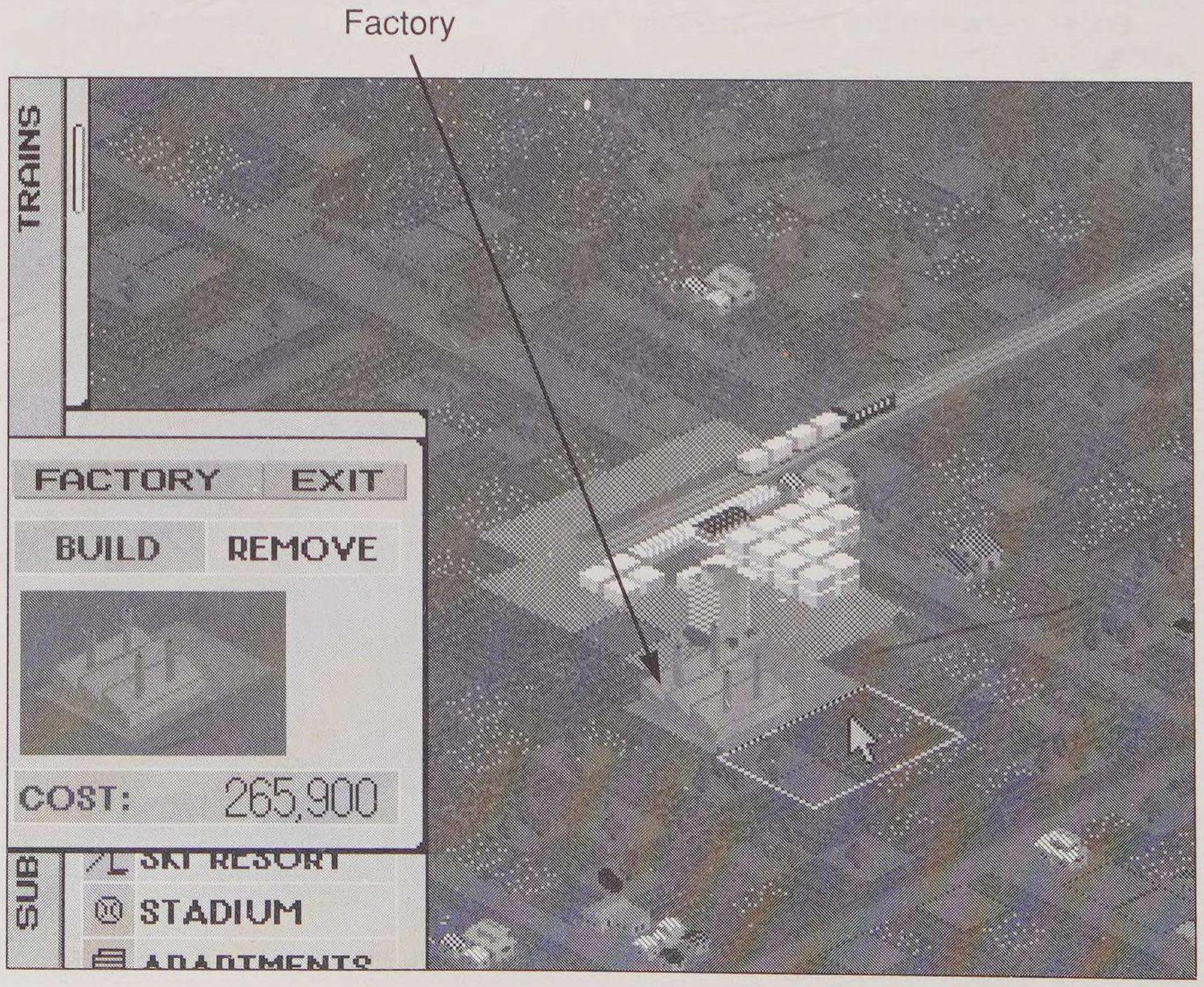
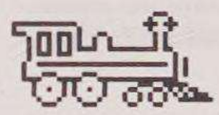


Figure 1.26 Building a factory to manufacture more building materials. Notice placement of factory is within the station's sphere of influence (8-block radius).

Factories don't pollute in the idyllic, utopian world of A-Train. They provide jobs and manufacture sorely needed construction materials for use locally or elsewhere. Unfortunately, they often lose money, and if you are the owner you will want to check their profitability often. If one of your factories is constantly running in the red, you should divest yourself of it by selling it to a competitor so that it can become his headache. Don't worry about the building materials; they will still be produced in the same quantities and you can still use them.

Make a Quick Buck

Now that you know how to acquire new subsidiaries, let's try making a quick buck by selling them to rival firms. Close the Subsidiary menu, and click on the Report 3: Subsidiaries menu to open up the Report 3 window.



Subsidiary Pleasures

In the Report 3: Subsidiaries menu, you can sell those subsidiaries that you currently own. Notice that you can also buy subsidiaries that have been put up for sale by your competitors. Thus there are two ways to acquire new subsidiaries:

1. You can buy subsidiaries directly from rival companies. Open the Report 3: Subsidiaries menu, then highlight the subsidiary and click on the Buy button to bring up a list of subsidiaries for sale.
2. You can build new subsidiaries. Choose the subsidiary you wish to build from the Subsidiary menu, then place it directly on the map, as you did with your apartment building.

However, at this point you are only interested in selling your subsidiaries, so you will be using just the Sell button in the Report 3: Subsidiaries menu. In this example, you will attempt to unload your apartment building subsidiary on some other hapless company.



In the Report 3 window you will see a catalog of all your subsidiary holdings, a count of the total number of subsidiaries, including those belonging to your competitors, your current cash reserves, and Buy and Sell buttons. To sell your apartment building subsidiary and reap your windfall profits, select the Apartments

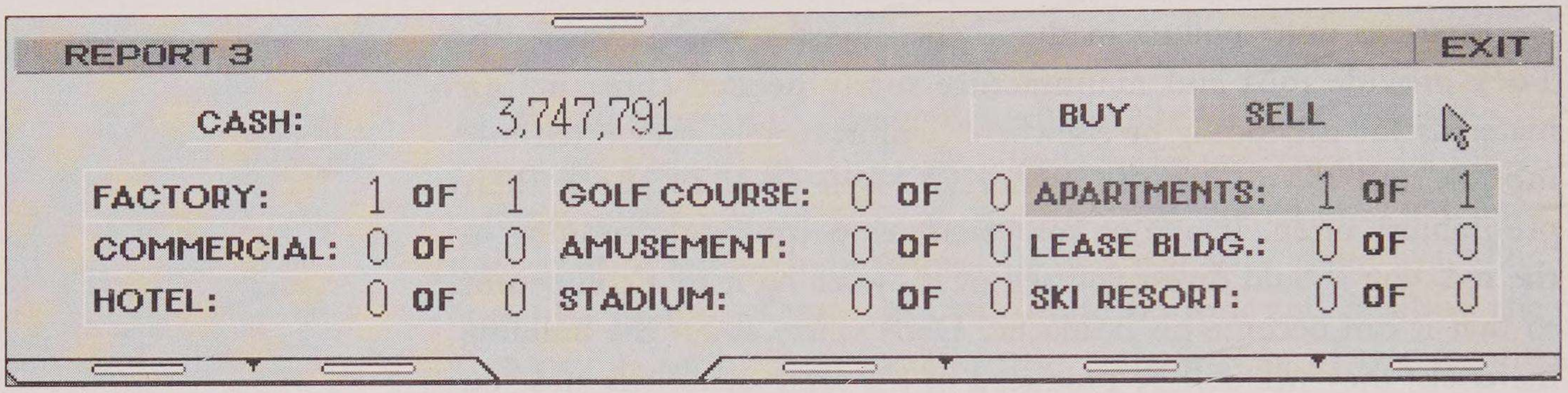


Figure 1.27 The Report 3: Subsidiaries menu

category and then click on the Sell button. Figure 1.27 shows the Report 3: Subsidiaries menu open.

In a moment you will see another window listing all your current apartment building holdings. Since all you own is one building, there is only one building listed. The information displayed here itemizes the total amount of sales this apartment building has yielded, the profit or loss, the current market value, and the commission that you paid to purchase the property. Hopefully, the market value will be higher than the amount you paid for the building, which forms the basis for your profit. The idea here is that once the building has been constructed, more and more equity will build up as the building increases in value.

Next, click on the apartment listing line and your apartment manager will appear to ask you to confirm whether you really wish to sell this building. On the upper right-hand side of the screen, if you watch carefully, the apartment building should come into view and flicker once. This is to identify and separate it from other buildings so that you can verify which building you are selecting. Click Yes to go

If you look closely at the upper right-hand side of the screen when you are selecting a particular building to buy or sell in the Report 3: Subsidiaries menu, the building will appear centered and will flicker. This allows you to visually ascertain which building you are selecting.

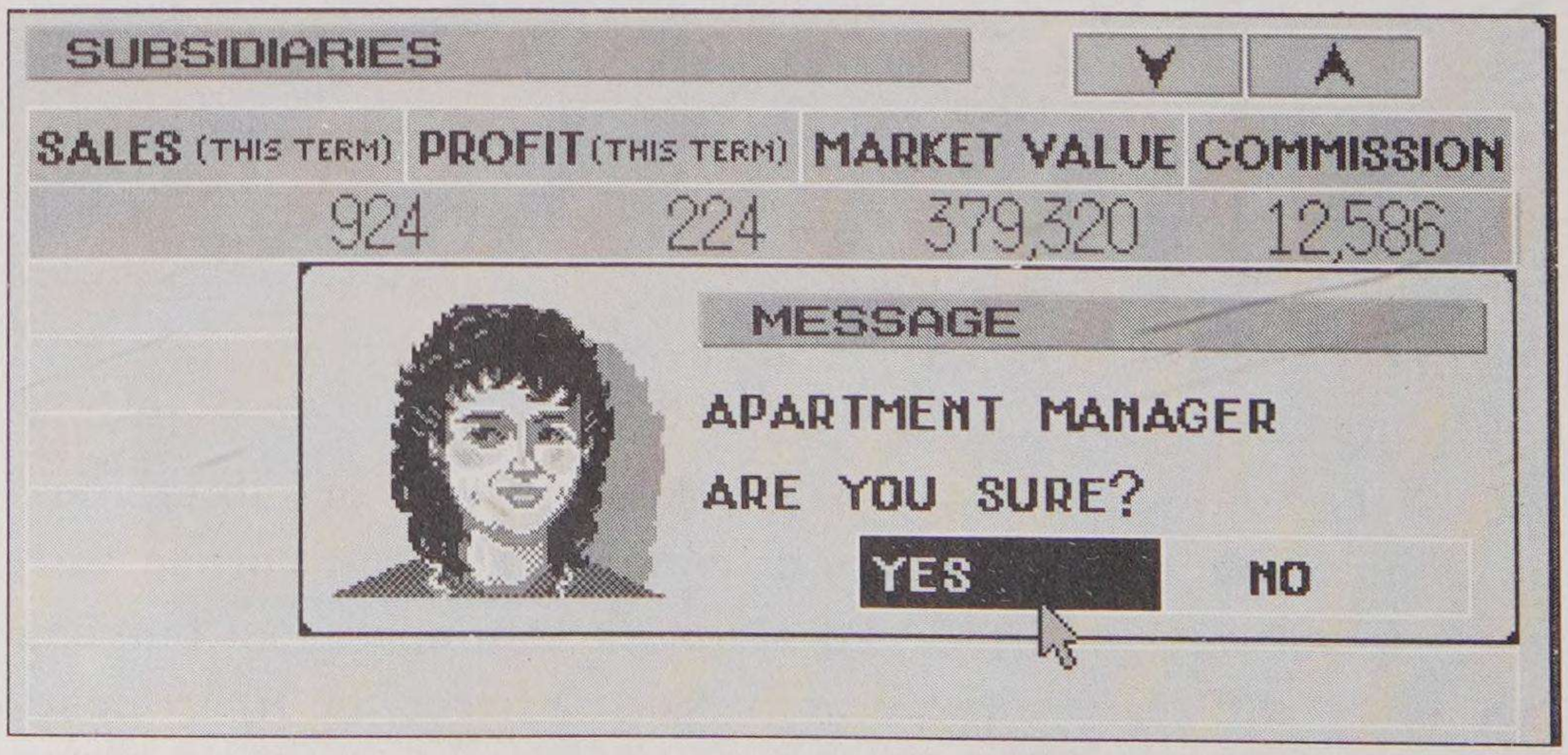


Figure 1.28 Selecting a particular apartment building to sell

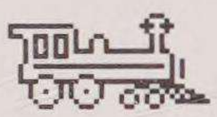
through with the sale. After the transaction has been completed, exit the window and the menu by clicking on the Exit buttons. When you return to the main view, the top of your apartment building will no longer display your company's sign.

Getting Your Passenger Line Going

By now, you should have quite a bit of construction activity in the neighborhood of your second station. This means that plenty of carpetbaggers are clamoring for transportation to your new boom town. It is an opportune time for you to put in some passenger trains to start milking this market.

Oriental Express

First, let's add a second track to parallel your freight line. Click the Lay Tracks command from the Trains menu, and construct a second track as illustrated in Figure 1.29.



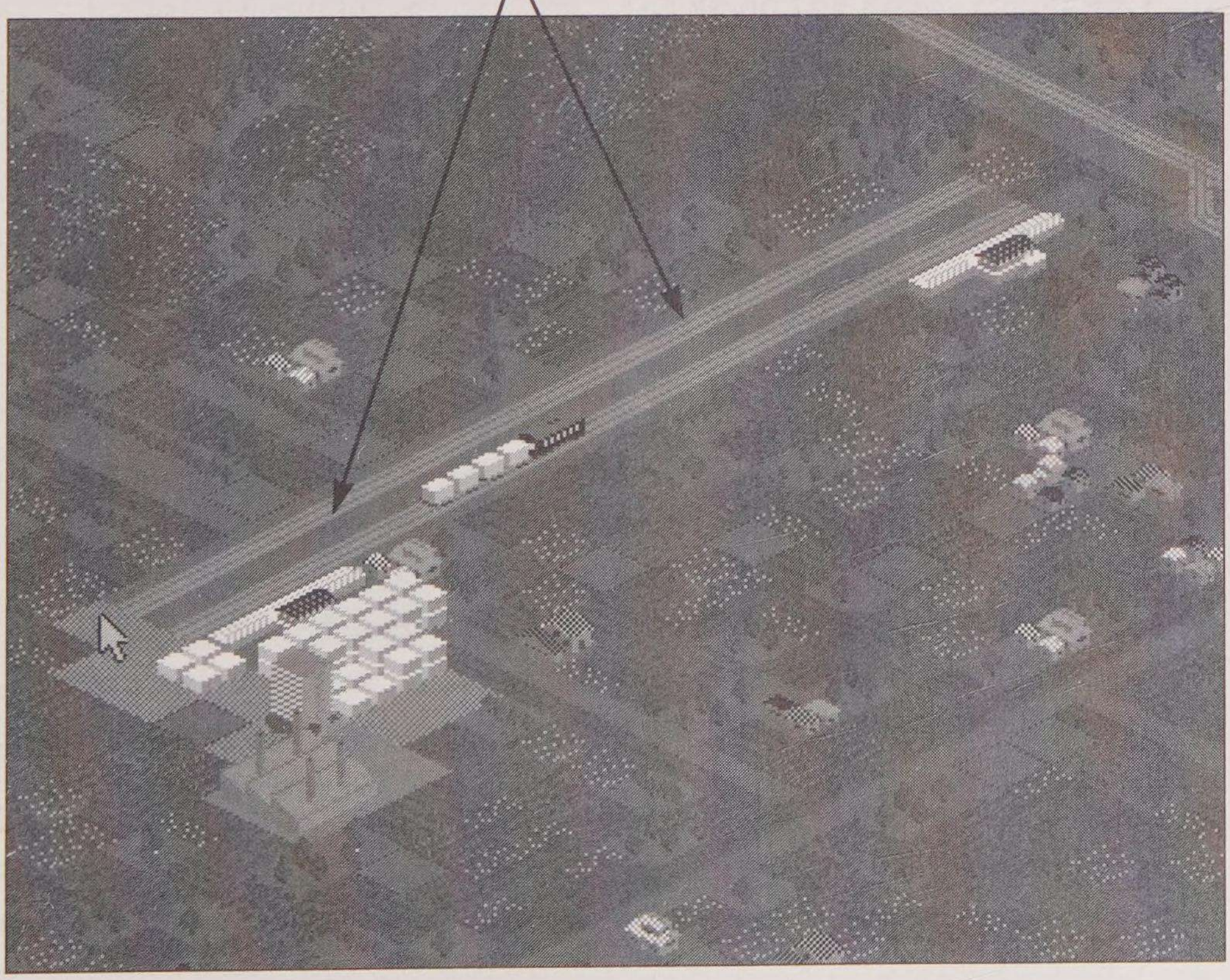
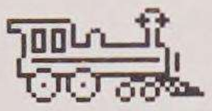


Figure 1.29 Building a second line for your passenger traffic

Buy the AR-III Passenger Train



Select the Buy Trains command, click the #2 box in the Train Registry, and then select the AR-III passenger train, which is the fourth train down from the top of the third column of trains. This train is very expensive, costing over $250,000, but it has advantages both in performance and efficiency over all the other passenger trains. The AR-III is extremely fast and it has 600 high-priced seats for which you can collect premium fares. Even though another passenger train, the AR, has a higher seating capacity, the AR-III outperforms it because the higher ticket prices in combination with the faster speed generate higher profit margins.

Interestingly enough, with all the passenger trains, it is possible to squeeze more passengers into the train than there are seats. In Japan, it is common practice during rush hour for special "pushers" to stuff as many commuters as possible into the trains due to the lack of space and the incredible crush of people waiting to get on.



In contrast to the major cities of the west, more of Japan's surface traffic is carried by rail than by road. Eighty percent of the country is made up of rugged mountainous terrain, making wide freeways difficult to build, and most of Japan's 125 million people are crowded into heavily congested metropolitan areas such as Tokyo. This makes trains the most efficient and practical means of transportation both in and between cities. In fact, alternative transportation infrastructures are unlikely to ever replace the trains there. Land is priced out of sight or is simply unavailable, and besides, the railroad network is already in place and it is already possible to get nearly everywhere in Japan by train. After years of acrimonious debate, Japan's first interstate-style freeway is only now being constructed, but it will never be able to replace the train system. When it is finished, this limited-capacity freeway will consist of only one north-to-south trunk, with feeders branching off to various cities.

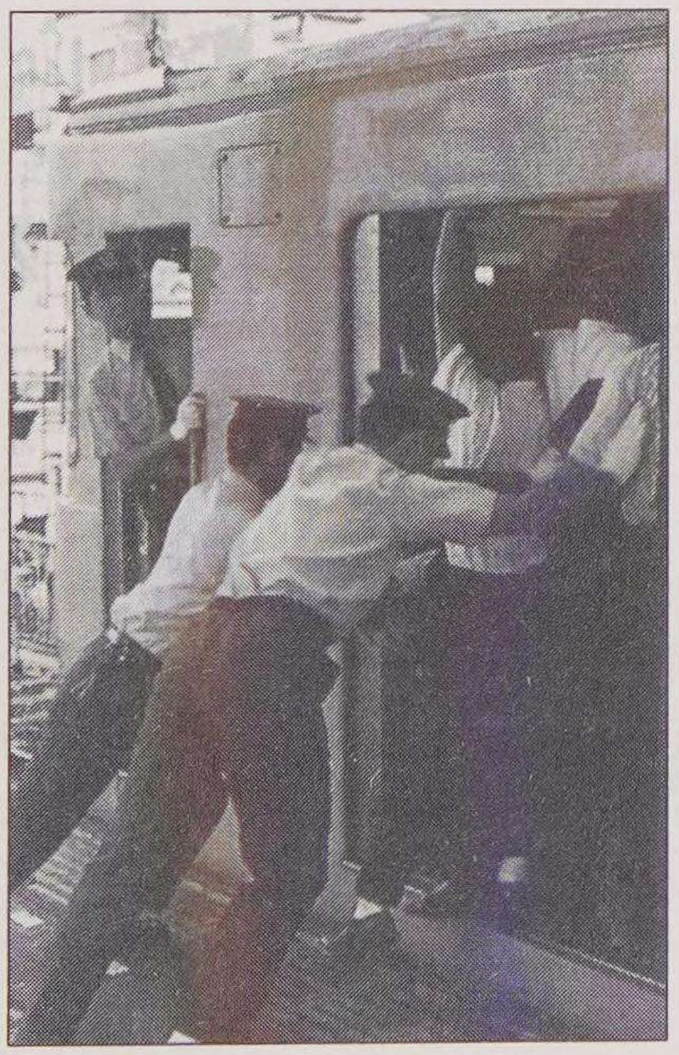
The immense commuter populations of Japanese cities prevent comfortable travel to and from work. For example, over 1.25 million people a day pass through just one station, Shinjuku, on Tokyo's west side. With so many people, the sheer crush of humanity becomes overwhelming. Trains leave the station with handbags, tails of overcoats, and, at least

once, with "a hot casserole still protruding from the door."[1]

During peak periods, load factors can average 234% of a train's total carrying capacity! The Seibu Railway, which serves the Tokyo metropolitan area, even publishes a load factor guide for its engineers, which calculates the degree of passenger comfort according to the following basis:

Table 1.1 Loading percentage showing degree of passenger comfort[1]

PASSENGER LOAD FACTOR COMFORT LEVEL	
100%	Nominal car seat and standing capacity fully occupied.
150%	Ability to read a magazine preserved.
200%	Space only available to read a pocket book.
201%	At this load factor and higher, special "pusher" station platform porters needed to cram more passengers in so that the doors will shut.
250%	No passenger limb movement possible.
300%	Extreme limits of physical endurance.



Special "Pusher" porters, two per door, stuff people inside the trains so the doors can close. Courtesy of Douglas W. Polinder, Trains, May 1990 issue, p. 37.

[1]Douglas W. Polinder, "Rails in the Rising Sun," Trains: The Magazine of Railroading, May 1990, p. 36.

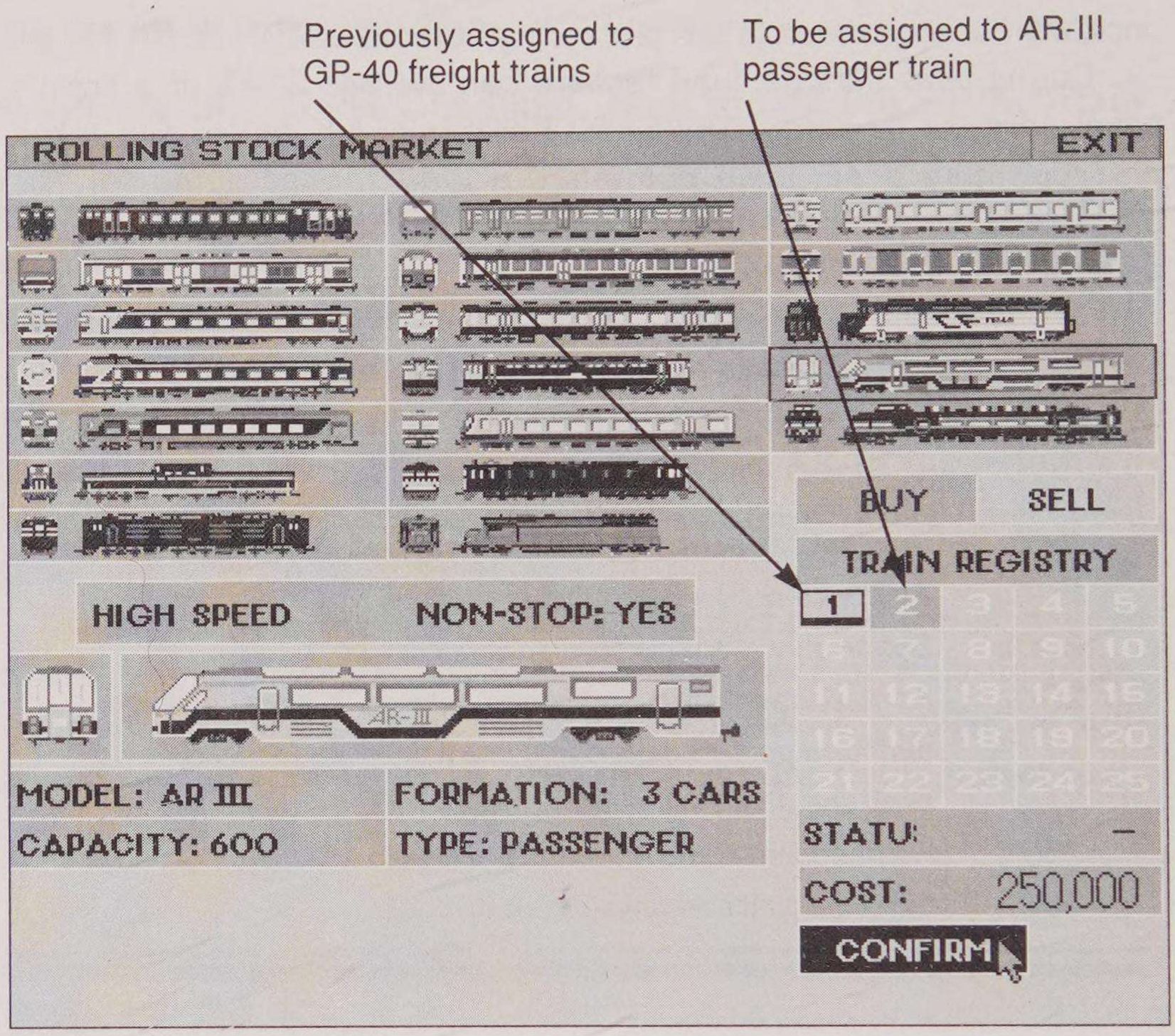
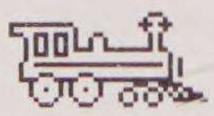


Figure 1.30 Buying the AR-III passenger train

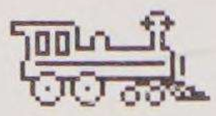
Click on the Buy button, click Confirm, and then click Exit when you are finished. Figure 1.30 shows the AR-III being purchased and assigned the designation of train #2.

Place Your Train on the Map



Call up the Place Train menu. Next, click the #2 box in the Train Registry (although it should already be highlighted) and then the Place button. To place the train, move the pointer over the newly created tracks and click. When the train appears with its direction arrows, and you are satisfied that all is well, click the Exit button. The train will start to roll.

How to Best Fleece Your Passenger Flock



As a well-informed manager, you will want to know how many passengers your new train is carrying. Click on the Satellite view, and then click on the #2 box in the Train Registry. At the bottom of the window you should see the Train Information statistics, including the

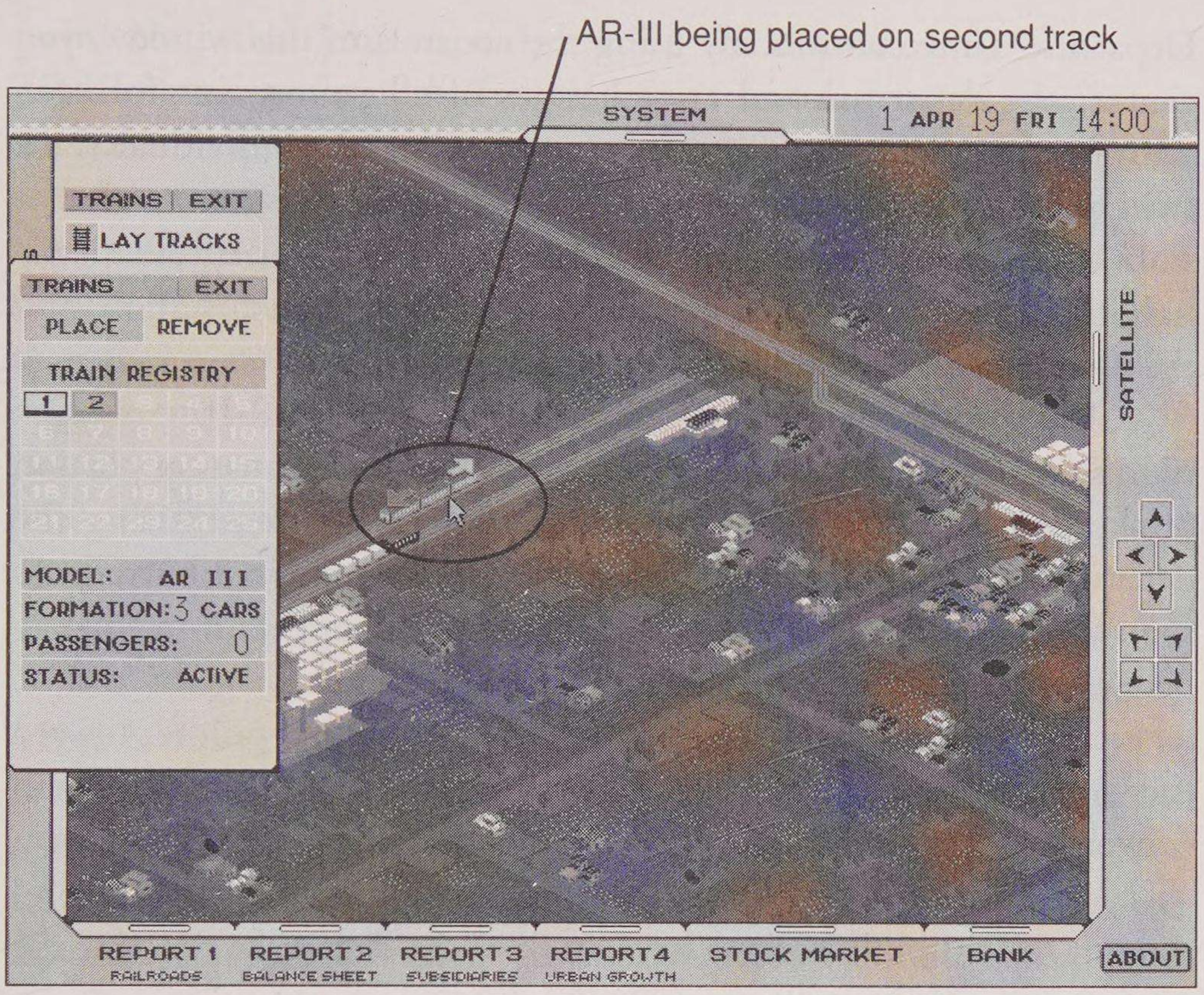


Figure 1.31 Placing your new AR-III

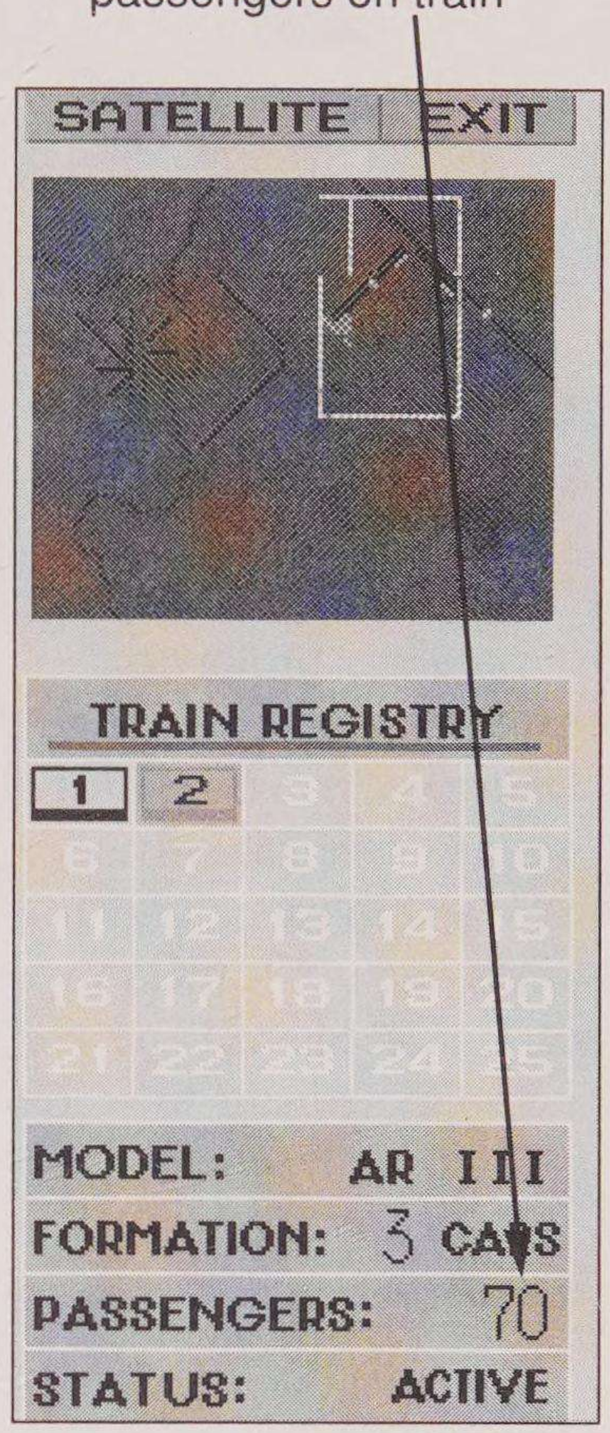
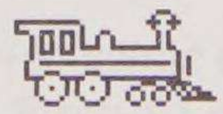


Figure 1.32 Observing passenger loads for your AR-III train

train model type, the number of trailer cars it is towing, the total number of passengers, and the current status of the train. Notice that the passenger count changes each time the train pulls out of the station. If you continue to observe the ebb and flow of the passengers, you will see that the number of passengers peaks at 8:00 AM. Because you don't want an inefficient train operation, it makes good sense to schedule your passenger train to depart at hours when passenger loads are heavy. This way, you will maximize your ticket revenues by running your trains only when they are needed. At other times your trains will idle in the stations, thereby saving you some operating costs.

When you are finished, close the Satellite window.

Scheduling Trains



To schedule the passenger train, you will need to open up the Schedule window by clicking on the Schedule command under the Trains menu. In this window you will see a Train Registry calendar chart, Route Map, Train Information, and the Track Switch and

Departure Time controls. By using the controls in this window, you can set the departure and arrival times of all your trains for each station, alter the path of your trains by adjusting individual track switches, and visually test your route to make sure all is as intended.

Unless told otherwise, all newly placed trains will automatically have their train schedules set for a one-hour stop at each station, and the switches will be set for a straight path.

Click the #2 box in the Train Registry, and the AR-III passenger train statistics should rapidly appear in the Train Information portion of the Schedule window. Since we are interested in adjusting the departure time, go ahead and click the Departure Time button. As soon as you do this, some new time buttons will appear immediately below the button, and they will replace the Switch diagram and its related control buttons. On the Route Map, move the pointer toward the northernmost station on your secondary line. Cross hairs will converge on the station. Click on the location of station #1 and then click the Departs 8:00 button. Repeat this procedure for the second station, so that both stations have an 8:00 AM departure time for the

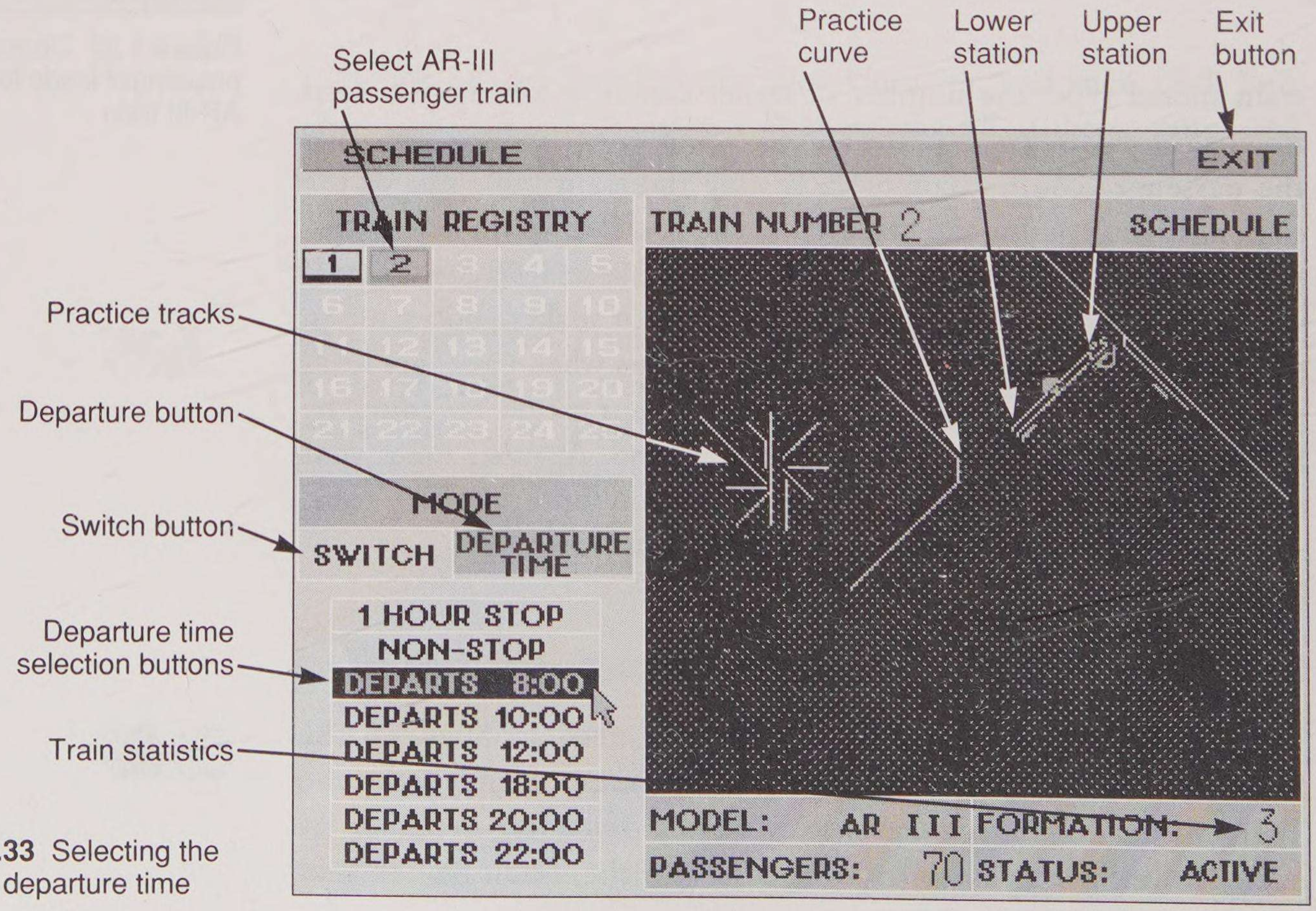
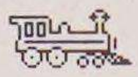


Figure 1.33 Selecting the 8:00 A.M. departure time

train. Note that you are only setting the departure times for the AR-III passenger train; the freight train's schedule remains unaffected.

Exit the Schedule window, and observe your passenger train's schedule. The train should leave the station each day at precisely 8:00 AM. If you now look in the Satellite window's Train Information section, your passenger totals for each trip should be startlingly higher than they were before when the train was running on the one-hour-stop-per-station mode.

There is no benefit to scheduling your freight trains to leave at 8:00 AM. Freight tonnage is unaffected by departure times.



Only passenger trains experience higher ridership levels during commute hours. Setting your passenger train to leave at 8:00 AM from a station will allow it to leave with the most people on board. Freight train cargo loads are unaffected by departure times, so don't worry if your freight train leaves at odd hours of the day or night. (You can still set the time of departure for your freight trains for more efficient operations.)

Switches

There is one problem with your current track layout. It is impossible to add any more trains to expedite the flow of building materials and passengers to the second station. It should be obvious that a second train added to each track will simply collide with the train coming from the opposite direction. How do you resolve this dilemma?

One possibility is to use the track layout illustrated in Figure 1.34

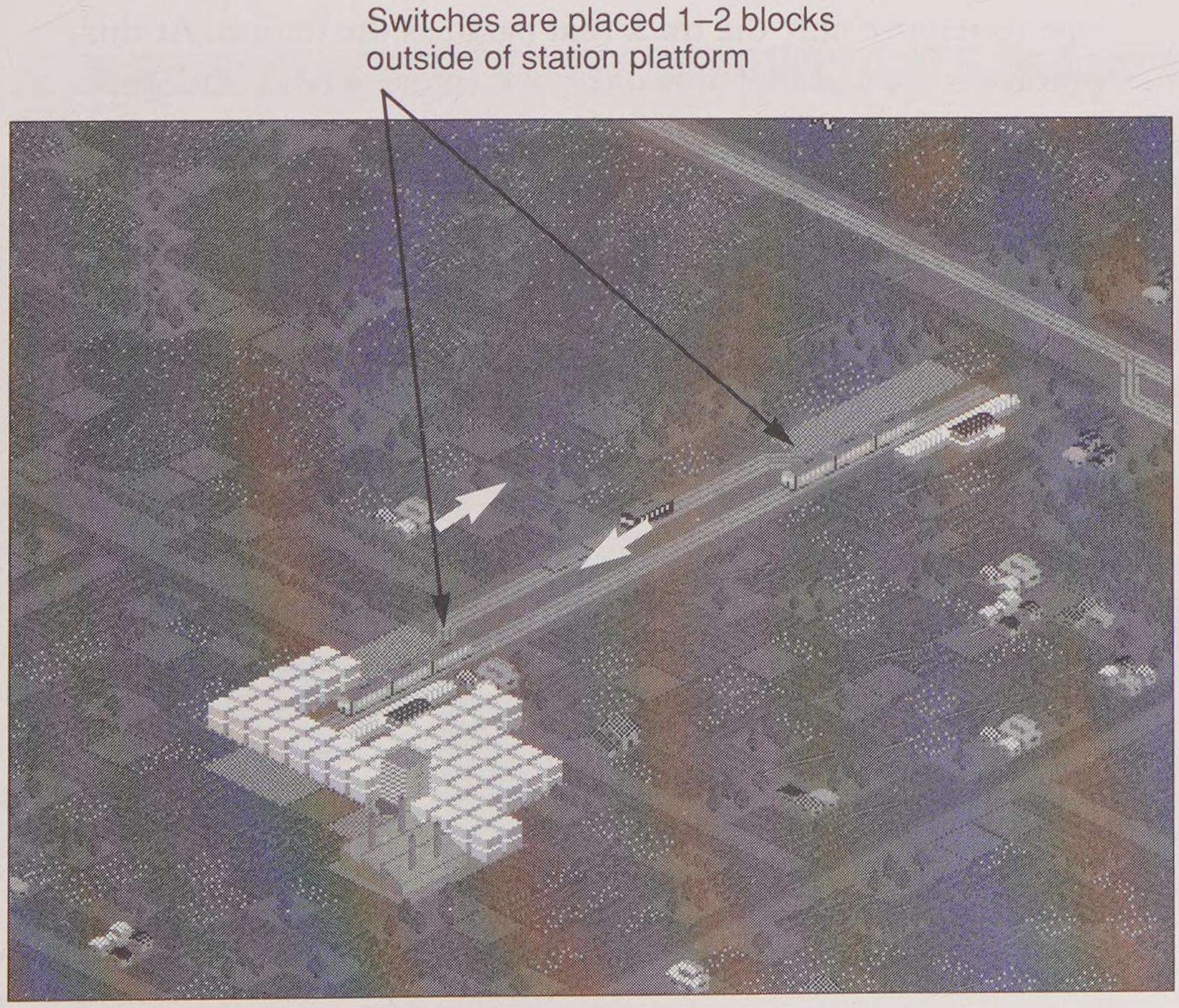
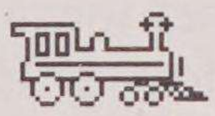


Figure 1.34 A new track layout allowing more than two trains to run simultaneously via track-switching

to allow your trains to move in a one-way direction back and forth between the two stations. No train will ever contradict another's motive direction, because north-bound trains will always be using the left-hand line, while south-bound trains will always use the right-hand track. But to create this particular track design, you will need to know how to set the track switches for each train.

In A-Train, tracks can be connected to each other via switches, and each switch can be set for any of your 25 trains through the Schedule window's switch controls. This means that for the same switch, two trains can take different paths, with each train automatically remembering its distinctive switch path the next time it encounters that same switch. Let's go ahead and remove the double tracking at each station platform, replacing it with the switch layout exhibited in Figure 1.34.



To revise your track design, follow the following steps:

1. Open the Trains menu and select Lay Tracks.
2. Click the Remove button.
3. On the main map, click on the right outside track blocks adjacent to each station platform to remove the outer track. Be sure to remove only the track that parallels the station. At this point, there should be only one track entering both stations.
4. Click the Lay button and then click on the map to connect the shortened outer track to the tracks entering the stations. Notice that you now have two switches where the two tracks converge. Your tracks should look like Figure 1.34. Be sure that the two switches are terminating on the block outside the station, otherwise the 3-car trains cannot negotiate the turn.
5. Exit the Tracks window.

You will now want to set the track switches for your first two trains. After doing this, test each train's path to make sure they are following the route you have designated. Follow these steps to set the switches:



1. Open the Schedule window.
2. Select train #1 from the Train Registry.
3. Click the Switch button. You should see a small diagram of a switch appear below.

4. In the Route Map, which displays the operating trains, their tracks and stations in miniature, click on the lower switch. A highlighted box will appear on the map at the switch's location, and the switch diagram will show the current position of the switch.
5. Click on the Change Switch button until the switch diagram matches the switch illustrated in Figure 1.35.
6. Move the pointer up to the top switch and click. Again, a highlighted box should appear and the switch diagram will show the upper switch's present position.
7. Click the Change Switch button to match the switch illustrated in Figure 1.36.
8. Click the Test Run button, and you will see your train, represented by a swiftly moving dot, traverse your intended path in the miniature Route Map. If all is in order, the train will move from the bottom station up to the top station on the left track, and return to the bottom station along the right track.
9. Click the End Test button to end the demonstration run.
10. Repeat steps 2 through 9 for train #2.

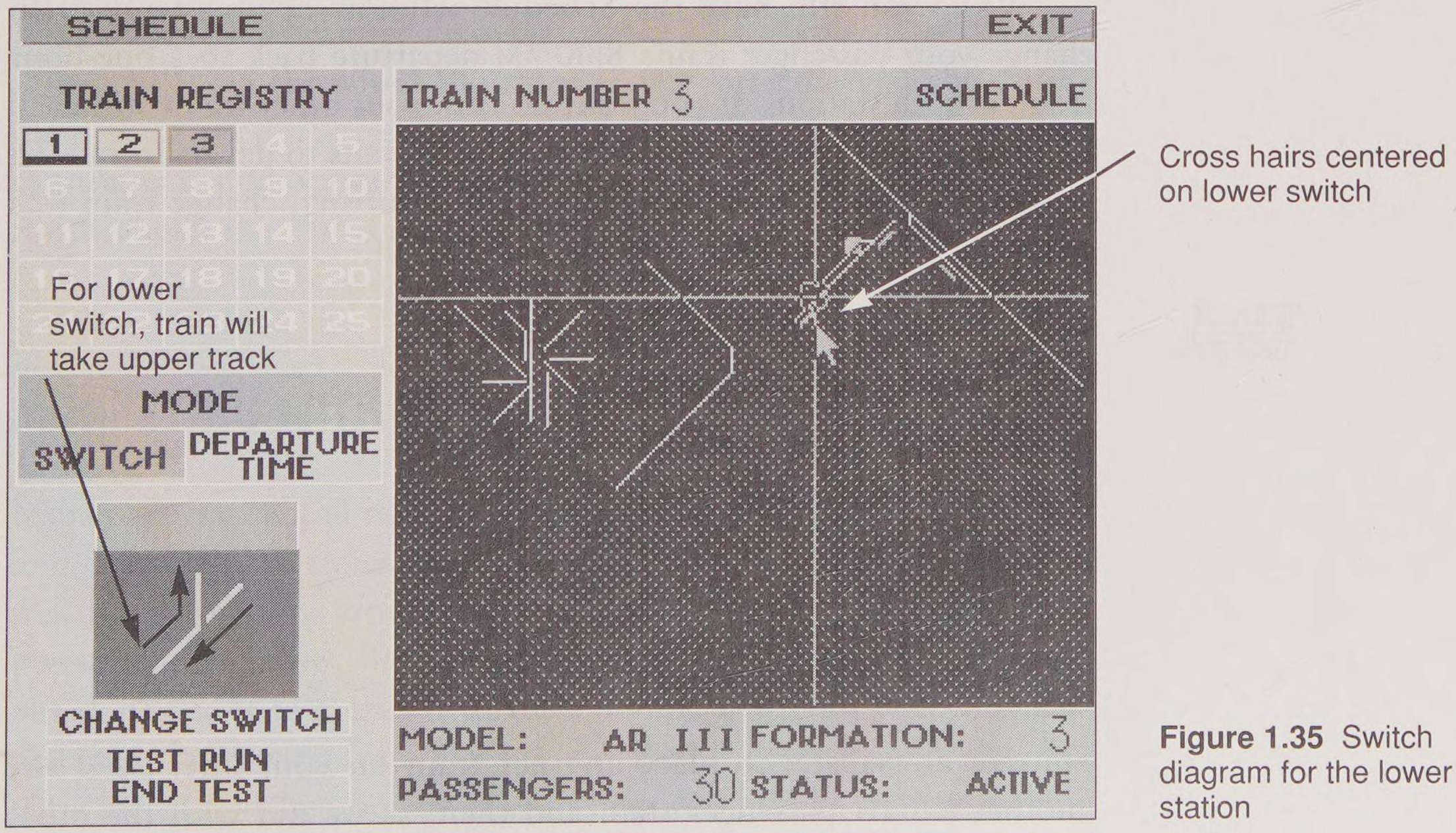


Figure 1.35 Switch diagram for the lower station

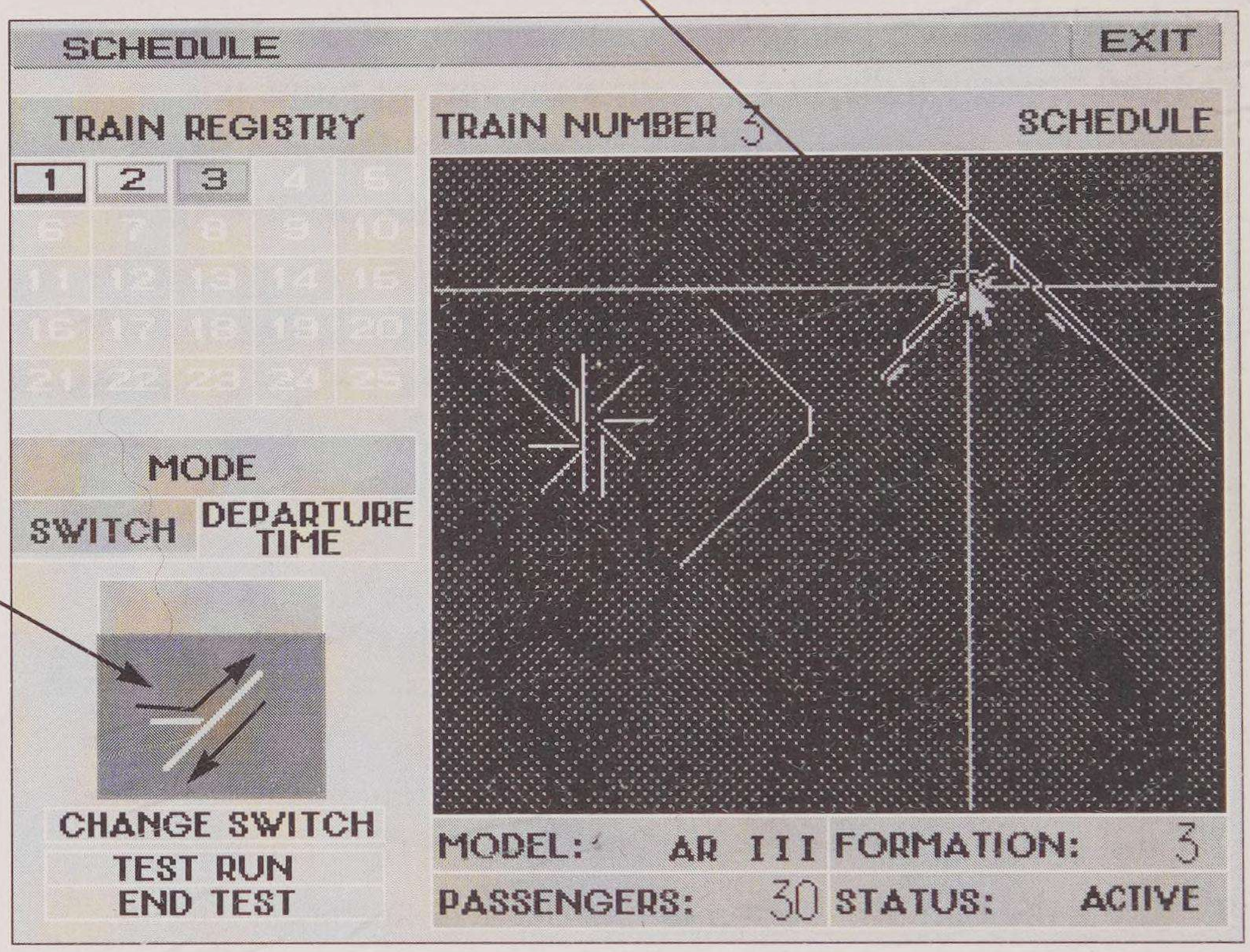
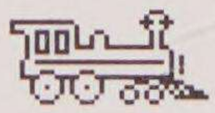


Figure 1.36 Switch diagram for the upper station

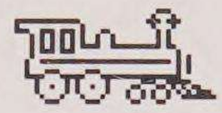
While you still have the Schedule window open, you need to change your passenger train's 8:00 AM departure back to a one-hour stop for both stations. If you don't do this, your other trains will back up behind your first passenger train while it waits to depart from each station. To prevent this traffic jam from occurring, change train #2's schedule to be a one-hour stop for each station.



1. Select train #2 from the Train Registry.
2. Click the Departure Time button.
3. Click on the upper station.
4. Select 1-Hour Stop.
5. Click on the lower station.
6. Select 1-Hour Stop.
7. Close the Schedule window.

You are now ready to place another train on your line. Let's buy another AR-III passenger train and then, as we did with the other trains, set the switches in the Schedule window so that the new train

will follow the clockwise motion of the other trains. When placing the new train, make sure that the direction arrows point in the same direction as the other trains on the line, or else a head-on collision will result.



1. Open the Buy Trains menu.
2. Click the #3 box in the Train Registry. Your new train will be designated as train #3.
3. Select the AR-III train.
4. Click the Buy button, then click on Confirm to complete the purchase.
5. Exit the Rolling Stock Market window.
6. Using the Place Train menu, place the train on the track equidistant between the other two trains.
7. Be sure to set the directional arrow so that the white arrow points in the direction the other trains would follow on the track.
8. Exit the Place Trains window.
9. Go to the Schedule window, and adjust both upper and lower switches so that they are set in exactly the same position as trains #1 and #2.
10. Close the Schedule window.

If you have synchronized the three trains correctly, you should see them share the tracks without any conflicts. Figure 1.34 shows how the trains would appear when running concurrently. When you are finished, exit the Trains menu and go on to the next section.

MONKEYING WITH YOUR MONEY

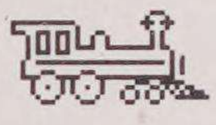
Money plays a central role in A-Train: with it you win; without it you lose. There will be times when you find yourself short of cash, so you will need to know how to manage your money and make wise investment decisions. Borrowing money is also an option in A-Train, but don't use it as a crutch to stave off the results of poor financial practices. Borrowing from Peter to pay Paul is never a good idea, but there are times when borrowing can help you build a money-making subsidiary that will more than repay your loan debt and allow you to

reap a handsome profit. Also, if you have a large pile of cash lying dormant in your bank account, you might want to invest it in the stock market. The returns can be much greater than the simple interest you earn at the bank. With all these options available to increase your assets, you should nonetheless be conservative in your financial decisions, never betting the farm on some whim.

First, let's learn how the bank operates, then we can take a look at how the stock market works.

Bank Borrowing

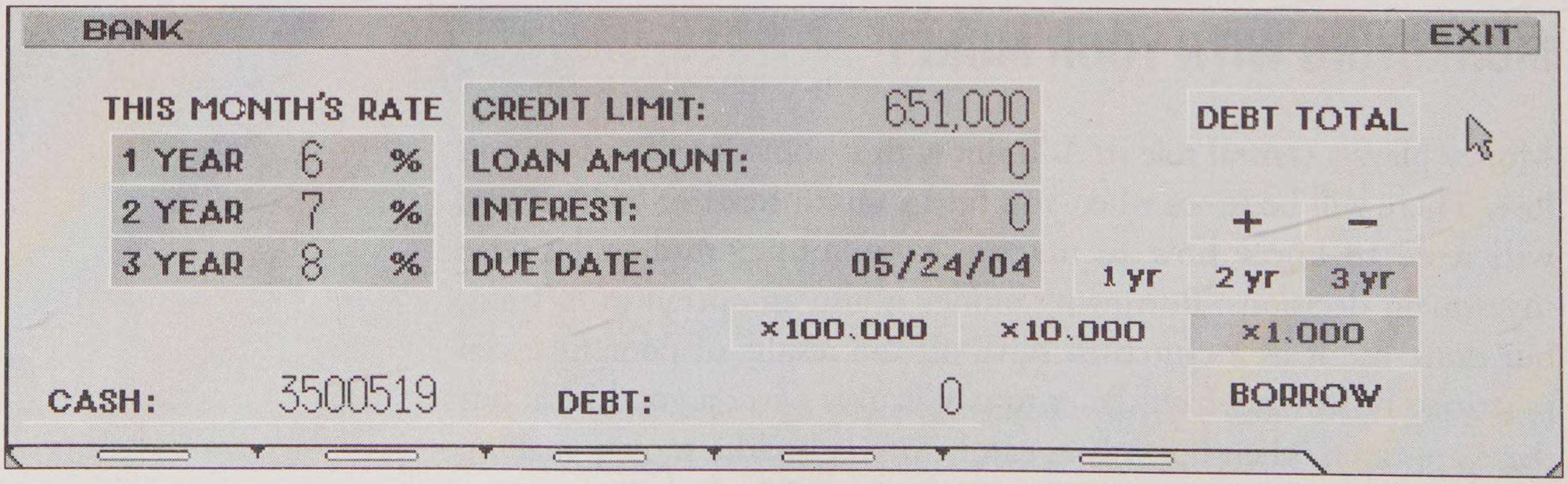
Since the bank has regular business hours, you can only visit it Monday through Saturday 9:00 AM to 5:00 PM, holidays excepted. If you try to enter the bank at other times, you will get a message informing you the bank is closed.



Look at the date/time indicator in the main window, and make sure that the bank is open. Click the Bank menu to open the window up, and you will see it as pictured in Figure 1.37.

Your railroad company has an open line of credit with the bank that is based on your company assets. Generally your credit line is limited to 30% of the company's total assets. In addition to your credit limit, you will also see the current interest rates for loans based on the length of the loan (1-3 years), your current cash reserves and debt totals, and various other buttons. Interest rates will fluctuate according to the economy, so you might want to shop for the loan when interest rates are low. This technique can save you a bundle in interest payments.

Figure 1.37 The Bank window



Loans amounts are adjusted by clicking on one of the unit multiplier (x100,000; x10,000; x1,000) buttons and then the Plus (+) or Minus (-) button to add or subtract from the Loan Amount. When you are satisfied that you are borrowing the correct amount, click the Borrow button to complete the transaction. To borrow $156,000 over 3 years, for example, you would execute the following steps:

1. Click the 3 year button.
2. Click the x100,000 button and then the Plus button once for $100,000.
3. Click the x10,000 button and then the Plus button five times for $50,000.
4. Click the x1,000 button and then the Plus button six times for $6,000. Your total loan amount should read $156,000.
5. Click the Borrow button to complete the transaction. Your debt will be increased by $156,000, payable with interest in three years.

Two weeks before your debts are due, your accountant will issue a warning. This will give you some time to make sure you have the cash on hand to cough up to the bank, which will automatically debit your bank account. If you don't have enough money to pay off the loan, you will lose the game.

All your debts, repayment dates, and individual loan interest rates are kept track of in the Debts window. Click on the Debt Total button to view this window, seen in Figure 1.38.

After you have cased out the bank, exit the bank window.

DUE DATE	PAYABLES	RATE
05/24/04	193,440	8
TOTAL:	193,440	

Figure 1.38 The Debts window

Dabbling In The Stock Market

If you have a big wad of cash sitting in your bank account, you might think about investing some of it in the stock market rather than letting it idle. Since bank interest rates are notoriously low, parking your money in stocks may be a pretty good idea, especially when the stock market seems to be headed upward. However, you should always heed the sound advice offered by your market advisors, who will appear from time to time to inform you of current market

conditions. Remember, buying low and selling high is the name of the game. There is a definite business cycle in A-Train, and by listening to your advisors and following the stock market graph charts, you can discern certain trends over time.

The Stock Market, like the bank, is only open Mondays through Saturdays from 9:00 AM to 5:00 PM, holidays excepted. Look at your date/time indicator to wait for the appropriate time, and then click on the Stock Market menu to open up the Today's Stock Market window. In this window you will see a graph charting a selected stock's price history over the past 30 weeks, along with a scrollable list of 24 stocks. Each stock entry is followed by two numbers, the first indicating the stock's current share price, and the second showing how much the price has dropped or risen from the previous day's price. A securities broker will often appear, giving you some useful information about where the market might be going.

Try clicking on any stock that strikes your fancy. After doing so, you will notice that the graph will update itself to display the stock's past history. If a stock looks as if it is consistently rising, you might consider buying shares to take advantage of its upward price spiral. Click the Buy button and a separate Buy Stocks window will pop open, giving you information on the selected stock. The current price

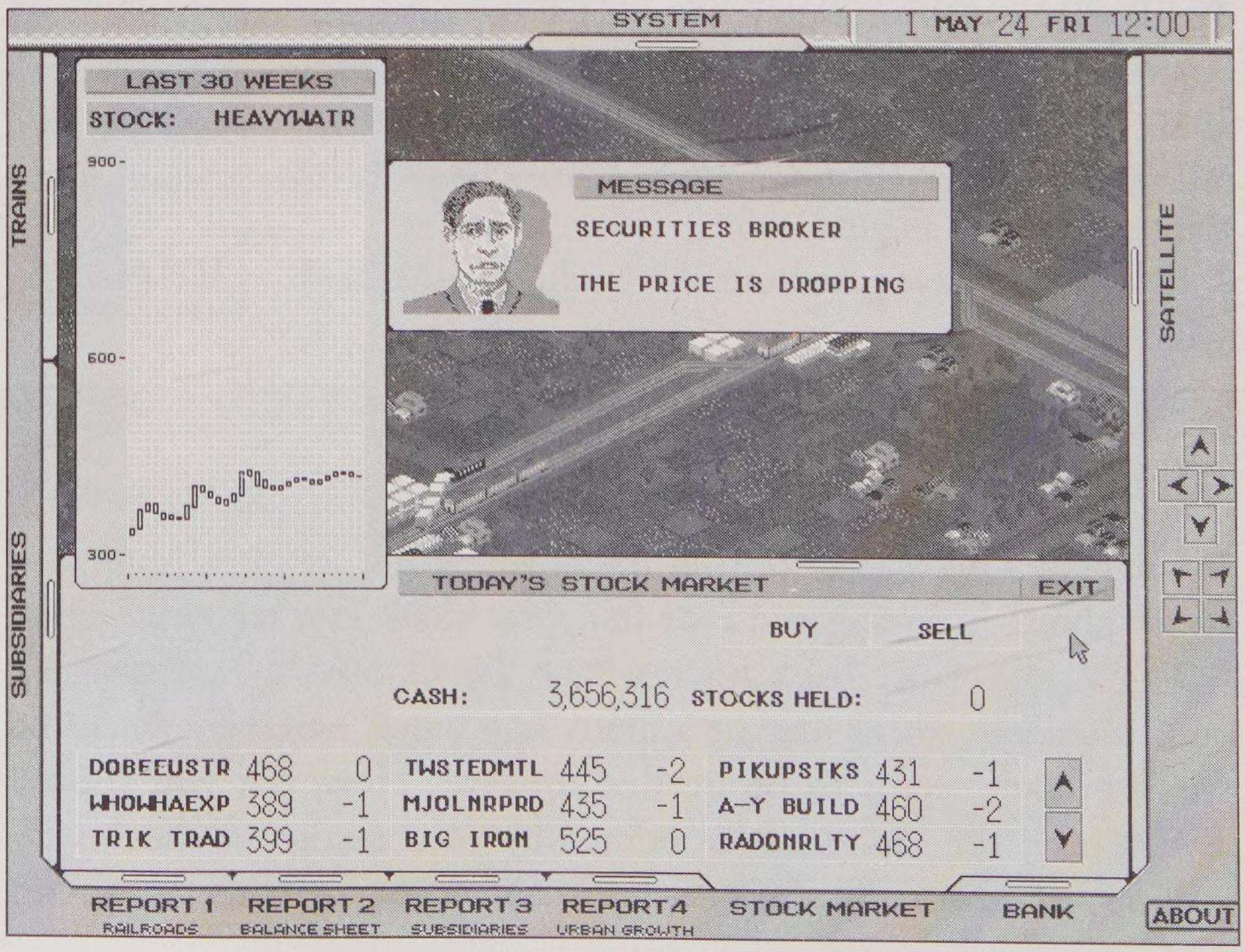


Figure 1.39 The Today's Stock Market window

per share, the brokerage commission, and the total number of shares you intend to buy are listed separately. To adjust the number of shares you wish to purchase, click on the x100, x10, and x1 units buttons, then the Plus or Minus button, the same way you adjusted the amount of your bank loan. Try buying 125 shares of any stock to gain some experience. To finalize the deal, click on the Buy button, and exit the Buy Stocks window.

Selling your stocks is similar to selling a subsidiary, albeit a little simpler. All you have to do is click the Sell button in the Stocks window to initiate a sale. The Portfolio window will pop into view, listing your entire stock portfolio. Select the stock you wish to get rid of, and then click the Sell button once more. Your accounting officer will briefly appear to ask you to confirm your sell order. Answer yes to this question by clicking on the Yes button, and in a flash your selected stock will have been sold.

Now that you have navigated your way through the Stock Market, go ahead and close the Stock Market windows. The next section will teach you how to keep track of your progress in the game.

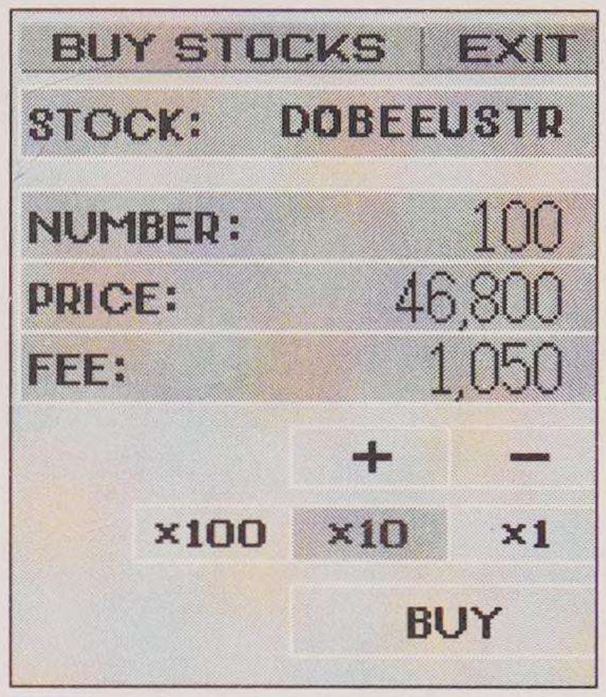


Figure 1.40 The Buy Stocks window

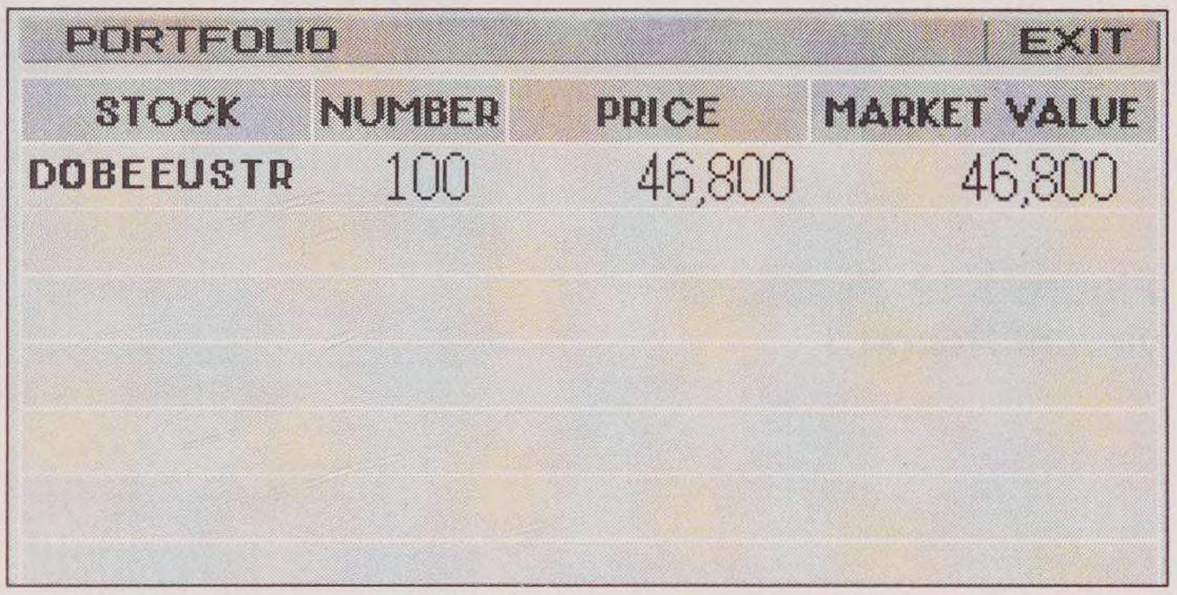


Figure 1.41 The Portfolio window

FEEDBACK AND EVALUATION

With all that is at stake, you will need to be constantly informed about your company's financial status as well as the progress your city is making. All of this information is presented in a series of four report windows titled Report 1, Report 2, Report 3, and Report 4.The Macintosh calls these report windows Railroad, Balance, Subsidiary, and Growth windows. They are found in the Tool Palette. Each report can be called up by clicking on the report's menu name in the main view window. Report 1 gives you information on your railroad's financial status, while Report 2 gives you an overall picture of your company's financial health. Report 3, which you have seen already, lets you keep track of your subsidiaries' profitability. while Report 4 provides feedback on the pace of city development.

Let's first learn how to interpret the stream of financial data that is constantly being updated in Report 1 and Report 2.

Monitoring Your Money

There are several ways to keep an eye on your finances. If you just want to monitor your railroad business, Report 1: Railroads will provide you with detailed information that is updated daily, monthly, and yearly. If you want a complete summary of all your company's business, then Report 2: Balance Sheet will inform you of your company's total performance, broken down by category. Both your railroad and subsidiary results are posted in the second report.

Keeping an Eye on Your Railroad—-Report 1: Railroads

Report 1: Railroads has three different viewer selection levels. If you click on it once, you will see the first level, which reports your total cash on hand, your accumulated debt, and estimated taxes.



Figure 1.42 First-level view of Report 1

Click again on the report window, and the second level of the report window will slide into view. In this more detailed report you will see the sales tallies for the day, month, and year. Sales figures are really your gross income from ticket sales, cargo-hauling charges, station rentals, etc. Operational expenses are also tabulated (Costs) and then your net profit or loss (P/L) is calculated by subtracting Costs from Sales. The figures quoted in this report include the amounts you spent on purchasing trains and building tracks, in addition to the day-to-day expenses of running the railroad. Note that the A-Train manual states that sales figures in this report include amounts earned from subsidiary sales. This is not correct. Sales only reflect moneys earned from your railroad lines.

All loss figures are shown in red, while profits or positive cash flow figures are shown in black.

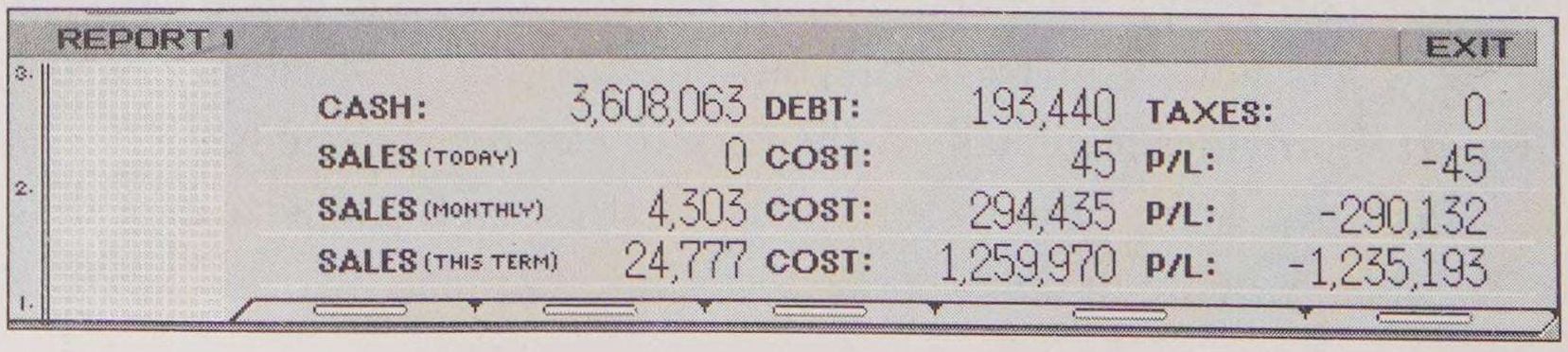


Figure 1.43 Second-level view of Report 1

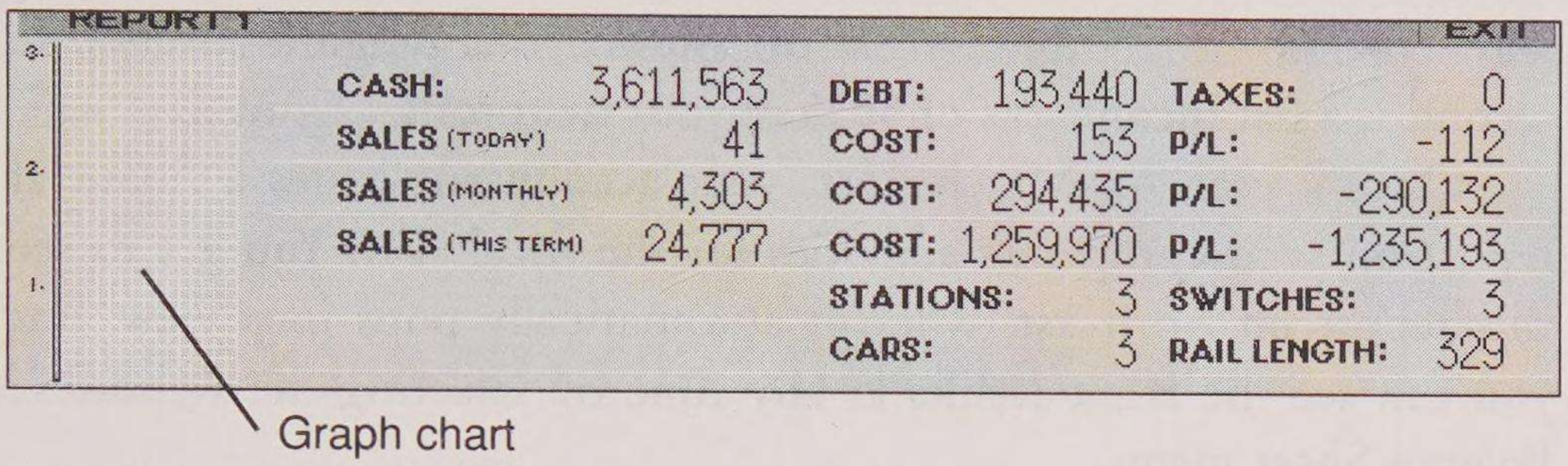


Figure 1.44 Third-level view of Report 1

A third click on the report window will cause the third level of the report window to slide into view. The third level displays all the information from the first two levels of the report, but also includes a graph chart of your cash flow over the past few months, and an inventory count of your railroad stock, stations, switches, and total track mileage. If the bar chart shows red columns, it means that you are losing money, whereas if the bar chart shows black columns, your company is raking in dough. The length of the bar indicates the relative amount of money you are earning or losing.

Counting Your Shekels—-REPORT 2: BALANCE SHEET window

The Report 2: Balance Sheet gives you a complete rundown of all your holdings, including railroads, subsidiaries, capital gains from stock sales, dividends, and bank interest. In addition to your revenue, all expenditures are listed, as is the current value of all your assets, for tax assessment purposes. You will notice that taxes are levied in two

REPORT 2 EXIT

ASSETS		MARKET VALUE	PROPERTY TAX
RAILROAD ASSETS:		1,751,050	87,552
SUBSIDIARIES:	1	268,000	13,400
STOCKS:	100	46,700	2,335
REAL ESTATE:	50	157,500	7,875
TOTAL:		2,223,250	111,162

REVENUE		EXPENDITURES	
RAILROAD OPERATION:	24,777	RAILROAD OPERATION:	1,259,970
SUBSIDIARIES:	924	SUBSIDIARIES:	8,624
SUBSIDIARY SALES:	379,320	SUBSIDIARY PURCHASE:	601,300
STOCK SALES:	0	STOCK PURCHASE:	46,800
REAL ESTATE SALES:	0	REAL ESTATE:	47,800
STOCK DIVIDENDS:	0	COMMISSIONS:	13,636
INTEREST INCOME:	3,500	INTEREST PAID:	0
TOTAL:	408,521	TOTAL:	1,978,130
PROFIT/LOSS:	-1,569,609	INCOME TAX:	100
CASH:	3,611,563	TOTAL TAX:	111,262

Figure 1.45: Report 2: Balance Sheet

ways: the first is a property tax of 5% on your tangible assets; the second is a flat income tax of 50% of your net profit.

Once a year, on March 31st, your accountant issues a financial report on your company's activities for the fiscal year. You get to see this report on April 1st, when it automatically pops into view, but you can see the latest results at any time by selecting the Report 2: Balance Sheet menu.

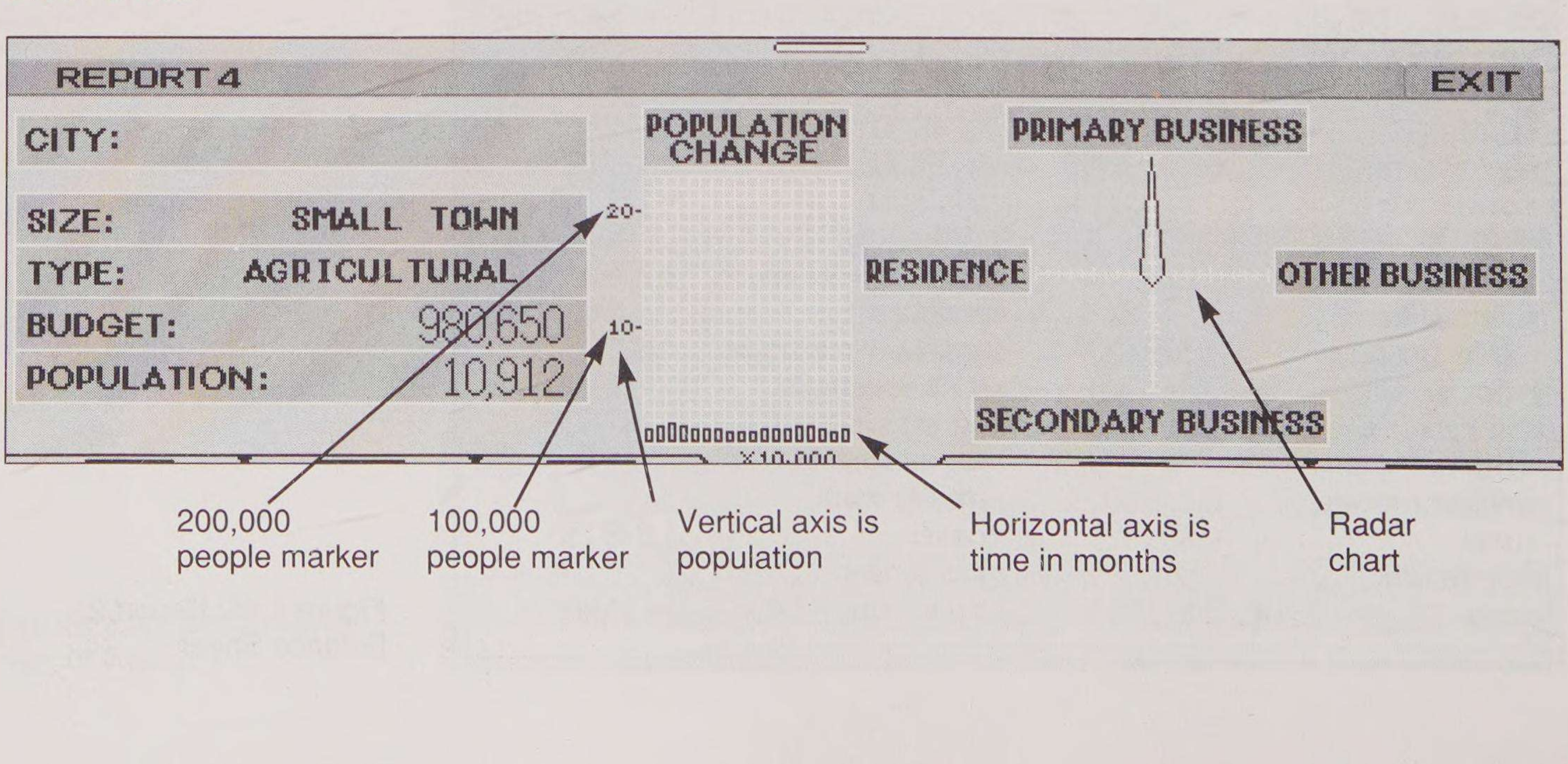
Charting Urban Growth

Now that you have an understanding of what all the numbers mean in the first two reports, let's look at Report 4: Urban Growth window which keeps track of development and growth in your city.

REPORT 4: URBAN GROWTH

Clicking on Report 4: Urban Growth will bring up the Report 4 window, which displays various city statistics, a population graph chart, and a "radar" chart that shows the relative concentrations of different businesses' activities. The Primary Business category consists of your railroad operations, while the Secondary Business classification includes industrial subsidiaries such as factories and lease buildings. Other Business covers golf courses, amusement parks, ski resorts, stadiums, and hotels. The Residence category covers all

Figure 1.46 Report 4: Urban Growth



residential buildings, and refers to the relative concentration of land that is devoted for housing purposes.

SAVING YOUR CITY FOR LATER PLAY



Because you will frequently want to replay cities that you have created, you should understand how to use the Save feature of A-Train. Macintosh users can save their cities by using the save option under the file menu. Saving a game on the PC is more cumbersome, so let's try saving the city that you have just created. Select the System menu and when it opens, click on the Save menu option. In a moment the Save Game window will open, showing a city name text box, the current path, a scrollable list of available drives and directories, and any previously saved city files. First check to make sure the path that is displayed underneath the city name text box includes the name of the directory in which you wish to store your city files. If the directory or drive is incorrect, click on the correct drive indicator or directory, and the path should instantly change. If you need to go to a parent directory (i.e., a higher-level directory), click on the <..> indicator in the scrollable file/directory/drive list. If you click on any directory in the list, the lower-level directories (i.e., sub-directories) will replace the current list of directories.

For our demonstration example here, we will call the city that we have created MYCITY, and store it in the C:\MAXIS\ATRAIN directory. Follow these steps to save your city.

1. Click on the [C:] drive indicator.
2. Click on the MAXIS directory name that appears in the file/directory/drive list. The path should now read C:\MAXIS\.
3. Click on the ATRAIN directory name to complete the path designation. The path should now read C:\MAXIS\ATRAIN.
4. Next, click the pointer on the city name text box at the top of the window and then type in the name MYCITY.
5. When you are finished, click the Save button and your city will be saved to disk for later replay.
6. Exit the Save Game window by clicking on the Exit button.

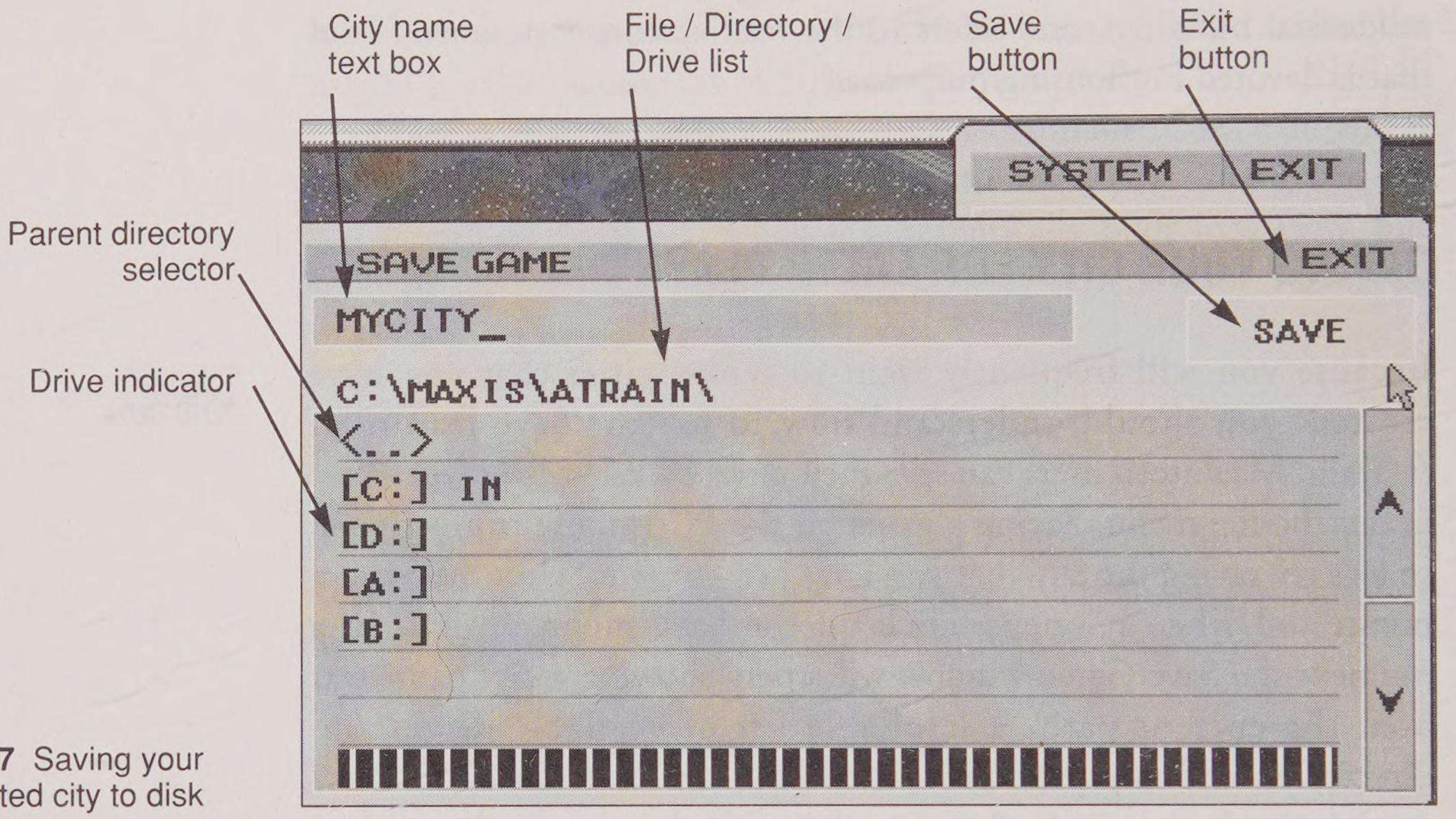


Figure 1.47 Saving your newly created city to disk

Figure 1.47 illustrates how you would save MYCITY to your C:\MAXIS\ATRAIN directory using the Save Game window. When you have completed this task, you can exit A-Train by selecting the System menu again and clicking on the Quit menu option.

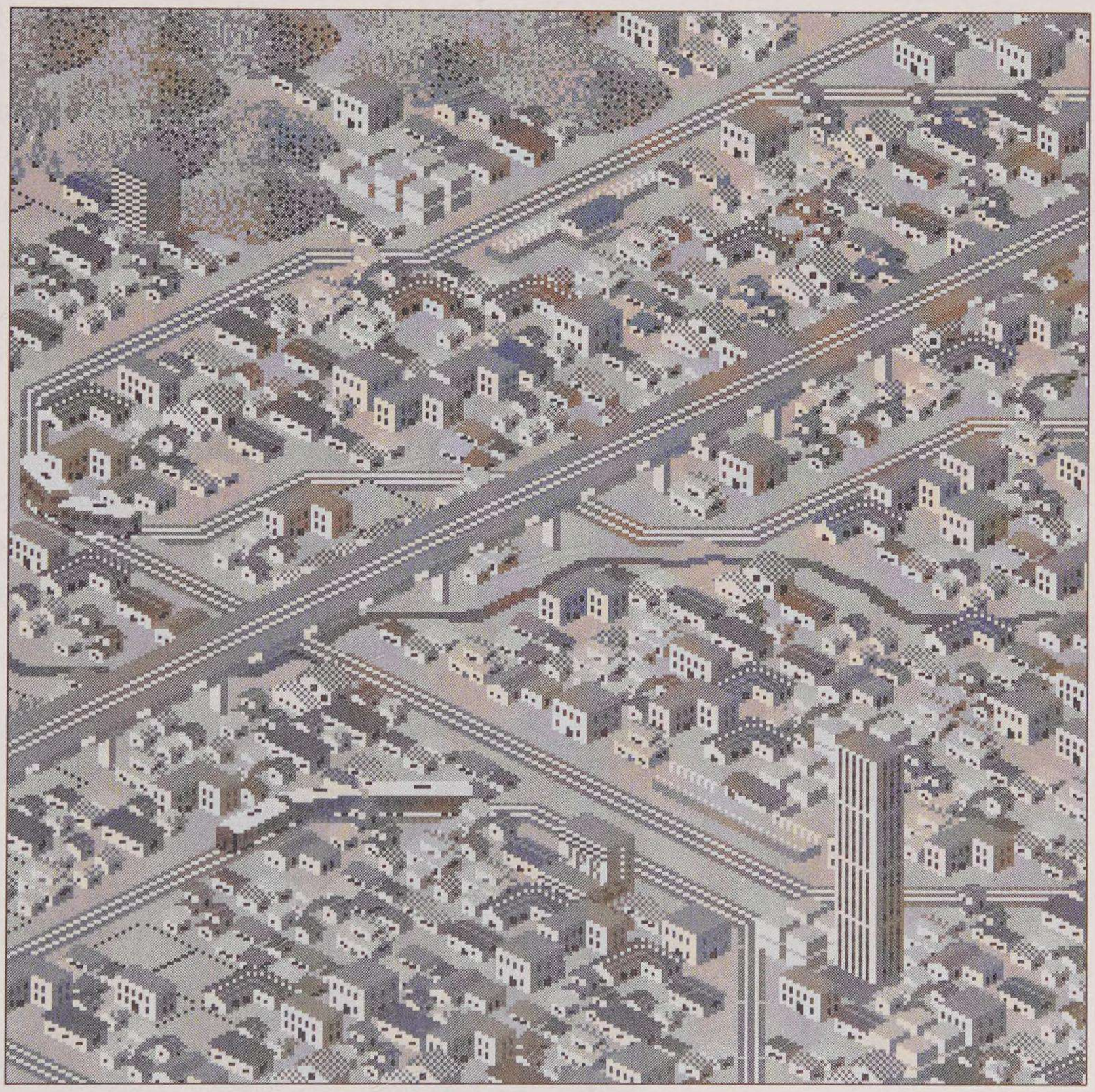
You may either exit the program now or continue on to the next chapter, keeping the current game open.

SUMMARY

You have now learned the basics of controlling A-Train. You will also have acquired some experience managing your company's operations and gained some understanding of how your city develops. In further chapters, we will go into more detail about these and other features of A-Train, including the built-in map scenarios.

CHAPTER 2

What's On the Menu?



In this chapter you will learn how to start, load, and save your cities, as well as customize your game play environment, by using the commands found under the System menu. You will also discover how to print out maps of your cities, using graphics printing software that you can purchase separately or obtain free as shareware.

Each time you start up A-Train, you will see the System menu open up after the opening credit screens. There are seven menu options within this menu. Most of the commands will open up a window or dialog box with various controls and settings you can modify. In each of these windows there is an Exit button, and clicking on it or pressing the Esc key will return you to the main menu. When the System menu is open, the clock stops and no game activity is possible.

Directly underneath the System menu, a sprawling metropolis is visible. Towering highrises soar into the sky, and multiple train lines weave in and out of the city's labyrinthine corridors. The city is often referred to as "Mannyville," in honor of its legendary Maxis creator, Manny. It can be played by first saving the city and giving it a new name, and then re-loading the newly saved city.

Let's try saving "Mannyville" and then loading it so that we can play with and learn how to use the file access features found under the System menu.



If A-Train is not yet loaded, while in the MAXIS\ATRAIN directory, start the game up by typing ATRAIN at the DOS prompt. If you were previously playing A-Train, exit your game by selecting the System menu, and then click on the Quit button. Exit and re-start the game from the DOS prompt so that your screen resembles Figure 2.1.

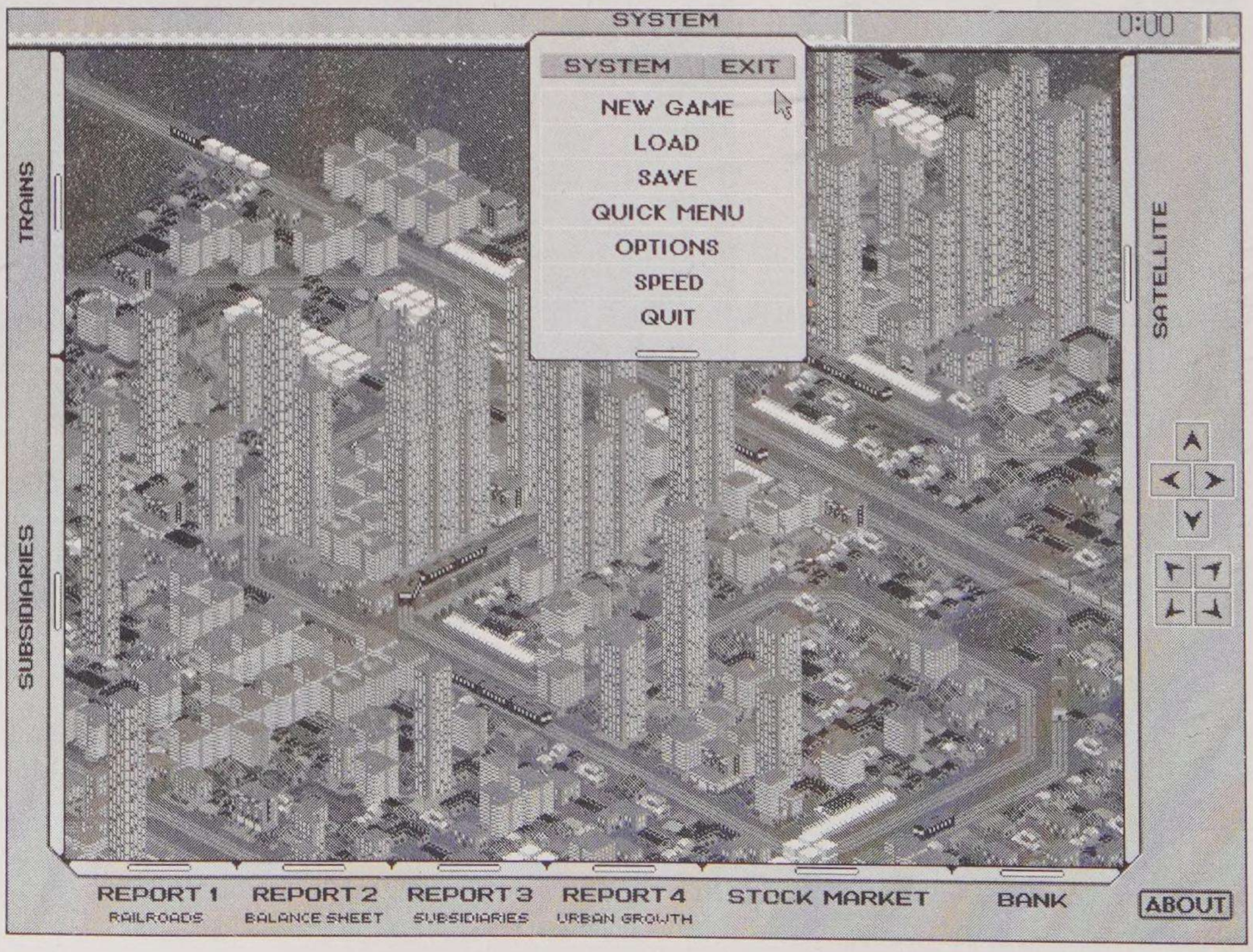


Figure 2.1 The initial city screen with the System menu automatically opened for you.

SAVE

The Save button on the System menu allows you to save your city, giving it a unique name of up to eight characters, in any directory or drive of your choosing. The map and all current city conditions, including time, money, debts, assets, and Animate Palette preference, are saved to disk so that you can return to the game at a later time. Other preferences, such as Sound FX (Sound Effects) and Music Off/On, are not stored with your city and must therefore be reset each time you start up the game.

Click on the Save menu option. The Save Game window will open, showing a city name ribbon just below the title bar, the current path listing, and a scrollable list of previously saved city files, including available drives and directories. Drives are symbolically represented by the bracketed characters [C:],[B:],[A:], while directories and sub-directories are enclosed within the greater-than and less-than signs (e.g., <MAXIS>). Clicking once on a drive designator will bring that drive's available directories into view in a list just below the path. Clicking once on a directory name forces the current path to change and also brings up a list of all sub-directories.

Navigating Through Your Disks & Directories

Check to make sure that the path displayed underneath the city name ribbon includes the name of the sub-directory in which you wish to store your city files. If the sub-directory or drive is incorrect, click on the correct drive indicator or sub-directory name and the path should instantly change. If you need to go to a parent directory (i.e., a higher-level directory), click on the <..> indicator in the scrollable file/directory/drive list. If you click on any directory name in the list (e.g., <MAXIS>), the lower level directories (i.e., sub-directories) will replace the current list.

For our demonstration example here, we will call the city that is currently on screen MANNYVIL. We will store it in the C:\MAXIS\ATRAIN directory. Follow these steps to save your city:

1. Click on the [C:] drive indicator.
2. Click on the <MAXIS> directory name that appears in the file/directory/drive list. The path should now read C:\MAXIS\.

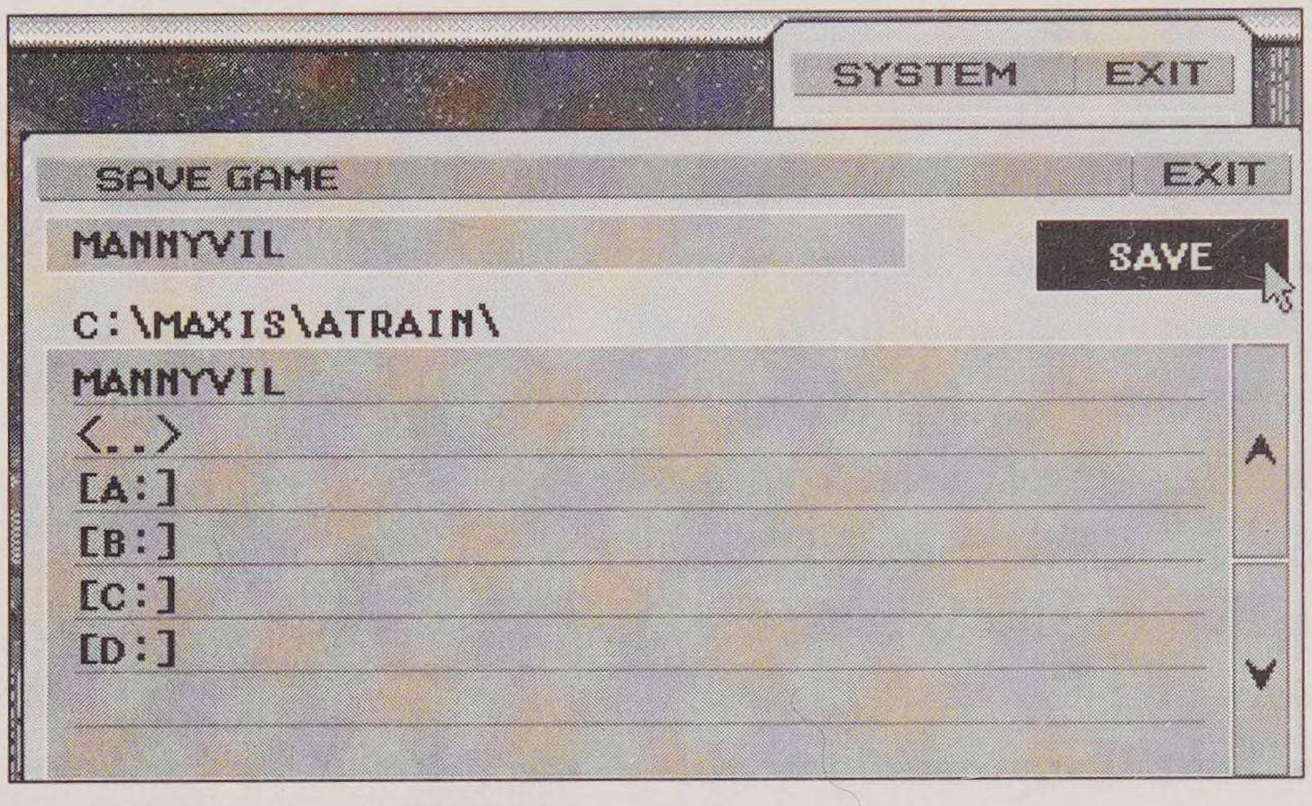


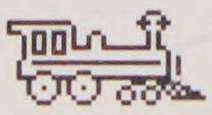
Figure 2.2 The Save Game window

3. Click on the <ATRAIN> sub-directory name to complete the path designation. The path should now read C:\MAXIS\ATRAIN.
4. Next, click the pointer on the city name ribbon at the top of the window and type in the name MANNYVIL.
5. When you are finished, click the Save button and your city will be saved to disk for later replay.
6. Exit the Save Game window by clicking on the Exit button.

Figure 2.2 illustrates how you would save MANNYVIL to your C:\MAXIS\ATRAIN directory using the Save Game window. When you have completed this task, you can exit the menu by clicking on the Exit button.

LOAD

Selecting the Load command brings up the Load Game window. Through this window you can retrieve previously saved games and navigate through your file/directory structures in search of errant games stored elsewhere in your computer. Just beneath the title bar, you can see the city name ribbon, the current path listing, and a scrollable list of previously saved city files, including available drives and directories.



Now that our city is saved to disk, we can play MANNYVIL by using the Load command to retrieve the file. Let's try this:

1. Select the Load button. The Load Game window should open up.
2. Click on the file name MANNYVIL, which should be listed in the File\Directory\Drive list. If it is not, and you need to change directories or drives to display it, click on the appropriate directory or drive designators. Remember, clicking on <..> allows you to navigate up to a higher-level directory, while clicking on a directory name allows you to move down to a lower-level sub-directory.
3. Click the Load button, and MANNYVIL will appear in the main view window.

New Game

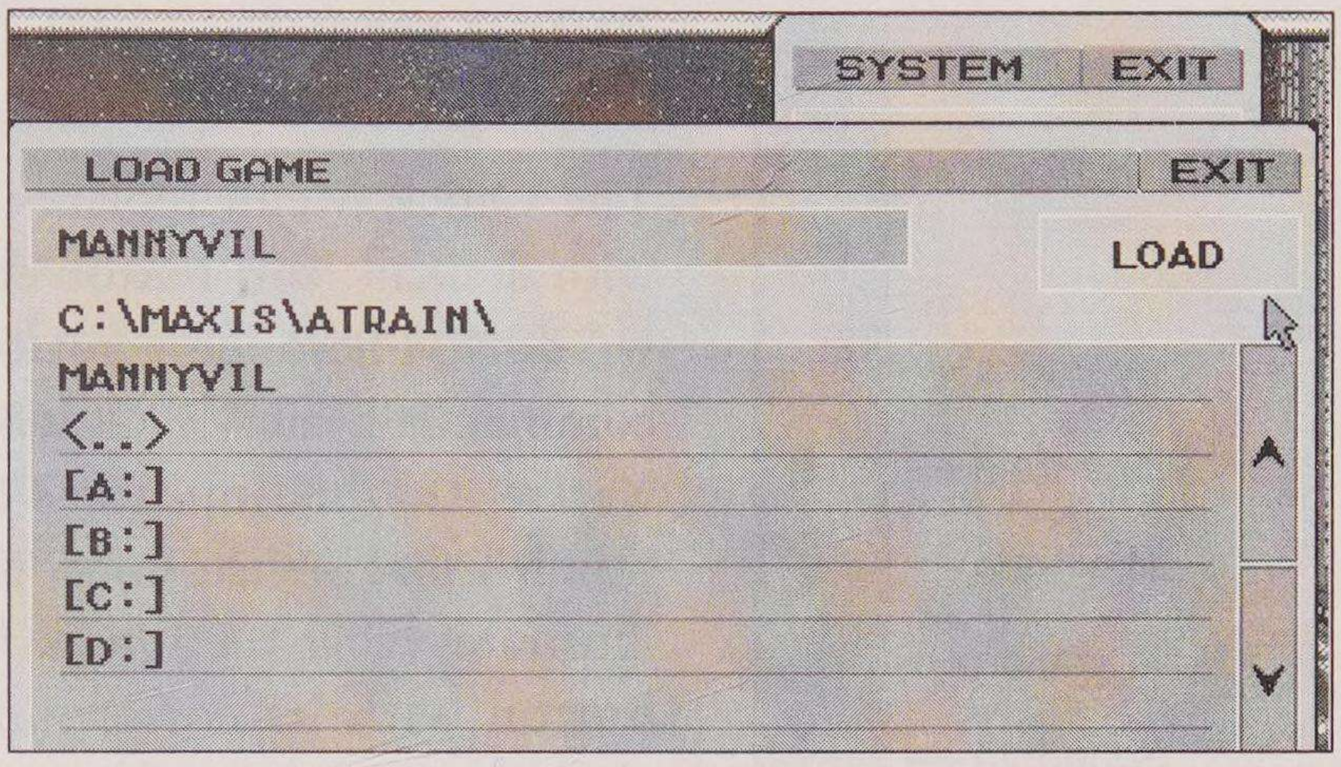


Figure 2.3 The Load Game window

Selecting the New Game command in the System menu opens up the New Game window, where you select a new game to start playing. A-Train contains six built-in map scenarios, differing in city size, complexity, and goals. Each time you pick one of the scenarios you will start the game anew, with all the initial city conditions reset to their default settings. If you want to save your progress, you need to give the city a name and then save it using the Save command. To return to the game from where you left off, you would use the Load command to retrieve the file from disk. Table 2.1 briefly lists and describes each map scenario.

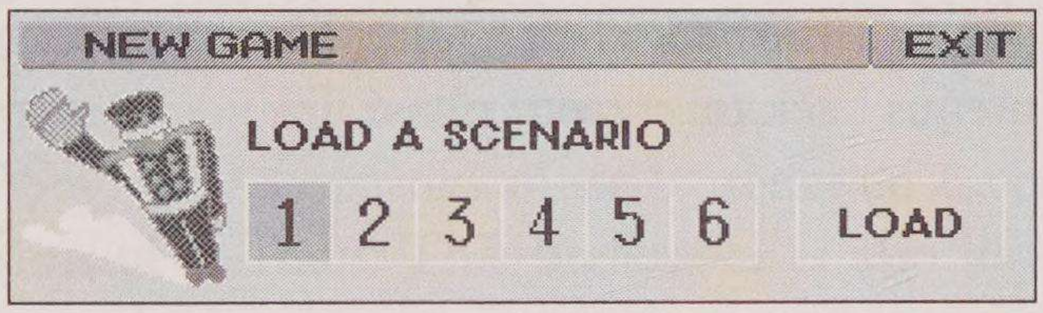


Figure 2.4 The New Game window

Table 2.1: Description of the Six Map Scenarios

Scenario #	Name	Goal	Difficulty
1	New town	Build small town into thriving metropolis	Easy
2	Bay Area	Successfully develop waterfront lands	Moderately easy
3	Resort development	Create a tourist mecca	Average
4	Multi-city connection	Build railroad links between scattered towns and cities	Extremely difficult
5	Reconstruction	Stop urban decay through redevelopment	Difficult
6	Downtown reorganization	Successfully respond to relocation of industry & commerce	Average

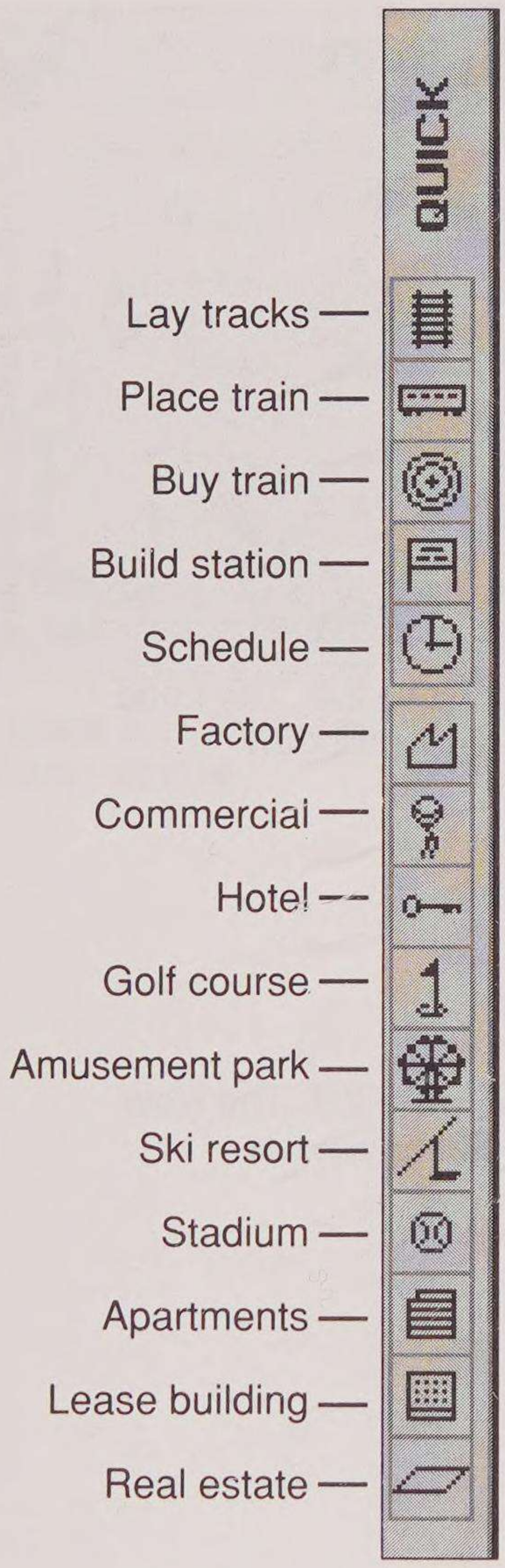


Figure 2.5 The Quick menu

QUICK MENU

The Quick Menu replaces both the Trains and Subsidiaries menus with a small icon button strip along the left edge of the main view window. These icon buttons provide a shortcut for accessing the commands available under these two menus. Besides being a faster way to use the simulator's controls, toggling Quick Menu on allows much more of the map to remain visible on screen. Figure 2.5 illustrates what the Quick Menu looks like, and identifies each icon button with its corresponding Trains or Subsidiaries command equivalent.

Click on the Quick Menu command under the System menu, and observe how the icon button strip replaces both the Trains and Subsidiaries menus. Try using some of the icon commands. When you are finished, click Quick Menu once again to toggle the standard menus back on screen.

OPTIONS

Through the Options window, you can choose whether you want sound effects and diurnal light or not. You can also generate a PCX graphic map file of your city for later printing with a paint program that you supply yourself.

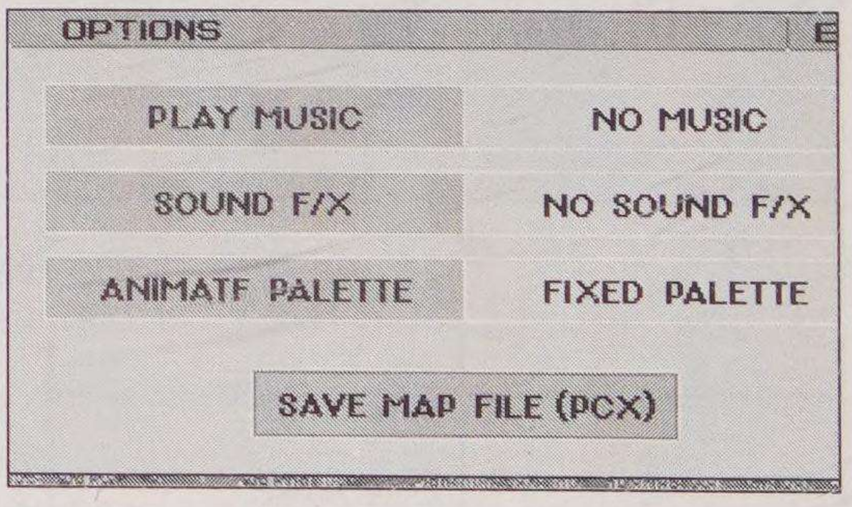


Figure 2.6 The Options window

Play Music/No Music

Selecting Play Music toggles on the music. No Music toggles it off. For this option to work, you must have a sound card such as the AdLib or Sound Blaster installed in your computer. Other cards supported by A-Train include the Tandy Sound Card, Covox, and Roland MPU-401—but any card that adheres to the Sound Blaster or AdLib standards should work as well (for example, the Pro Audio Spectrum 16 from Media Vision). Music will not work with the PC's built-in speaker. With music toggled on, you will hear tunes played at

important events during your game. Holidays, seasonal changes, winning screens, and congratulatory messages all have their own distinct melodies.

Sound volume cannot be adjusted directly through A-Train. You need to set the volume through your sound card which, in the case of the Sound Blaster, is controlled by a dial on the back of the card.

Your Play Music/No Music settings must be renewed each time you start a new session of A-Train. Unhappily, this preference is not saved when you exit the program.

Sound F/X/ No Sound F/X (Sound Effects/No Sound Effects)

If you don't want to be committed to the nut house, I urge you to select No Sound F/X. The only thing you will miss is the clickity-clacking of the trains on the tracks. In return you will retain your sanity.

Your Sound F/X No Sound F/X settings must be renewed each time you start a new session of A-Train. This preference is also lost when exiting the program, and must be reset each time you start up A-Train.

Animate Palette/Fixed Palette

The constant cycle from day to night is reflected in the changing light of the panoramic scenery. At night everything becomes darker, while during the day everything becomes brighter. If this is too distracting or annoying, you can shut it off and view your kingdom in perpetual daylight by selecting Fixed Palette. Otherwise, if you like the change from night to day, keep the selection on Animate Palette.

This preference is saved with your city, so you will not need to reset it when you restart a previously saved game.

Save Map File (PCX—For the PC Version of A-Train Only)

Activating this command causes a giant 16-color, 1,952- by-824-pixel PCX graphic file map of your city to be generated on disk (1,952 pixels wide, 824 pixels tall). However, if you have installed the monochrome version of A-Train, no color information will be captured to the PCX file. The file will be named, by default, SCREEN00.PCX, and if you capture a second file, it will be named

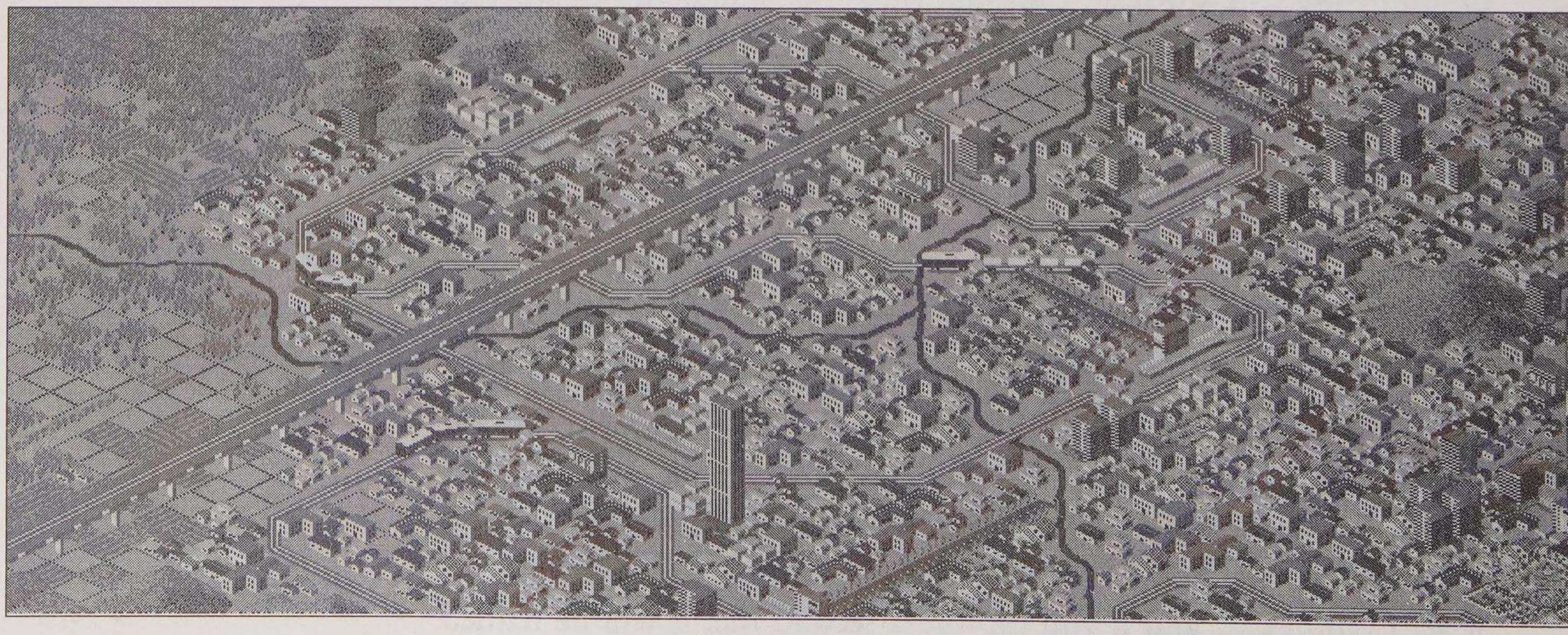
SCREEN01.PCX. Other additional maps you create will be numbered in consecutive order SCREEN02.PCX, SCREEN03.PCX, etc. The size of the file ranges from 590 Kb (590,000 bytes) to over 1 Mb (1,000,000 bytes), depending on the amount of detail your city contains.

A-Train has no built-in facilities for printing out PCX files, so you must have a separate graphics paint program to accomplish this task. The PCX graphic is an unusual size, being much wider than it is tall. This causes untold grief with most graphic printing programs that are unaccustomed to dealing with mammoth, odd-shaped images.

How to Print PCX Files

Using programs such as Deluxe Paint by Electronic Arts or Windows 3.1's Paintbrush, you can print out the PCX graphic file of your city. A word of warning is in order here: due to the enormous size and complexity of the map, you will need to have a laser printer with at least 1 and preferably 2 Mb of memory, and your computer should have at least 2 Mb of RAM, if not more. Furthermore, most graphics programs will require 2 to 3 Mb of free hard-disk space while they thrash out your map to a temporary print file on disk. Also, the printing process is time consuming. Depending on which graphic printing program you use and what hardware set-up you have, it can take anywhere from 15 minutes to several hours!

Figure 2.7 Poster-sized printout of Mannyville.PCX file using Deluxe Paint



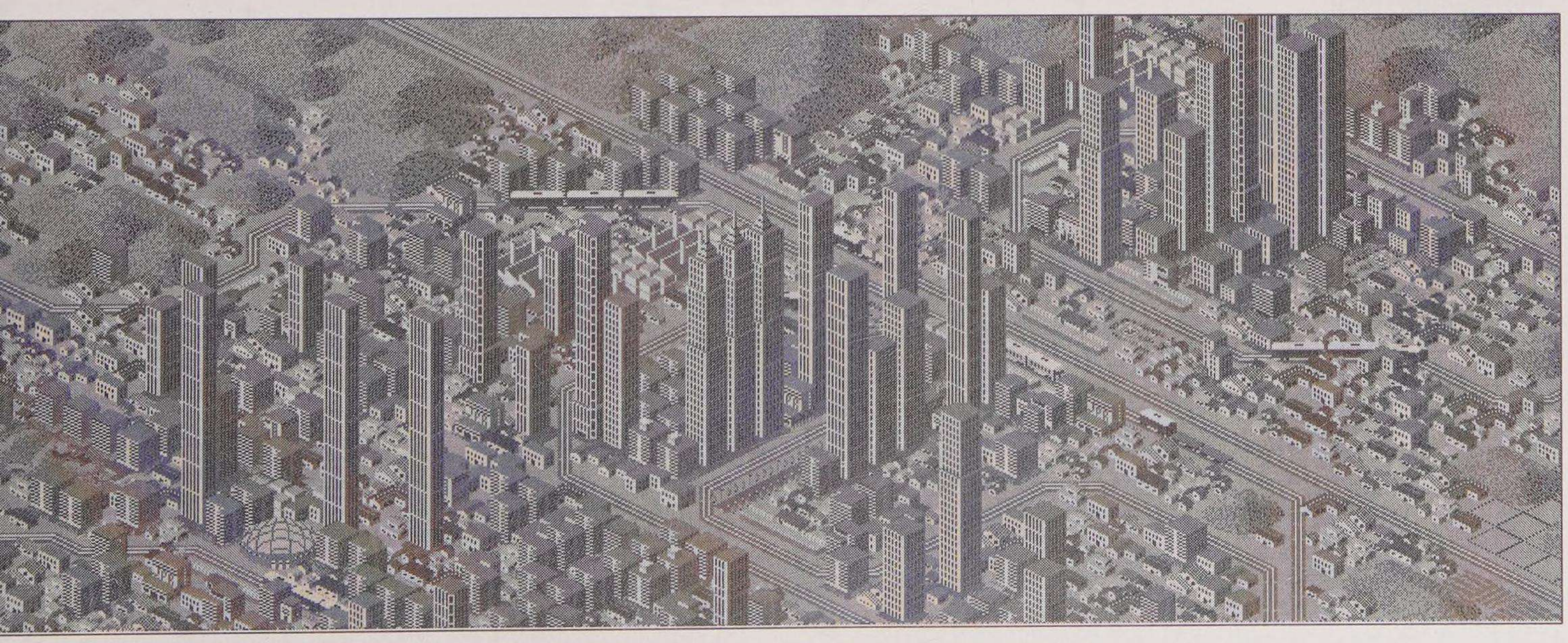
There are several choices to make when deciding what your printout should look like. You can print out the entire map in a six-page banner or poster mode, or you can condense the map down to one page. Figure 2.7 illustrates what a banner-sized printout of your map would look like using Deluxe Paint.

Using Windows' Paintbrush to Print out the Map

Since Windows 3.1 and its bundled Paintbrush graphics program are so popular and ubiquitous, let's use it for our demonstration example of how to print out the city map. Because of trouble I experienced while printing, I recommend that you have 4 Mb of RAM in your computer and 2 Mb of RAM in your printer before proceeding. We will use Mannyville as our map, but before going on we must save the PCX file to disk:



1. With Mannyville still on screen, open the System menu and select Options. If you have exited this particular map, reload it using the Load command.
2. In the Options window, double click on Save Map File (PCX). A message box will appear informing you that A-Train is saving your map as a PCX file. This process can take a few minutes, so don't reboot your machine thinking that your system has crashed.
3. Exit A-Train.



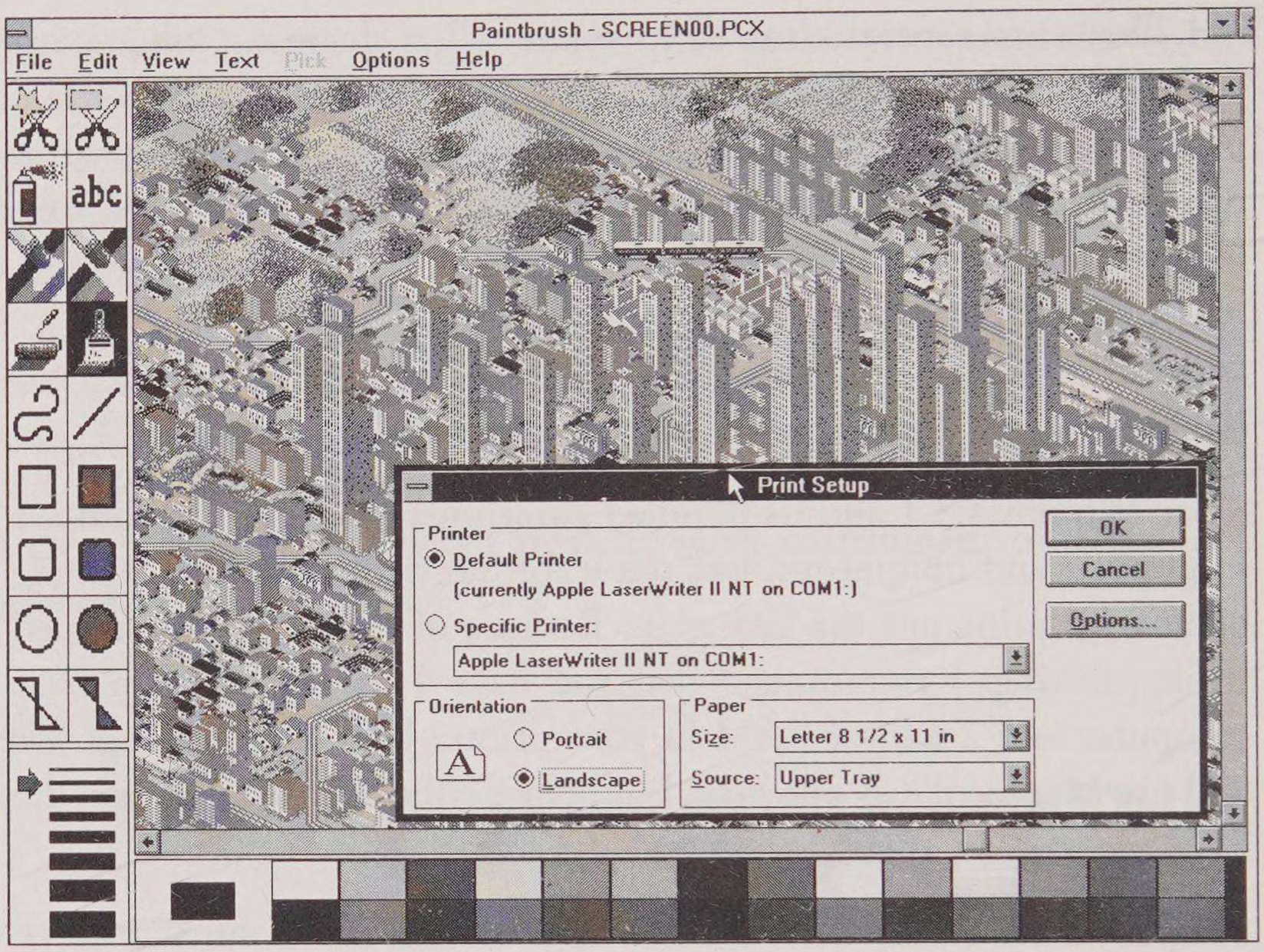


Figure 2.8 The Print Setup window in Paintbrush for Windows 3.1

Now that the PCX file is on your hard disk, we can start up Windows and Paintbrush to begin printing out the map. Follow these steps:

1. Start up Windows.
2. In the Accessories group window, double click on the Paintbrush icon.
3. When Paintbrush has opened, pull down the File menu and select Open.
4. Scroll through your directories until you find the PCX file SCREEN00.PCX (it should be in the C:\MAXIS\ATRAIN directory), then click on it twice. At this point, be very patient, because Paintbrush takes a fairly long time to access all the picture information from the disk. In a minute or so the map will pop into view.
5. Pull down the File menu and select Print Setup. When this window opens up, click on the Landscape button to orient the map in a horizontal position.
6. Click the Options button, and the Options window should open up as seen in Figure 2.9 for a PostScript printer. The appearance of this window will depend on the kind of printer you have.

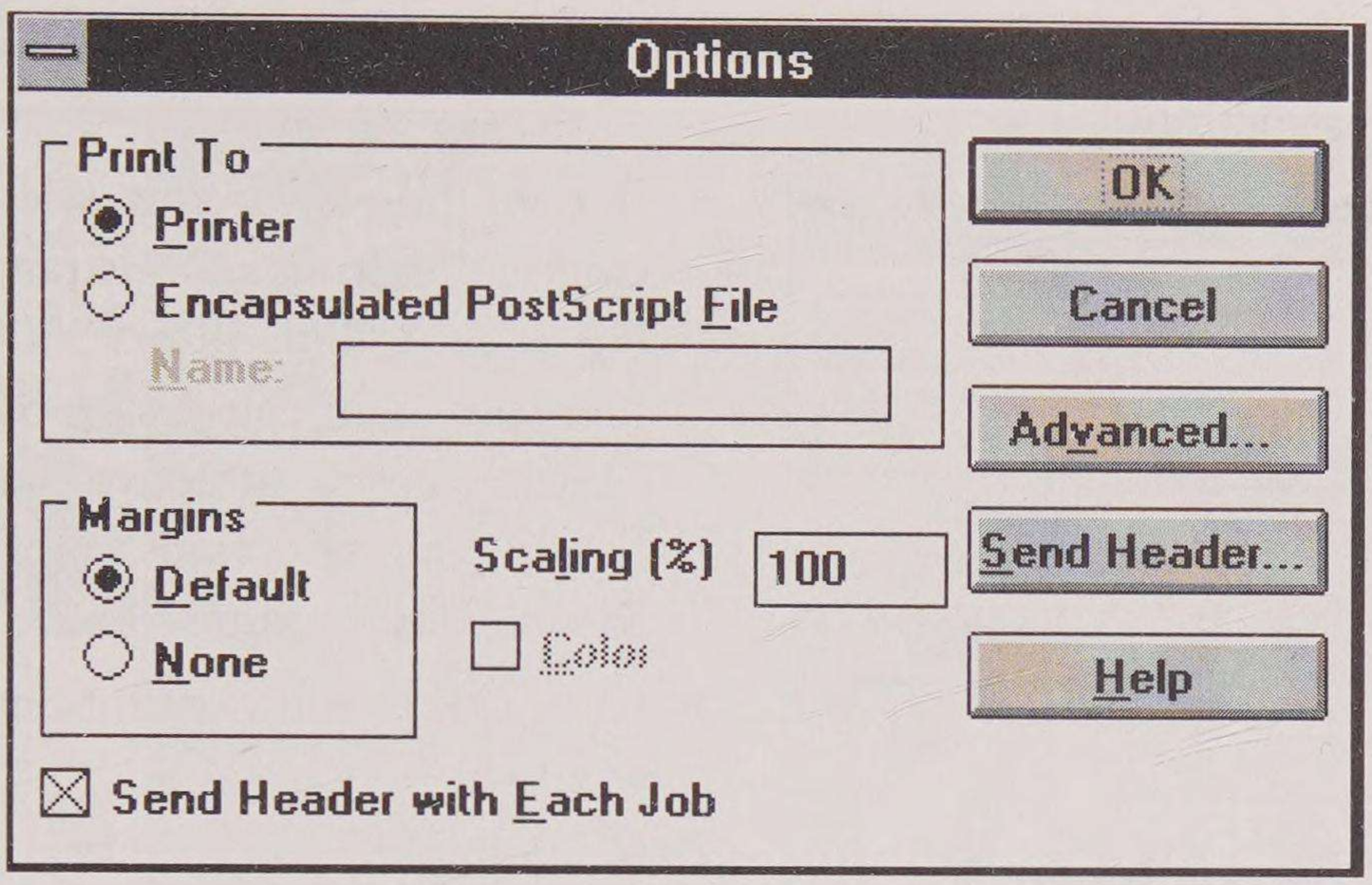
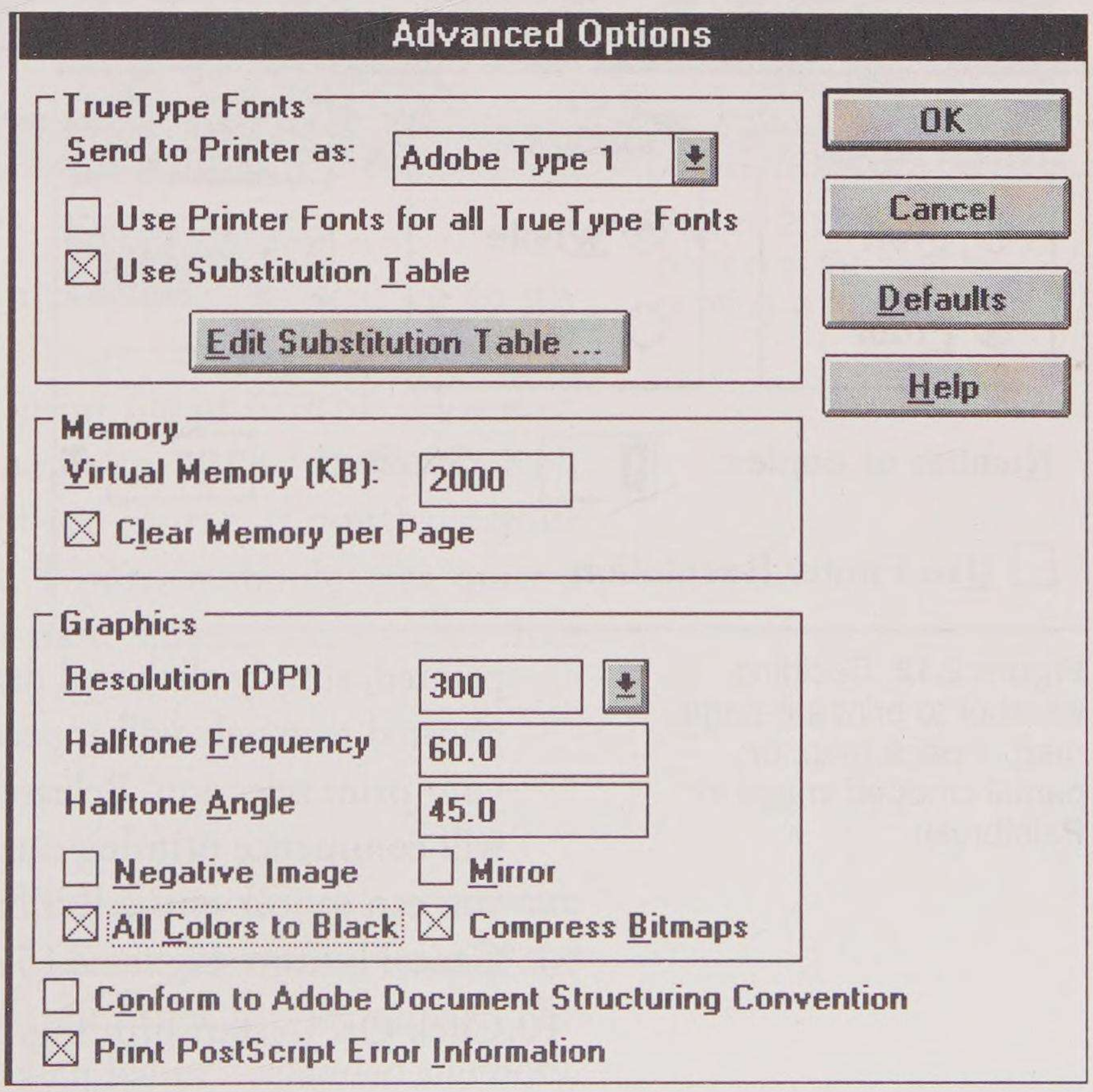


Figure 2.9 The Print Options window for PostScript printers in Paintbrush

7. If you have a PostScript printer, follow these instructions:
   - In the Options window, click the Advanced button and the Advanced Options window will pop into view (see Figure 2.10).
   - Set Virtual Memory to 2,000 Kb, or the maximum amount of printer memory you have (most PostScript printers have at least 2 Mb (2,000Kb).
   - Click on the Clear Memory per Page to allow the printer memory to be emptied after each page.
   - Click the All Colors to Black check box to convert all colors to the black and white images of your LaserWriter.
   - When finished, click OK to exit the Advanced Options window.
   - Click OK to exit the Options window.
   - Click OK to exit the Print Setup window.

Figure 2.10 The Advanced Options window for PostScript printers in Paintbrush



8. If you have an HP LaserJet or compatible, follow these instructions:

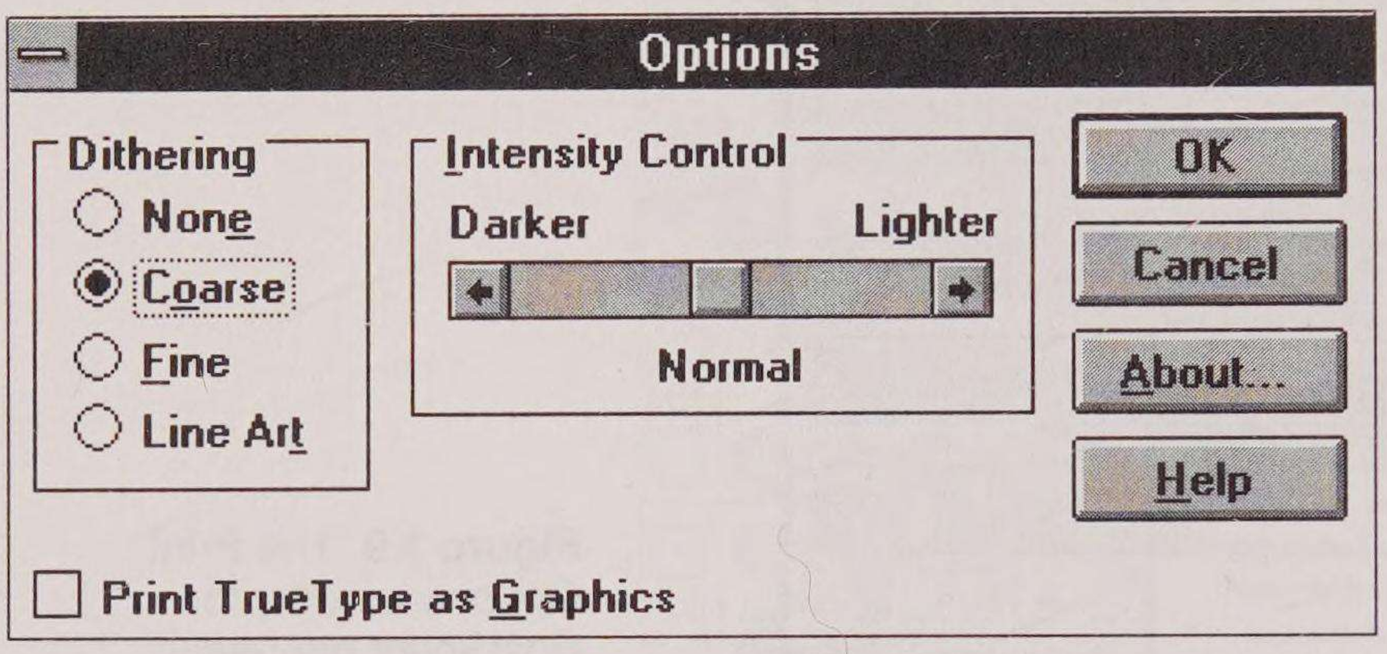


Figure 2.11 The Print Options Window for HP LaserJet and PCL compatible printers in Paintbrush

- In the Options window, select Coarse dithering, as illustrated in Figure 2.11. This allows 300-dpi (dots per inch) conversion of color images to attractive black & white reproductions on black & white laser printers.
- Click OK to exit the Options window.

9. You are now ready to print! Select Print from the File menu, and in the Print window that opens up you will have one last decision to make, as shown in Figure 2.12.
   - If you want to print out a six-page banner reproduction of your map, click the Whole radio button.
   - If you want to print out a one-page condensed version of your map, click the Partial radio button Next, type in 15% scaling to cause the map's six pages of graphics to be shrunk down to one.
   - If you want to crop, or cut out only a small portion of the map for printing, click the Partial radio button and then click OK. After a few seconds, a complete miniaturized picture of the map will appear on screen. To select the portion of the map you wish printed, simply click and drag the mouse over the desired area. A ghosted rectangle will appear superimposed on the map, showing your print selection. Release the mouse button, and Paintbrush will commence printing out your selection. If you make a mistake, you can cancel your selection at any time by clicking on the Cancel button. Figure 2.13 shows this being done.

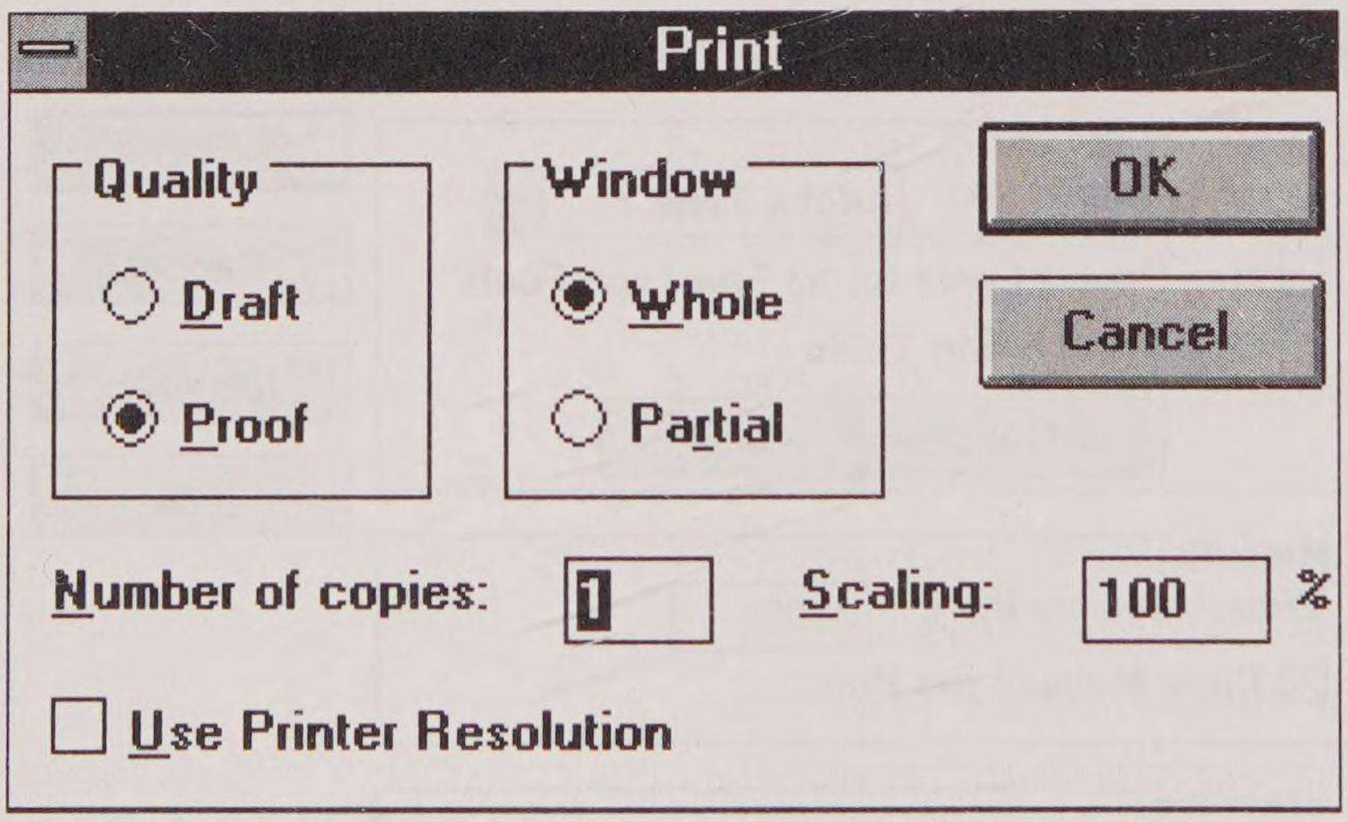


Figure 2.12 Deciding whether to print a 6-page map, 1-page map, or partial cropped image in Paintbrush

10. Click OK to start printing.

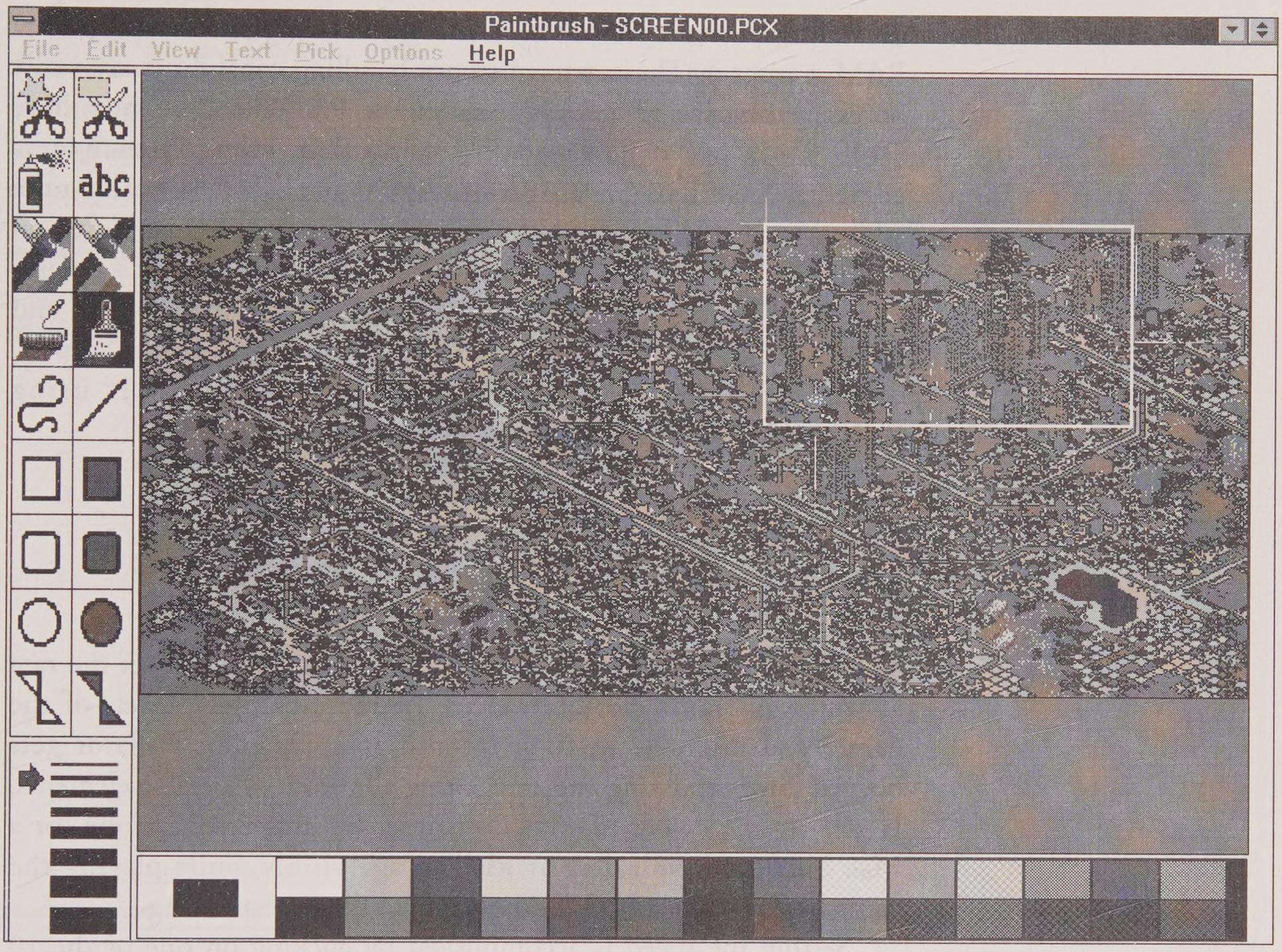


Figure 2.13 Cropping a portion of the map for printing in Paintbrush

With my particular setup—a PostScript printer hooked up to my COM 1: serial port—printing out a 2-page cropped portion of my map took 24 minutes with a graphic print file of 670 Kb. However, printing out all six pages created a whopping 2.183 Mb (2,183 Kb!) print file that took over 90 minutes! Of course, if you have your printer hooked up to your parallel LPT port, it should take quite a bit less time, since data is transferred more quickly via parallel than serial ports.

Using a Shareware Printing Utility

Another option for printing out the PCX file is to use a shareware program called Graphics Workshop 6.1. There are two versions of the program available, one for DOS and the other for Windows. The DOS version is able to make use of Extended or Expanded memory,

as well as Virtual memory (i.e., using your hard disk as temporary RAM memory). These extra memory handling capabilities are really necessary because of the huge size of the PCX file. You must have DOS 5's HIMEM.SYS and EMM386.EXE memory managers correctly installed on a 386 or higher machine to really take advantage of this feature. Although this program is available free on computer services such as CompuServe in the Graphics Forum Libraries, the authors request that if you really like the program and use it, you send in $40 to register it. After downloading the "zipped" or compressed file, you will need to decompress it using PKUNZIP.EXE, which is also available as shareware.

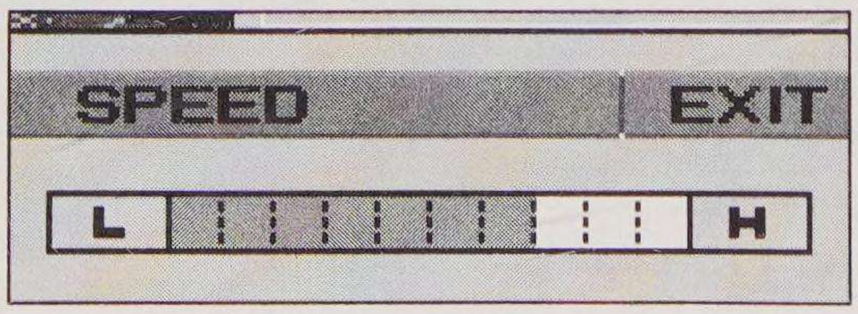
SPEED

Through the judicious use of the Speed control, you can set the rate at which A-Train's clock advances. At more complex levels of the game, you might want to speed things up as the simulator gets bogged down updating and calculating all the city's variable elements. If you are the owner of an XT or other 8086/8088 PC clone (or a Mac Plus), and you do not wish to age visibly while playing the game, you might want to set the speed to the fastest setting.

Setting the speed is accomplished by clicking on one of the 10 possible speed boxes in the Speed window's bar graph. When you click on any individual box, the speed will jump to that particular level and the boxes will light up to graphically depict at what speed your clock is set. When speed increases, more boxes fill up with a white pattern that starts from the right of the L box, and terminates to the left of the H box. The fastest speed causes all the boxes to be lit. You can also click on the L box to lower the speed one notch or the H box to raise the speed a notch.

Altering the speed of the game is a really nifty feature for those Simmers who like to whiz through boring years, and slow down for more interesting ones. And if you are terribly impatient about waiting for your next "payday" (i.e., your new fiscal year commencing April 1st, in which you are given a new quota of selling subsidiaries for profit), speeding up the game allows you to accrue money more quickly.

Figure 2.14 The Speed window



The slowest speed setting is useful for delaying or postponing days of reckoning, such as when taxes or debts fall due. However, if you are easily irritated by delays, this speed can be frustrating. The slowest speed is also recommended for owners of Cray XMP super computers, and, of course, 586 machines running at 120 MHz.

If you want the highest speed performance possible on your computer, here's a neat little trick to squeeze a little more speed out of your PC.

1. Set the Speed to the fastest setting.
2. Toggle off Music in the Options window.
3. Toggle off Sound F/X in the Options window.
4. Select Fixed Palette in the Options window.
5. Close any open Report windows.
6. Open the Satellite window.
7. Move the rectangle pointer to some isolated corner of the map where there is little or no activity (preferably a location free of train lines). Reposition the map by clicking.
8. Close the Satellite window.
9. Watch the clock accelerate, as the simulator is freed from the burden of updating sound, reports, animation, and palette effects.

QUIT

Quitting the game is accomplished by clicking on this menu command. If your game has not yet been saved, a Quit Game dialog box will first pop up to confirm whether or not you wish to save your current game. This procedure is merely a safeguard to protect you from inadvertently losing the contents of your current game. Click the Save button to bring up the Save game window, or click the Quit button to confirm your intentions to exit the game.

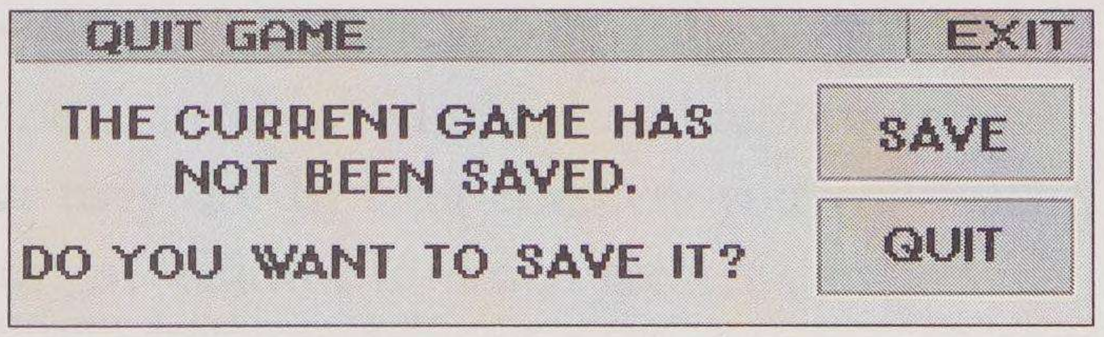
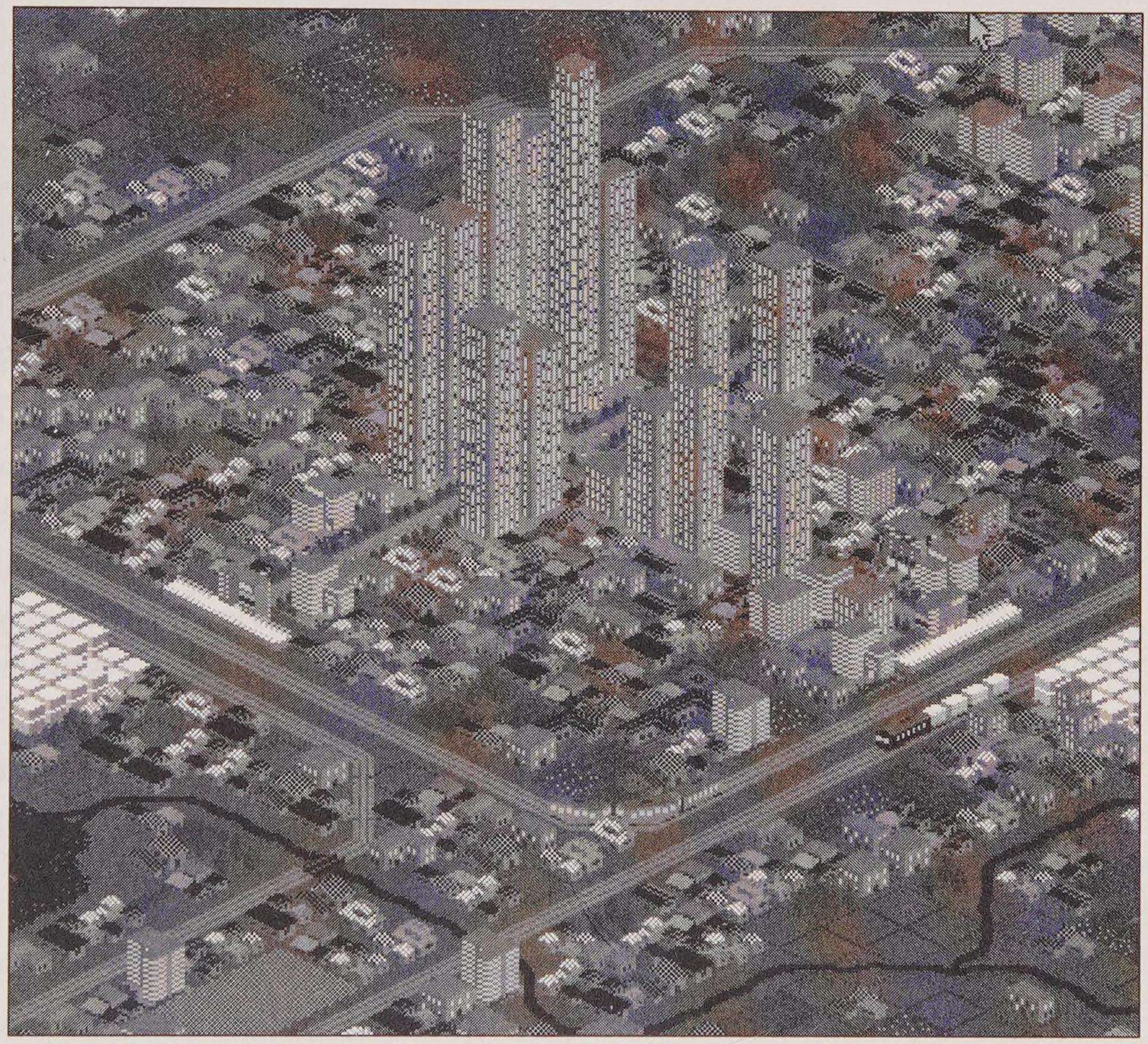


Figure 2.15 The Quit Game dialog box

CHAPTER 3

A Room with a View



A-Train presents all the information regarding your world in a series of windows and reports which are accessed through menus. This chapter will briefly describe these windows and reports to give you an overview of what they do. In later chapters you will learn the specifics of each report or window in much greater detail. This chapter will focus on the PC version of A-Train, since the Macintosh version of A-Train is slightly different. You can check Appendix D to see the Macintosh screen equivalents.

Most of the windows and reports allow you to control some aspect of your company, but three of them, Report 1: Railroads, Report 2: Balance Sheet, and Report 4: Urban Growth, merely provide informational feedback to you. Unlike all other reports and windows, no interaction is possible in these three reports. Using information gleaned from these reports, you can make appropriate business decisions and take action in the remaining menus and reports.

THE MAIN WINDOW

The Main window is the place where all activity in A-Train is centered. This window is on screen at all times, although parts of it may be obscured by opening other windows and reports. Within the Main window you can view a scrollable 3-D axonometric perspective map of your city and open all menus and report windows. Through the various menus you can lay tracks, place trains and stations, and buy and sell land, as well as build subsidiary businesses and buildings directly on the displayed view of your city. Using the financial reports and menus at the bottom of the window, you can ferret out useful information about your company, buy and sell subsidiaries, trade securities in the stock market, and borrow money from the bank. There are also Scrolling Arrow buttons in the lower right edge of the picture frame, which you click on to scroll the Map Territory. Clicking once on any arrow will cause the map to scroll a minute amount in the arrow's direction, while holding down the mouse button (or spacebar) causes continuous scrolling until you release the button (or spacebar).

The Map Territory is comprised of blocks by which you can judge distances and areas when planning construction. The approximate size of the map is 120 blocks horizontal by 51 blocks vertical, making a total area of 6,120 blocks. Measured diagonally the map stretches 112 blocks. From these dimensions you can easily see that the map is much wider than it is tall, making the whole image a "Cinemascope"-like shape. This also explains why the PCX graphics file that you printed in the previous chapter has the asymmetrical dimension of 1,952 horizontal by 824 vertical pixels (picture elements).

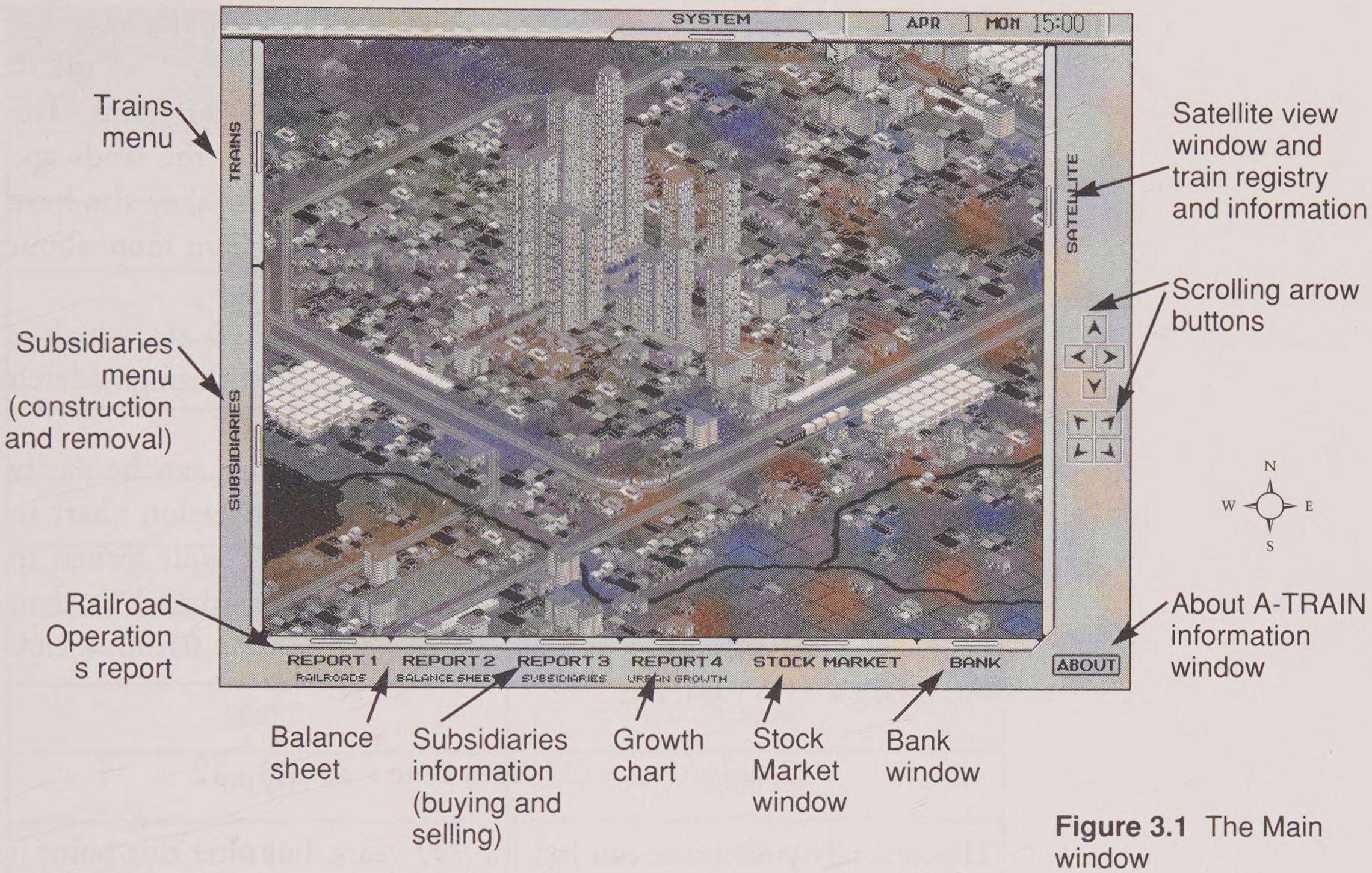
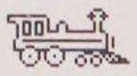


Figure 3.1 The Main window

System Menu

Opening the System menu allows you to open, start, load, and save games, as well as customize the simulation's sound and graphical environment. You can also adjust the simulator's speed and create a PCX graphics file of your city map for later printing. Chapter 2 describes how to use all the options found under this menu.



When the System menu is open all game activity stops. While the game is paused you can reflect on other matters, answer nature's call, or simply go to the fridge for a snack. When you come back, you can exit the System menu and resume play.

Map Date and Time

The year, month, date, day, and time are displayed in the upper right corner of the Main window. You will want to keep an eye on the date and time constantly, because many events are tied to what day and time it currently is. For example, holidays and weekends affect certain businesses, such as resorts and commercial buildings, more than others, while the current time affects passenger loads on your trains

and whether the bank and stock market are open. At predetermined monthly, weekly, and hourly intervals, financial updates are made to your reports. Time also plays a role in scheduling your trains. The different seasons have a visible and tangible effect on the landscape (winter snow, fall colors, and springtime greenery), but they also have an impact on the economy in subtle ways. You will learn more about this in later chapters.

All new games start on Monday, April 1st, at 8:00 AM, which is significant because the fiscal year runs from April 1st through March 31st.

Time is expressed in a 24-hour format, which can be easily converted to the 12-hour format by using the conversion chart in Table 3.1. If you prefer to convert the time to a 12-hour format in your head, an easy formula is to subtract 12 from any time later than 13:00. For earlier hours it is a simple translation, i.e., 01:00 = 1:00 AM, 00:45 = 12:45 AM, etc.

12-hour time = (24-hour time > 13:00) - 12

Theoretically your game can last for 999 years, but after this point it will reset itself to the year 001. There are no honors, accolades, special music, keys to city, etc., awarded to you for reaching such a ripe old age.

Trains Menu

Through the Trains menu you can lay and remove tracks, place and remove trains, buy and sell trains, build and remove stations, alter train schedules, and throw track switches. Chapter 4 discusses each of the menu commands and how they are used.

While the Trains menu is open, game play continues. When you open any of the Train commands' sub-windows, however, game play will be interrupted until you exit the sub-window and return to the Trains menu.

Subsidiaries Menu

With the Subsidiaries menu you can build or remove any subsidiary business. You can buy and sell land; build and demolish factories, commercial buildings, hotels, golf courses, amusement parks, ski

Table 3.1: 24-Hour to 12-Hour Conversion Chart

24-Hour Time	12-Hour Time
00:00	12:00 AM
01:00	1:00 AM
02:00	2:00 AM
03:00	3:00 AM
04:00	4:00 AM
05:00	5:00 AM
06:00	6:00 AM
07:00	7:00 AM
08:00	8:00 AM
09:00	9:00 AM
10:00	10:00 AM
11:00	11:00 AM
12:00	12:00 PM
13:00	1:00 PM
14:00	2:00 PM
15:00	3:00 PM
16:00	4:00 PM
17:00	5:00 PM
18:00	6:00 PM
19:00	7:00 PM
20:00	8:00 PM
21:00	9:00 PM
22:00	10:00 PM
23:00	11:00 PM

resorts, stadiums, and apartments; and lease buildings. In Chapter 5 you will learn more about running your subsidiaries.

While the Subsidiaries menu is open, game play continues. When you open any of the Subsidiaries' sub-windows, however, game play is interrupted until you exit the sub-window.

Reports

There are four report windows which summarize essential information for guiding your actions in A-Train. Oddly enough, one of the reports, Report 3: Subsidiaries, is not really a report. As with other reports, Report 3 presents information on your business; but unlike other reports, you can actually do something in it, namely, buy and sell your subsidiaries to rival companies. Do not confuse Report 3: Subsidiaries with the Subsidiaries menu, in which you can only build new subsidiaries or remove subsidiaries that you already own.

Report 1: Railroads

Clicking on the Report 1: Railroads menu opens up the Report 1 window. This window tells you the current financial state of your railroad operations (not including your subsidiary operations, as the A-Train manual erroneously states). There are three display levels which present more information on your window with each additional click on the Report 1: Railroads menu. The first level only shows your cash, debts, and taxes due at the end of the fiscal year. The second level shows your profit and loss from the train business, while the third level displays a graph chart of your monthly earnings along with a count of your railroad capital assets.

During game play, it is highly recommended to keep the Report 1 window open on the first level so that you can keep an eye on your cash reserves. This way you won't inadvertently spend more money than you have, which will prematurely end your game. All figures are constantly updated in the report, so you can keep close tabs on your cash flow.

There are no game controls or commands inside this report. The clock and game play continue while the report is open.

Report 2: Balance Sheet

Click the Report 2: Balance Sheet menu to open up the Report 2 window. Inside this report window you get a complete rundown of your company's assets, revenues, expenditures, and taxes. All financial figures are categorized and broken down into totals for your subsidiaries, railroad operations, stocks, and real estate holdings. Total profit and loss is calculated and then summarized in your statement's bottom line. The Balance Sheet report is updated continuously throughout the year.

There are no game controls or commands inside this report. Also, game play is halted while the report is open.

Do not confuse Report 3: Subsidiaries with the Subsidiaries menu, in which you can only build new subsidiaries or remove subsidiaries that you already own. Report 3 only allows you to buy and sell subsidiaries with other companies.

Report 3: Subsidiaries

Selecting the Report 3: Subsidiaries menu causes the Report 3 window to open. This window details the number of buildings and facilities owned by you and other companies. Using the Buy and Sell buttons inside this window, you can buy subsidiaries from other companies (assuming they are for sale), or you can sell subsidiaries that you have previously built (assuming there are buyers). Remember that buying and selling of all subsidiaries is accomplished through this report, while constructing new subsidiaries or "bulldozing" down previously built subsidiaries is done through the Subsidiary menu. You can also check on the profitability of a particular subsidiary by selecting the subsidiary name from the list, and then clicking on the Sell button if it belongs to you, or on the Buy button if it belongs to a rival company.

In the Report 3 window, the numbers next to the subsidiary names refer to the number of subsidiaries you own, while the numbers to the far right refer to the total number of subsidiaries owned by other companies.

Game play is suspended while this report is open.

Report 4: Urban Growth

Clicking on the Report 4: Urban Growth menu brings up the Report 4 window. This report window displays an almanac of information about your city. The size of your city is rated, along with city type,

budget, and population. There is also a graph chart to display changes in population over time, and a "radar chart" of business activity showing which kinds of businesses are currently most active.

There are no game controls or commands inside this report. Game play ceases while the report is open.

Stock Market Menu

Clicking the Stock Market menu opens up the Stock Market window. Through this window you can buy and sell shares of 24 different companies in the stock market. You can also track the performance of any stock on a graph chart to see what state the market is in.

The stock market's hours of operation are Monday through Saturday, 9:00 AM to 5:00 PM, except holidays. This means that during off hours the menu is inaccessible. Game play stops when this window is open.

Bank Menu

Clicking this menu opens up the Bank window, which you use to borrow money from the bank and check on the status of your debts. The Bank's hours of operation are Monday through Saturday, 9:00 AM to 5:00 PM, except holidays.

Game play is suspended while this report is open.

Scrolling Arrow Buttons

Scrolling the Map Territory in the Main window is accomplished by clicking on one of the eight Scrolling Arrow buttons. Simply do this to nudge your map incrementally in a particular direction. The direction of the arrow inside the button indicates the relative motion the map will move if you click on it. Holding down the left mouse button or the spacebar while pointing on the button will sustain the motion until you release the mouse button or spacebar. The upper four arrow buttons allow you to scroll up, down, left, or right, while the lower four arrow buttons allow diagonal motions.

If the Satellite window is open, the Scrolling Arrow buttons will also move the selection rectangle. Although you can drag the selection

rectangle in the Satellite window, using the Scrolling Arrow buttons gives you more precise positioning control for smaller movements.

To use the keyboard equivalent of the Scrolling Arrow buttons, press the Shift key in combination with any arrow cursor key.

A Bird's Eye View: The Satellite View Window and Train Calendar Chart

Using the Satellite window, you can scroll the map large distances much more rapidly than you can with the Scrolling Arrow buttons. You can also locate any train and have the Main window automatically center on the train's current position on the map. In addition, you can find out the passenger counts for any particular train and what the train's current status is.

The Satellite window and Train Calendar Chart (also called Train Registry) are opened by clicking on the Satellite menu. Inside this window is a small map containing a scrolling selection rectangle, a Train Registry chart, and a Train Information text box. The small map is a miniaturized version of your entire map, and the selection rectangle represents the area currently visible in the Main window. Clicking and dragging the selection rectangle inside this mini-map allows you to reposition the Main window's Map Territory view quickly anywhere in the city. This saves you time in scrolling large distances, since you don't have to wait for the Main window to update itself by redrawing the landscape.

The selection rectangle will change size if you open menus or reports on screen that reduce the visible portion of the Main map. For example, fully opening the Report 1 window causes the selection rectangle to become a square instead of a rectangle. The selection rectangle always depicts the viewable area of the Main map.

All your train lines are displayed in the Satellite window, and you can even see little dots representing each train moving along the tracks. If you click on any active train number in the Train Registry (or calendar chart), the Main window's view will jump to the current location on the map of the selected train. Notice that the maximum number of trains is 25, which is the total number of trains that A-Train can handle at any given time.

Table 3.2: Train Registry Legend

Train Number Symbol	Meaning
15	Vacant: No train yet assigned
10	Train assigned but not yet placed on map
4	Train assigned and running on map

The appearance of the numbers in the Train Registry indicates the status of trains assigned to that number. Trains that are active and running on the map have a colored border circumscribing the train number in the Train Registry. Trains that you own but have not yet placed on the map have a colored number that is underlined in the Train Registry. The color of the underline matches the color of the train after it has been placed on the map. Train numbers that appear white or ghosted out indicate that no train has yet been assigned to or purchased for that numbered slot. Table 3.2 summarizes the preceding with a legend for reading the Train Registry numbers.

Just below the Train Registry, the Train Information text boxes will tell you the type of train you have selected, the number of cars in the formation, the number of passengers it is carrying (if it is a passenger train), and the present status of the train. If your train is idle, stalled due to collision, or not active on the map, the Status box will inform you.

Game play continues while this window is open.

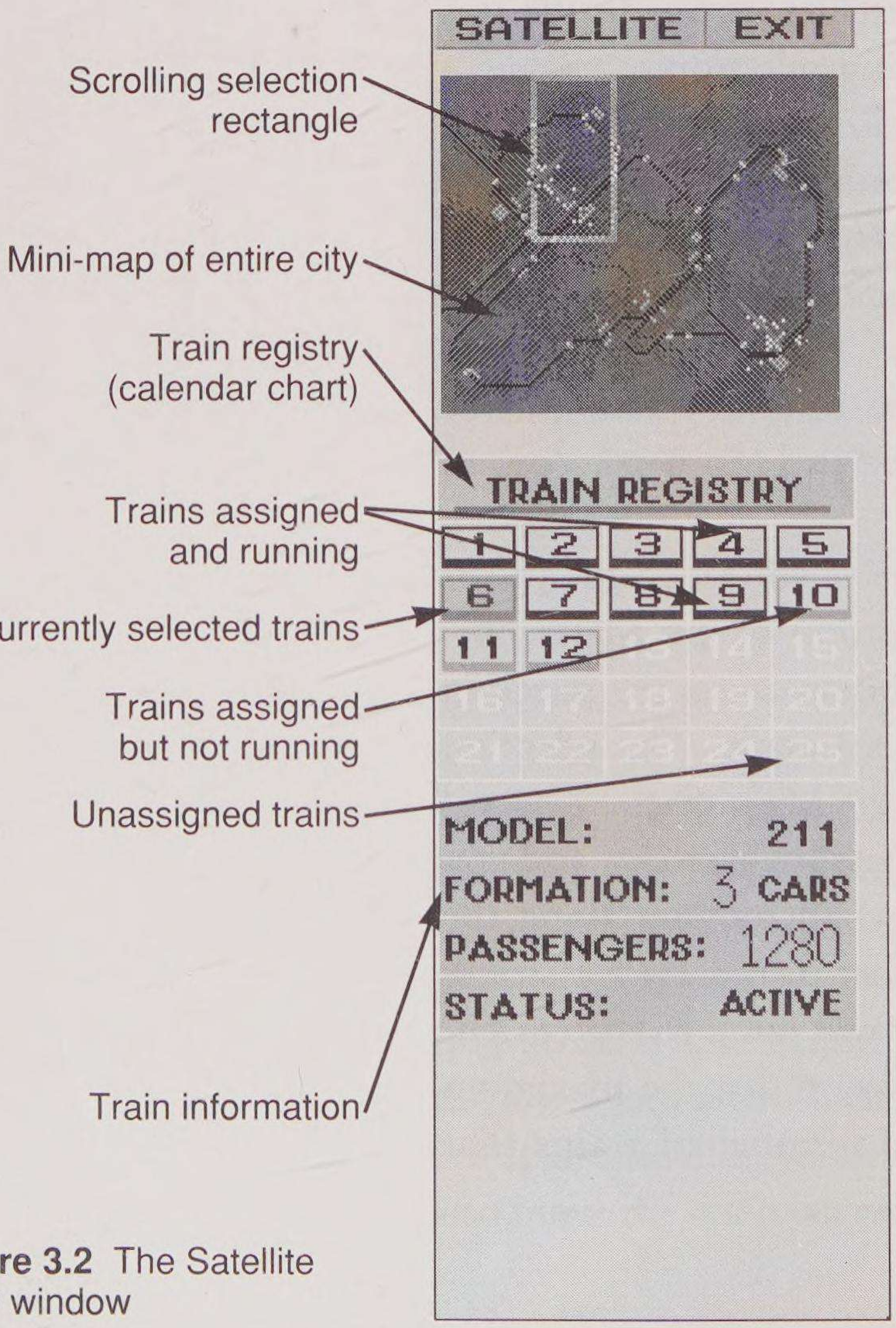


Figure 3.2 The Satellite View window

The About Button

Clicking the About button will open the About window. This window lists the names of all the people who helped produce the A-Train simulation. Game play freezes while this window is open.

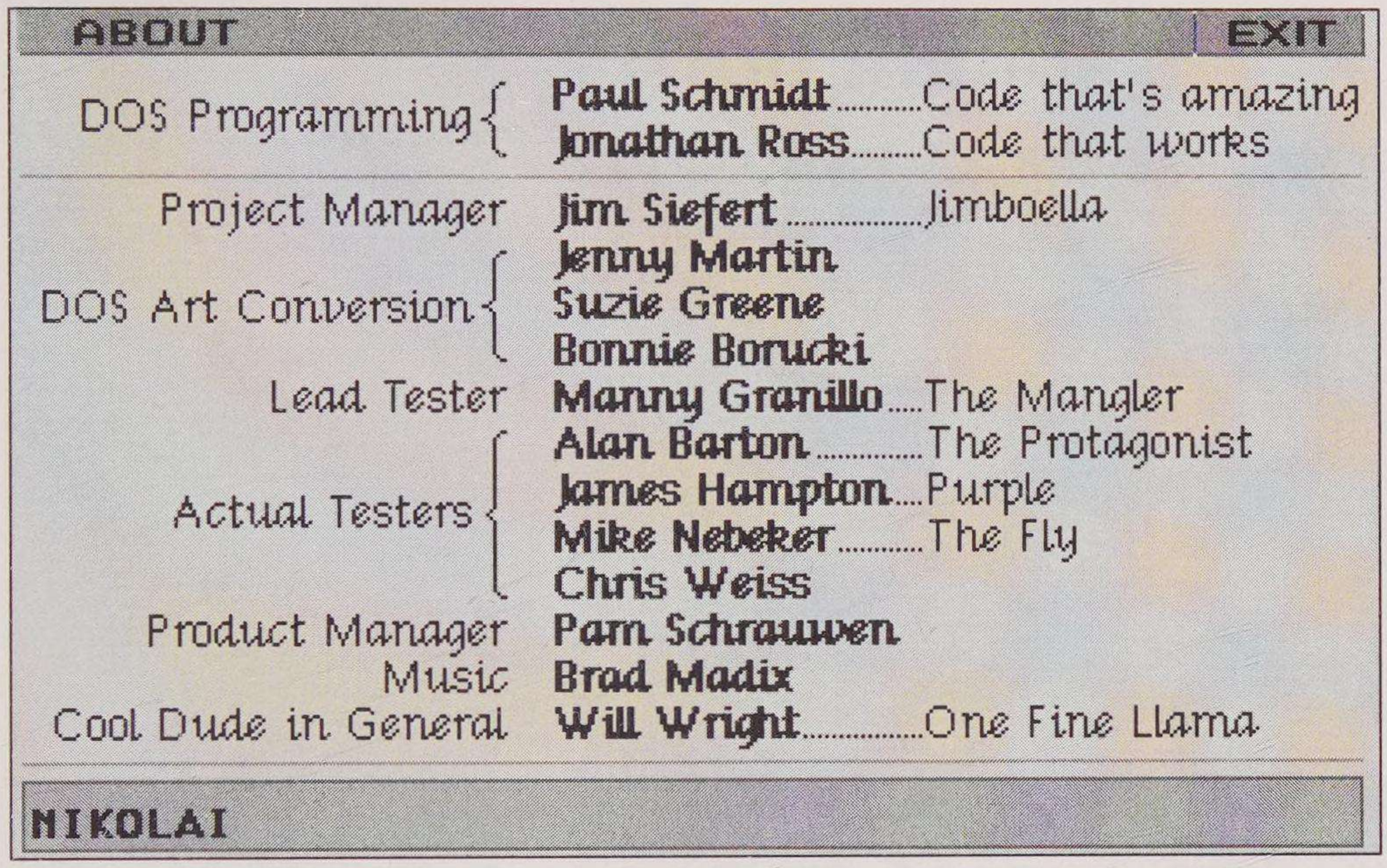
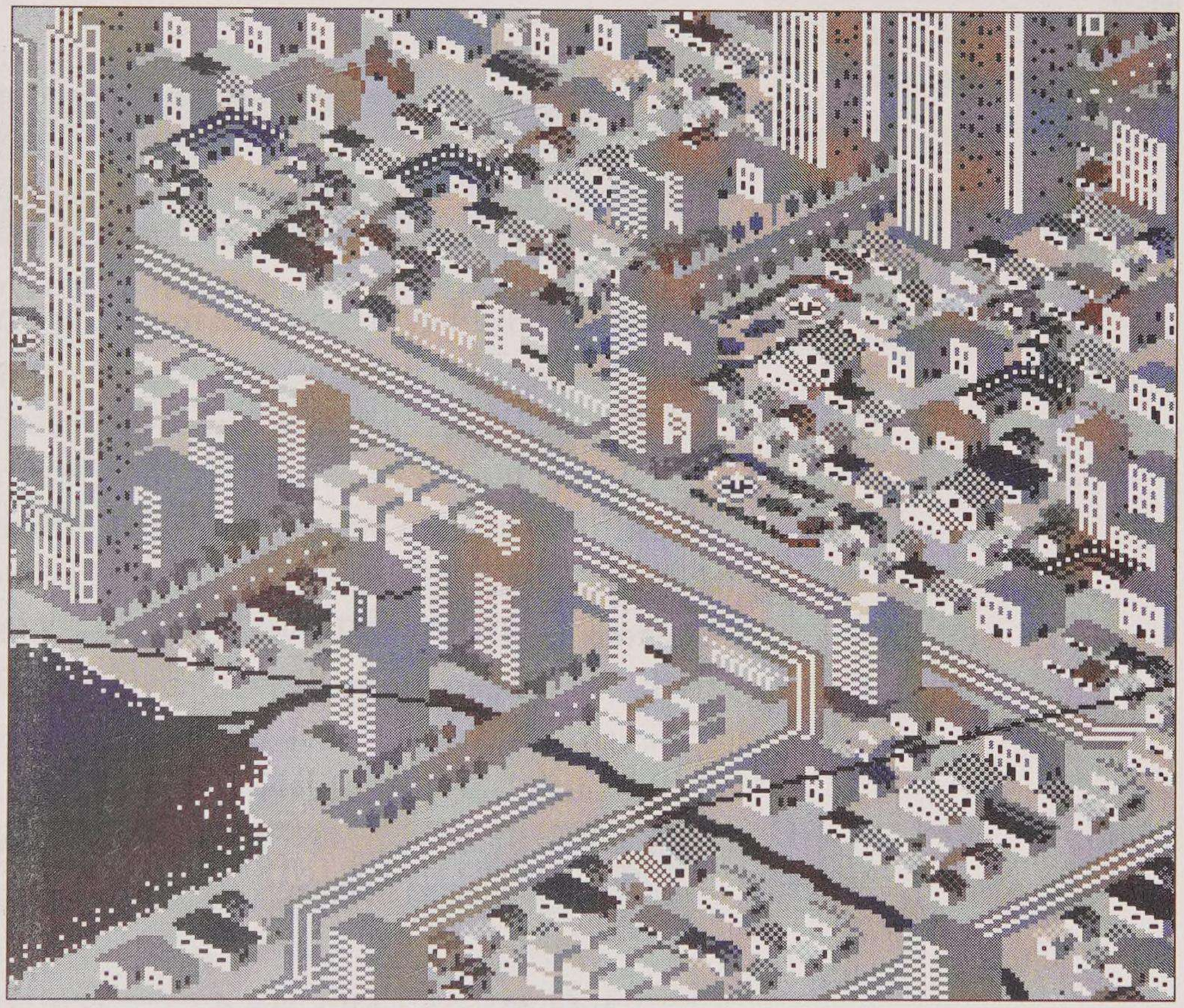


Figure 3.3 The About window

CHAPTER 4

Tools of the Trade
(Train Menu)



Because trains and stations are the nexus of A-Train's environment, you will need to master the construction, operation, and scheduling commands found under the Trains menu. This chapter will teach you the basics of using the Trains menu, and will also provide you with some basic information on how tracks, trains, stations, storage yards, materials, and roads interrelate. If you think you already understand how to use the menus, you can skip the basic menu instructions and just read the text that offers you something new. I think you will find some interesting new ideas and concepts that will help you with your game.

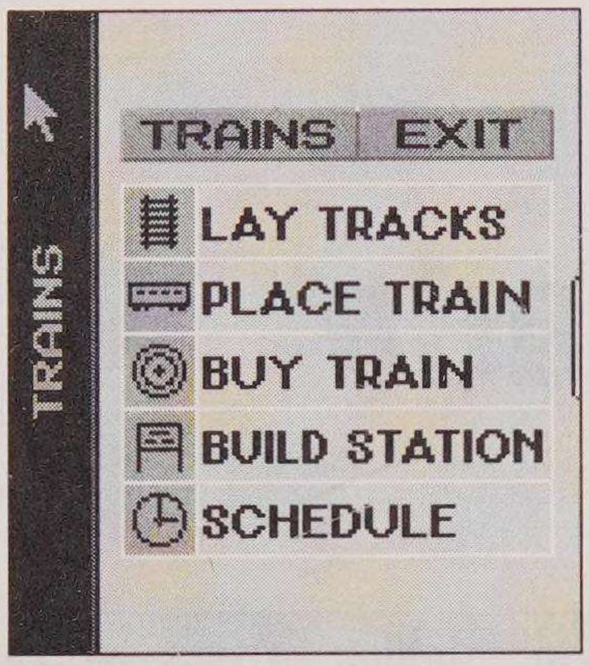
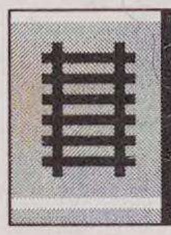


Figure 4.1 The Trains menu

USING THE TRAINS MENU

When you click on the Trains menu on the left edge of the Main window's picture frame, a window with five sub-menu options will pop into view. To the left of each menu option you can see an icon symbol, which is the same icon that appears on the Quick Menu tool bar.

Game play continues while the Trains menu is open, but will stop if you open any of the sub-menu windows.



LAY TRACKS

Through the Lay Tracks menu you lay or remove tracks by clicking on the Lay and Remove buttons. The cost of constructing the tracks, which is displayed below the two buttons, includes the purchase of land and buildings as well as the clearing expense for the railroad's right of way. Plan your train routes efficiently to minimize the length of tracks and thus the cost. The cost to lay one block of track or track switch is $100[1]. However, this does not include the price of land, which ranges from $2,000 to $3,000 per block depending on location, and the cost of clearing the land of surface features. Obviously, the cost of laying track is not as financially burdensome as the acquisition price and expense of clearing the land. This formula depicts how track-laying costs are calculated:

Total cost of laying track	=	(Purchase price per block)
	+	(Clearing expense per block)
	+	(Land clearing expense).
	+	$100
	=	Total cost of laying track

[1]As this book goes to press, there are some known bugs in A-Train that should be corrected by the time you read this:

- The cost for removing track, which should be $20, is $2,000.
- The cost for removing a switch, which should be $40, is $4,000.
- Laying track from different directions, even if they are over the same two blocks, costs different amounts when it should be the same.
- The A-Train manual incorrectly states the costs for building and removing rail, switches, and bridges. Table 4.1 in this book lists the correct amounts.

Laying a straight section of track is relatively simple: merely click the Lay button and then click and drag the cursor over the map. When the track is the desired length, click again and the track will appear on the map. If you make a mistake before placing the track, you can undo your track laying efforts by clicking the right mouse button. Track removal is also simple: click the Remove button and then click on the track that you wish to remove.

There are a few points you should remember:

- There are a some restrictions on where you can lay tracks (see next section).
- When you first lay tracks, the land underneath is bought and any surface features are cleared away. This is all done automatically for you, with the costs for clearing and purchasing the land shown in the Cost box of the Track window.
- When you place your railroads over occupied land, any buildings atop it are automatically bought and cleared (except for the restrictions listed in the next section).
- When you remove the tracks, the land still belongs to you and can be sold to other companies or used for building other subsidiaries.
- No building materials are needed when you lay track, add switches, or build railroad bridges.

Table 4.1 Track Laying and Removal Expenses

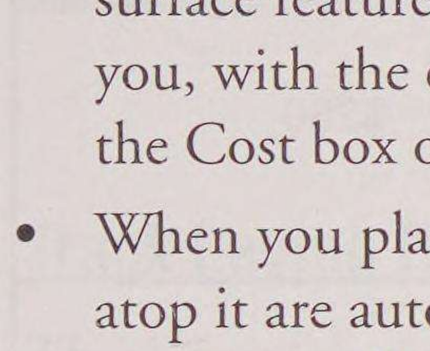
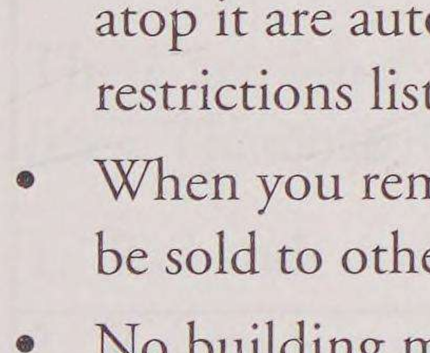
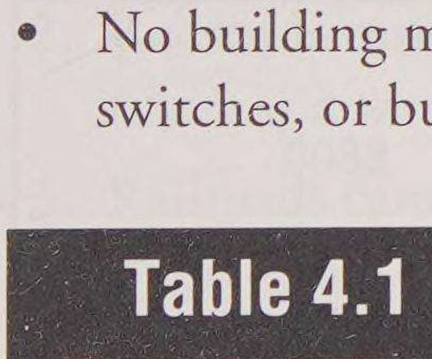
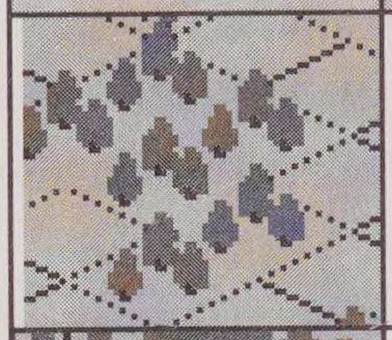
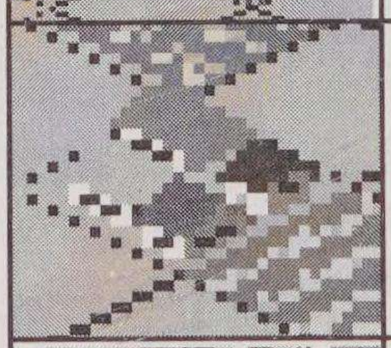
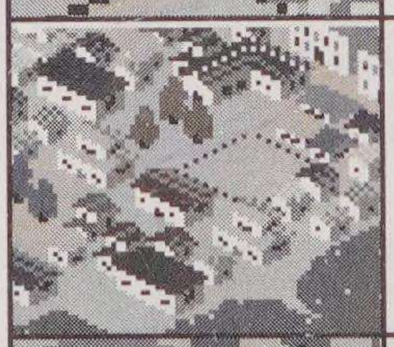
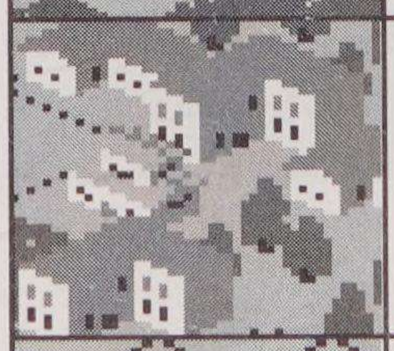
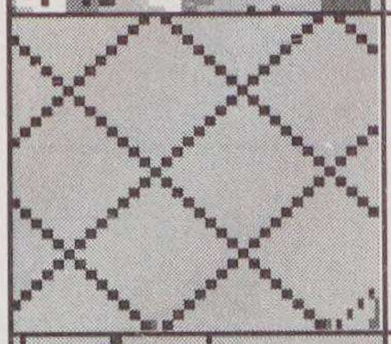
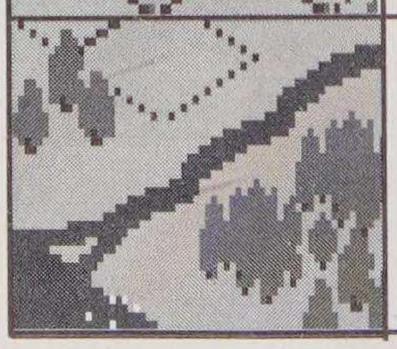
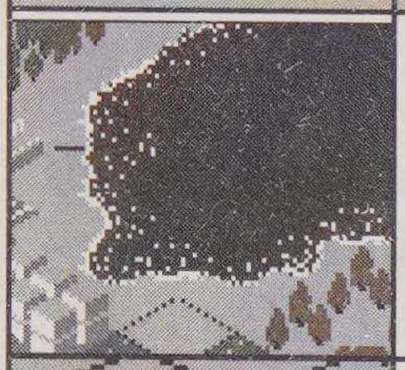
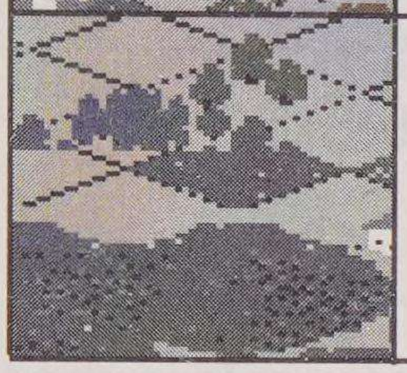
Map Image	Track Type	Laying	Removal
	Rail	$100	$20
	Switch	$100	$40
	Bridge	$0	$1,000

Table 4.2 Land Clearing Expenses

Map Image	Type of Land	Cost
	Forest	$100
	Pond	$100
	Farm	$200
	Ranch	$200
	Residential Housing	$800
	Public Building	$8,000
	Flat Land	$0
	River	n/a[2]

[2](N/A) Not applicable because you can't clear a river.

Table 4.2 Land Clearing Expenses (continued)

Map Image	Type of Land	Cost
	Sea/Lake	n/a[3]
	Mountain	n/a[4]

Track Laying Restrictions

There are other conditions which prevent you from laying railroad lines. These restrictions are summarized below:

1. Railroads cannot connect at right angles to other railroads.
2. Railroads cannot intersect and cross over established railroads (there is a way around this rule; see below).
3. Railroads cannot cross oceans and lakes (except the Shinkansen-Bullet Train, over which you have no control).
4. Railroads cannot cross rivers unless you construct a bridge, which must be built at right angles to a river. There are only a limited number of crossing points for rivers because of this right-angle rule, so plan accordingly.
5. Railroads cannot pass through hills or mountains, but must be routed around them. No tunnels are possible.
6. Railroads can pass through parks, but not streets. There is no clearing cost for park land.
7. Railroads cannot pass through a company-owned subsidiary building without first removing the building (exception: buildings

[3](N/A) Not applicable. You cannot build anything on a sea or lake.

[4](N/A) Not applicable. You can't clear a mountain.



Figure 4.2 The Track menu

under five floors can have railroads built over them without prior removal). Subsidiary buildings can be removed by using the Remove button in the various sub-menus of the Subsidiaries menu.

8. Railroads cannot pass through subsidiary buildings owned by other companies without first buying and removing the buildings (exception: buildings under five floors can have railroads built over them without prior removal). You must buy the subsidiary through Report 3, then remove it using the Subsidiaries menu. Because this can be very costly, it would be much better to re-route the tracks.
9. Railroads cannot be built if you run out of money.
10. Railroads cannot be built outside the map boundaries; that is, the area that you can scroll in the Main Map view. This means you can't build new lines to the outside.
11. Railroads cannot be built passing through skyscrapers (buildings over five stories), factories, amusement parks, ports, airports, golf courses, ski resorts, or stadiums. Each of these facilities must first be removed before tracks can be laid.

If you try any of these track-laying no-nos, you will get a message from your engineering advisor informing you that the track location is bad and that you will have to try again.

Curves

When you need to alter the direction of a railroad line, you must construct a curve. Curves are really 45-degree diagonal offshoots from a straight section of track. Note that the maximum angle of curvature for any bending section of track is 45 degrees. Usually, any bend greater than 45 degrees requires two separate steps:

1. Build the two straight sections of your line that need to be connected by a curved track.
2. Try connecting the curved section by cutting across in a 45-degree angle. When connecting to the straight track sections, start your mouse pointer on the very last straight track block and then click and drag so that the point of departure is at an angle of 45 degrees. Finish the curve by hooking it up to the last block of the other straight track at the same 45-degree angle.

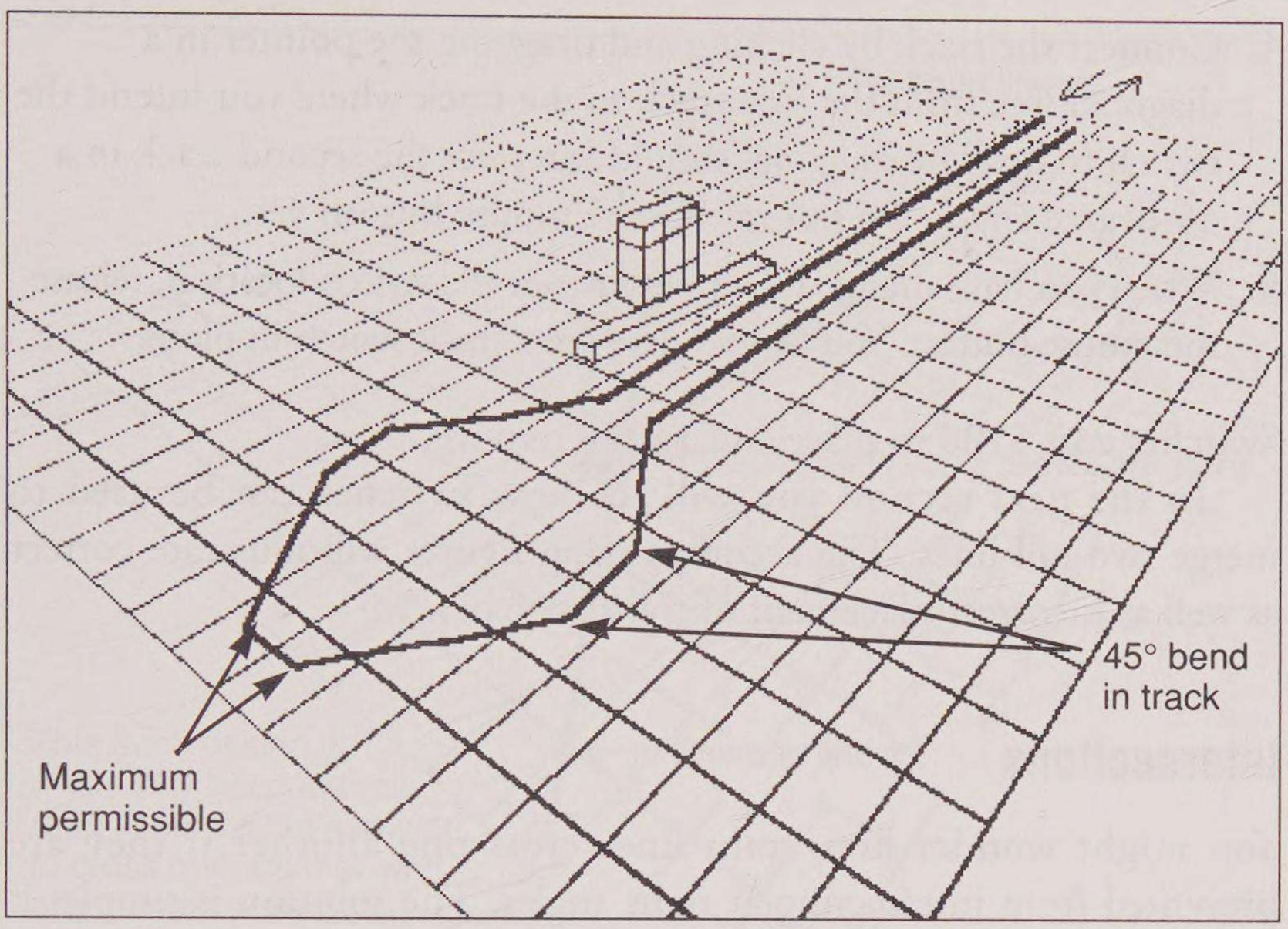


Figure 4.3 Constructing a turn-around curve for a railroad station. Note the maximum permissible 45-degree bends in the track.

Figure 4.3 illustrates a single track with several curves which allow a complete 180-degree turn. This curving track design is particularly advantageous for stations where multiple trains are sharing the tracks. Since track direction is one-way, you can add as many trains as you like to this line without fear of collision.

Switches

Track switches are used to allow tracks to merge and diverge. This allows each train to take a path different than its other wheeled brethren. Each switch is set individually for each train in the Schedule window and never needs to be reset. Different trains using the same switch can be automatically routed on diverging paths because the simulator remembers to switch the track in the correct direction for each train. When you first place a new switch on a line, the switch is set by default so that trains traveling on it will go straight. Here is how you create a new switch:

1. Select the Lay Tracks menu.
2. Click the Lay button.
3. Position the pointer over the end of the track you wish to join (not the track where the switch is to be placed).

4. Connect the track by clicking and dragging the pointer in a diagonal line from the first track to the track where you intend the switch to be. The diagonal should intersect the second track in a 45-degree angle. Do not release the mouse button yet.
5. When you have dragged the pointer over the switch location, release the mouse button. You should now see a track switch in place.

Switches cost $100 to place and $40 to remove.

In the next section you will see how switches can be used to merge two rail lines. The accompanying figures will illustrate correct as well as incorrect placement of track switches.

Intersections

You might wonder how train lines cross one another if they are prevented from intersecting at right angles. The solution is simple: if you design the track intersections correctly so that the tracks merge diagonally at 45-degree angles with a switch for each crossover point, you can merge the two tracks temporarily and then separate them with another switch. Figures 4.4 and 4.5 show incorrect track designs that will not work. In Figure 4.4 you can see that simply attempting to cross the lines at right angles would violate the no-right-angle rule

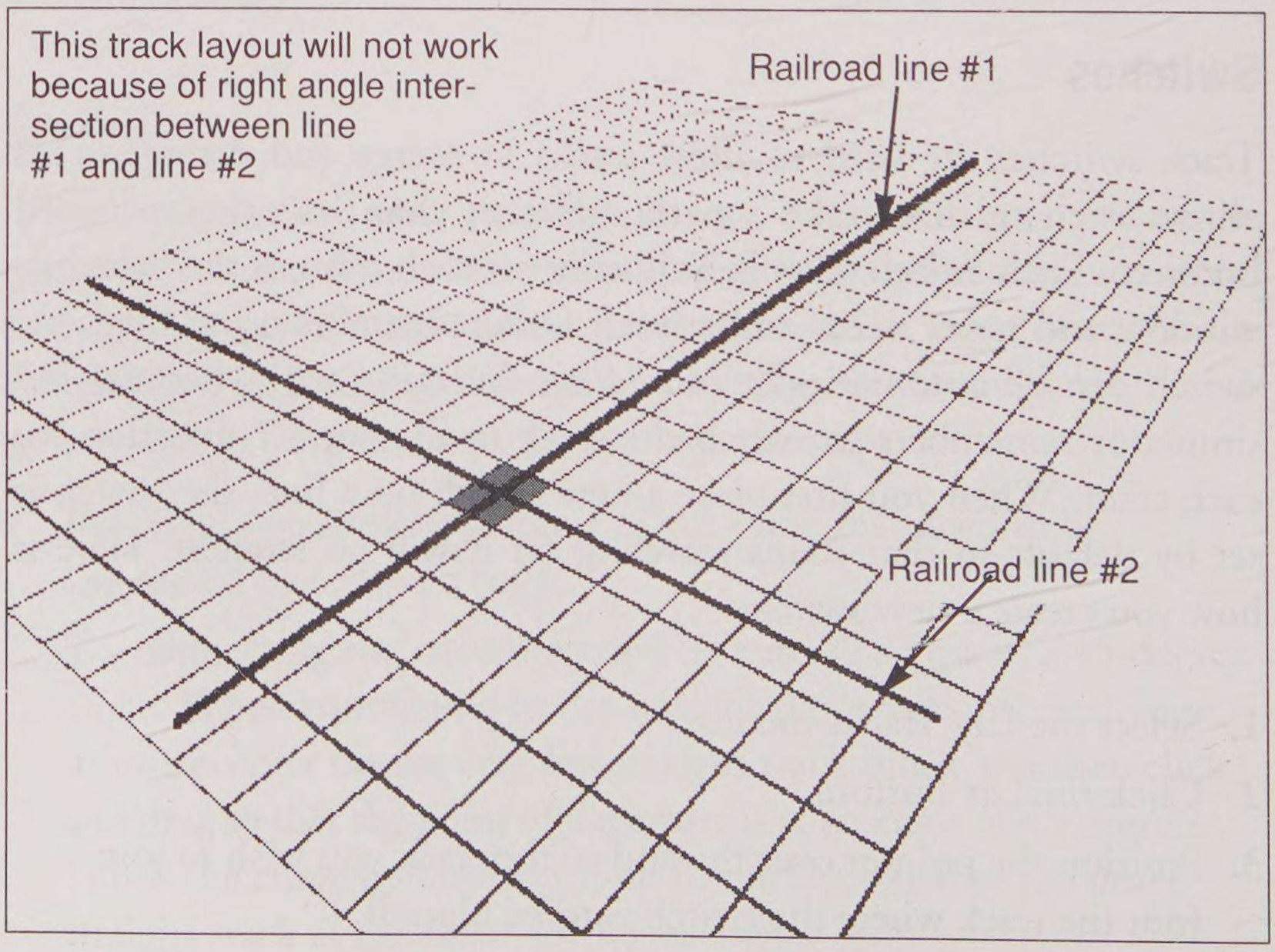


Figure 4.4 Tracks cannot cross at right angles

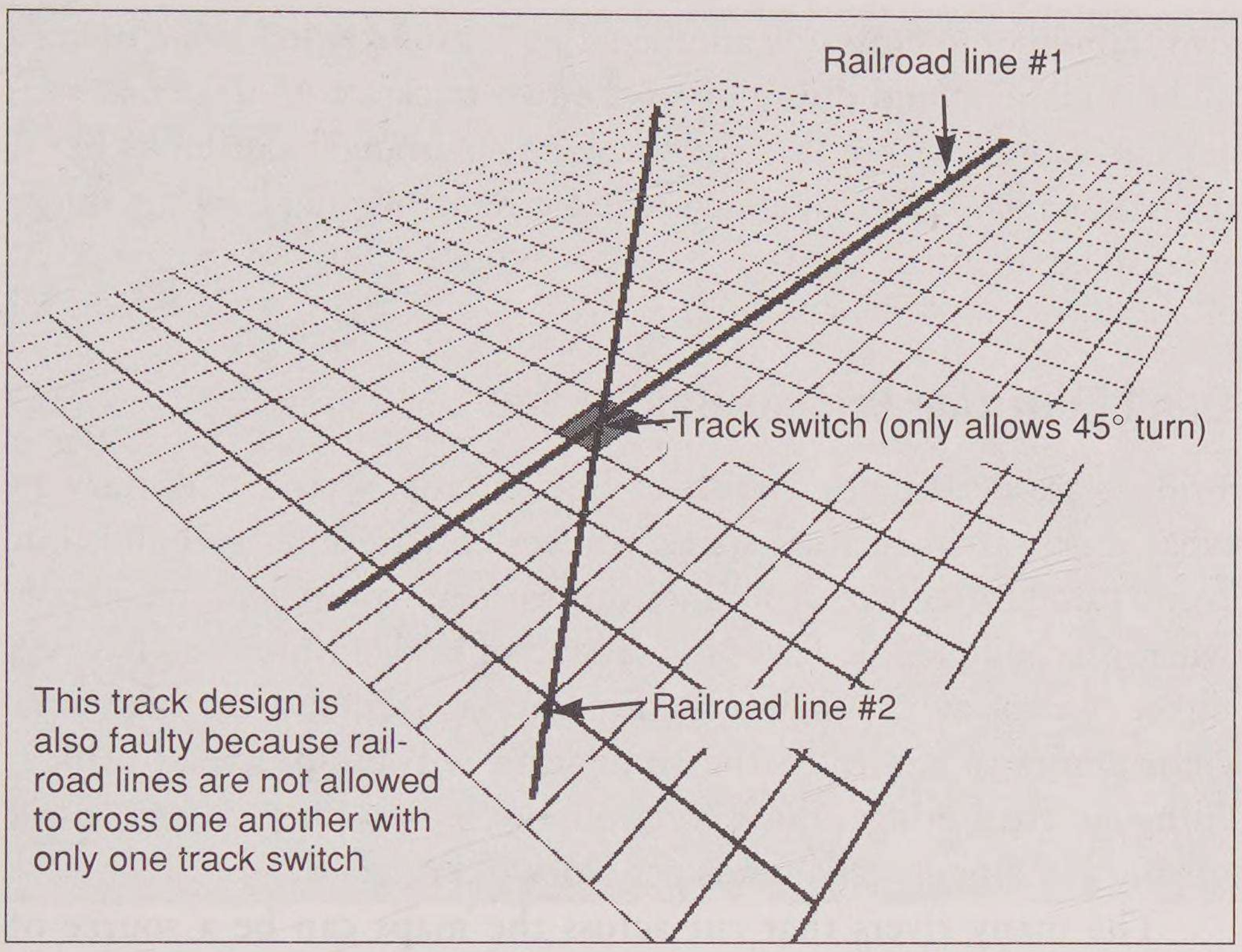


Figure 4.5 Tracks cannot intersect and cross one another with only one track switch

of track placement. Although Figure 4.5 shows a clever attempt to cross two lines by merging them diagonally at a single 45-degree angle track switch, again, this geometry will not work. Track switches will only work for a single change of direction, not two, as would be the case in the diagram. Figure 4.6 illustrates the correct way to allow

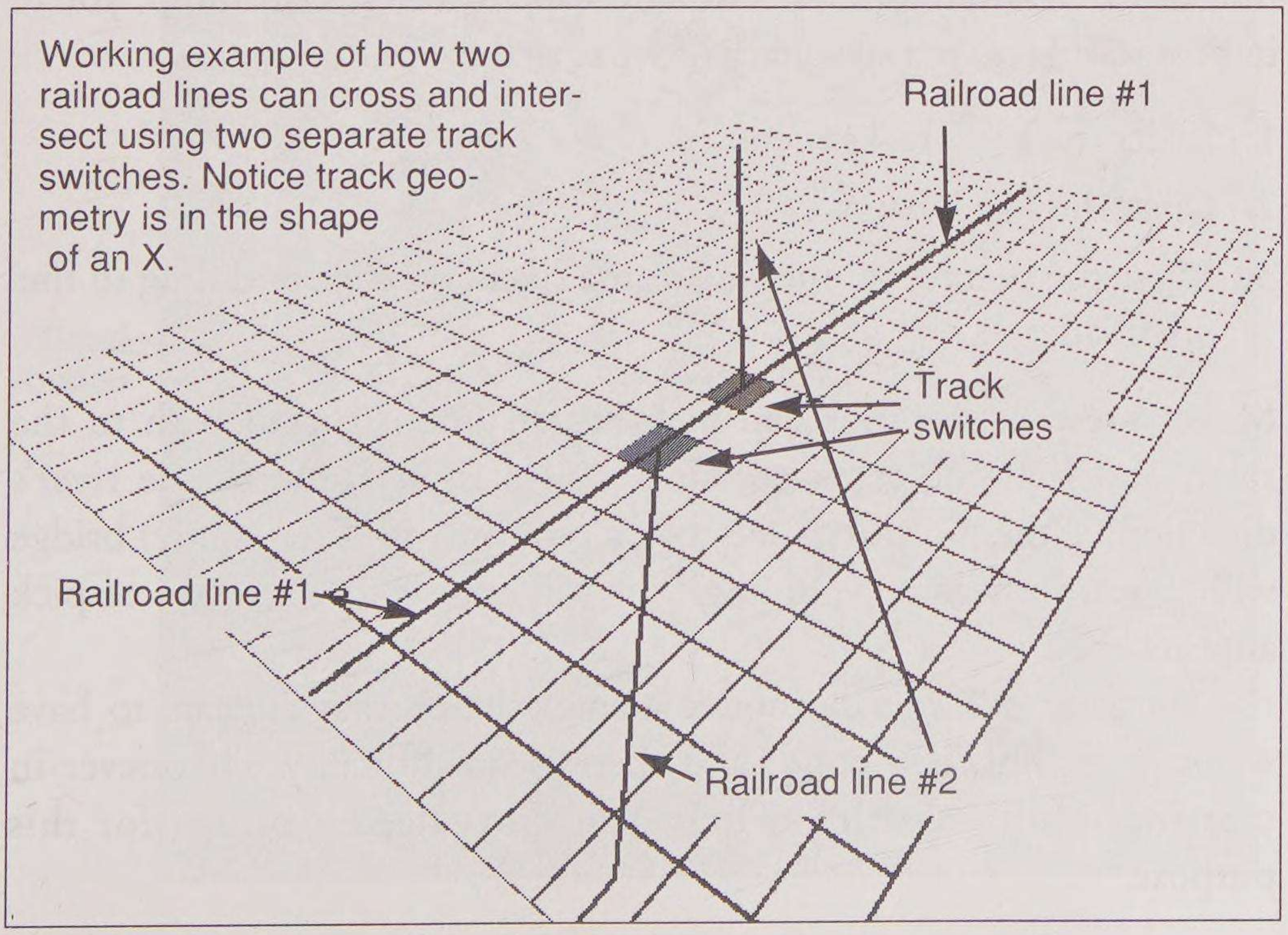


Figure 4.6 How to allow two railroad lines to cross using switches

two train lines to cross one another. Two separate switches are used to allow a merging and diverging of the two tracks at 45-degree angles. It's interesting to note that the whole track arrangement looks like a giant X, which is an easy mnemonic for remembering how the tracks need to be oriented.

Don't Burn Your Bridges Behind You

Bridges are needed for a railroad line to cross a river. Contrary to what the A-Train manual states, bridges cost nothing to build, but cost $1,000 to remove. Also, they don't use up construction materials when you build them. There is one kind of bridge which you have no direct control over. When a road reaches a river, and the road is at right angles to the river, the simulation will build a road bridge. Although road bridges don't cost you any money, they do use up six of your building material units per block of bridge.

The many rivers that cut across the maps can be a source of frustration if you are trying to ford them. You may have noticed that building a railroad line across a river is not so easy. This is because the railroad line can only cross the river at a 90-degree (right) angle, and there are only a handful of suitable locations where you can do this. What's more, the bridge cannot curve, and can only be one block in length. When you find an appropriate spot that isn't troublesome because of nearby mountains or landscape features, Geronimo, you're in business! Here is a summary of what to do:

1. Select the Lay Tracks menu.
2. Click the Lay button.
3. Move the pointer to one side of the river and click and drag to the other side.

Make sure that the spot you pick has an unobstructed path to the river, and that the track crossing is at a right angle to the river's direction. If the location is suitable, a red (only in VGA mode) bridge will appear; otherwise your engineer will appear to warn you to pick another spot.

You may occasionally notice a single block that appears to have water in it. This is a pond, and there is no difficulty whatsoever in crossing it with a railroad line. You don't need a bridge for this purpose.

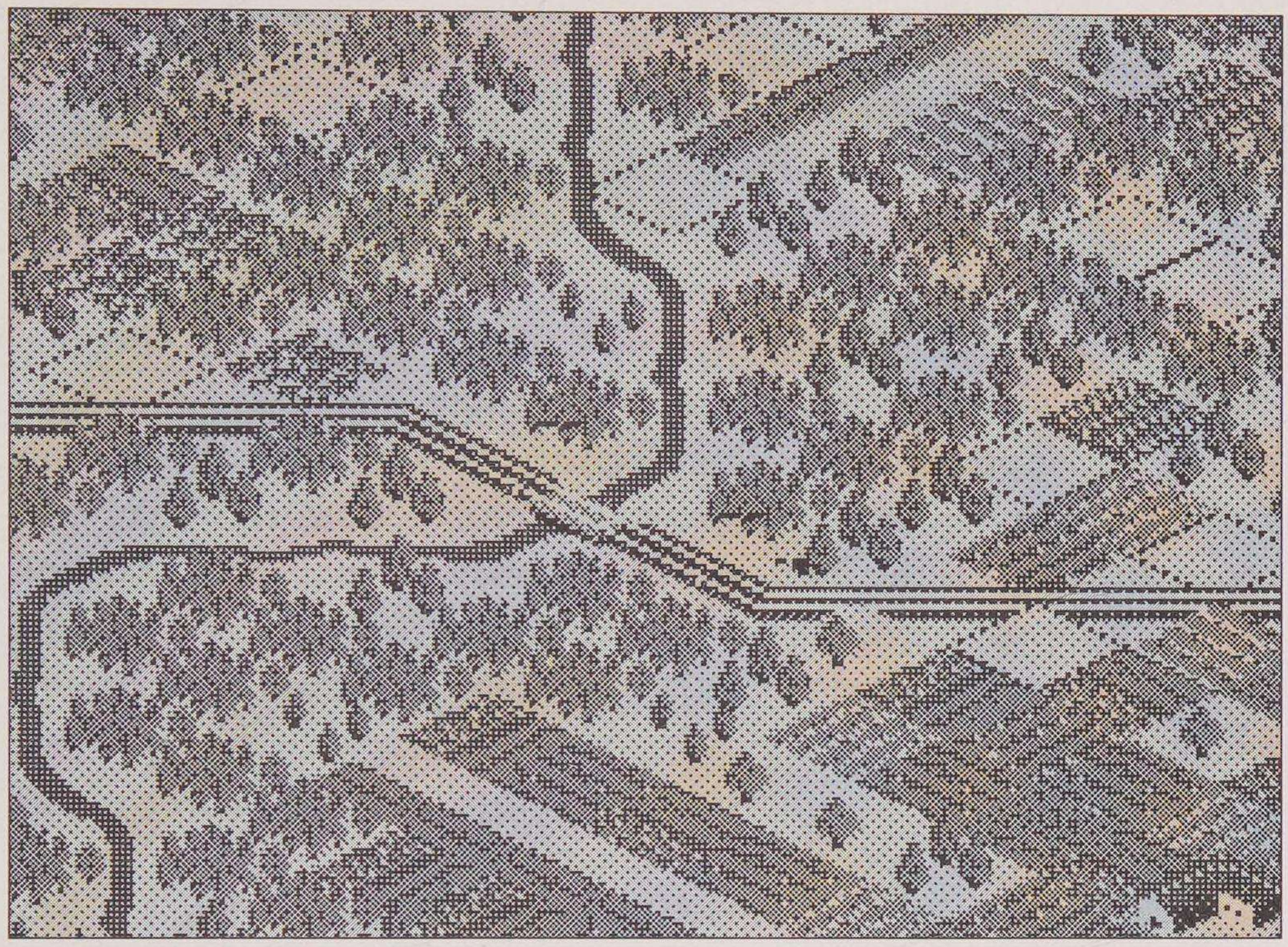


Figure 4.7a Approaches to bridge must be straight.

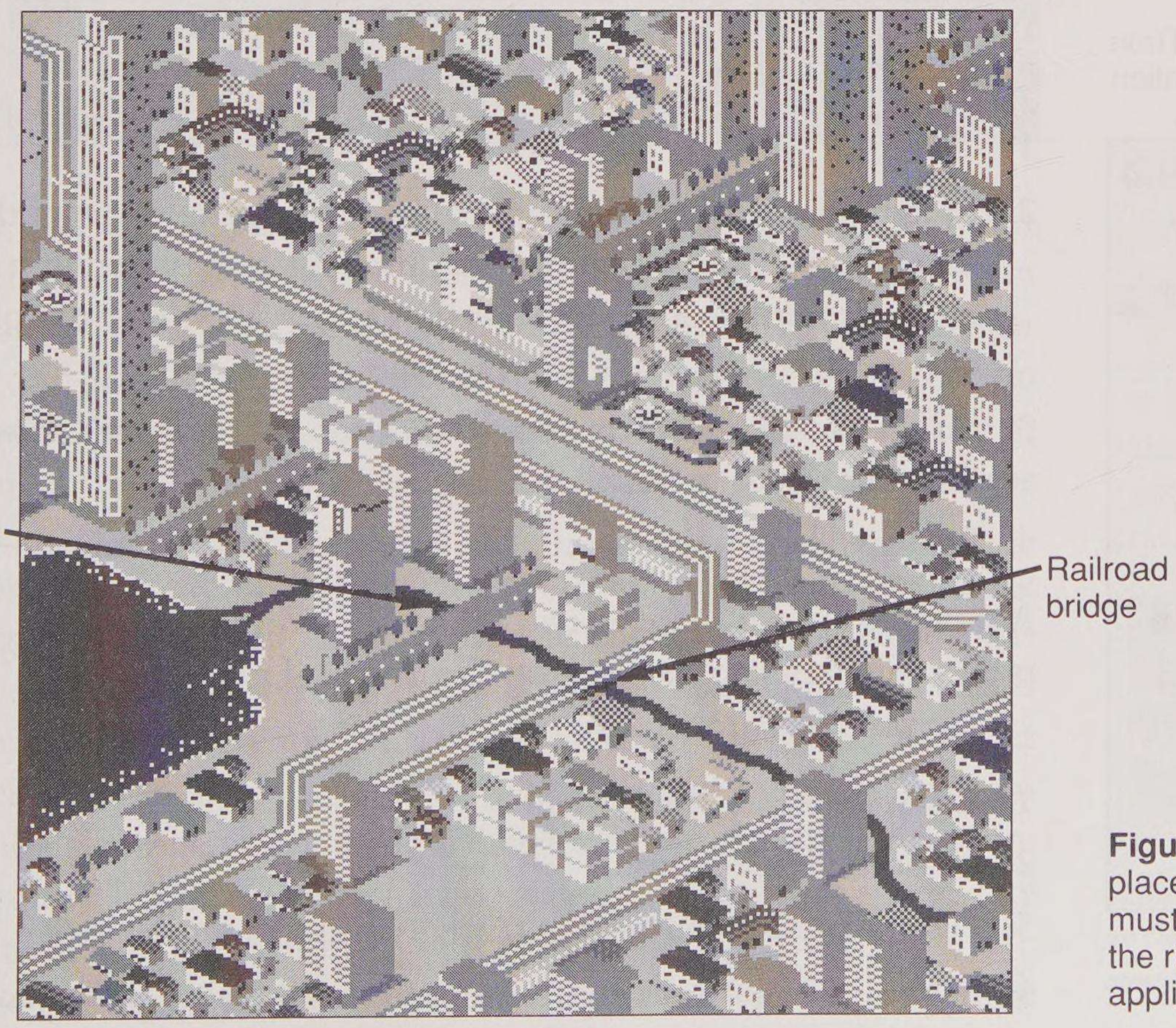


Figure 4.7b Proper placement of a bridge. It must be at a right angle to the river. This rule also applies to road bridges.

PLACE TRAIN

When two trains suffer a head-on collision, instead of removing one of the trains entirely you can use the Place Trains command to change the direction of one train to match the other train's course.

This menu is used to place or remove any train on the tracks. You can also choose the direction a train will take by clicking on direction arrows that appear on top of the train. A train is selected by clicking on the train number in the Train Registry calendar chart. If a train is currently running, selecting the train number from this chart will center the map on the train, wherever it may be, and cause direction arrows to appear over the train. The train's model number, the number of coaches or trailer cars it is running, the seating capacity, and the current status of the train will be displayed below the chart. To understand how to interpret the colors and appearance of the calendar chart, see Table 3.2 in Chapter 3.

The cost for placing or removing a train is $100.

Another vital use of the Place Train command is to resolve train collisions. When two trains collide head on, they freeze and will not resume motion until you alter the intended direction of one of the trains or remove it from the map. When you see a train wreck, here is what you need to do:

1. Open the Place Trains menu.
2. In the Train Registry click on a number assigned to one of the trains. If you don't know the train number, keep selecting train numbers until you see two direction arrows appear on top of one of the two trains involved in the collision.
3. When you see the direction arrows, click on the arrow facing away from the opposite train.
4. Exit the Place Trains menu. The trains will begin to move.

Although you can place a train on any line on the map, you cannot put a train on a line shorter than the length of the train.

To place a train:

1. Open the Place Trains menu.
2. Click the Place button.
3. Select the train you wish to place from the Train Registry.
4. Scroll the map to where you want the train placed, then click the

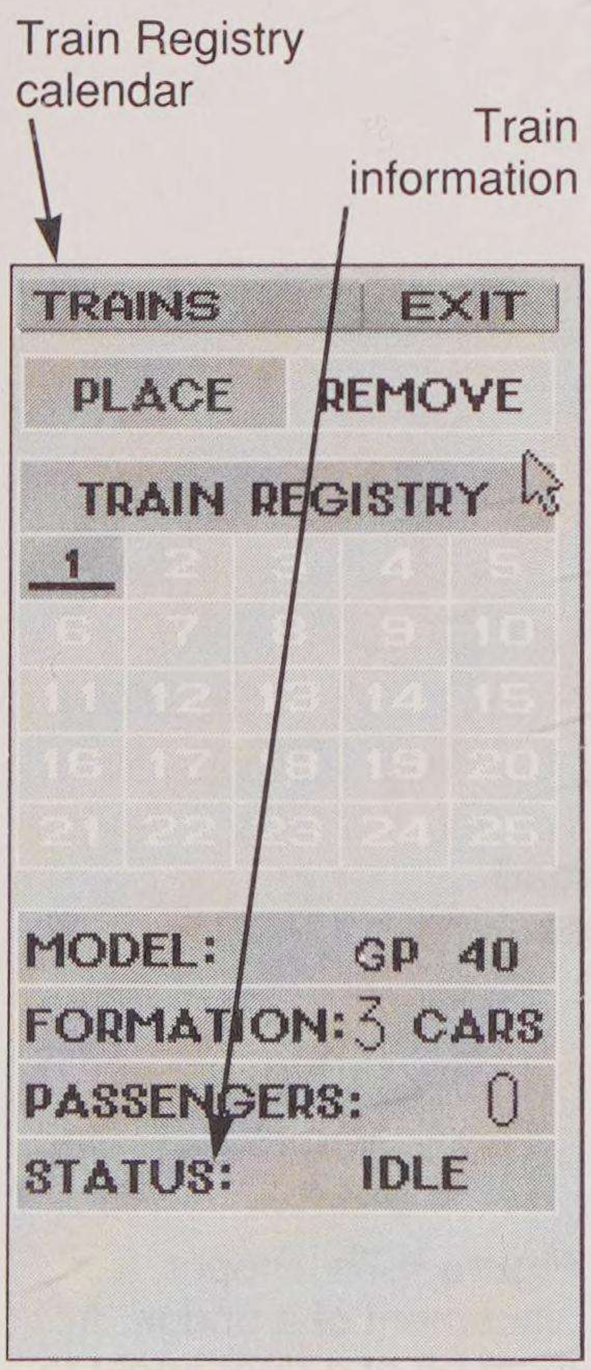


Figure 4.8 The Place Train menu

pointer on the tracks.

5. When the train appears, click the arrow on top to choose its initial direction. The white arrow signifies the train's current intended direction. Click the black arrow to toggle the train's direction the other way.

If you want to remove a train to put it into storage, or perhaps to sell it, you would follow a similar procedure:

1. Open the Place Trains menu.
2. Click the Remove button.
3. Select the train you wish to remove from the Train Registry.
4. The map will automatically scroll to the train's current position on the map. You will see it with two arrows, one white, the other black, on its roof. Click on the train and it will be removed.

You can place the train back on the map at any time, unless, of course, you sell it.

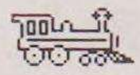


BUY TRAIN

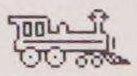
Buying and selling trains is accomplished through the Rolling Stock Market window, which you open by clicking on the Buy Train command. Of the 19 different trains to choose from, 15 are passenger trains and four are freight trains used for hauling construction materials. Two freight trains are found at the bottom of the first column of trains and the other two are found at the bottom of the second column of trains.

Both types of trains earn you profits by carrying fare-paying passengers and freight. Ticket prices are based on the type of train and the distance traveled between stations, with longer distances generating greater revenue. The fare is collected from each passenger or block of building material carried. The amount earned is based on where the passengers disembark or freight is unloaded from the train. Thus you will earn more with trains traveling away from a large city center than with trains heading into a city from the suburbs.

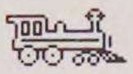
The Rolling Stock Market window also contains a Train Registry,



After a train has been removed, if it is a freight train, the materials will be permanently lost; while if it is a passenger train, the people on board will go home.



Trains carry more passengers away from city centers than they bring in from the suburbs. Since the income generated is added to your coffers when the train arrives at its destination, you will actually make more money with trains leaving the city than with trains arriving from the suburbs.



A good way to assign train numbers so that you remember which train is which, is to assign all passenger trains from number 1 up in order, and assign all freight trains in reverse order from number 25 on down.

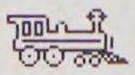
from which you pick a train number to register your newly purchased train. When selling trains, you also use this calendar chart to select the particular train you wish to get rid of.

Below the Train Registry chart you can see the cost of the train you are buying, or alternatively, if you are selling, the amount you would earn. Off to the right-hand side of the Train Registry, you can see the selected train's vital statistics—including the model number, type of train, speed, passenger or freight carrying capacity, and whether or not it is capable of being a nonstop express train. Trains that have nonstop capability are much more useful than those without it because they can bypass little-used stations as an economy measure. All four freight trains can pass stations, which is absolutely necessary when you are trying to target a particular area for delivery of building materials, and you don't want to dump the train's cargo prematurely at a way station along the route.

Another important consideration is the speed of the train. High-speed trains move at three blocks per hour, while low-speed trains move at two blocks per hour. A good rule of thumb is to never mix and match high-speed and low-speed trains on the same line; otherwise they will be constantly bumping into one another. Essentially, all high-speed trains would be forced to proceed at the speed of the slower trains on the same line. This is terribly wasteful and inefficient, as the high-speed trains would always be chafing at the bit, constantly frustrated from being unable to speed ahead. One exception to this rule, to be discussed in a later chapter, would be to design tracks with special passing lanes and curves. This would enable high-speed trains to bypass slower trains without tailgating or losing speed.

High-speed and low-speed trains also have different running expenses based on each block of movement. For a comparison of these expenses, along with a formula that shows how train profits are calculated, see Chapter 9.

To buy a train, follow this procedure:



Don't place high-speed trains on the same line as slow-speed trains.

1. Open the Rolling Stock Market window by clicking on the Buy Train command.
2. Click the Buy button.
3. Select the train number you wish to assign to the new train from the Train Registry calendar chart.

4. Click on the icon of the train you wish to buy.
5. To finalize the purchase, click the Confirm button. An underline will appear below the train number in the calendar chart to let you know that the train has been assigned.

Once you have purchased the train, you will need to place it on the map by using the Place Trains menu.

When you sell a train, the price it fetches is always one-half the price you paid for it. Don't be too hasty in selling off your rolling stock! You can really lose your shirt on this one. Here is how to sell a train:

1. Open the Rolling Stock Market window by clicking on the Buy Train menu.
2. Click the Sell button.
3. Pick the train number from the Train Registry calendar chart. Note that you can only sell trains that have been removed from the map. In the calendar chart this means that only those numbers with an underline and no frame can be selected as candidates for disposal.
4. Click the Confirm button to complete the sale.

You can only sell trains that you have removed from the map. Once they are in storage, you can sell them.

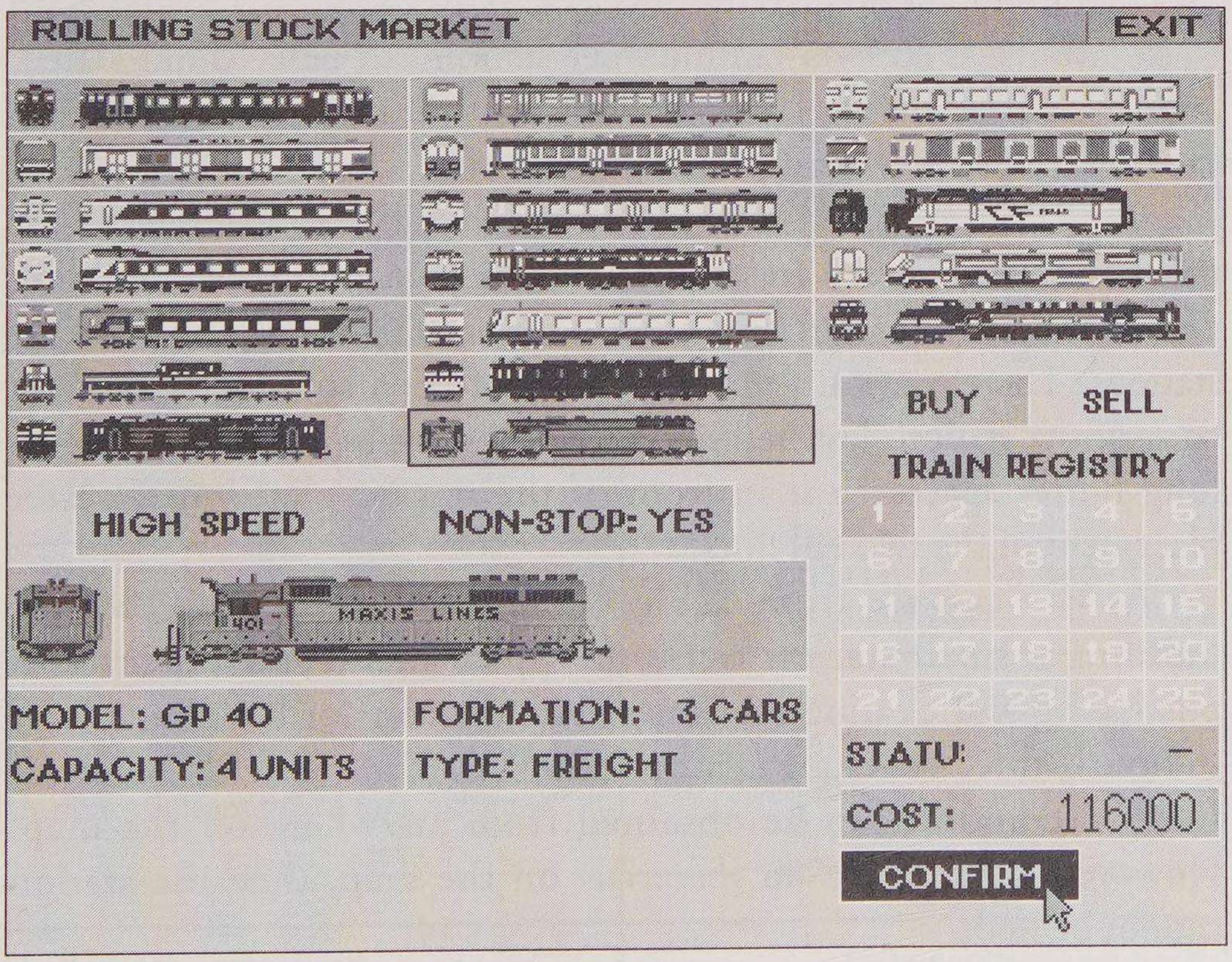
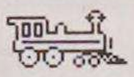


Figure 4.9 The Buy Train menu



You can only own a total of 25 trains, regardless of whether they are being used or not.

Deciding what trains you wish to buy is often a tricky matter. What it boils down to is a tradeoff between what train features you can afford and what train features you absolutely need. If you have lots of money, and you don't mind burning a hole in your pocket, then buy the AR-III high-speed passenger train. It is the most expensive train, costing $250,000, but it is also the most profitable, since you can command $1.20 per ticket and seat over 600 people. For freight trains, try the GP-40, which costs $116,000, but offers high speed and the ability to carry four building materials at a time.



BUILD STATION

There are two types of railroad stations: small stations and large stations. Each station has four different orientations which you can select from the Build Station menu window. Stations can only be placed on the map in a diagonal, slanting position. They cannot be placed so that the station platform faces vertically or horizontally; as a result, you must choose your station locations carefully to conform to track layouts. Only two rail lines per station can be accommodated, and these lines must be placed parallel to the station platform. The surrounding terrain may prevent use of your station, so don't place the station too near mountains, lakes, or rivers unless you know that there is enough room for expansion. Keep in mind that building development and road construction generally occurs in back of stations. Therefore you will want plenty of open space for growth in back of the station. Furthermore, you will want to keep two 3-block-long buffer spaces clear in front of the station platform for later placement of the two rail lines.

As you can see from Table 4.3 and Table 4.4, the cost for building a small station is $40,000 plus incidental expenses of purchasing and clearing the land, while the cost for building a large station is three times greater, or $120,000. The materials necessary for construction can be obtained from anywhere on the map. However, if there are no materials on the map, then the station cannot be built.

Table 4.3 Small Stations

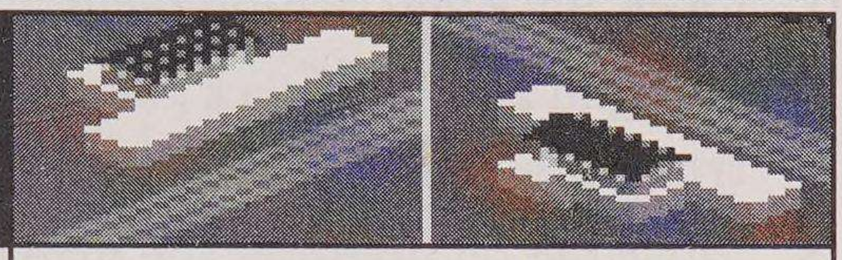
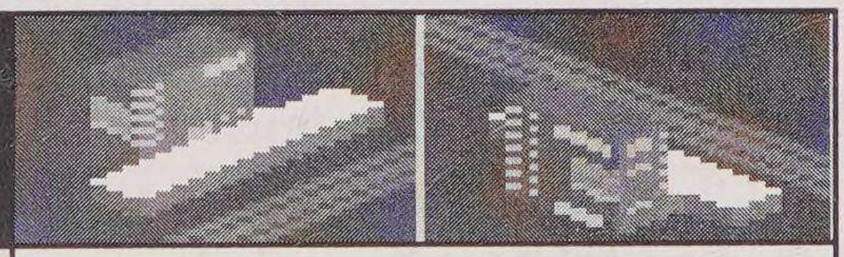
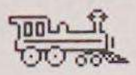
Small station	
Building materials needed	4
Construction cost	$40,000
Removal cost	$4,000
Management expenses	$5 per day plus $1 for each 10 passengers
Sales income (separate from ticket fare income)	People — Amount earned 0–100 — $0 101–300 — $2 301–500 — $4 501–above — $6
Labor force employed	150 people

Table 4.4 Large Stations

Large station	
Building materials needed	8
Construction cost	$120,000
Removal cost	$12,000
Management expenses	$9 per day plus $1 for each 10 passengers
Sales income (separate from ticket fare income)	People — Amount earned 0–100 — $0 101–300 — $7 301–500 — $10 501–above — $12
Labor force employed	150 people



You can build a station anywhere on the map, regardless of whether or not there are any rail lines nearby. All that matters is that you have enough building materials somewhere on the map. However, even though you are not using the station, you will continue to be charged for its operational expenses.

These are the steps to follow when building a station:

1. Open the Build Station menu.
2. To build a station, click the Build button, then pick your station type from the available choices.
3. Move the pointer over the map and it should change into a faint outline of the station.
4. Make sure that the outline of the station is precisely positioned where you want it. Next, click on the map where you wish the station to be placed. The station will appear.

To remove a station, just click the Remove button and click on the station you wish removed. The cost for removal is $12,000 for large stations and $4,000 for small stations. Trains will continue to function if you remove a station; all that changes is that they no longer stop there to pick up and drop off passengers and cargo. However, the materials that were used to construct the station will not recycle themselves back into the simulation. These building materials are irrevocably lost forever.

Station Stops

Railroad stations can only accommodate two railroad lines per station. In order for trains to stop, the tracks must be parallel to the station platform and within a two-block radius. No bends, curves, or switches are allowed. No stops are permitted for lines that run behind a station, even if they are within two blocks of the platform. Only two trains at a time can stop and use the station. Through the Schedule window you can determine whether a train will stop at the station, not stop, or depart at a specific time. If another train on the same line comes along while a train is in the station, that train must wait outside till the tracks are clear. Figure 4.11 shows the correct way for tracks to be built in order for trains to stop at the station, while Figure 4.12 illustrates a misaligned track that prevents trains from stopping.

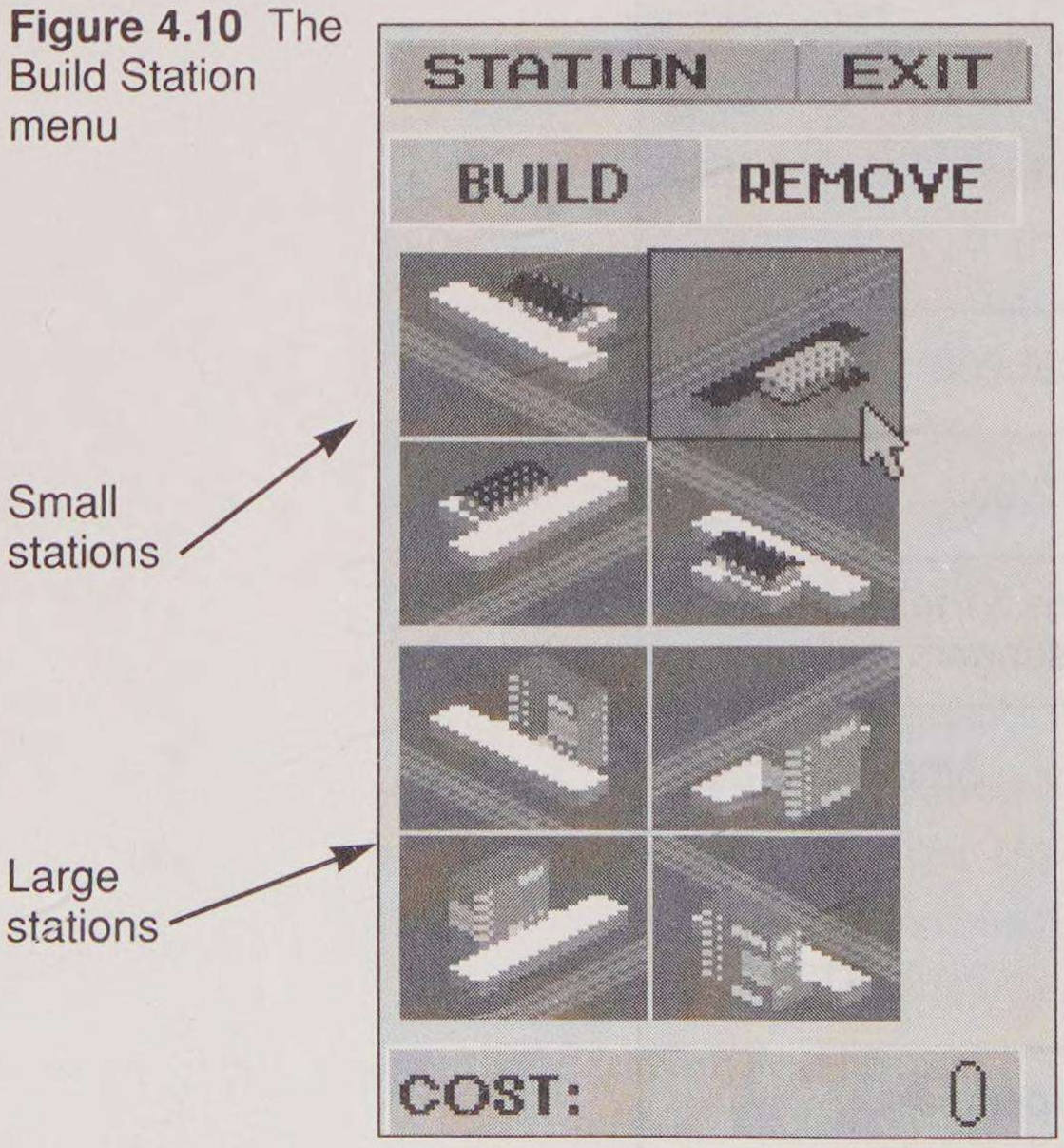
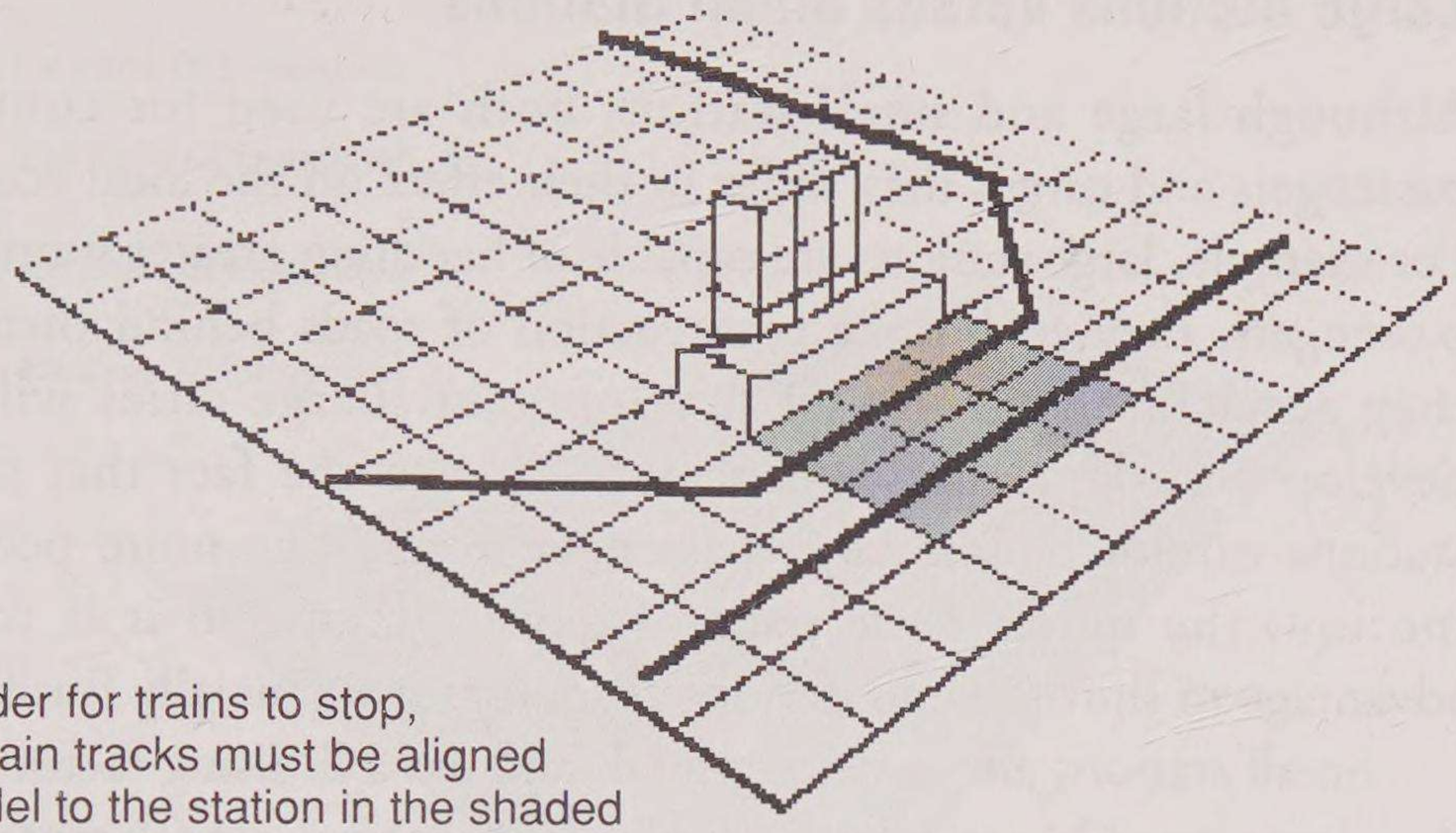


Figure 4.10 The Build Station menu

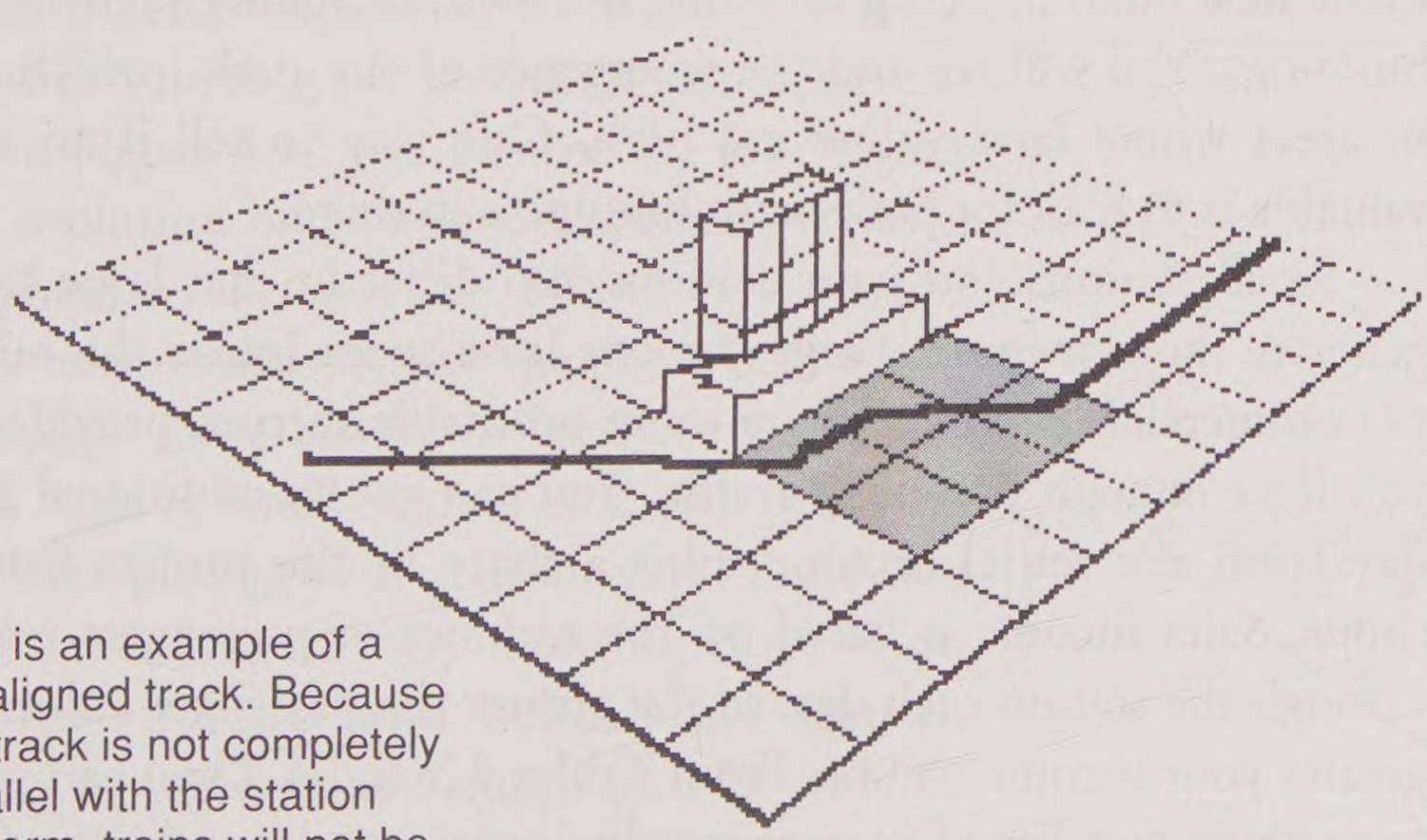


In order for trains to stop, the train tracks must be aligned parallel to the station in the shaded block area. Only two railroad lines per station are allowed.

Figure 4.11 Tracks aligned parallel to station

If your track terminates before the end of the station platform, three-car trains will not be able to stop. This is because they need all three blocks of platform to load and unload passengers and freight. However, two-car trains can stop if there are at least two blocks of track adjacent to the station platform. All trains automatically reverse direction whenever they come to the end of a track.

Both freight and passenger trains can use the same station.



This is an example of a misaligned track. Because the track is not completely parallel with the station platform, trains will not be able to stop at this station.

Figure 4.12 Misaligned track prevents train from stopping at station

Large Stations Versus Small Stations

Although large and small stations both are used for conveying passengers and cargo, they differ in their effect on the local economy. For example, large stations are capable of handling greater numbers of passengers, they enable the construction of roads behind them, and they accelerate growth and development. Large cities will only develop with large stations in place, due to the fact that smaller stations cannot handle large passenger flows. The more people in motion, the quicker the pace of development, so it is to your advantage to shift to large stations as soon as is financially feasible.

Small stations also restrict growth and are a limiting factor in city development. Most building growth around small stations is residential, so high rises and other commercial properties will not develop. In fact, the largest building that will develop naturally, without your intervention, is the commercial building or department store. Despite your best efforts to spur growth, development will eventually cease around small stations, even if there is much passenger activity. If you reach this juncture, it is high time that you move up to a large station.

Large stations foster the development of roads, which further accelerate the rate of building growth. If conditions are right, you will see a block-wide road grow slowly from the rear of the station. Prices of land immediately adjacent to the road will rocket sky-high as demand for choice property zooms. Shortly thereafter, you will see many new buildings crop up along the road, including high-rise lease buildings. You will see also the emergence of city parks, which thrive in areas where land values are high. One way to tell if an area is valuable is to scan for parks with fountains in them.

Small stations and large stations also differ in that large stations generate more income. Large stations lease space inside the building to commercial tenants and are more profitable to run, provided that you have enough passenger traffic. You can get an additional $3 per day from the rental income, plus a share in the profits from the shops. Sales income is based on the number of passengers traveling through the station each day, so the greater the passenger volume, the greater your income will be. From Tables 4.3 and 4.4 you can see that for a given number of passengers, the income is always higher for the large station.

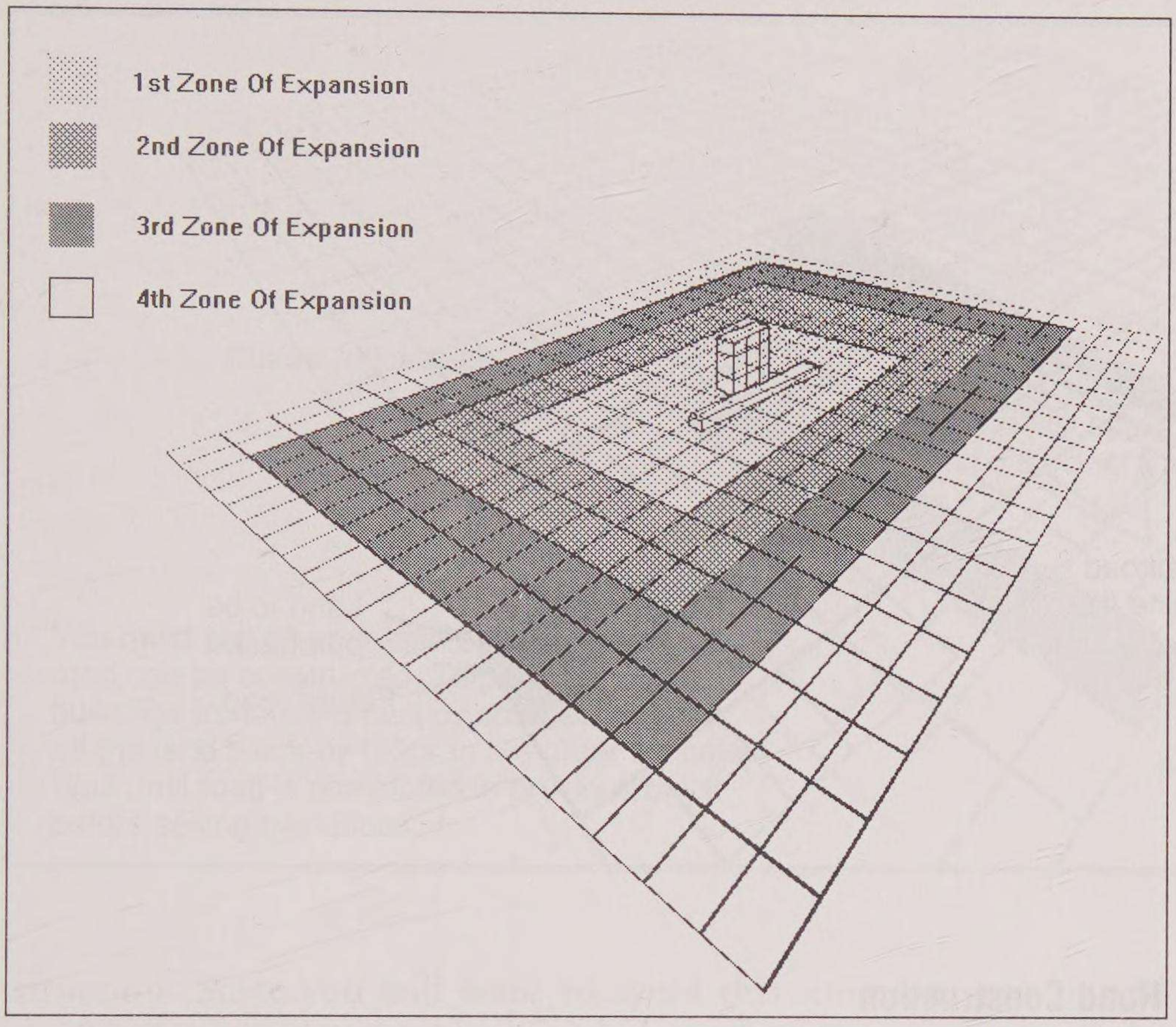


Figure 4.13 Sphere of influence for railroad stations

Zones of Influence

There are different stages of growth, but the longer a large station exists, the greater its sphere of influence. This manifests itself early on, with small commercial developments immediately surrounding the station, later expanding to roads, high rises, and other valuable properties in zones farther away. In Figure 4.13 you can see the four phases in the evolution of a station's impact on growth. Each phase reaches out farther and encompasses a larger territorial zone than the phase before.

At least three blocks of land are needed to build a large or small station, as shown in Figure 4.14. After placing your station, you should buy up the land immediately fronting the station platform and the land behind the station building to preserve as future rights of way for roads and rail lines. Figure 4.15 illustrates this principle.

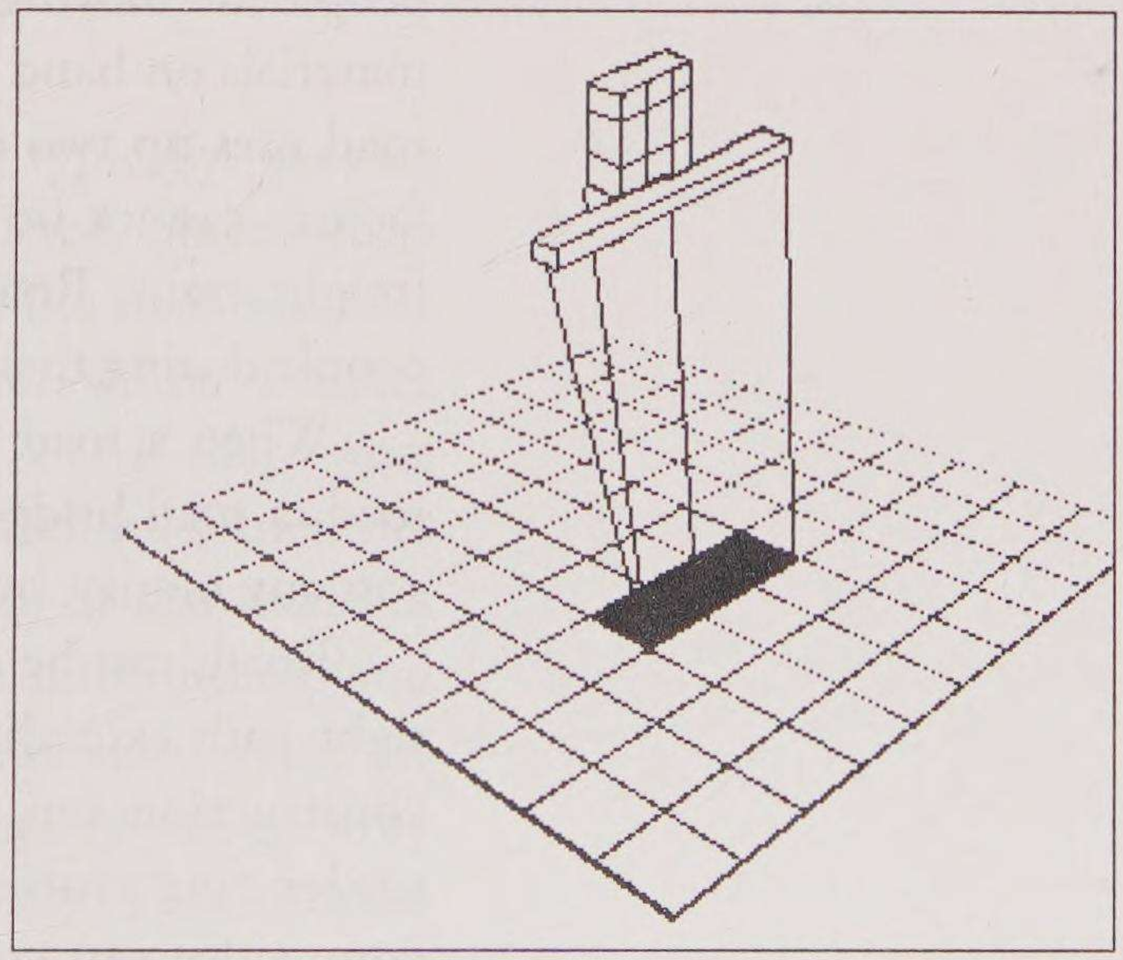


Figure 4.14 Large and small stations take up the same amount of space

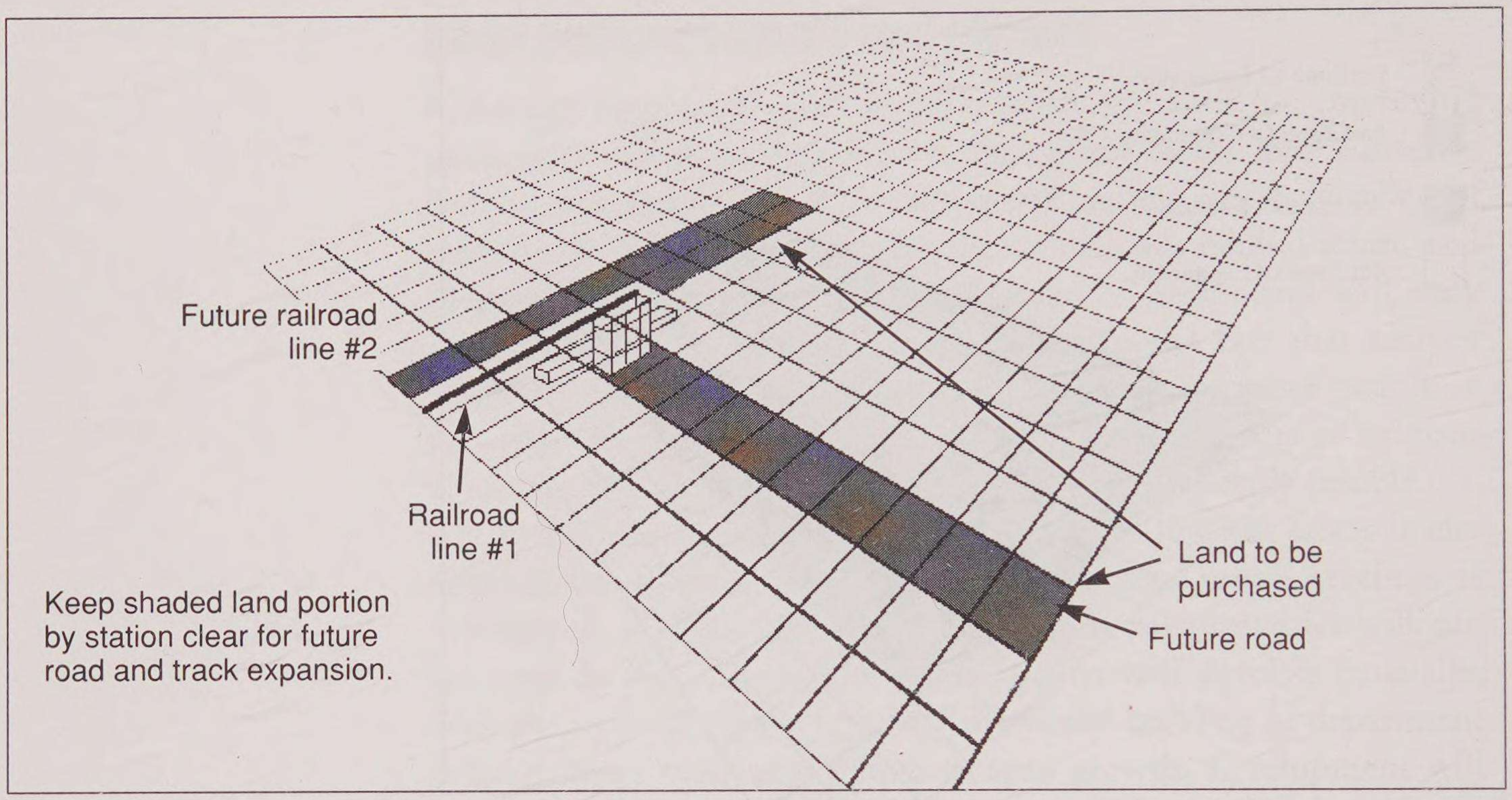


Figure 4.15a Preserving future rights of way for rail lines and roads

Road Construction

As mentioned before, you can't build a road directly. The simulator will construct a road behind large stations if, and only if, certain conditions are present. One condition is that the number of users of a station reaches 400 per day. This number does not seem like a lot, but the number of users can decrease by 100 per day unless more people are moving into the area. Also, you need to have construction materials on hand within an eight-block radius, because each block of road uses up two material units. Materials manufactured by a nearby factory cannot be used unless you have moved the materials first via freight train. Roads don't cost you anything, nor do they employ people during their construction.

When a road is situated near a river that is at right angles to the road, a road bridge is automatically built. Building the bridges doesn't cost any money, but does use up six construction material units.

Roads can be obstructed by buildings and rail lines in the line-of-sight path extending from the rear of the station. In most cases, road construction can automatically condemn and remove any buildings under five stories that block their paths. However, other rival companies can construct taller buildings that block the road's con-

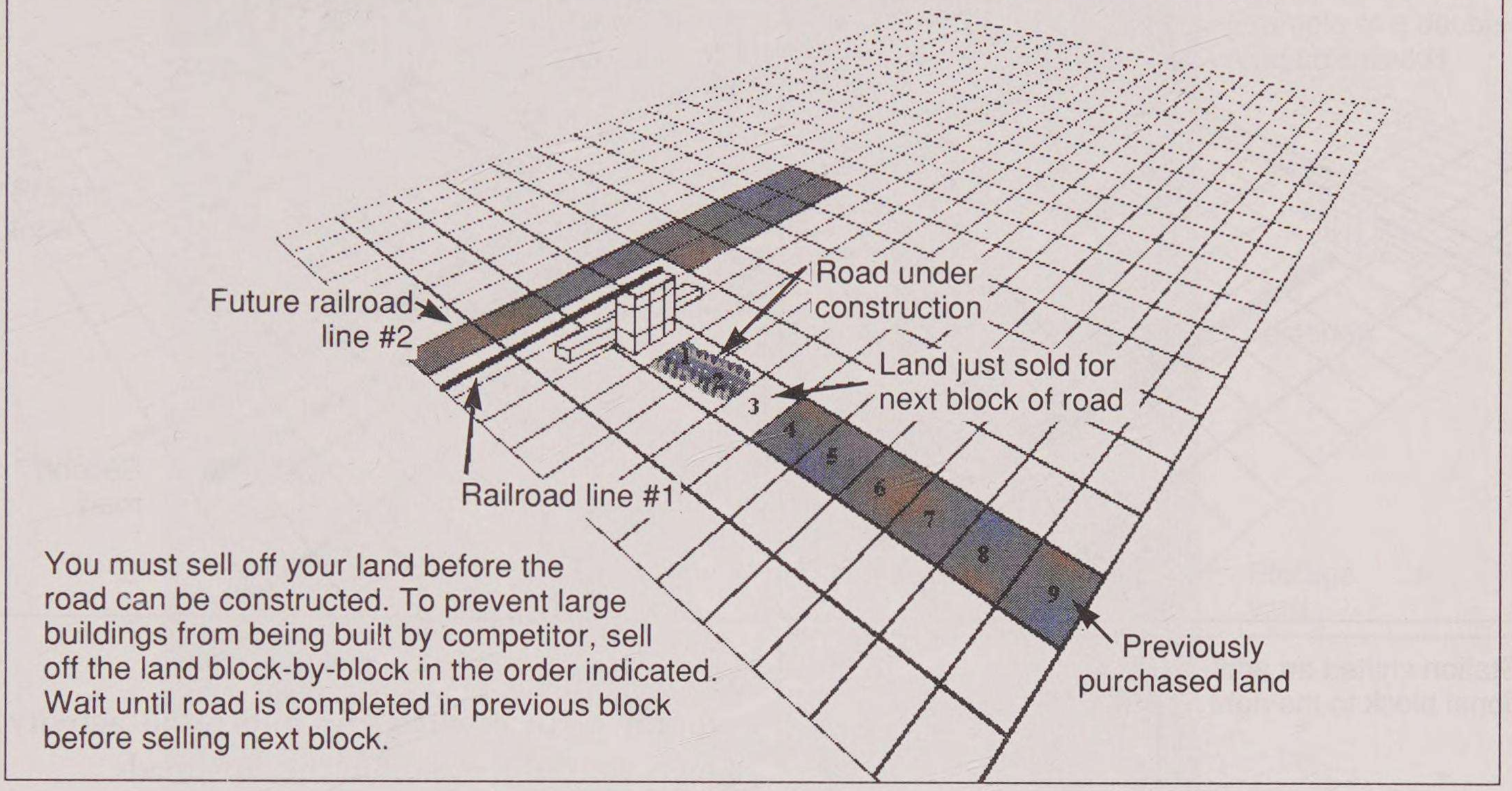
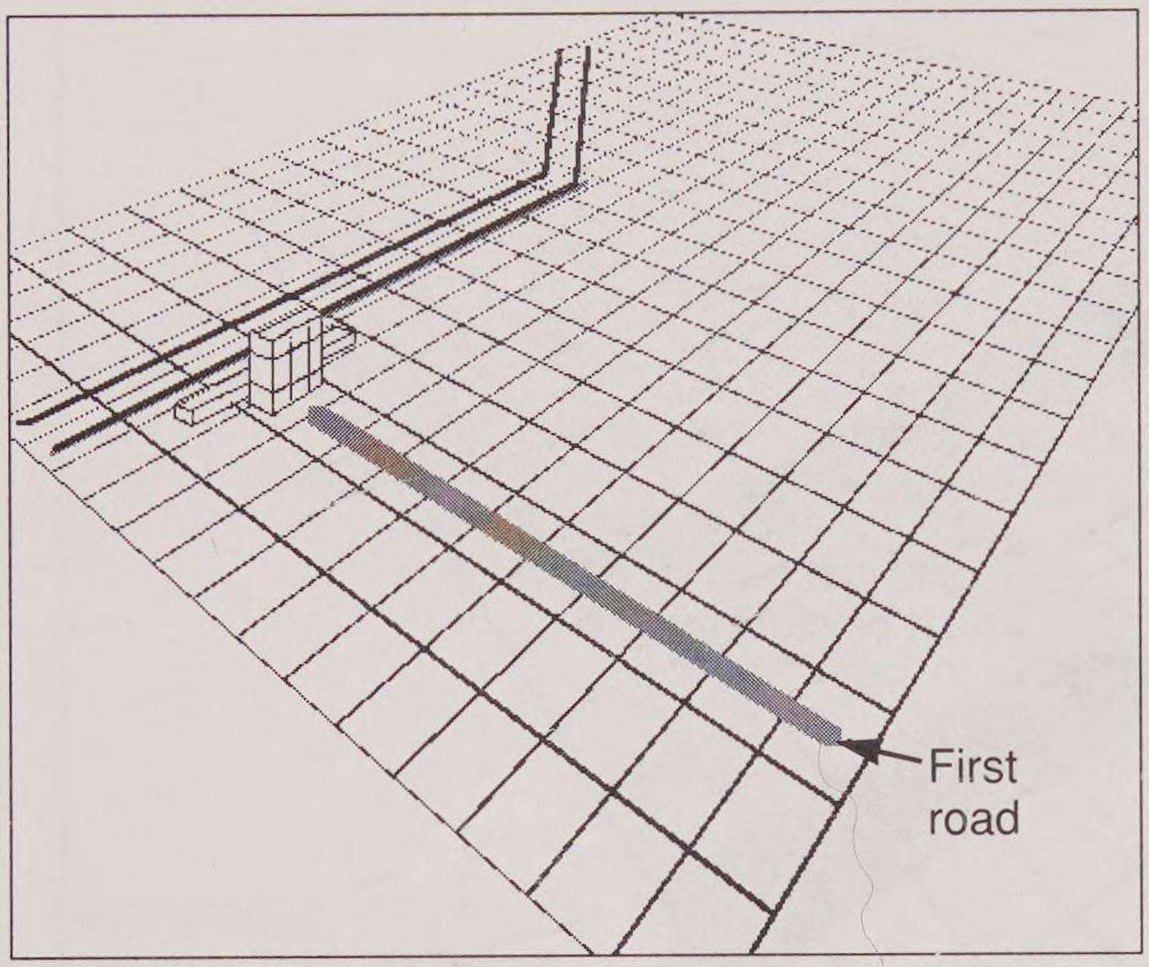


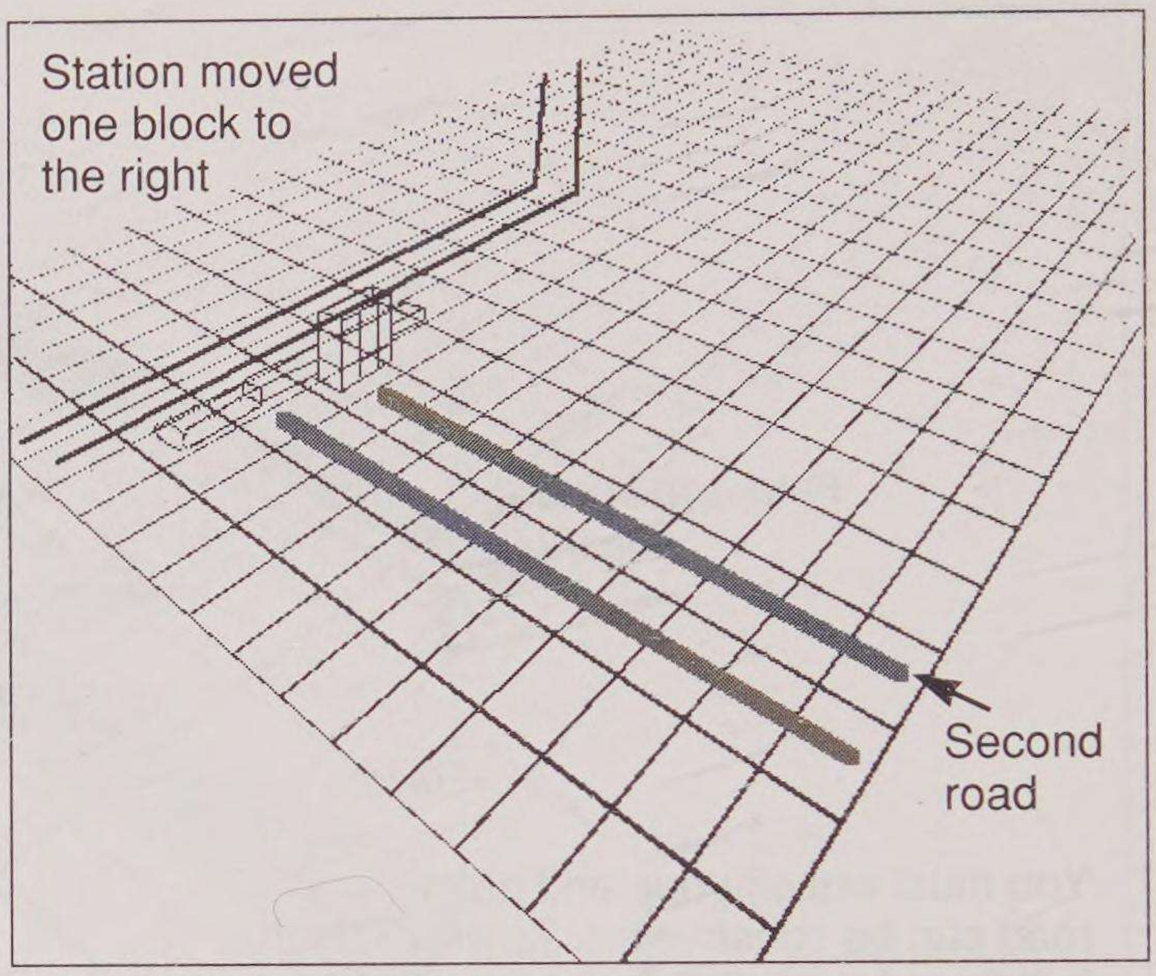
Figure 4.15b Selling the land in back of the station block-by-block for the road to be constructed

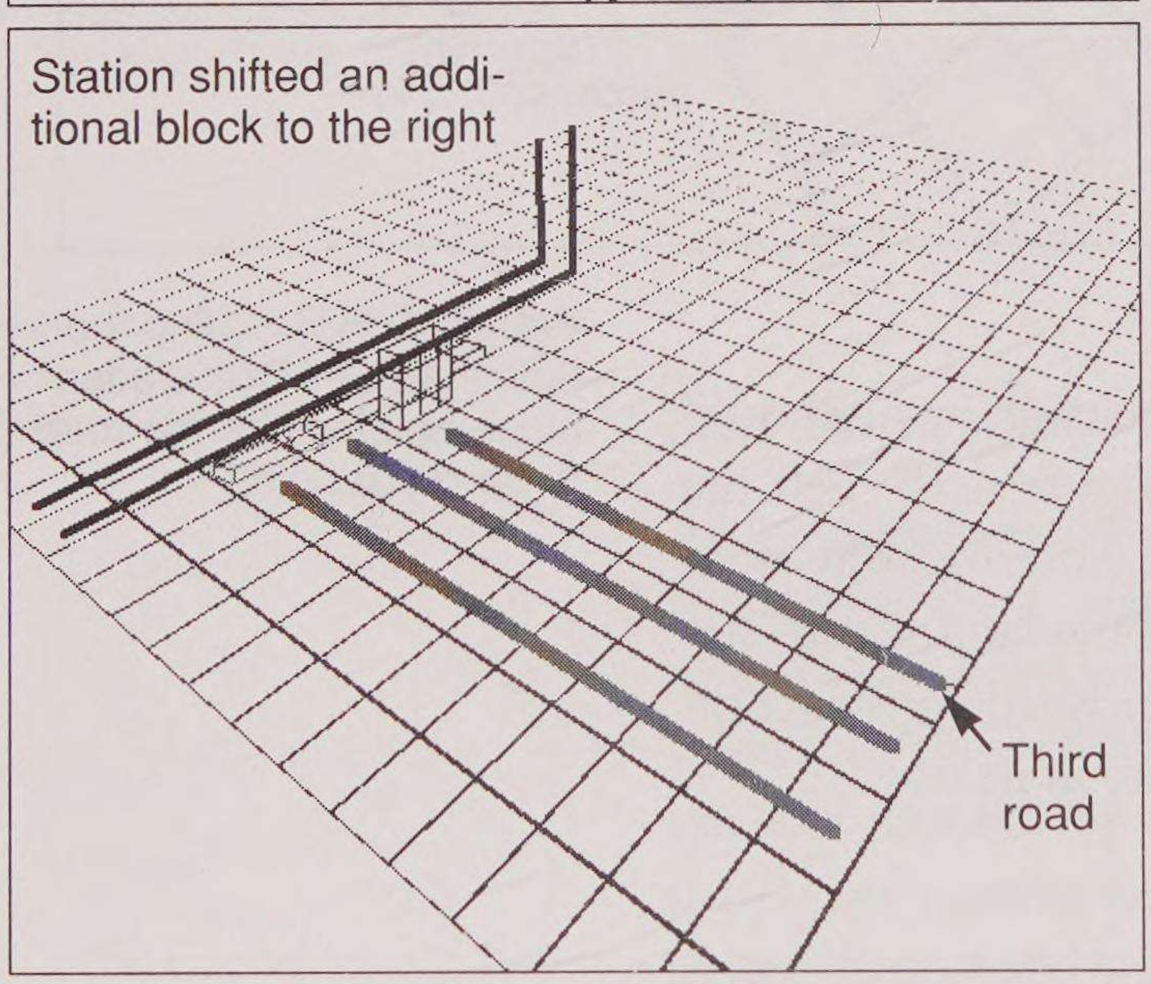
struction. Since you will want to avoid this situation, you should purchase the land beforehand, as illustrated in Figure 4.15. Sell the land block-by-block, starting from the station and working away from it as each road block is constructed. You must sell the land before any road tiles can be built, as pictured in Figure 4.15b. Road construction will also automatically remove any park tiles that are in its way.

Crossroads

Once a large station starts construction of a road, it typically takes six days for each additional block of road to be completed. Since streets can reach up to 12 blocks in length, completion of the road will take over 72 days, or $2^1/_2$ months of simulator time. When a street intersects another road, the effect of the juncture is as if there were two road blocks occupying the same spot. An intersection, sometimes known as the crossroads, is the most desirable piece of real estate in A-Train. You can make big profits by acquiring the surrounding land before the intersection is built, then selling the land after its completion. But the most important benefit is that a city will grow by leaps and bounds around the center of the crossroads. This location becomes the new center of the city, and all development will revolve







Figures 4.16a, 4.16b, and 4.16c Moving a large station in order to create more roads

around it. In essence, the hub of all activity moves from the station to the crossroads.

An interesting trick to try in A-Train is to construct a large station and, when the street gets long enough, withdraw the station, then build a large station one block from the old station's location. A second road will start to emerge. When this road is long enough, repeat the process of moving the station over by one block. As you can see from Figures 4.16a through 4.16c, you can create roads with two, three, or more lanes. Of course, you will need plenty of passenger traffic through the station for this technique to work. If you create a multi-lane crossroads, as seen in Figure 4.16d, the extra-wide avenues will aid growth even more.

Stations, Storage, Yards . . .

Another crucial consideration when placing stations is that you need to create depositories for construction materials. The materials brought in by freight trains can only be dropped off on empty land that your company owns. Building materials represent the life blood of A-Train; without them development will grind to a halt. The railroad, like an artery, carries these vital nutrients to the far reaches of the map. All buildings, whether built by you or by rival companies,

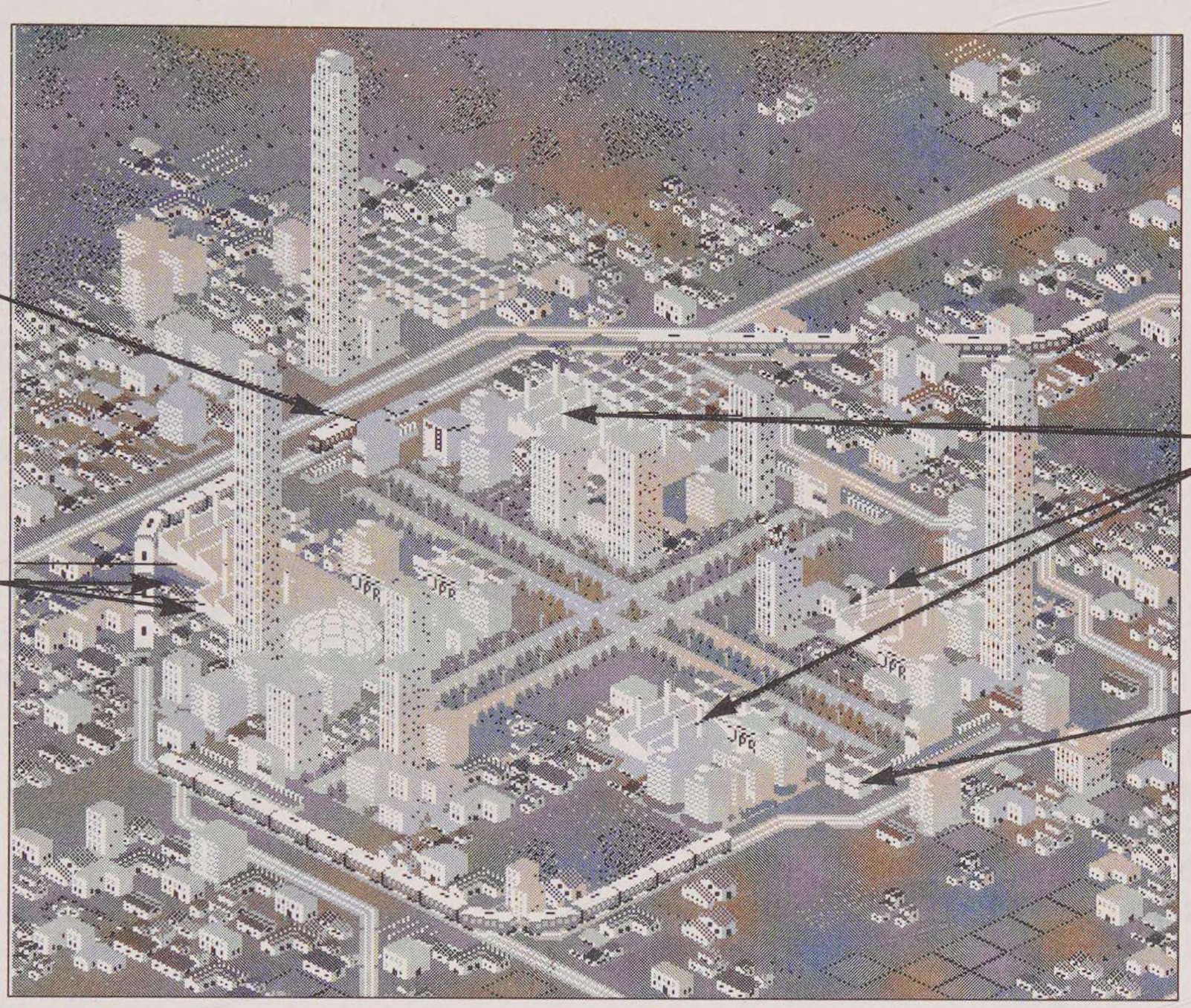


Figure 4.16d
Example of a double-road crossroads

Double road crossroads constructed by shifting large stations over by one block. City growth will accelerate around the hub of the intersection. (Note: the factory materials could not be used directly to construct the roads. The freight train was needed to move the materials first.)

are constructed out of these materials. Cut off the flow of goods, or improperly place the storage yards, and you will strangle the living organism that is A-Train.

You might wonder where these materials are being manufactured. There are two principal sources: factory subsidiaries create them on the map, and trade with the outside world brings them in via the freight line that conveys materials from offscreen.

In order for building materials to be offloaded from freight trains and stockpiled for construction purposes, you will need to buy some land near the station by using the Real Estate command under the Subsidiaries menu.

Storage Yards

Storage yards must be located within an eight-block radius of the station in order for the station to act as a conduit for materials

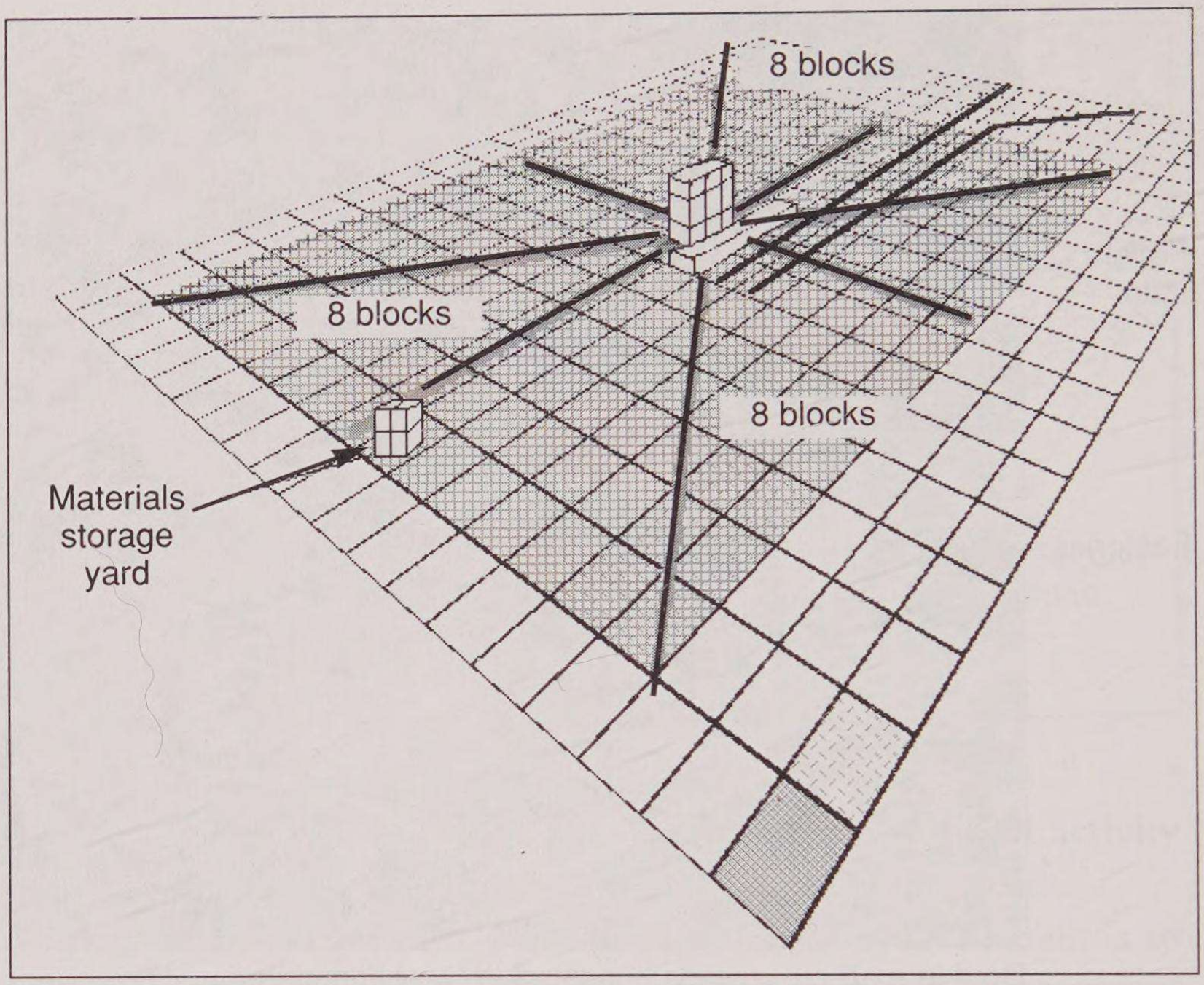


Figure 4.17 Materials storage yard must be located within eight blocks of railroad station for construction materials to be loaded and unloaded from freight trains

transport. Figure 4.17 illustrates this concept in greater detail. If you buy land outside this radius, and there is no other empty land available inside this eight-block zone, freight trains will whiz by the station and not bother to unload their valuable cargo.

You cannot construct a railroad or build buildings over a storage yard. When the materials are placed, they are either consumed or taken out again by freight trains. Otherwise they remain indefinitely. Do not purchase land without first taking this into consideration. You need to plan where the storage yard should go beforehand. Don't make the mistake of leaving it to chance. For example, a common blunder people make is to build a station and then immediately buy land in front of the station for tracks, and land immediately behind the station for future road expansion. However, when the freight trains start arriving with their cargo, the materials are often dumped in the closest and most convenient locale, which might be where that all-important road or that new rail line was supposed to go! To prevent this from happening, before you buy any land around a station make sure that your first land purchase will be away from any critical areas. When the first train arrives with its materials, the freight

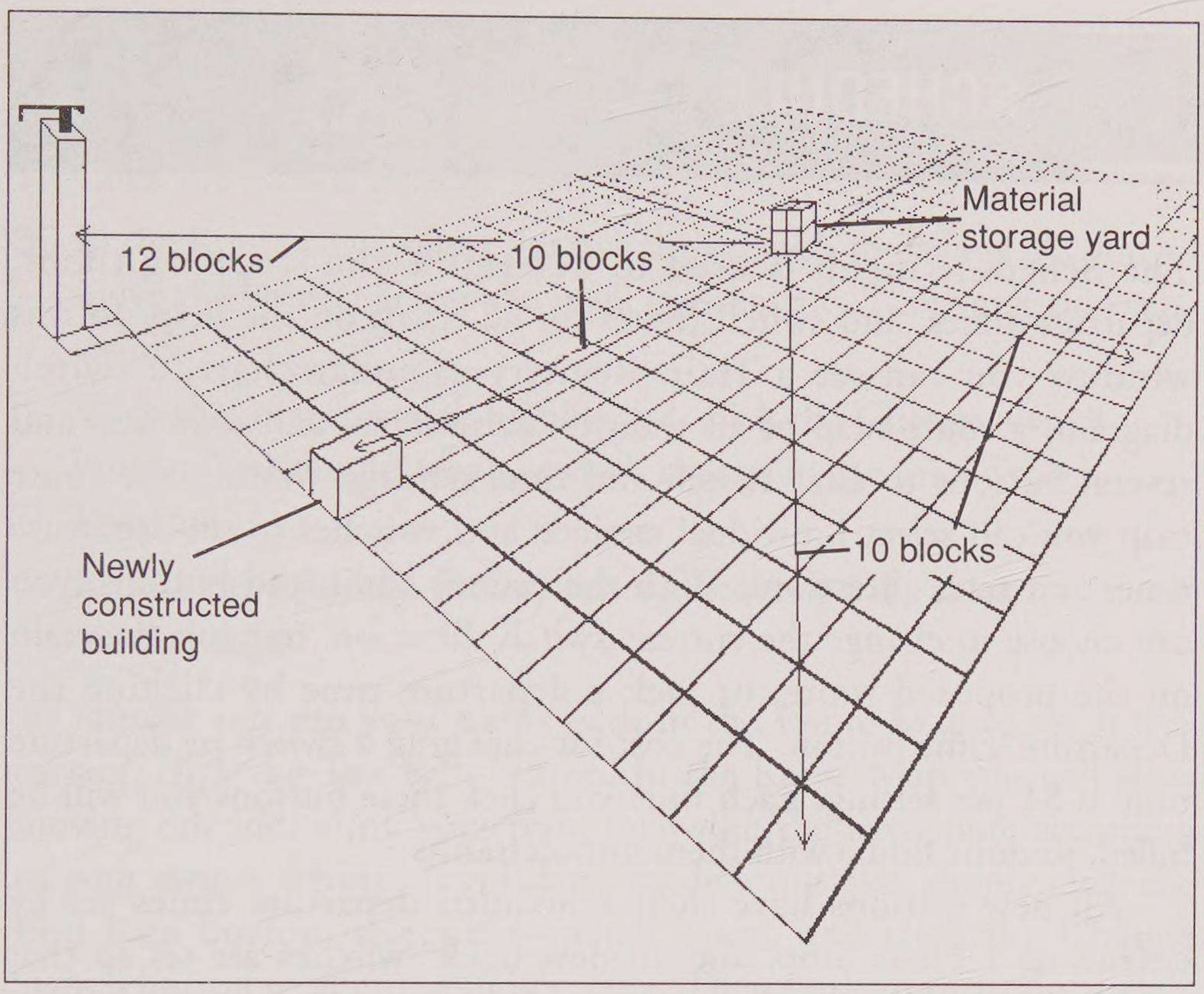


Figure 4.18 Materials can only be used within 10 blocks of storage yard (exception: buildings can expand and become taller if they are within 12 blocks of storage yard)

will occupy this first plot of land, since it is the nearest and only available empty land by the station. After you see the materials in the newly created storage yard, you can breathe a sigh of relief and go ahead with your other land purchases.

Materials can only be used within 10 blocks of the storage yard. However, buildings that were previously placed outside this range can expand and become taller if they are within 12 blocks of the depository. You can see how this works by glancing at Figure 4.18.

You can use the materials manufactured at a factory directly if your building is within 10 blocks of the factory. However, and this is very important, *only you can use the materials straight from the factory directly*. All others must wait until the materials have been transported by a freight train at least once. *Thus roads, public buildings, residential housing, and other companies' subsidiaries cannot be built by using factory-made materials directly*. Many people, including myself, have missed this subtle but crucial point. Night after night, I spent many frustrating hours trying to figure this out when I just couldn't get a large station to produce a road even though there were materials at hand.

SCHEDULE

The Schedule menu is used to determine the stopping times, departure times, and switch routes for all trains on the map. In this window you can see a Train Registry calendar chart, a switch diagram, a route map of all train lines, stations, and switches, and several buttons to alter switch and time settings. Within the route map you can select individual stations and switches to set departure times and track directions. With the various command buttons, you can choose to change the current switch direction, test run the train on the proposed route, or pick a departure time by clicking the Departure Time button. The cost for changing a switch or departure time is $1 per setting. Each time you click these buttons you will be billed, so don't fiddle with them unnecessarily.

All new stations have their scheduled departure times set by default to 1 Hour Stop, and all new track switches are set so that trains move in a straight line. This applies to all trains traveling across the new switch or past the new station.

The switch diagram is only present on screen while changing switch settings. When you click the Departure Time button, the switch diagram is replaced by the Departure Time buttons, which you use to set train schedules for each individual station.

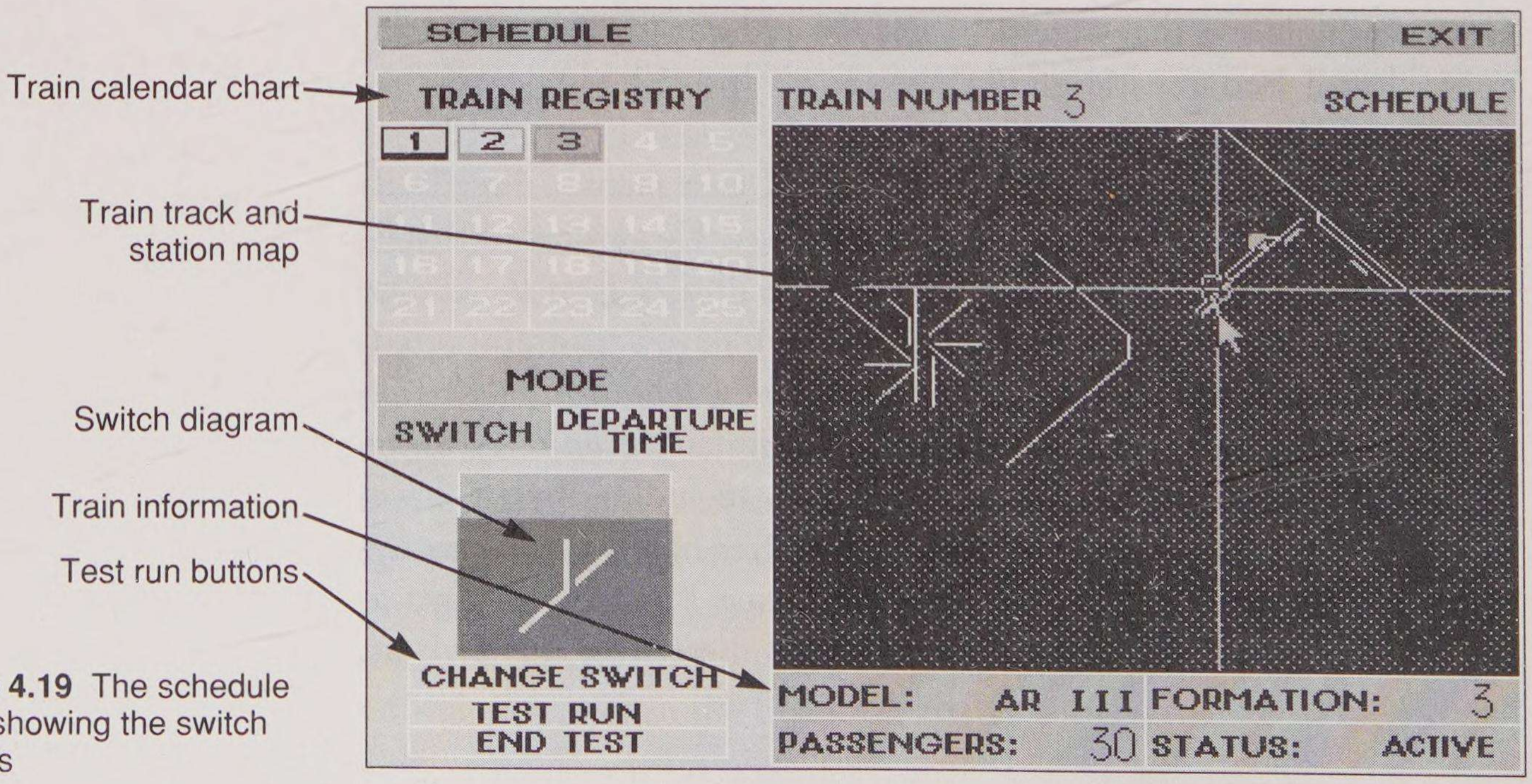


Figure 4.19 The schedule menu showing the switch controls

To change a switch setting, follow these steps:

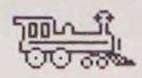
1. From the Train Registry, select the train whose path you want to adjust.
2. Click the Switch button.
3. In the Route Map, select the switch you wish to change. As you move the pointer across the map, crosshairs will converge on each switch.
4. With the correct switch highlighted, click the Change Switch button. You should see the switch change in the mini-Switch Diagram.
5. Repeat steps 3 and 4 for any other switches on the track that need to be changed.

To visually test run your train's path in the Route Map to see if it is correct, click the Test Run button. In the Route Map you will see a moving dot indicating your train following the new route according to your switch setting. If you have made a mistake, simply click the End Run button, select the switch again, and click the Change Switch button to alter the train's route. Then test run the train again.

Setting departure times for each station is also a snap. To modify the departure time for any station:

1. From the Train Registry, select the train whose schedule you wish to modify.
2. Click the Departure Time button.
3. In the Route Map, select the station where you want to adjust the departure time. As you move the pointer across the map, crosshairs will converge on each station.
4. With the correct station highlighted, click either the 1 Hour Stop button, the Non-Stop button, or any of the other six departure-time buttons.
5. Repeat steps 3 and 4 as needed for any other stations along the route.

The ideal time for all passenger trains to depart is 8:00 AM each morning. At this time, all stations will experience their maximum passenger loads. Although you might think that setting the trains to return at 6:00 PM (i.e., 18:00) each evening for the "reverse commute" would generate the same passenger traffic, this is not so. For some strange reason, 8:00 AM is the best time regardless of where the station is located. Thus, whenever you are concerned about



Only trains that can pass stations (have Non-Stop capability) are allowed to use the Non-Stop feature of the Departure Time controls. If you try to assign a Non-Stop to a train that does not have this capability, the simulator will beep at you to warn you that this is not allowed.

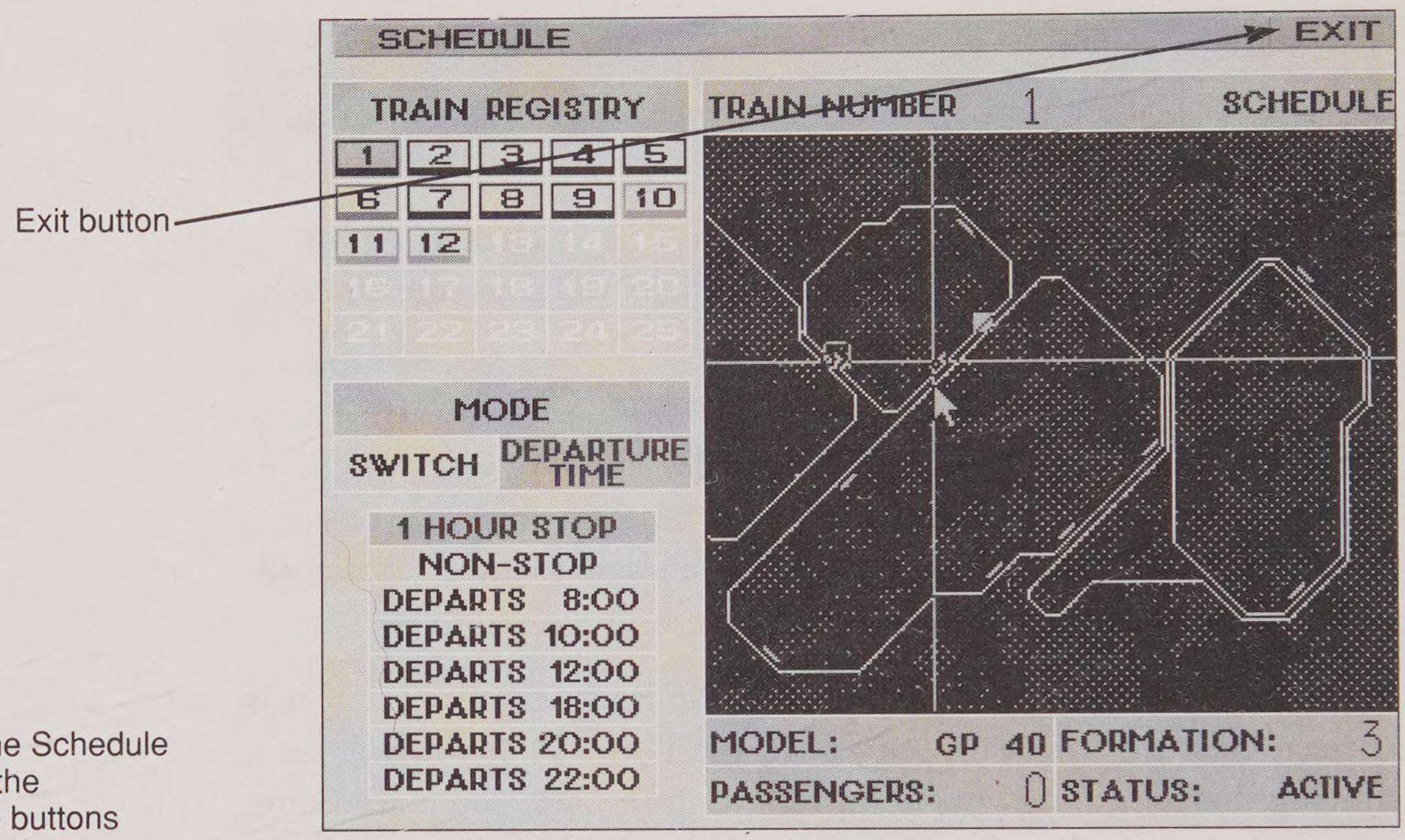


Figure 4.20 The Schedule menu showing the Departure Time buttons

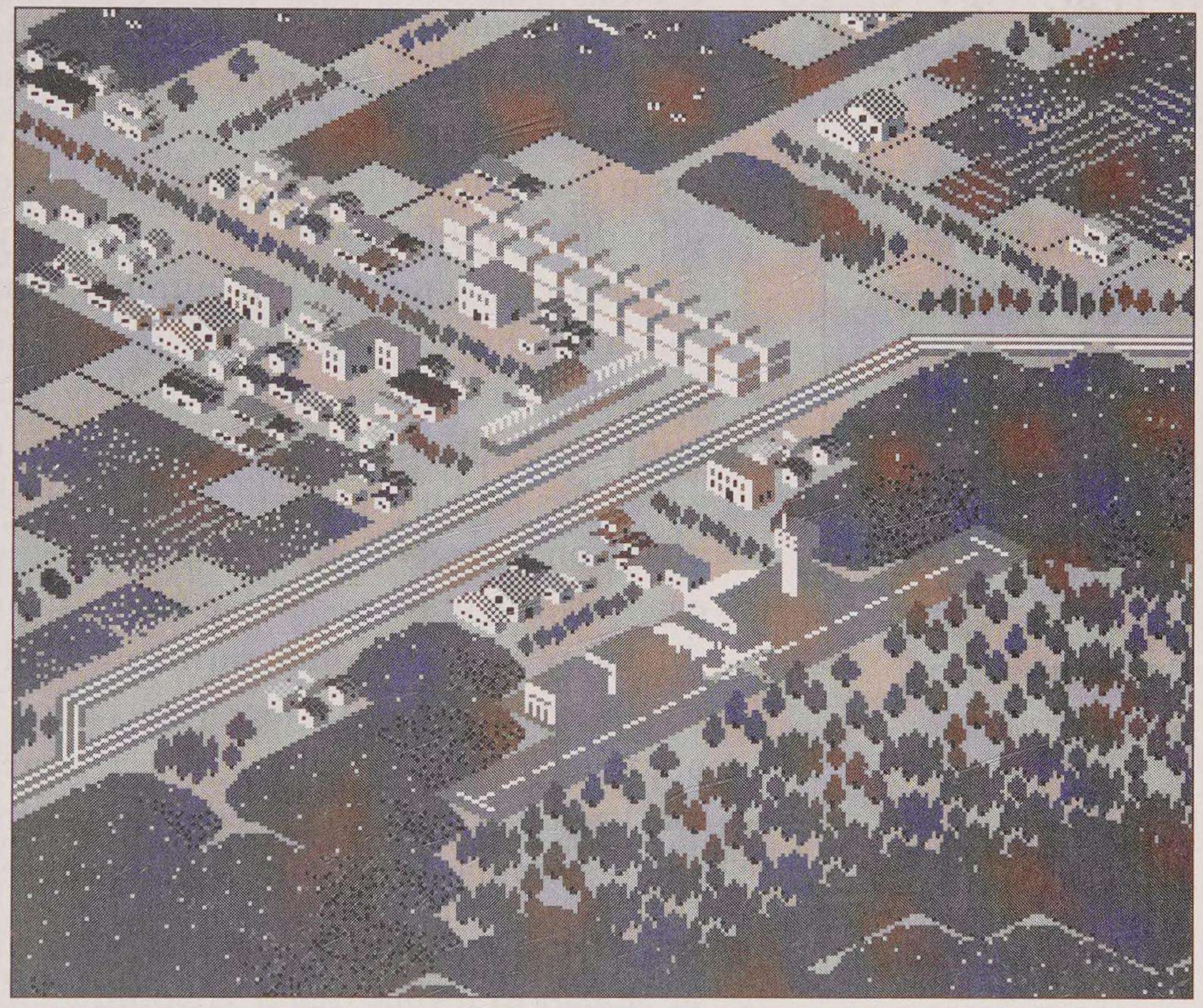
maximizing revenues and minimizing train operation costs, always set the departure times at 8:00 AM for each of your stations.

There are a few other points to remember about the Schedule menu:

- Trains on the same line can take different paths through the automated switching controls, which "remember" each train's individual switch setting.
- Only passenger trains that have non-stop capability can bypass stations by using the Non-Stop Departure Time control. All freight trains have non-stop ability.
- A 1-Hour stop allows a train ample time to disgorge passengers and cargo. When it is time to leave, the train will depart with whatever passengers and cargo are readily available.
- You can assign multiple train settings for each switch or station's departure time by using the Train Registry's calendar chart. Simply set the switch or time and start selecting trains one after the other from the calendar chart. This saves time when you have many trains that share similar scheduling characteristics.
- When you finish running the Test Run command, the train's position on the map is restored to its original location (before you ran the test).
- It makes no difference what time the freight train departs from a station; it will always carry whatever materials that are available.

5 CHAPTER

Scrutinizing Your Subsidiaries



In this chapter you will learn how to build, remove, buy, and sell subsidiary businesses using the Subsidiaries and Report 3: Subsidiaries menus. You will also learn what role subsidiaries play in A-Train and how to make quick profits from them. Each of the 10 subsidiaries is discussed separately in the latter half of the chapter, so if you are only interested in a specific subsidiary, you can skip directly to that section to learn more about it. Some of the text that follows is of an introductory nature, so if you already understand how to use subsidiaries, you may want to skim through the material to find the more advanced sections.

USING THE SUBSIDIARIES MENU

In the main picture frame view of the map, move your pointer over the Subsidiaries menu and click. You will see a menu open listing all 10 subsidiary choices, as pictured in Figure 5.1. To the left of each menu option you can see an icon, which is the same icon that appears on the Quick Menu tool bar.



Figure 5.1 The Subsidiaries menu

Game play continues while the Subsidiaries menu is open, but will stop if you open any of the sub-menu windows.

The Subsidiaries menu contains all the tools you need to build or remove subsidiary businesses in A-Train (although buying and selling them is accomplished through the Report 3 menu). There are 10 subsidiary holding companies which you control through your railroad company. Of this number, nine subsidiaries are used to construct different building types, while the tenth, the real estate subsidiary, is exclusively used to buy and sell land. The maximum number of subsidiaries you can own is 60 (excluding real estate—which has no limit), of which no more than 18 can be concentrated in any one category.[1] You must know how to manage your subsidiary enterprises in order to develop your city profitably.

Early in the game, building and selling subsidiaries is a fundamental way to finance your railroad operations and is a source of capital for other ventures. In fact, there is no faster or better way of making a quick buck. A good strategy early on is to build subsidiaries and then immediately turn around and sell them. Obviously, to make a profit you will want to sell subsidiaries that are worth more than you paid for them. To find out this financial information, you must open the Report 3: Subsidiaries menu.

You can only own a total mixture of 60 subsidiaries, of which no more than 18 can be concentrated in any one category. This means, for example, that you can't build more than 18 hotels without selling some off to keep within this limit.

USING THE REPORT 3: SUBSIDIARIES MENU

You will find the current market value, commissions, sales figures, and profits of your subsidiaries in the Report 3: Subsidiaries window, where you will also make the decision to buy or sell.

In the main picture frame view of the map, move your pointer

[1]The A-Train manual incorrectly states that you can own only 10 golf courses. This is not so. You can own up to 18 golf courses (like any other subsidiary).

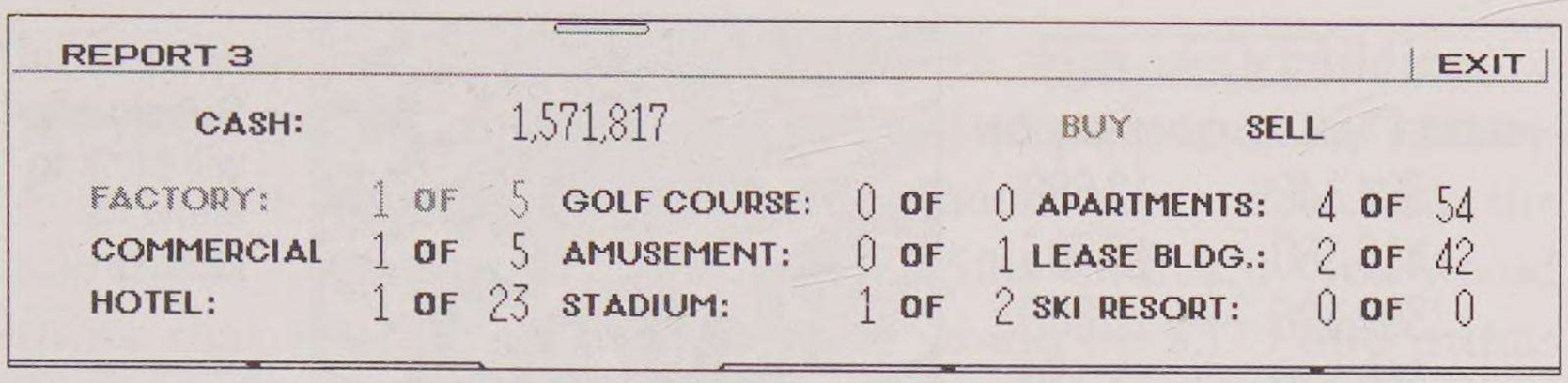


Figure 5.2 Report 3: Subsidiaries

over the Report 3: Subsidiaries menu at the bottom of the screen and click. You will see a window open listing nine subsidiary choices, along with Buy and Sell buttons, as pictured in Figure 5.2. The real estate subsidiary is not listed in Report 3 because, unlike other subsidiaries, you don't earn income from land. To buy and sell land you must use the Real Estate sub-menu from the Subsidiaries menu.

For each subsidiary listing there are two numbers: the first number refers to the number of subsidiaries you currently own; the second number represents the total number of subsidiaries on the map, both yours and those of your rivals.

Each of your subsidiaries, except for real estate, generates income, otherwise called "sales," and has operational expenses such as management fees and maintenance costs. In addition, taxes are levied on the appreciated value of the land and its improvements. Any income generated by the businesses is reported individually in Report 3, and collectively totaled for all your subsidiaries in Report 2. Profits, which reflect sales income minus expenses, are also reported for individual facilities in Report 3, and totaled for all in Report 2. Assuming you have a color monitor, negative cash flows are shown in red ink while positive cash flows appear in black ink. The net appraised value of the subsidiary property is also shown in Report 3, except for real estate, which is reported separately under the Real Estate sub-menu under the Subsidiaries menu.

Checking Out Sales, Profitability, and Appraised Value of Individual Subsidiaries

To find out the profit figures, sales amounts, or appraised value for one of your subsidiaries:

1. Click on the Report 3: Subsidiaries menu. As seen in Figure 5.2, the Report 3 window will open listing nine subsidiary types.
2. Click the Sell button.

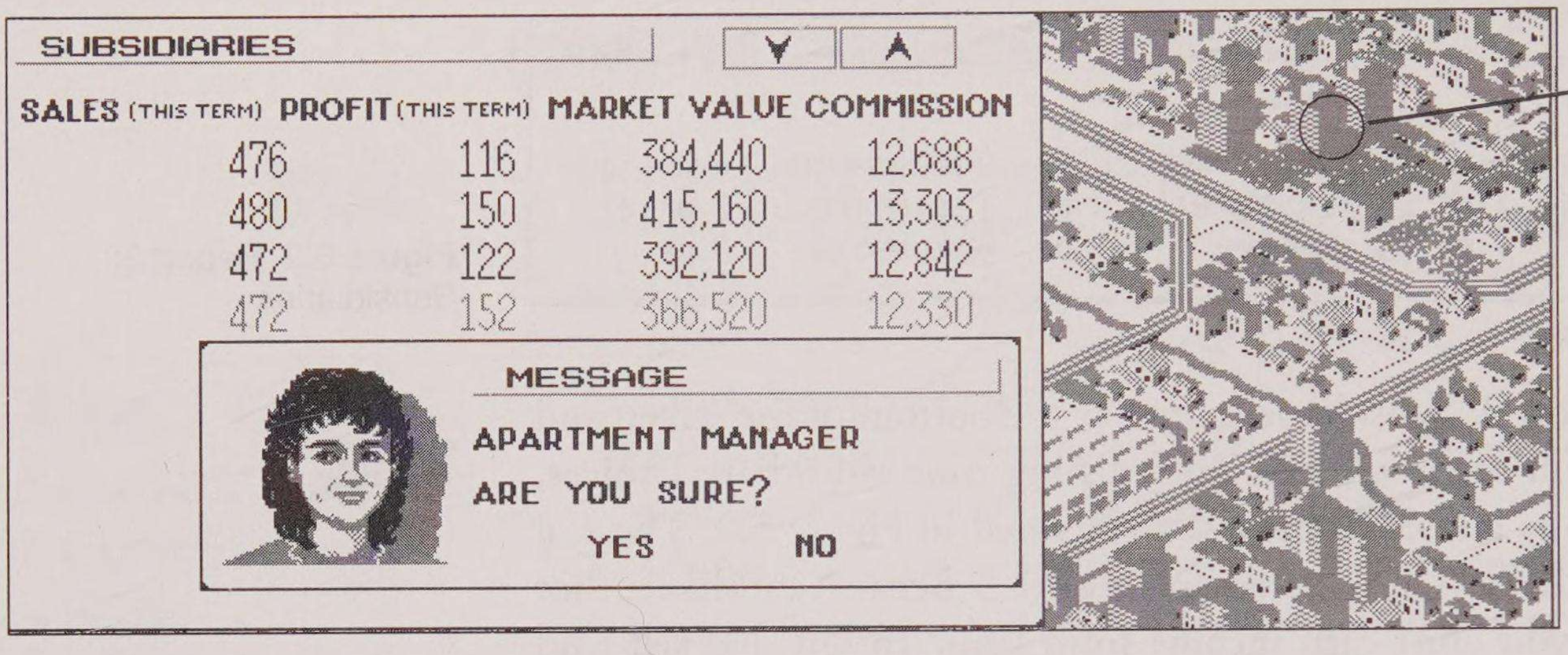


Figure 5.3 The Subsidiaries sub-window of Report 3. In this window you can buy or sell subsidiaries or just check on the financial performance of a particular subsidiary.

3. Click on the type of subsidiary you are interested in (i.e. factory, hotel, commercial, etc.). As you can see in Figure 5.3, a separate Subsidiary sub-window will open showing a list of all the subsidiaries of this type that you own. If you don't own any subsidiaries, your subsidiary manager will make an announcement to this effect and you can exit the sub-window to select another subsidiary.
4. Click on a subsidiary listing in the sub-window. A message will appear asking you to confirm the sale. Just click No to go on to the next listing, or click Yes to sell the subsidiary. As you click each subsidiary listing, an image of it will flash to the immediate right of the window. This is how you tell one subsidiary listing from another.
5. Exit the Report 3 window by clicking on the Exit button.

The figures reported under Sales (This Term), are the cumulative gross receipts from the beginning of the fiscal year on April 1st. The figures reported under Profit (This Term) represent the gross sales receipts minus any management expenses, and are your cumulative net profits from the beginning of the fiscal year. The Market Value is the current appraised price for the subsidiary, while the Commission is an amount charged for selling the subsidiary. Consider the commission as if it were a real estate brokerage fee. The commission is pegged at a basic rate of 2 percent of market value, plus a minimum charge of $5,000 per subsidiary sold or bought.

Interestingly enough, when you sell a subsidiary the commission is extra money you earn from the sale rather than an expense you

have to pay. For example, say you sell an apartment building for $375,000 and the commission is $12,500 (2 percent of $375,000 = $7,500 plus $5,000 = $12,500). The amount you collect from the sale is $375,000 plus $12,500, or $387,500! Ordinarily you would think that your profit from the sale would be $375,000 minus $12,500, or $362,500, but this is not so. However, when you buy a subsidiary from another company, the situation reverses and the commission becomes money that you have to pay. You are charged the commission on top of the market value of the subsidiary. This means that if the apartment building costs $375,000 and the commission is $12,500, you would really have to cough up $375,000 plus $12,500, or $387,500 to buy the subsidiary. Confusing? Yes, it is, very! Earning a commission on your own sale doesn't really make sense, unless you are acting as your own real estate agent and collecting the brokerage fee for yourself. This is my explanation, however wretched it might be.

HOW TO PROFIT FROM SUBSIDIARIES

The income you earn from subsidiaries can be substantial, but it will always pale in comparison to the huge amounts of cash you can make selling them. However, each year there is a set limit on the number of subsidiaries you can sell. The fiscal year runs from April 1st to May 31st, so when you reach your ceiling for the year, you will have to wait for April 1st to roll around before you can start selling subsidiaries again. In the first year you are allowed to sell up to 30 subsidiaries. In subsequent years the number you are allowed to sell will fluctuate according to a set formula. On average you can count on selling 15 or more subsidiaries per year after the first year. Just remember that each April 1st is your "pay day," because the subsidiary sell counter is reset to zero and you can make money selling subsidiaries again.

Limitation of Selling in Second and Subsequent Years

The formula for calculating the exact number of subsidiaries you can sell is presented below:



You can sell only 30 subsidiaries in the first year; in subsequent years, you can sell 15 or more per year. This number is governed by a formula which changes from year to year.

$$\text{Number of Subsidiaries Selling Next Fiscal Year} = 30-\frac{(\text{Number of Subsidiaries Sold This Fiscal Year})}{2}$$

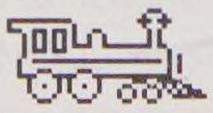
For example, using the formula above, the following table shows you how many subsidiaries you would be entitled to sell next year based on how many you sold this year.

Number sold this fiscal year	1	5	10	15	20	25	30
Number you can sell next fiscal year	30	28	25	23	20	18	15

After you construct big ticket items such as stadiums, hotels, and commercial buildings, you can usually resell them to competitors, making a hefty profit. Watch that you don't go over your subsidiary limitation for the year, otherwise you may run out of cash and have a surfeit of unmarketable buildings on your hands.

BUYING AND SELLING SUBSIDIARIES

You buy and sell subsidiaries by using the Report 3: Subsidiaries menu (except for real estate). Not every subsidiary owned by your competitors is for sale. In any given month less than ⅛ of all the subsidiaries will be offered for sale, except for the months of April and May, when there are few, if any, subsidiaries on the auction block. In fact, it is much easier to sell subsidiaries than it is to buy them, since you can't predict when any given subsidiary will be put up for sale. However, subsidiaries that block roads or railroad tracks will often be offered for sale as a concession to the greater good of the community. You won't know unless you check frequently, though.



To buy or sell an existing subsidiary:

1. Open the Report 3: Subsidiary menu.

2. Click the Buy button if you wish to buy a subsidiary or the Sell button to sell a subsidiary.
3. Select the type of subsidiary you wish to sell or buy. Immediately, a Subsidiaries sub-window will open up with a list of subsidiaries, as seen in Figure 5.3. If there are no subsidiaries for sale, or there are no buyers, a message will pop up on-screen advising you of this fact and you must select a different subsidiary to buy or sell.
4. Click the subsidiary listing you are interested in, and the subsidiary manager will appear to ask you to confirm the transaction. To the immediate right of the window the map will scroll to the subsidiary's location and the subsidiary will begin to blink. This helps you to differentiate the subsidiary from any other nearby buildings that may look similar.
5. Click Yes in the Subsidiary Manager's window if the selected subsidiary is the correct one, or else click No and repeat step 4.
6. Click the Exit button to exit the Report 3 window. The sale or purchase is now complete.

CONSTRUCTION OF SUBSIDIARIES

Whenever you develop a new area on the map, you should first build the railroad infrastructure necessary to supply it with materials and people. After the rail lines, stations, and trains are bought and set up correctly, you can turn your attention to building subsidiaries. In the beginning, trains should be ferrying construction materials from your factories to the new area. A lack of materials will retard growth, since all residences, subsidiaries, public buildings and roads depend on their availability. Later, when you have some local factories producing materials, you can inaugurate passenger train service. Once you have an adequate supply of materials flowing to the area, you should build apartment buildings to increase the local population. After all this has been accomplished, you will want to jump-start the local economy by building commercial buildings, lease buildings, and hotels. Do not build any leisure facilities such as golf courses, amusement parks, ski resorts, or stadiums, until your population has grown substantially. If you build these types of subsidiaries too early in the game, you will lose money, and not be able to sell them without huge financial losses.

To summarize, here are some specific guidelines to follow if you want to develop an area as rapidly as possible:

- Using the Real Estate subsidiary menu, buy all the empty land immediately surrounding the station. Don't buy any residences or other land with buildings on it.
- Sell all the land, except for a few blocks near the station which will be used for storing construction materials. The purpose of buying the land is to clear it of vegetation. Land which is clear and vacant is much more desirable than land which has to be bulldozed clear. When you sell the land, it allows others to develop it more swiftly than if you had left the land in its pristine state.
- Using the Apartments subsidiary menu, build some apartment buildings to increase the local population.
- Build a factory using the Factory subsidiary menu if there is a shortage of building materials.
- If there is no passenger train service to the area, add some passenger trains to help bring new people into the area.
- Using the Lease Bldg., Commercial, and Hotel subsidiaries menus, build some lease buildings, commercial stores, and hotels to help create a local economy and provide employment.
- When you are certain the population has surged higher, you can start to build expensive leisure facilities. Make sure there are plenty of new residences, public buildings, and rival subsidiaries before taking this plunge.
- Sell your subsidiaries as soon as you build them, with a revolving door policy designed to make short-term profits available for other projects.

Rival companies cannot construct leisure institutions such as amusement parks, stadiums, golf courses, and ski resorts. The only way they can own such a subsidiary is if you first build one and then sell it to them. Since you have an exclusive monopoly on these kinds of subsidiaries, other rival firms are desperate to acquire them for astronomical prices. For example, you can make a profit of almost $5 million dollars selling a stadium if the circumstances are right. Keep in mind, this money-making tip will only work if leisure institutions are in demand.



To construct a new subsidiary, first open the Subsidiary menu.

From inside this menu you must open one of the Subsidiary sub-menus, click the Build button, and then click on the map to place the subsidiary. If you want to buy real estate, use the Real Estate sub-menu under the Subsidiary menu and click the Buy button.

Location, Location, Location!

Before building a new subsidiary, you need to scout the area for a suitable location in which to place it. You will need to keep in mind proximity to a station, whether there are sufficient construction materials nearby, and unfavorable terrain. Ideally, the subsidiary should be within an eight-block radius of the station, preferably in the back of the station where roads evolve and most development is concentrated. Next, there should be a plentiful supply of construction materials within a ten-block radius of the site, and there should be a regular freight train run that replenishes the materials stockpile in the area. Finally, you should choose a location that is not obstructed by a river, mountain, sea, or other impediment, so that future city expansion can occur.

Do not build two leisure facilities of the same type near each other, as they will compete with each other and lose money. (Exception: golf courses and ski resorts can be placed together because seasonal schedules prevent any operational conflicts.)



REMOVING SUBSIDIARIES AND SELLING REAL ESTATE

You can remove any subsidiary you own by clicking on the Remove button in each of the Subsidiary sub-menus and then clicking on the subsidiary on the map. You cannot remove real estate that you own; you can only sell it. To sell real estate, use the Real Estate sub-menu, select the Sell button, and click on the block(s) of land you wish to part with. You will notice that after clicking the Sell button, the Cost text box in the Real Estate sub-window will change to Income. The figures inside this text box will now tell you the income you would earn if you sold a particular plot of land.

Contrary to what the A-Train manual states, removing a subsidiary

does not cause your subsidiary to be sold. Also not mentioned in the manual is that commercial buildings, apartments, hotels, and lease buildings cost money to remove.[2] For a listing of these costs, consult the tables that appear in each of the subsidiary subsections later in this chapter.

Removing a subsidiary is tantamount to destroying it. The materials that were used for its construction and the funds you spent building it are gone forever. The only real justification for removing a subsidiary is to make way for a rail line, road, or station that cannot be relocated and which is crucial to the development of an area. By using this command you are essentially flushing your money down the drain, so use it sparingly.

SUBSIDIARIES

All the subsidiaries will be presented and discussed in greater detail in the next part of this chapter. Each subsidiary section will have a summary table listing vital information about the subsidiary. Before proceeding, though, let's define some of the terms you will see in the tables.

Construction Materials

Materials is the amount of construction materials required to build the subsidiary. These materials can be obtained from storage yards or directly from factories if within a 10-block radius.

Construction Expense

Some subsidiaries within a given category have different construction expenses. Commercial buildings, amusement parks, apartments, and lease buildings have several styles of buildings to choose from. Each cost is listed separately in the tables.

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[2]Currently, there is a bug in the PC version of A-Train that allows you to remove factories, golf courses, amusement parks, ski resorts, and stadiums without charge. Also, the removal costs for apartment buildings should always be 10 percent of the construction cost of the building, not uniformly $34,000 as is the case at present. Maxis will fix this problem with a bug fix that should be available by the time you read this.

Labor Force

Subsidiaries are the tools with which you create employment. Factory and lease buildings provide the most employment opportunities for the residents of your city. In order for the population to grow and the economy to prosper, you must provide jobs as well as housing. To balance the needs of the people, you must be ever watchful for slowdowns in residential development or stagnating sales from subsidiaries—both of which indicate an improper alignment of your economic engine. When residential housing stops expanding, you probably haven't created enough jobs; while if sales slump in your subsidiaries it is high time to create more housing to provide a larger customer base.

Management Fee

Management fees are the expenses incurred in the day-to-day operations of your subsidiaries. They are subtracted from sales to arrive at your net profit.

Sales Income

Sales income is the money earned from the subsidiary's operation. It represents gross receipts, so management expenses must be subtracted before you can calculate net profits. Sales are affected by other variables, such as the presence of railroad stations and other subsidiaries in the neighborhood, the season, whether it is a holiday or not, the volume of passenger traffic, and the population of the city. Rival companies, in particular, can severely depress income if they are stealing business away from your subsidiary.

Average Daily Profit

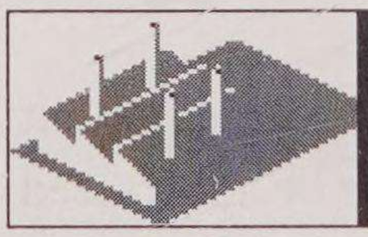
This number is a crude "guesstimation" of what your net profit from daily sales would be. It subtracts management fees from sales income to arrive at a net profit. This number should be treated as a ballpark figure that can fluctuate greatly. I have used high average profit estimates taken from actual subsidiaries in operation and averaged the numbers over time to give you an idea of what you might expect. Use this number as a reference benchmark, not as a fixed standard.

Average Commission Fee When Selling a Subsidiary

The average commission fee is a 2 percent real estate broker's fee charged against the market value of your subsidiary plus a flat charge of $5,000. When you are *selling* a subsidiary it is *additional money you earn* over and above the market value of your subsidiary. When you are *buying* a subsidiary it is *additional money you must pay* over and above the market value of the subsidiary.

Average Net Profit from Selling a Subsidiary

This number is also a best estimate of the net profit you might expect to receive if you were to sell the subsidiary. The net profit is calculated by subtracting the cost of building the subsidiary from the market value, then adding the sales commission (the sales commission is money you earn when selling). Again, I used a range of numbers that estimated a higher profit than might be typical. Use this number only as a reference mark, not as a fixed standard.



FACTORY

Factory subsidiaries are to A-Train what the heart is to a human being. They pump materials, the life blood of A-Train, into the arteries of the simulation, the train lines. The materials they produce are vital to sustaining growth and nourishing the organism that is A-Train. They also employ 500 people, and are thus a potent force in the creation of jobs for the economy.

There is a big distinction between factory-made materials and the ordinary materials that have been imported from off the map or that sit in storage yards. Factory materials can only be used by your company if you build a subsidiary within a 10-block radius of the factory. Rival companies and the simulation itself are unable to use these materials directly, but may use them indirectly if you first transport the materials by freight train to some other location. Once the materials have been moved, anybody can use them. Many people don't realize this crucial point and wonder why roads, public

buildings, and residences never appear when seemingly there are plenty of materials at hand.

Factory-made materials are placed in a special lot that is part of the factory. This lot, which has room for 16 material units, can be used to store only the materials made in the factory. When the storage space has been filled, the factory stops producing materials but continues to run up operating expenses. In order to prevent this from happening, you need to use up the materials in the yard by building subsidiaries or, alternatively, transporting the materials elsewhere via freight train.

If you want to have the factory materials made available for local consumption, you should build a short-haul railroad line to dump the materials in a storage yard. Figure 5.7 demonstrates an example of

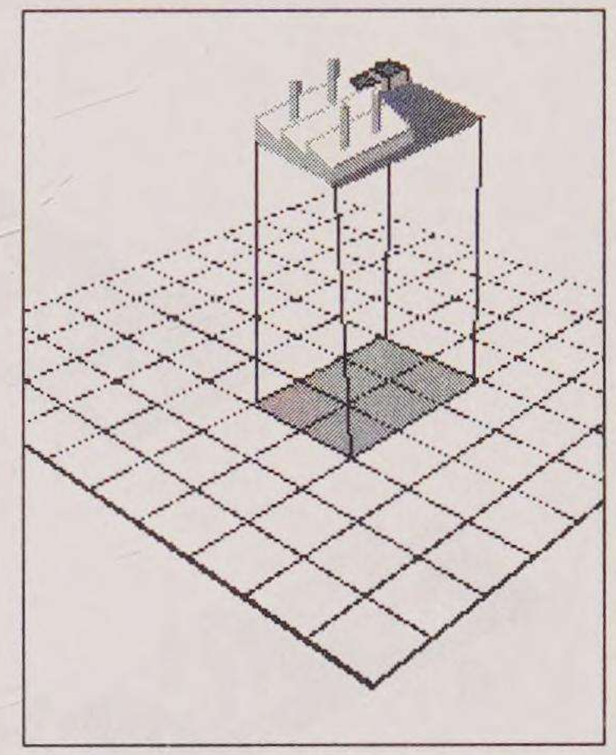
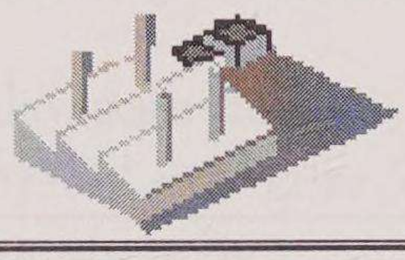


Figure 5.5 The factory takes up six blocks of land

Table 5.1: Factory	
Construction materials needed to build	20 materials
Construction expense	$250,000
Removal expense	$25,000
Management fee	$201–$202/day
Materials manufacturing fee	$4/material
Sales income	$250/material*
Average daily profit	$42/day*
Average commission fee when selling factory (high estimate)	$10,360
Average net profit from selling factory	$13,160
Storage yard capacity	16 materials
Labor force	500 people

*Factory materials must be removed from yard before sales amounts are registered

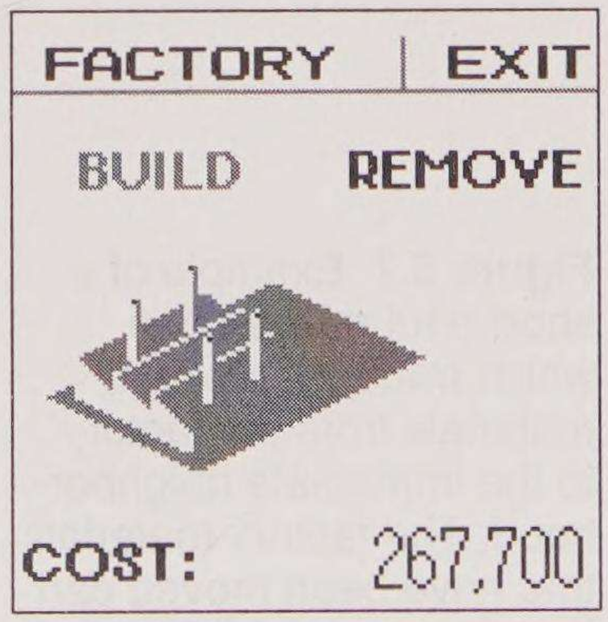


Figure 5.4 The Factory menu

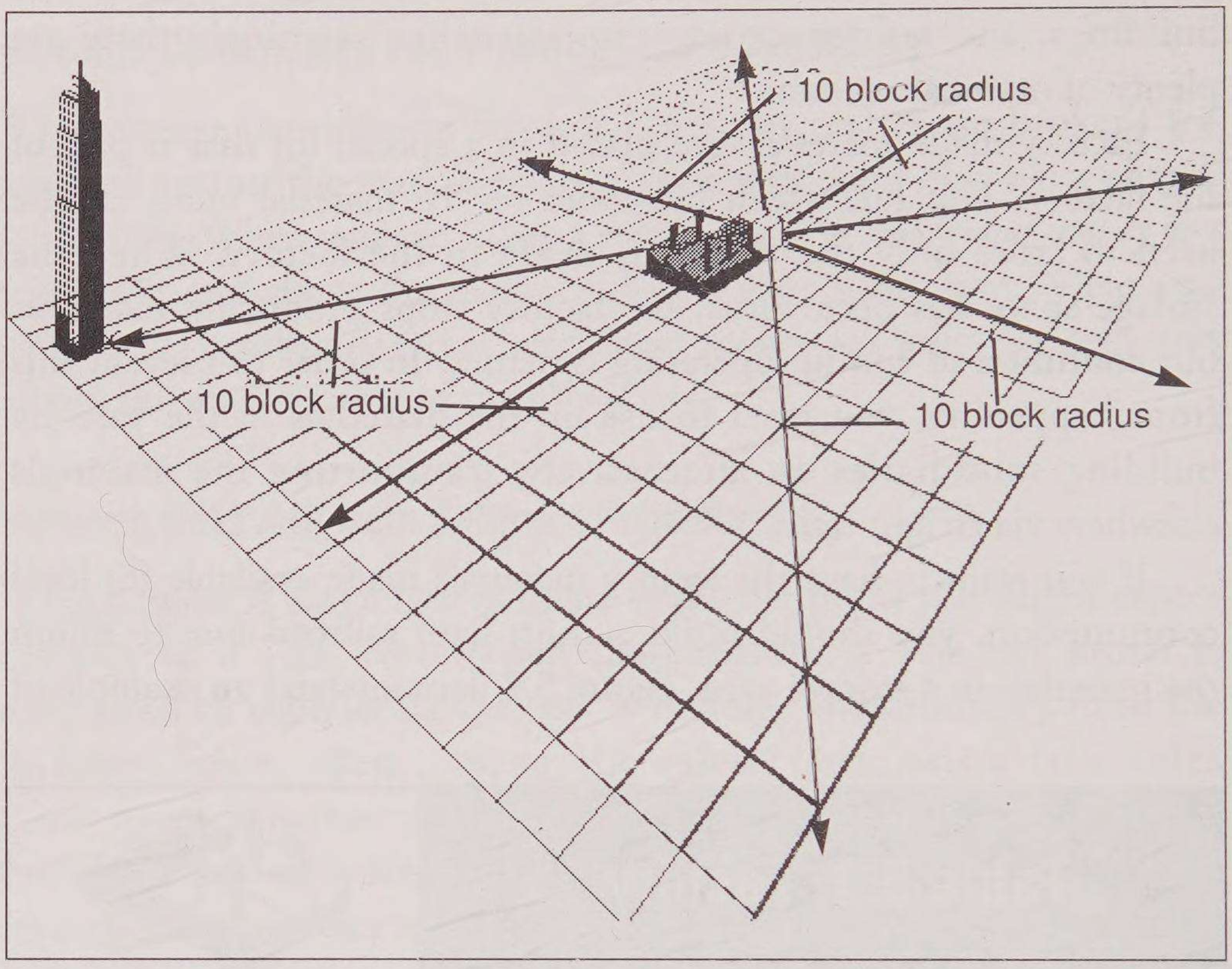


Figure 5.6 Only you can use factory materials within a 10-block radius of the factory's storage yard. In order for others to use these building materials, you must first transport them elsewhere by freight train.

this with a freight line that is used exclusively to convert factory materials into construction materials for the community.

Interestingly enough, factories can be linked together to multiply their output. In Figure 5.8 you can see various combinations of factories that have been connected. In all cases the I, II, III, and IV

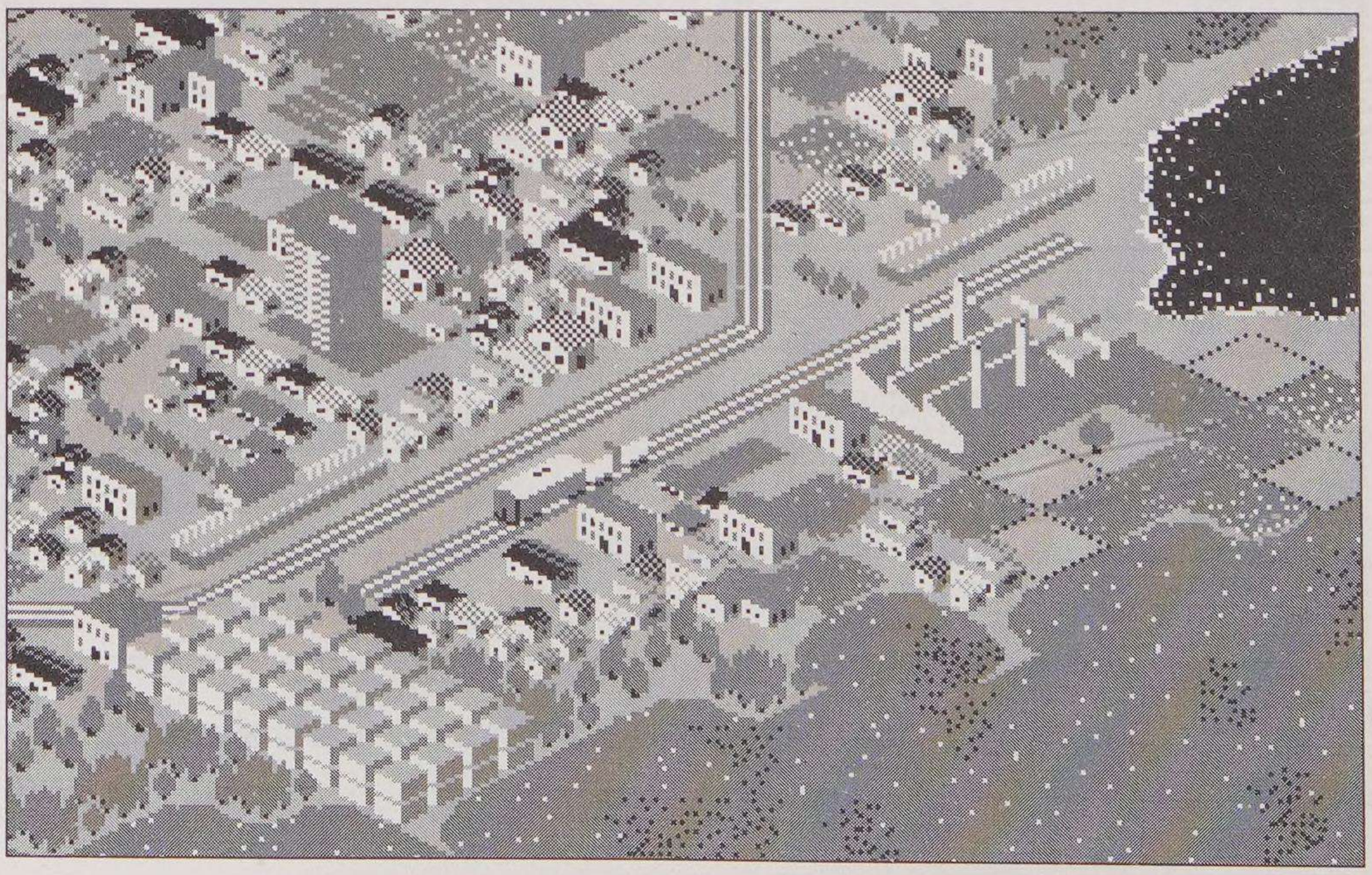


Figure 5.7 Example of a short-haul railroad line which transports freight materials from the factory to the immediate neighborhood. The factory materials that have been moved can now be used to build roads, public buildings, residences, and other rival company subsidiaries.

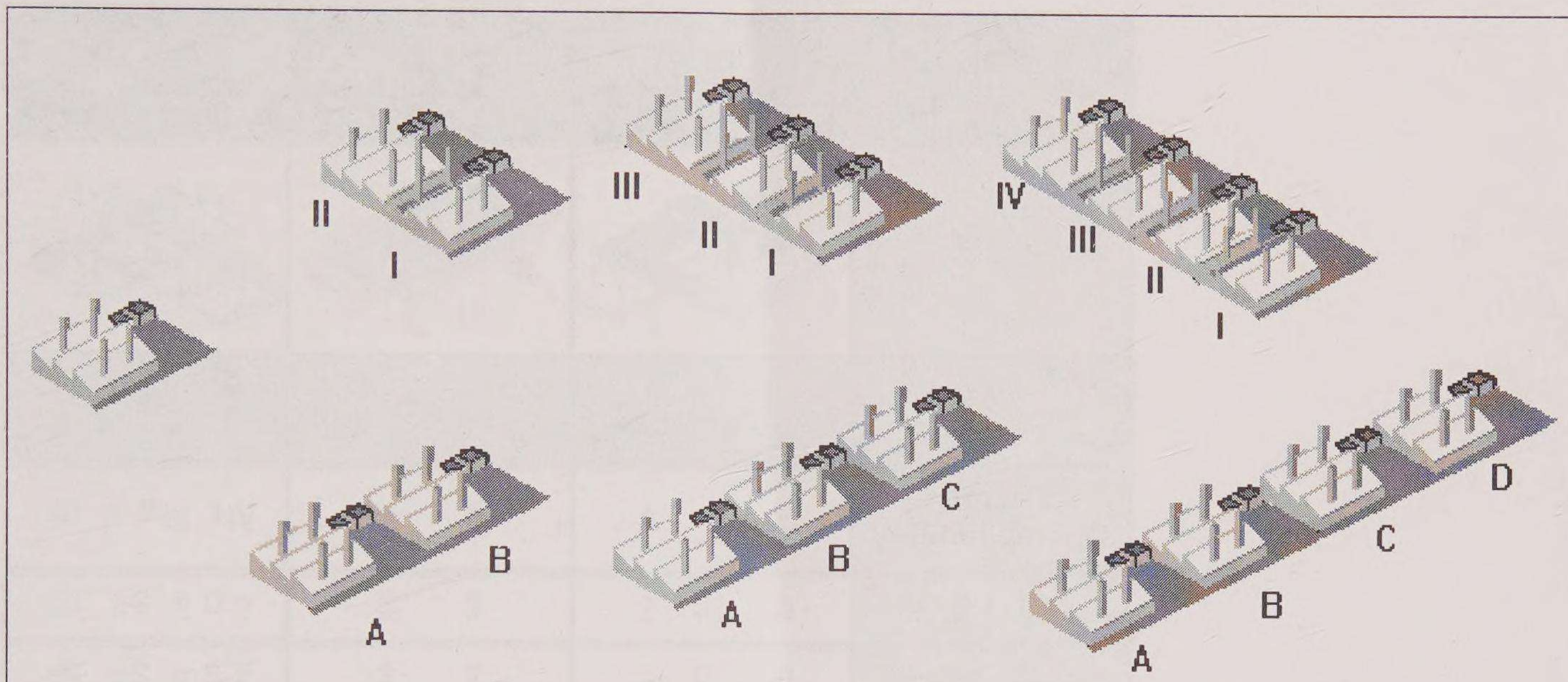


Figure 5.8 Factories can be combined to multiply their output. The I, II, III, and IV factory orientations produce more material per day than do the A, B, C and D factory orientations.

factory orientations produce more materials per day than do their A, B, C, and D counterparts, as is dramatically illustrated in Figure 5.9. You can see the day-by-day factory production numbers by glancing at Figure 5.10, which shows the factory materials schedule for each factory orientation. The materials are always produced in multiples of two, although at different times according to the factory orientation and set-up.

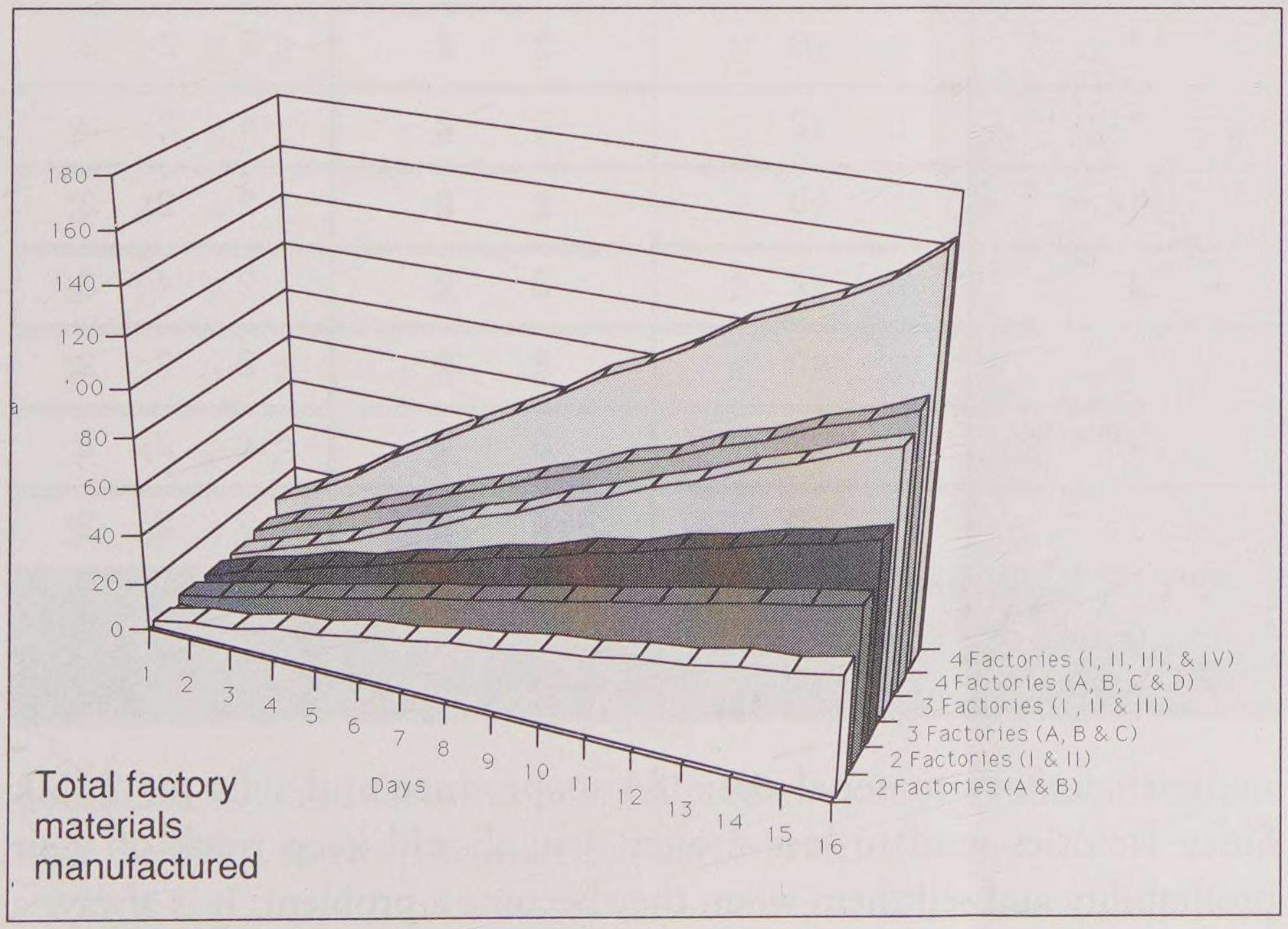


Figure 5.9 Comparison chart for factory output by day and number of factories

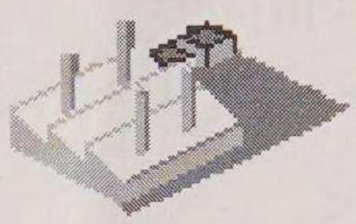
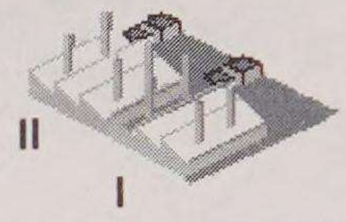
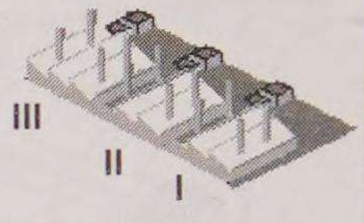
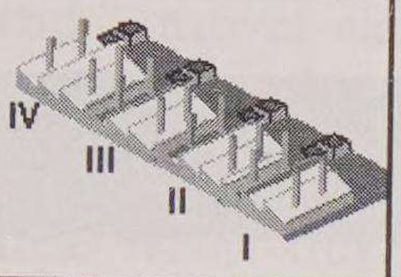
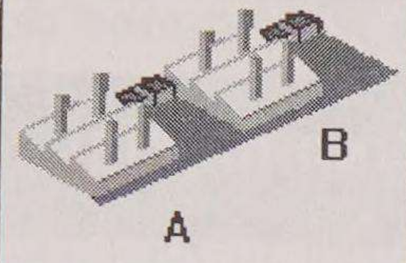
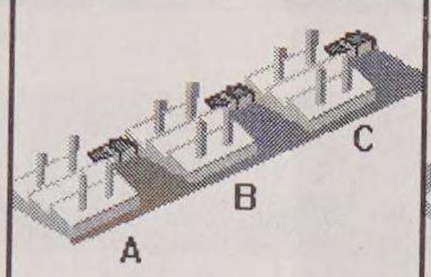
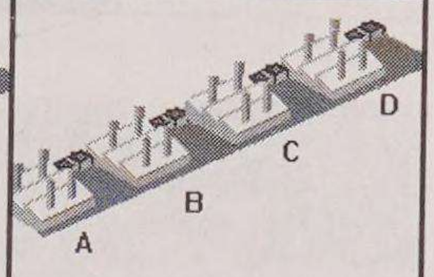
Factory Materials Schedule			
			
	1 Factory	2 Factories	3 Factories
Factory Orientation Day		I II	I II III
1	2	2 2	0 2 2
2	0	2 2	2 2 2
3	2	2 2	2 2 2
4	0	2 2	2 2 2
5	2	2 2	2 4 2
6	0	2 2	2 2 2
7	2	2 2	4 2 2
8	0	2 2	2 2 2
9	2	2 2	2 4 2
10	0	2 2	2 2 2
11	2	2 2	4 2 2
12	0	2 2	2 2 2
13	2	2 2	2 4 2
14	0	2 2	2 2 2
15	2	2 2	4 2 2
16	0	2 2	2 2 2
Total Factory Materials	16	64	106

Figure 5.10 Factory materials schedule

Each factory material costs $4 to produce and sells for $250. Since factories tend to lose money, you should keep track of their profitability and sell them when they become a problem. It is always a

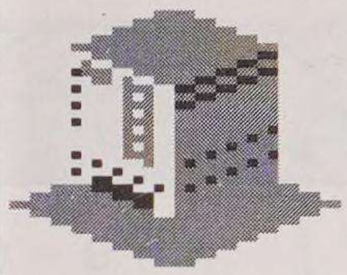
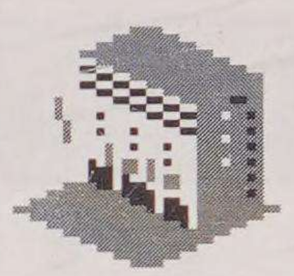
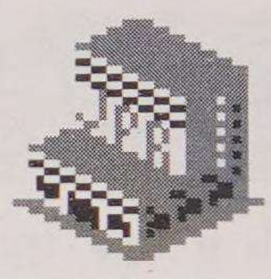
			
4 Factories	**2 Factories**	**3 Factories**	**4 Factories**
I II III IV	A B	A B C	A B C D
4 4 2 2	2 0	2 2 0	2 2 2 0
2 2 2 2	2 2	2 2 2	2 2 2 2
2 4 2 2	2 0	2 2 0	2 2 2 0
2 6 2 2	2 2	2 2 2	2 2 2 2
4 2 2 2	2 0	2 2 0	2 2 2 0
2 4 2 2	2 2	2 2 2	2 2 2 2
2 4 2 2	2 0	2 2 0	2 2 2 0
2 2 4 2	2 2	2 2 2	2 2 2 2
4 4 2 2	2 0	2 2 0	2 2 2 0
2 2 2 2	2 2	2 2 2	2 2 2 2
2 4 2 2	2 0	2 2 0	2 2 2 0
2 4 4 2	2 2	2 2 2	2 2 2 2
2 2 2 2	2 0	2 2 0	2 2 2 0
2 2 2 2	2 2	2 2 2	2 2 2 2
2 4 2 2	2 0	2 2 0	2 2 2 0
2 6 4 2	2 2	2 2 2	2 2 2 2
164	**48**	**80**	**112**

good idea to build factories near railroad stations, or railroad stations near factories, so that the materials can be carried away.



COMMERCIAL

Table 5.2: Commercial

			
Construction Materials Needed to Build	12 materials		
Construction Expense	$1,200,000	$1,260,000	$1,320,000
Removal Expense	$120,000	$126,000	$132,000
Management Fee	$2,300–$2,600/day (30% more on holidays)		
Sales Income	$2,200–$2,700/day if near station $1,000–$1,350/day if far away from station (plus 50% more on holidays) (plus $500/day if near residences, apartments, lease building, and hotels		
Average Daily Profit	$43/day (but often tend to lose money)		
Avg. Commission Fee When Selling Commercial Building (high est.)	$31,400		
Net Profit Range from Selling Commercial Bldg (high estimate)	$537,821–$903,025		
Labor Force	550 people		
Works Best With	Stations, apartments, lease buildings, hotels, and residences		
Seasonal Changes	Income rises 20–30% in December, decreases 10-20% in February and August		
Competition	Presence of nearby rival store causes 20–40% dip in income		

Commercial buildings consist of department stores where people shop for consumer items. Although there are three types of commercial buildings that cost different amounts of money to build and remove, each commercial building type has the same sales income and expenses as the others.

Commercial buildings are very expensive and should be placed in areas where there is a lot of traffic, such as near stations and along roads. The closer the commercial building is to the station, the higher the sales income will be. Despite what you might think, commercial buildings make more money near stations than they do near crossroads. Nearby hotels, apartments, residences, and lease buildings can also help increase sales to the tune of $500 per day.

With the introduction of a commercial building near a station, the passenger count at the nearby railroad stations will increase by up to 10 passengers per commercial building. Figure 5.13 illustrates this by showing the relative passenger increases at two stations in the neighborhood, one a downtown city-center rail station, the other a suburban station some distance away. Notice that the suburban station shows a startling increase of 60 passengers for the first commercial building. This anomaly can be explained by the fact that suburban residential dwellers need a place to shop and will flock to the first available commercial building in the area.



Figure 5.11 The Commercial menu

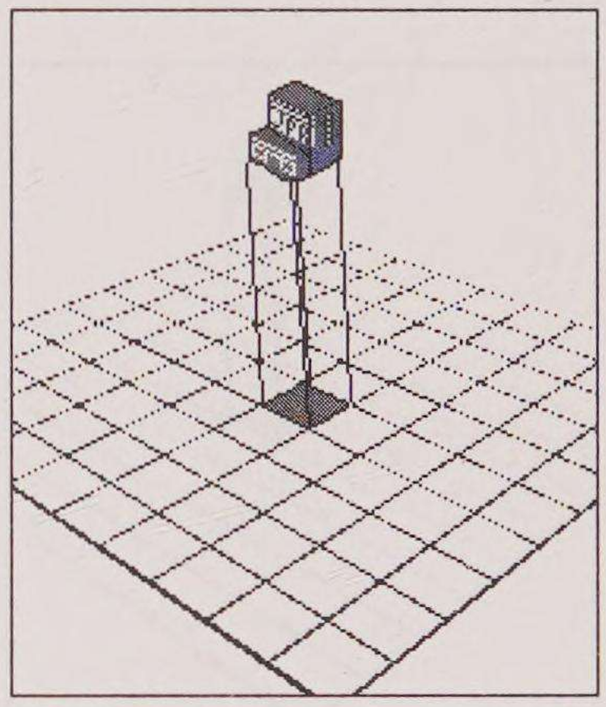


Figure 5.12 The commercial building takes up one block of land

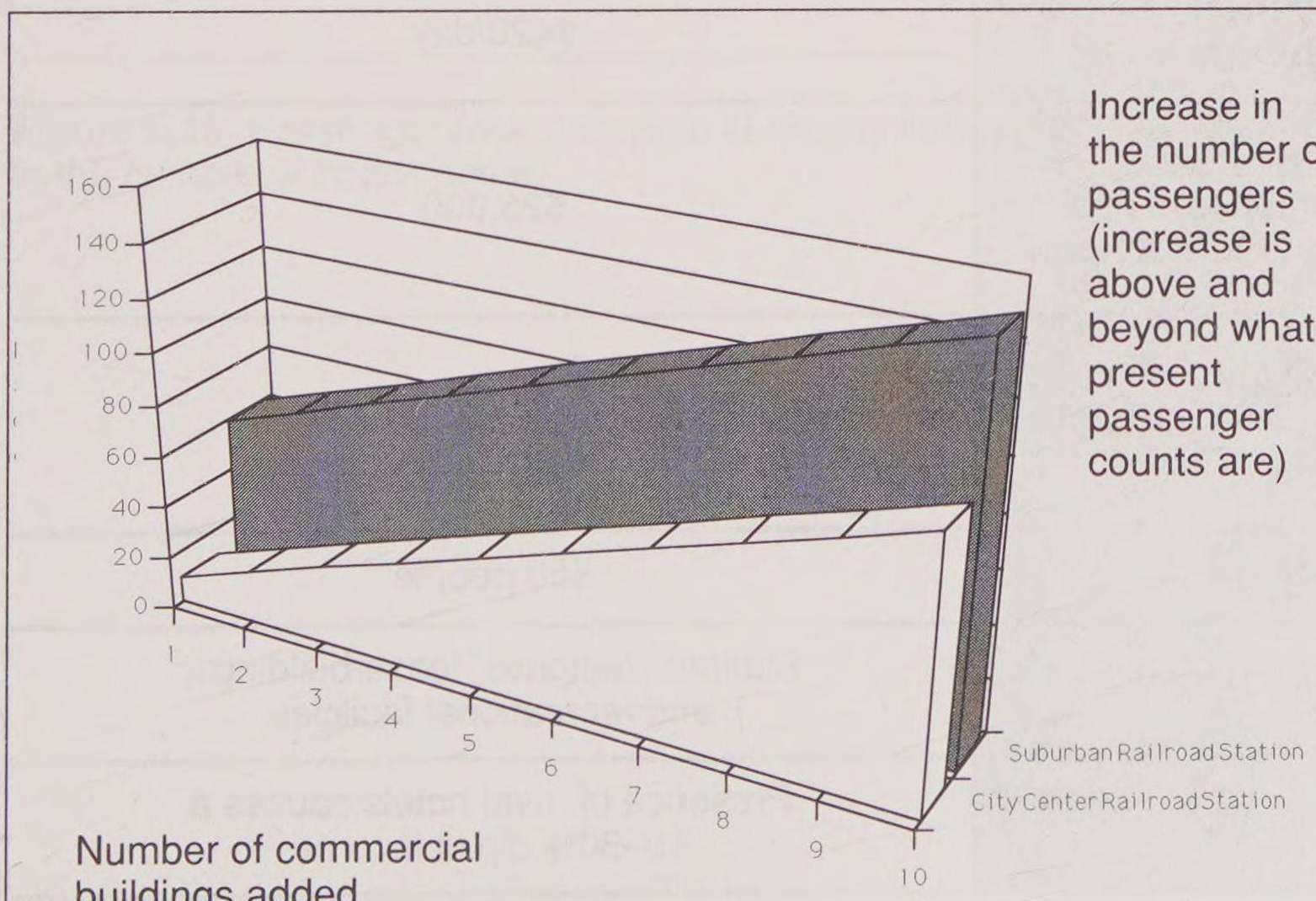
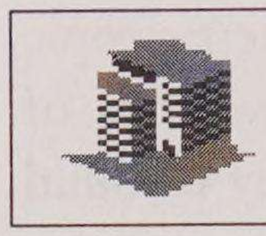
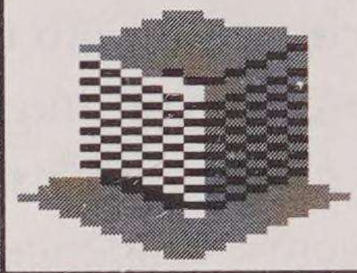
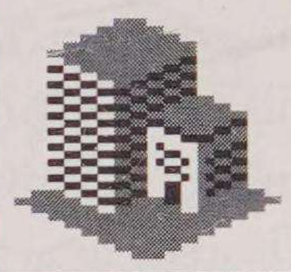
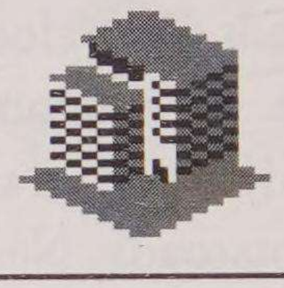


Figure 5.13 Passenger count increase at nearby railroad stations according to the number of commercial buildings added



HOTEL

Table 5.3: Hotel

			
Construction Materials Needed to Build	12 materials		
Construction Expense	$1,000,000		
Removal Expense	$100,000		
Management Fee	$1,700–$1,800/day (5% more on weekdays)		
Sales Income	$1,400/day ($1,600–$1,850/day if near station) (plus $200/day weekdays if near factories and lease buildings) (plus $500/day if near residences and apartment buildings		
Daily Profit (high estimate)	$420/day		
Average Commission Fee When Selling Hotel	$25,000		
Net Profit Range from Selling Hotel (high estimate)	$560,845		
Labor Force	550 people		
Works Best With	Stations, factories, lease buildings, and recreational facilities		
Competition	Presence of rival hotels causes a 10–30% dip in income		

Hotels do their best business next to stations, lease buildings, factories, and recreational facilities such as golf courses, ski resorts, amusement parks, and stadiums. Therefore your best bet is to place them near these subsidiary types to maximize your profits.

With the introduction of hotels, passenger counts will increase at city-center stations by nearly 40 passengers per hotel added, and by approximately 20 passengers per hotel at suburban rail stations.



Figure 5.14 The Hotel menu

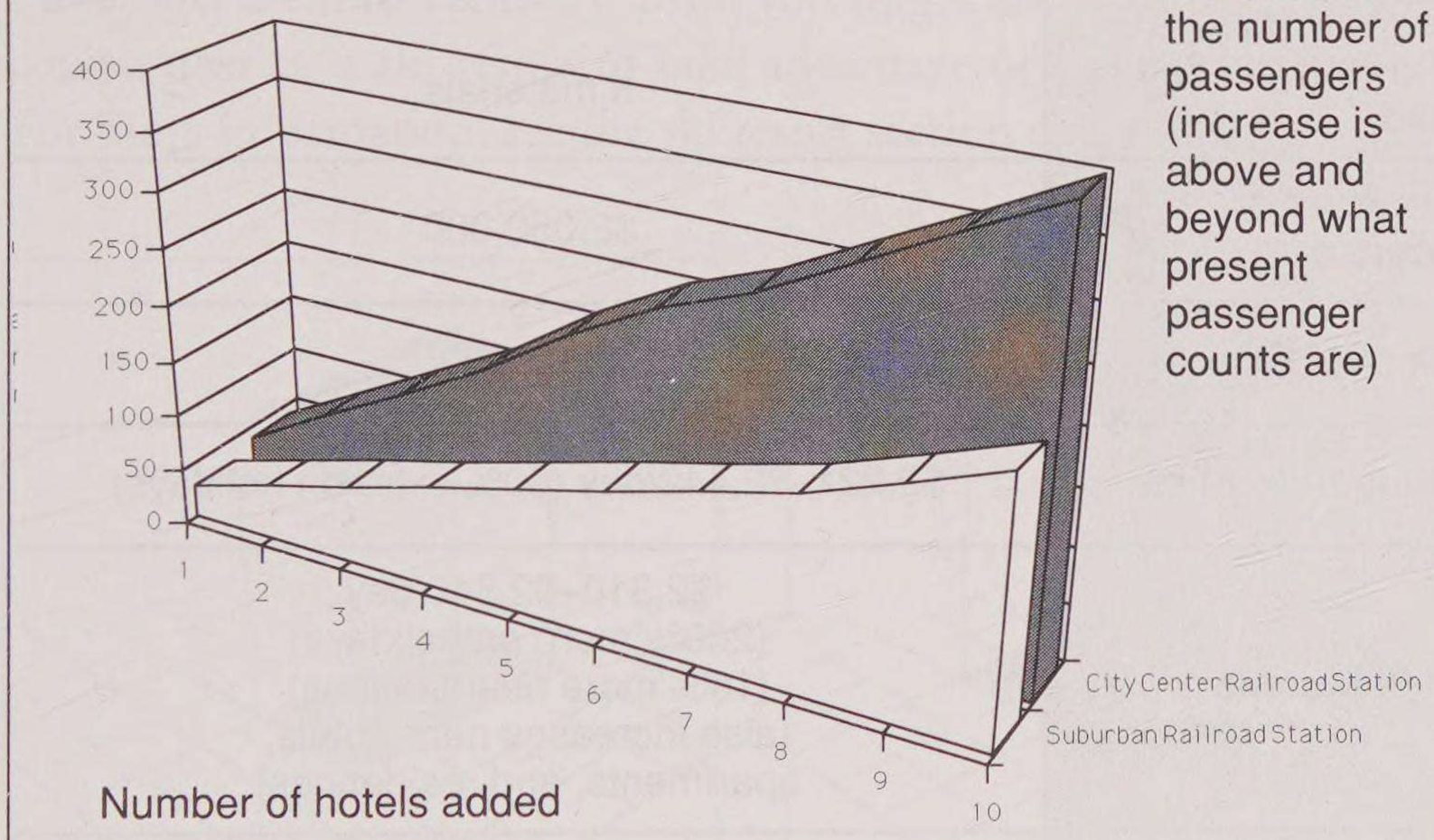


Figure 5.16 Passenger count increase at nearby railroad stations according to the number of hotels added

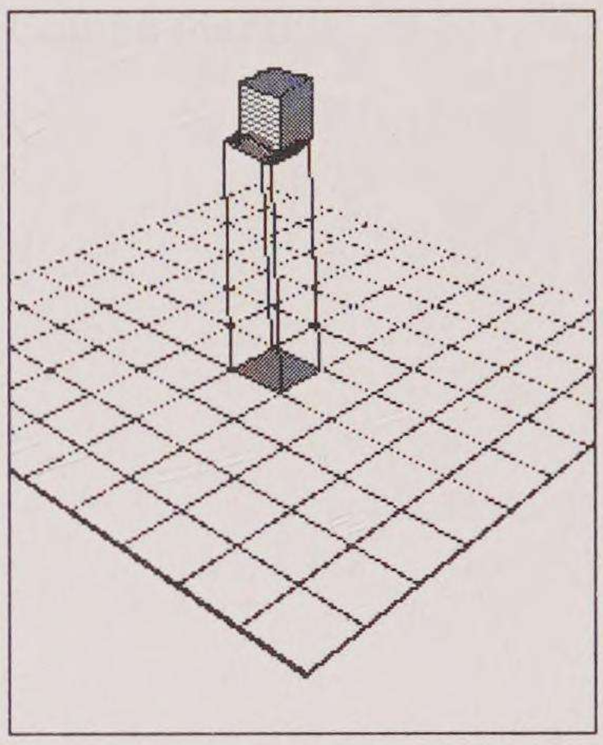
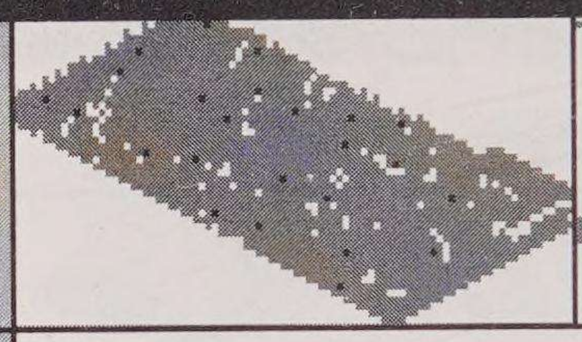
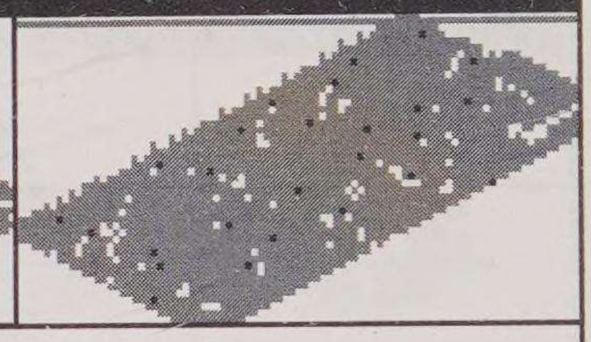


Figure 5.15 The hotel takes up one block of land



GOLF COURSE

Table 5.4: Golf Course

		
Construction Materials Needed to Build	8 materials	
Construction Expense	$2,050,000	
Removal Expense	$205,000	
Management Fee	$2,221–$2,442/day (50% extra on holidays)	
Sales Income	$2,310–$2,540/day (200% more on holidays) (10% more near stations) (also increases near hotels, apartments, and residences)	
Highest Daily Profit	$1,003/day	
Commission Fee when Selling Golf Course (high estimate)	$46,000	
Net Profit from Selling Golf Course (high estimate)	$1,580,194	
Labor Force	200 people	
Works Best With	Railroad station, hotel, apartments and residences	
Seasonal Changes	Closed in winter (12/24–2/28)	
Competition	Presence of rival golf courses causes a 20–30% dip in income	

Even though golf courses need only eight materials for their construction, they are the most expensive subsidiary you can build. If you are not careful, buying a golf course can financially ruin your company because you may not be able to recoup your construction investment, or the golf course itself may be unprofitable to run. They are the most difficult subsidiary to manage because the management expenses and market value of the facilities are so volatile and unpredictable.

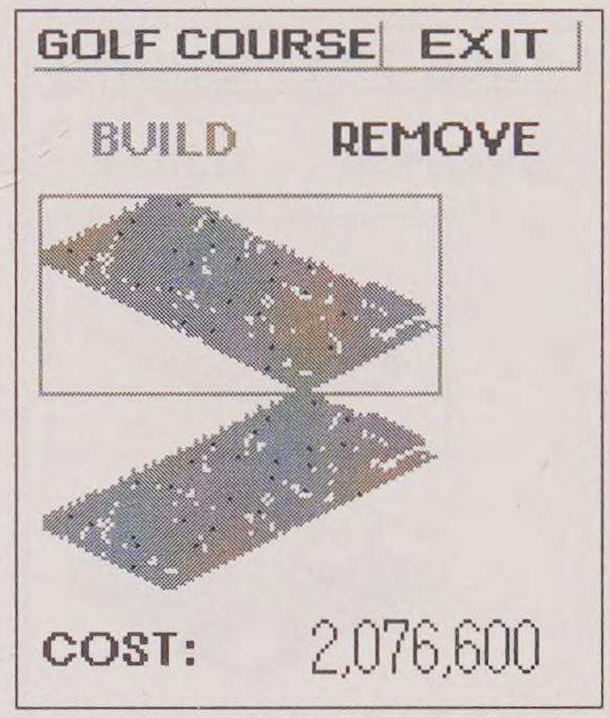
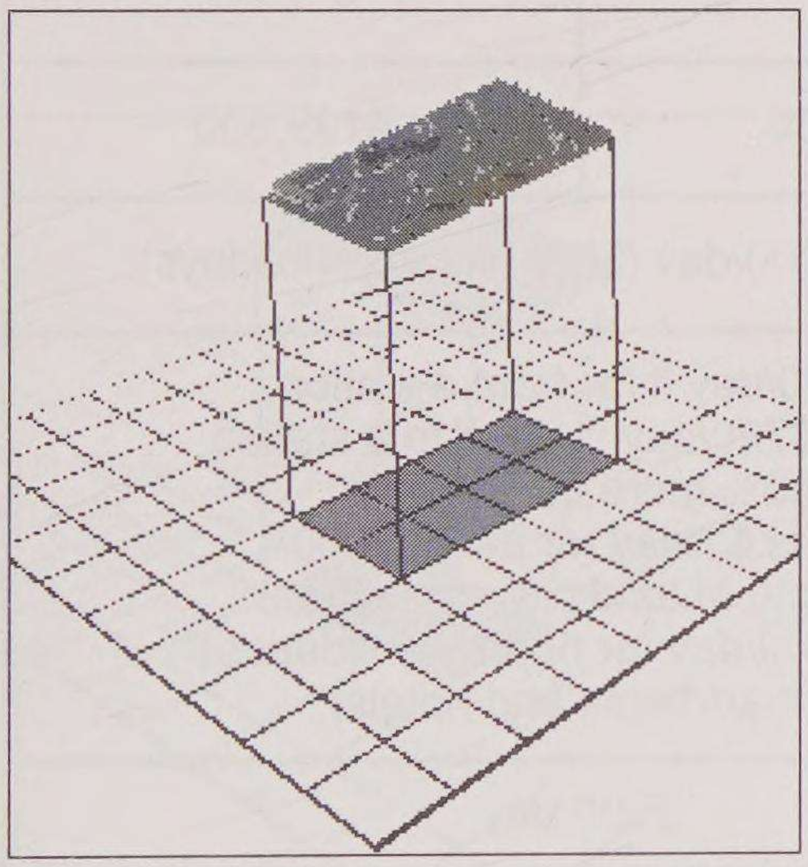


Figure 5.17 The Golf Course menu

Golf courses close down in winter from December 24th to February 28th due to snow. Because the ski resort is only open from December 24th to February 28th, you might consider opening a golf course next to a ski resort to take advantage of the seasonal overlap. For more information, see the ski resort section of this chapter.



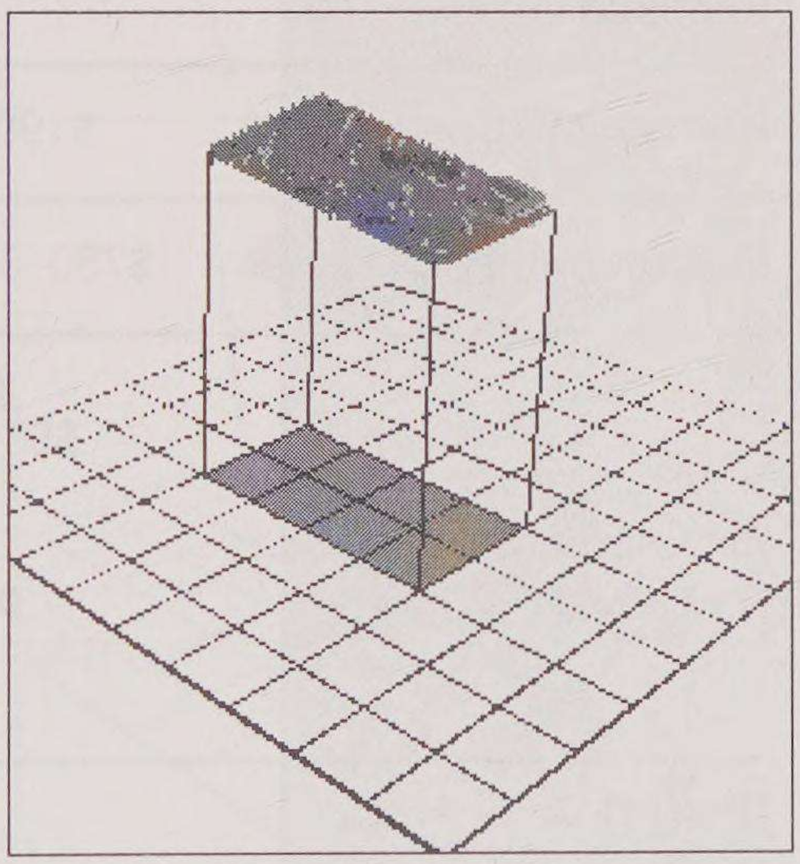
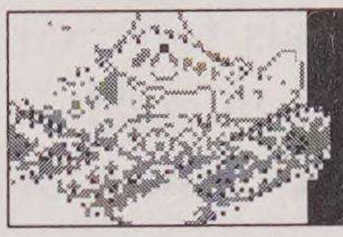


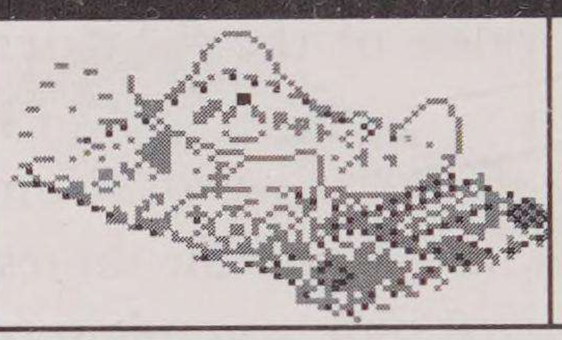
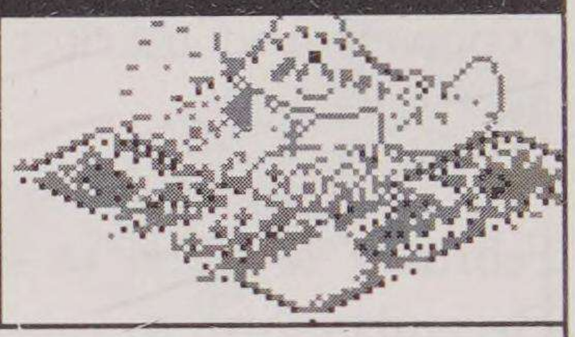
Figure 5.18a & 5.18b The golf course takes up six blocks of land

Only your company has the exclusive right to build golf courses, although you can later sell them to other companies.



AMUSEMENT PARK

Table 5.5: Amusement Park

		
Construction Materials Needed to Build	24 materials	
Construction Expense	$1,900,000	$1,995,000
Removal Expense	$190,000	$199,500
Management Fee	$750–$1,000/day (50% extra on holidays)	
Sales Income	$390/day if far from a station $550–$720/day if close to a station (50% more on holidays) (plus $1/day for each 1,000 people of total city population) (plus $200/day for nearby residences, apartments and hotels)	
Highest Daily Profit	$500/day	
Commission Fee when Selling Amusement Park (high estimate)	$44,900	
Net Profit from Selling Amusement Park (high estimate)	$2,161,930	
Labor Force	200 people	
Works Best With	Stations, hotels, apartments and residences	
Seasonal Changes	Fireworks show on Saturday nights in August	
Competition	Presence of rival park causes a 20–40% decline in income	

There are two amusement park subsidiaries to choose from. The small amusement park takes up six blocks of land and costs $1,900,000, while the large amusement park takes up nine blocks of land and costs $1,995,000. The two parks have the same income and management expenses. Sales income is based on the proximity of the park to railroad stations, residences, apartments, and hotels, as well as the population of the city. The A-Train manual incorrectly states that income is based on the number of patrons visiting the park. In actuality, you earn $1 for each 1,000 people in the city's population.

Only your company is allowed to build amusement parks, although you can later sell them to other companies. Also, on Saturday nights in August, you can see fireworks exploding over the amusement park.

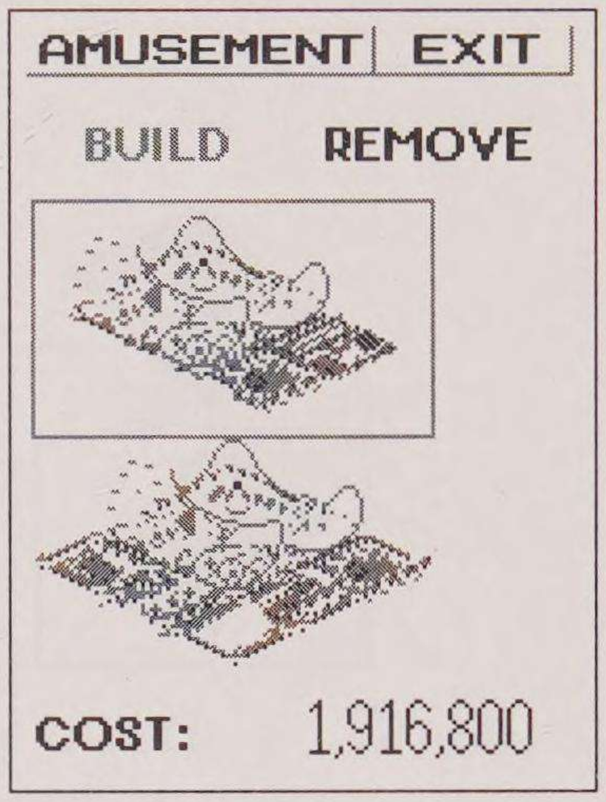


Figure 5.19 The Amusement Park menu

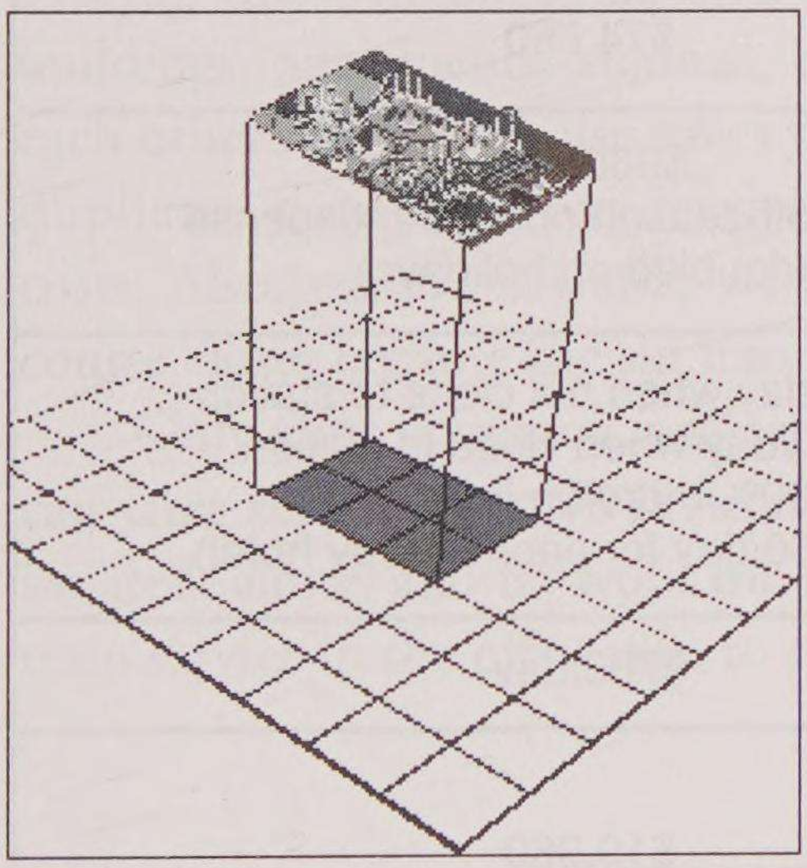


Figure 5.20a The small amusement park takes up six blocks of land

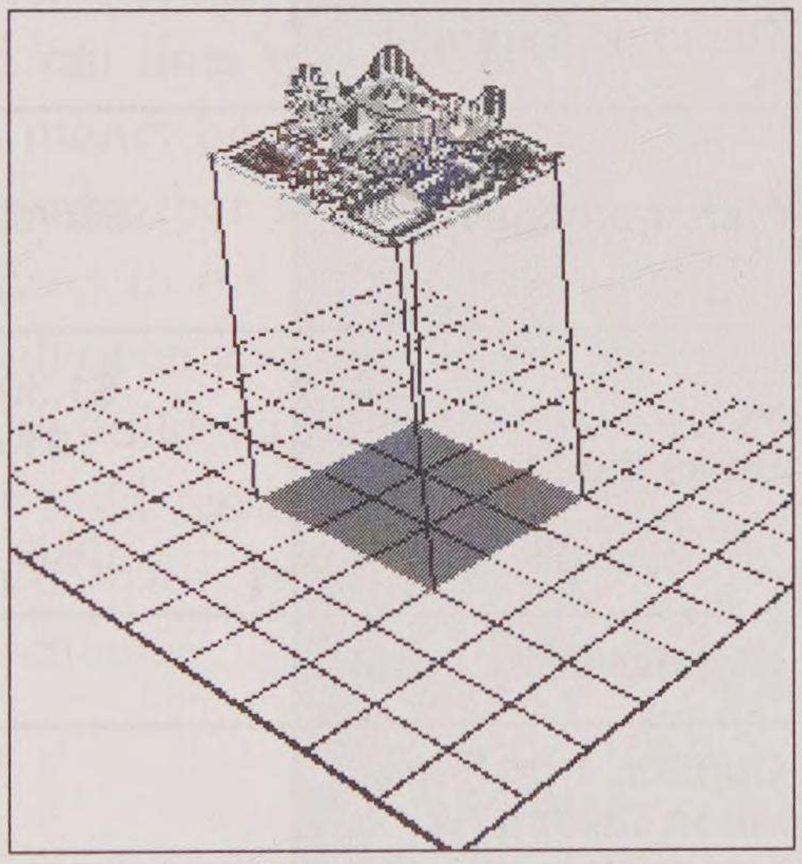
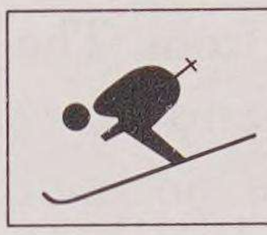
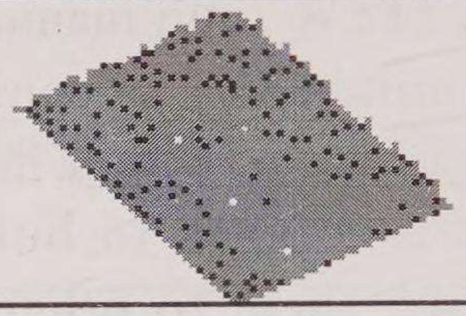
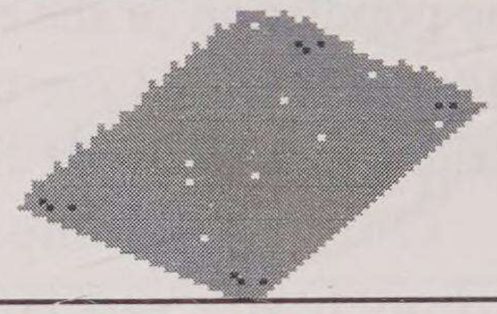


Figure 5.20b The large amusement park takes up nine blocks of land. There is little or no difference in income or operating expenses for large and small amusement parks.



SKI RESORT

Table 5.6: Ski Resort

		
Construction Materials Needed to Build	8 materials	
Construction Expense	$748,600	
Removal Expense	$74,860	
Management Fee	$960/day $50/day off-season operating expense (doubled on holidays)	
Sales Income	$1,300 /day when not close to station $1,660/day when close to station (300% more on holidays) (plus $160/day for each nearby hotel)	
Highest Daily Profit	$700/day	
Commission Fee when Selling Ski Resort (high estimate)	$19,960	
Net Profit from Selling Ski Resort	Only profitable to sell in winter	
Labor Force	0 people	
Works Best With	Railroad station, hotel, and apartments	
Seasonal Changes	Only open in winter (12/24–2/28)	
Competition	Presence of rival ski resorts causes a 20–40% drop in income	

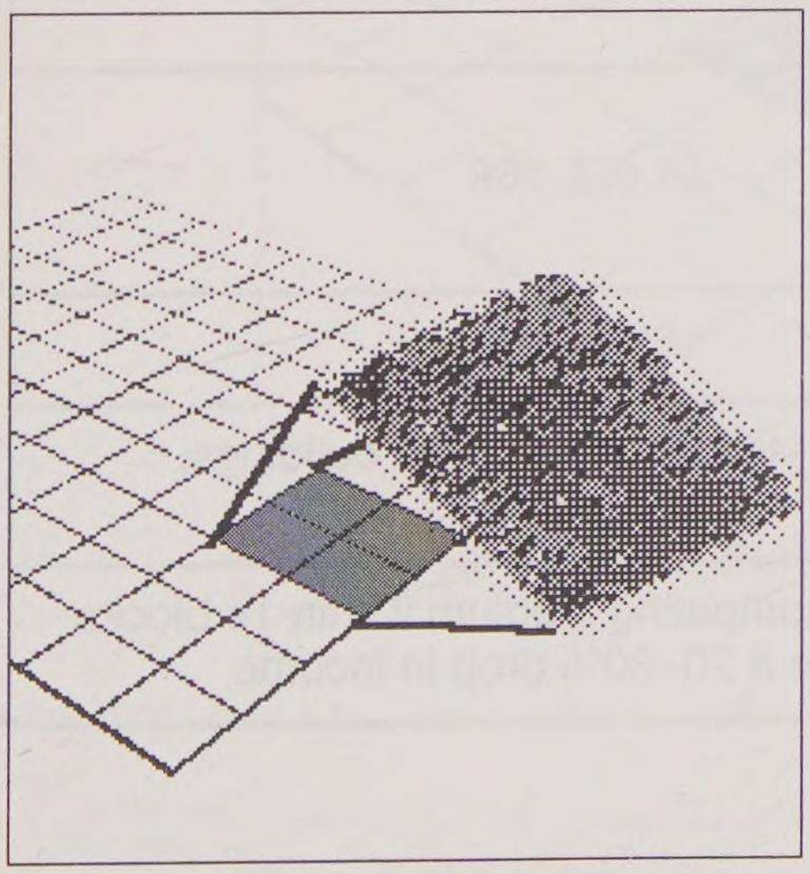
Ski resorts can only be built on slopes of hills that face the same direction as the icons in the Ski Resort menu. Of the six map scenarios, you can build a ski resort in map scenarios 1, 3, 5, and 6. The Bay Area Map 2 and the Multi-City Connection Map 4 scenarios do not have any suitable slopes for a ski resort.

Ski resorts only bring in money two months out of the year, December 24th through February 28th. It is very difficult to make a profit with this type of subsidiary, since management fees during the rest of the year eat up whatever profits you might make during the winter.

Because golf courses have an off season from December 24th through February 28th, you might try combining the ski resort with the golf course so that their seasons don't interfere with one another. This is the only instance where you might get away with putting two leisure facilities next to each other without harmful consequences. Placing them in the same area enables them to share hotels, lease buildings, apartments, stations, and rail lines without infringing on each other's turf. This also saves you money because you don't have to duplicate transportation services, and other related infrastructure costs. Also, passenger traffic won't drop in the winter when the golf course closes because the ski resort will open and take up the slack.

Only your company is allowed to build ski resorts, although you can later sell them to rival firms. If a ski resort is built so that it is isolated, alone, and far from the beaten path, you should discontinue train service in the off-season to save money.

Figure 5.21 The Ski Resort menu



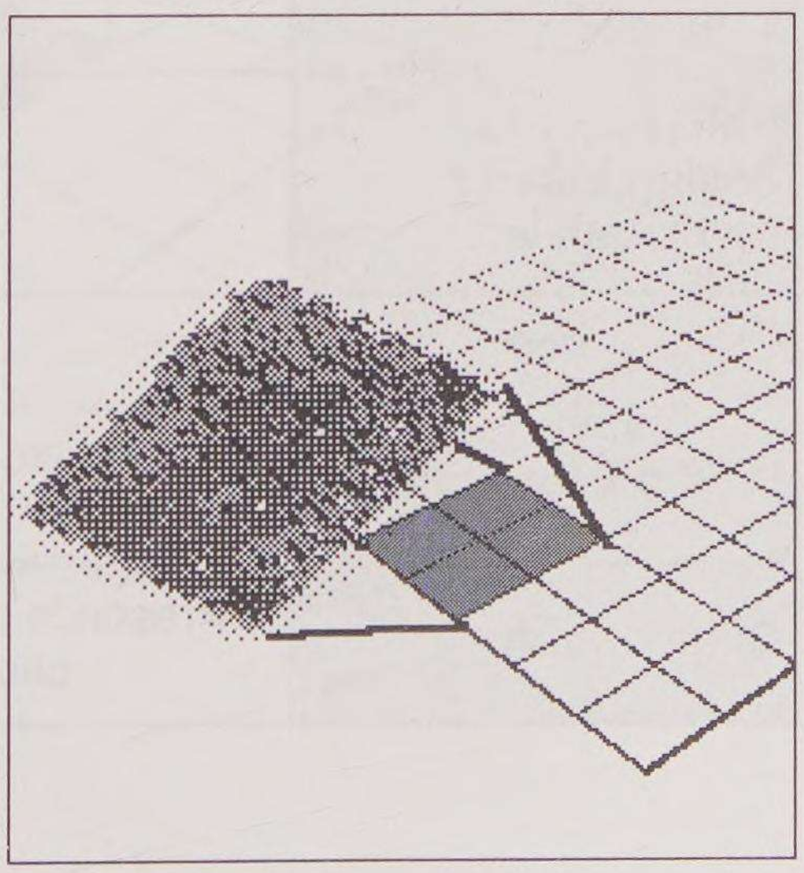
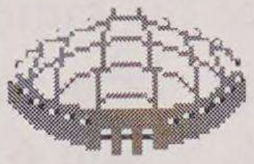
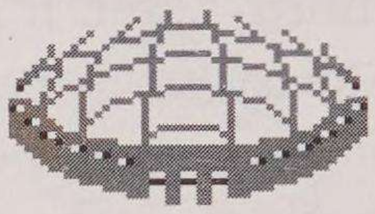


Figure 5.22a & 5.22b The Ski Resort takes up four blocks of land and can only be placed on hillsides that face the same direction as the ski resorts in the diagram



STADIUM

Table 5.7: Stadium



Construction Materials Needed to Build	20 materials
Construction Expense	$1,000,000
Removal Expense	$100,000
Management Fee	$240–$260/day
Sales Income	$80/day when not close to station $140/day when close to station (plus $1/day for each 1,000 people of total city pop.) (plus 50% increase on holidays) (plus up to $500/day if near residences, apartments, lease buildings, and hotels)
Highest Daily Profit	$1,157/day for a city of 100,000 people
Commission Fee when Selling Stadium (high estimate)	$25,000–$115,000
Net Profit from Selling Stadium (high estimate)	$4,608,168
Labor Force	150 people
Works Best With	Railroad station, hotel, lease buildings, and apartments
Competition	Presence of competing stadium within 14 blocks causes a 20–30% drop in income

Only your company is allowed to build stadiums, although later on you can sell them to competitors. Because of this, you can make a whopping profit by selling stadiums to other companies which desire stadiums but cannot build them themselves. In Downtown Reorganization Map 6 scenario, for example, if you build a stadium and then quickly resell it, you can make a gigantic $4 million profit! However, such huge profits are not so easy to come by in cities of smaller size and population. It would be a dreadful mistake to build a stadium in New Town Map 1 scenario, because the small population cannot sustain the stadium's profitability. As a result, if you build the stadium and sell it you will lose money, since the market value will be less than the price you paid for construction.



Figure 5.23 The Stadium menu

Stadiums are best located near stations, apartment buildings, hotels, and lease buildings. Contrary to what the A-Train manual states, the income from a stadium is directly proportional to the total population of the city, not just the occupants of the stadium. Thus, for every 1,000 residents, you earn an additional $1 of income per day.

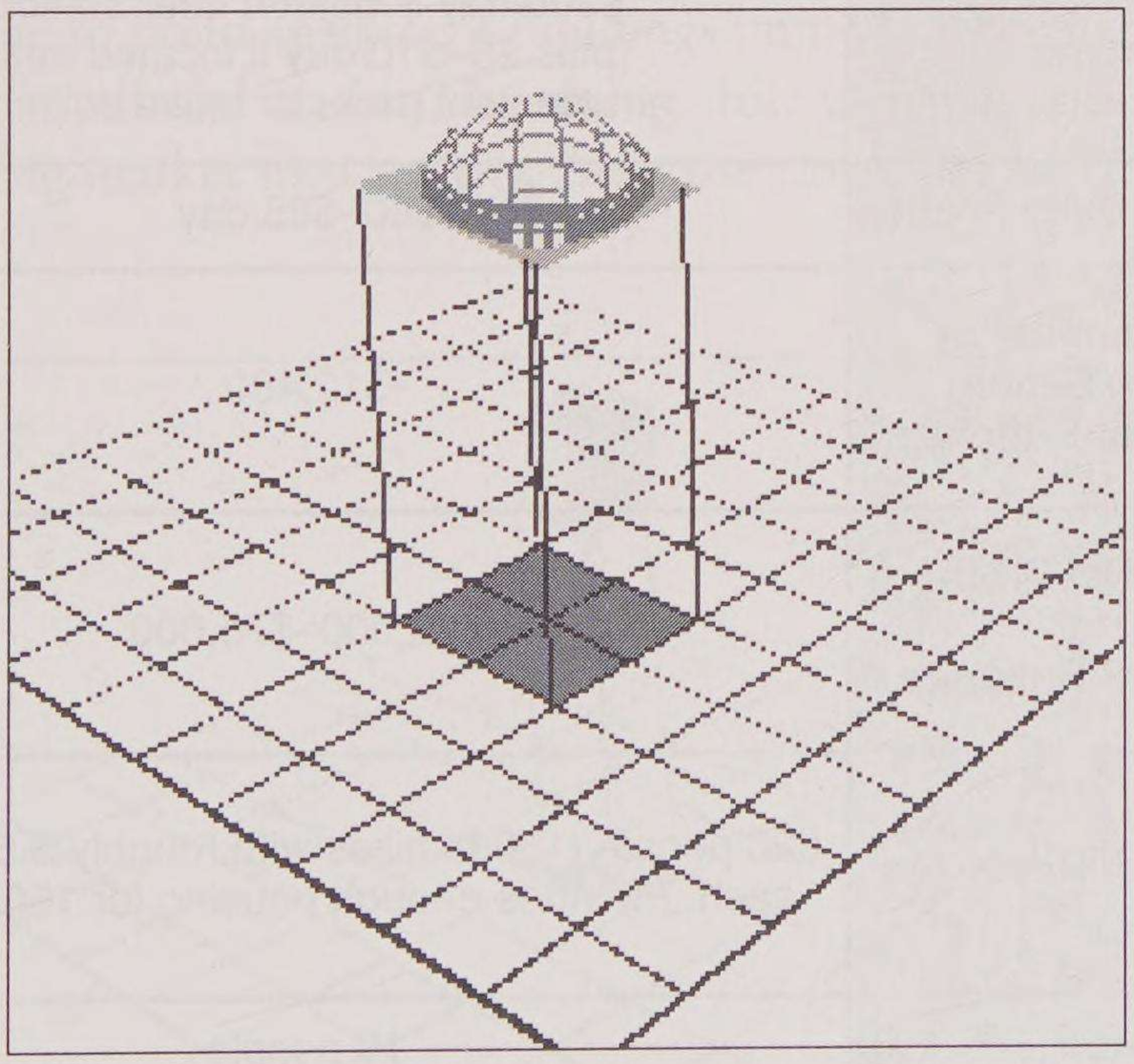
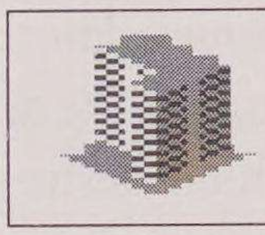
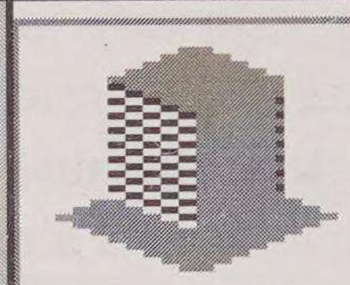
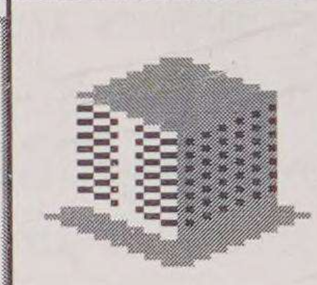
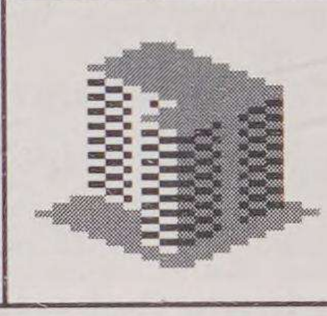


Figure 5.24 The Stadium takes up four blocks of land



APARTMENTS

Table 5.8: Apartment Buildings

			
Construction Materials Needed to Build	8 materials		
Construction Expense	$340,000	$357,000	$374,000
Removal Expense	$34,000	$35,700	$37,400
Management Fee	$150–$200/day		
Sales Income	$300/day if located near station (plus $3–$10/day if located near amusement parks or lease buildings		
Average Daily Profit	$60–$85/day		
Avg. Commission Fee When Selling Apartment Building	$12,480		
Average Net Profit from Selling Apartment Building	$10,000–$75,000		
Number of Residents	526 people (150 families with roughly 3.5 members each. Provides enough housing for 150 workers)		
Labor Force	10 people		
Works Best With	Stations, lease buildings, and recreational facilities		

Apartment buildings take eight building material units to construct, and provide housing for 150 families with 3.5 members each. Since not all members of a family work, only the head of household from each family is counted as a worker in the labor force. This means that an apartment building provides enough housing for only 150 workers. All three types of apartment buildings have different construction and removal costs, but their sales income and expenses are all the same. Since the cheapest apartment building costs $340,000 and is essentially the same as all the others, you can save money by only building this type and ignoring the other two, which cost more to build.



Figure 5.25 The Apartments menu

If there are plenty of job opportunities available in your city, apartments will retain a high market value and you can build and sell them for quick profits. However, if there are not enough jobs to go around, the value of apartments will fall and you will lose money building and selling them. Thus, if you are losing money selling apartment subsidiaries, it is a good idea to start developing the local economy by building lease buildings, factories, commercial buildings, and hotels.

It is wise to build apartment buildings immediately whenever you build a new railroad station. By doing this, you will stimulate the local housing market into activity. Also, the closer the apartments are

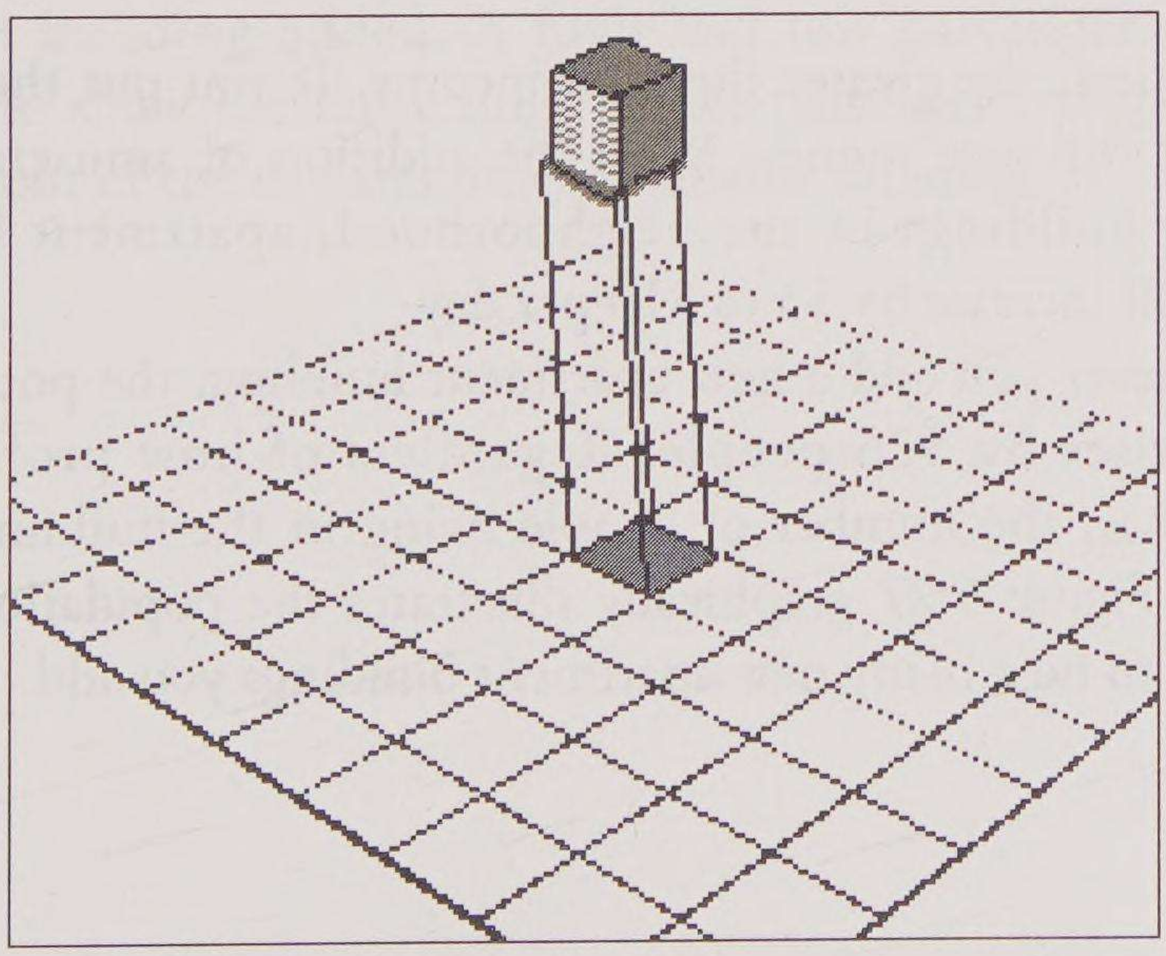


Figure 5.26 The Apartment Building takes up one block of land

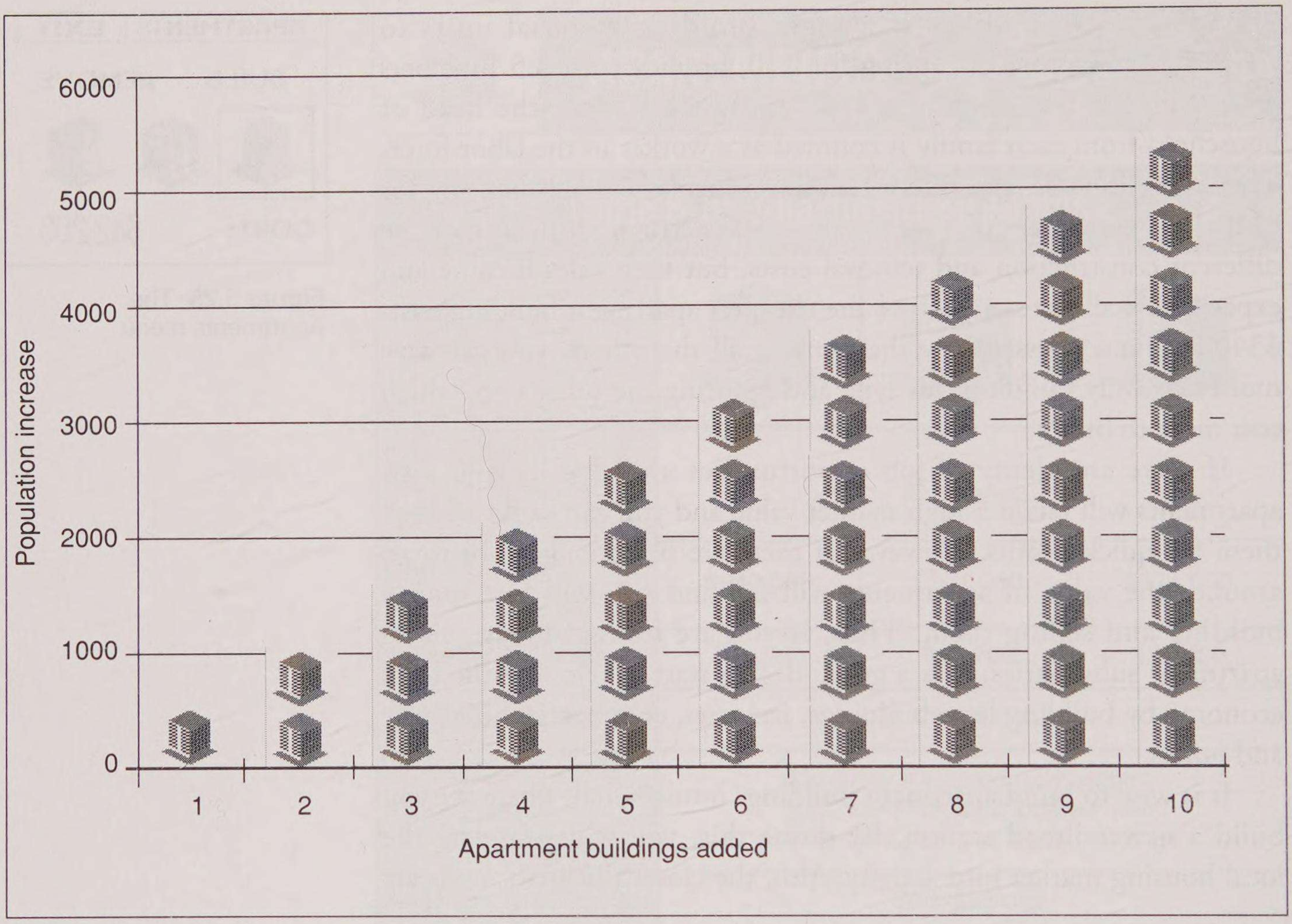


Figure 5.27 Chart showing population increase according to number of apartment buildings added

to the station, the greater the sales income. If you put them too far away, you will lose money. With the addition of amusement parks and lease buildings in the neighborhood, apartment buildings' income will increase by $3 to $10 per day.

Whenever you add a new apartment building, the population of the city rises by 526 people. Regardless of how profitable the subsidiary is, the number of people living in the building remains constant. Figure 5.27 graphically illustrates the population increase according to how many new apartment buildings you add.

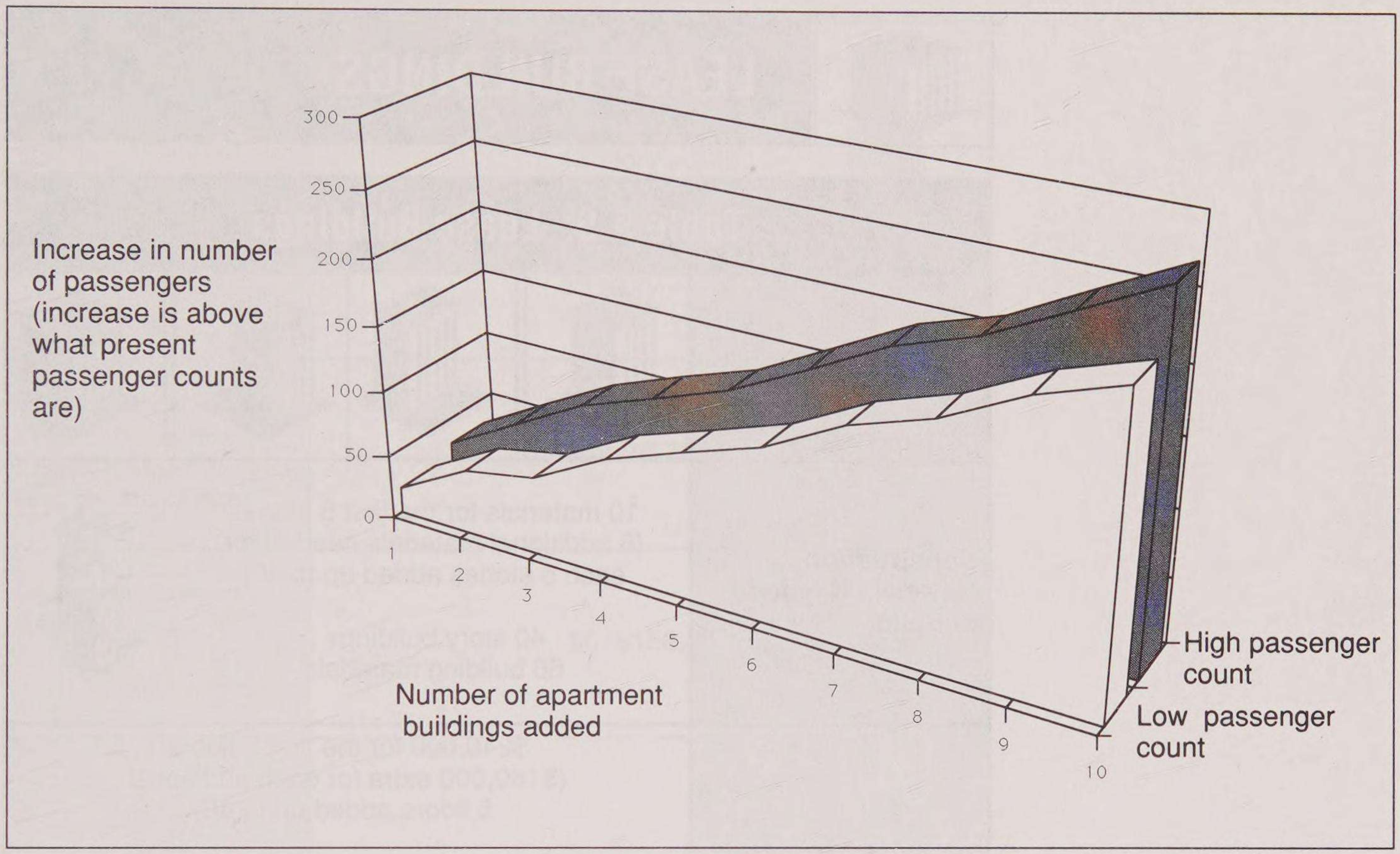
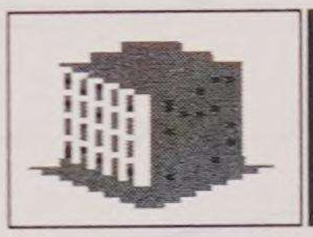


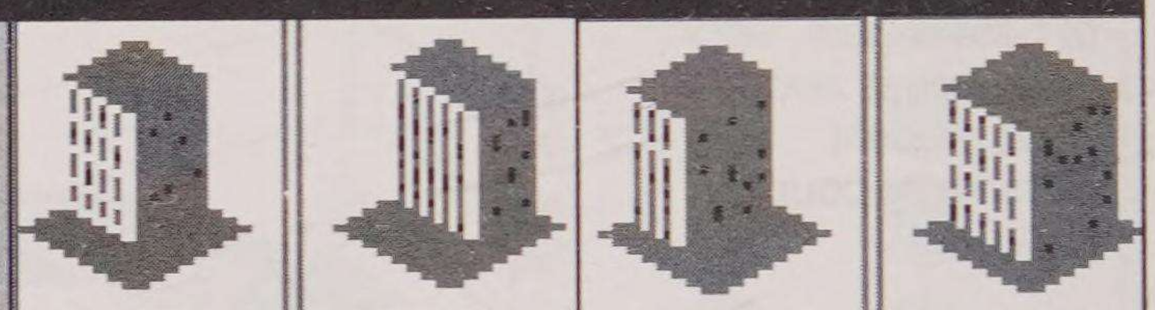
Figure 5.28 Passenger count increase at nearby railroad station according to number of apartment buildings added

The number of passengers using a nearby railroad station will also increase when you build new apartment buildings. Figure 5.28 illustrates this, showing an increase of 20 to 30 passengers per apartment building added. A high and low passenger count are displayed to show the range limits, since passenger traffic fluctuates with the hour of the day and other simulator variables.

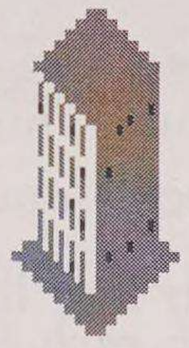
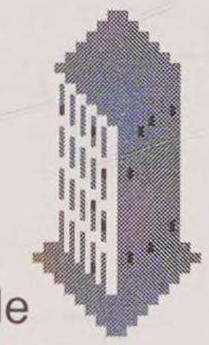
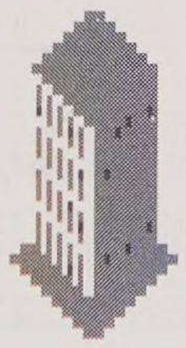


LEASE BUILDINGS

Table 5.9: Lease Buildings



Construction Materials Needed to Build	10 materials for the first 5 stories (8 additional materials needed for each 5 stories added up to 40) 40 story building= 66 building materials
Construction Expense	$240,000 for the first 5 floors ($160,000 extra for each additional 5 floors added up to 40) 40 story = $1,360,000 35 story = $1,200,000 30 story = $1,040,000 25 story = $880,000 20 story = $720,000 15 story = $560,000 10 story = $400,000 5 story = $240,000
Removal Expense	5 story = $24,000 10 story = $40,000 15 sotry = $56,000 20 story = $72,000 25 story = $88,000 30 story = $104,000 35 story = $120,000 40 story = $136,000
Management Fee (per 5 floors	$40–$45/day 40 story building - $360/day
Sales Income (per 5 floors)	$50–$60/day if far from station $80–$90/day if near station (plus $20/day if near hotel) 40 story building = $580/day

Average Daily Profit	5 story = $36 10 story = $38 15 story = $39 20 story = $50 25 story = $60 30 story = $100 35 story = $144 40 story = $199 
Commission Fee when Selling Lease Building (estimated range)	$9,800-$32,000
Net profit from Selling Lease Building (estimated range)	$0–$158,952
Labor Force	120 people per 5 floors 40 story building = 960 people 
Works Best With	Hotels and stations
Building Points (counted by simulation as a means of determining city scale)	2 points per 5 floors 40 story building = 16 building points 

In order for big business to thrive in A-Train, you will need to build lease buildings. These buildings provide jobs and rental revenue from the companies that lease out space. There are eight different types of lease buildings to select from in the Lease Bldg. menu. There are only cosmetic differences between the different types; the costs

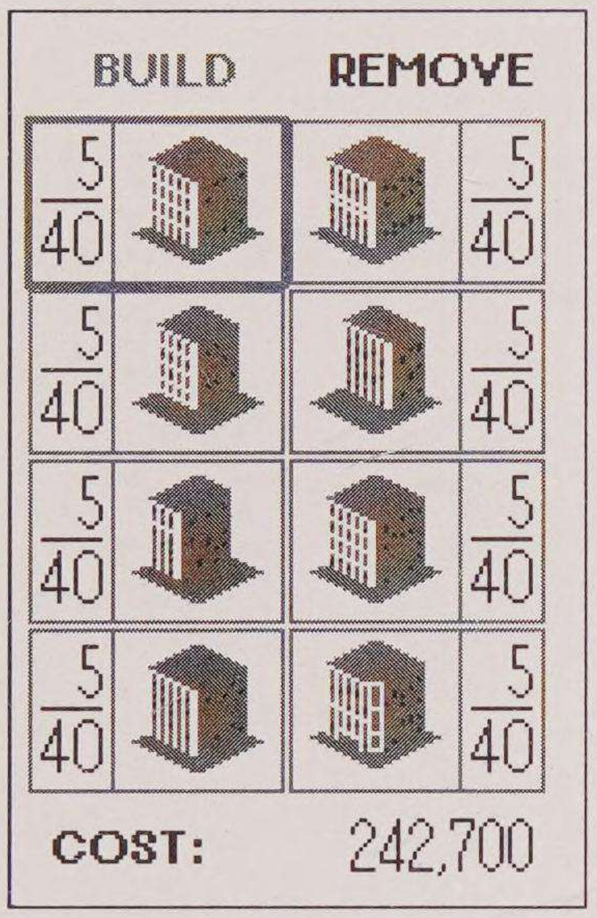


Figure 5.29 The Lease Building menu

and income for running them are the same. Lease buildings range in size from five stories all the way up to 40 stories. By clicking on any building icon in the Lease Bldg. menu you increase the size by five floors. Thus if you click seven times on a building, you will have selected one with 40 stories.

The income and expenses are calculated by the number of floors, with each five floors counting as one block unit. Regardless of their height, lease buildings take up only one block of land, as illustrated in Figure 5.30. However, taller buildings make much more money for you because of the additional blocks of space that are factored in for each five floors. The number of workers ranges from 120 people for a five-story building all the way up to 960 people for a 40-story building. When constructing lease buildings, you need 10 building material units for the first five floors and eight more materials for each additional five floors. Figure 5.31 shows you how many weeks are needed to construct lease buildings of varying sizes.

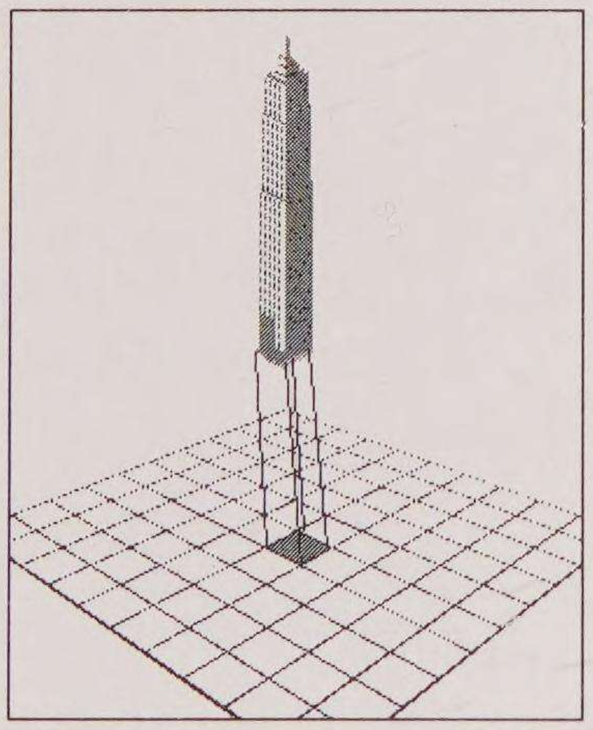


Figure 5.30 All lease buildings take up only one block of land

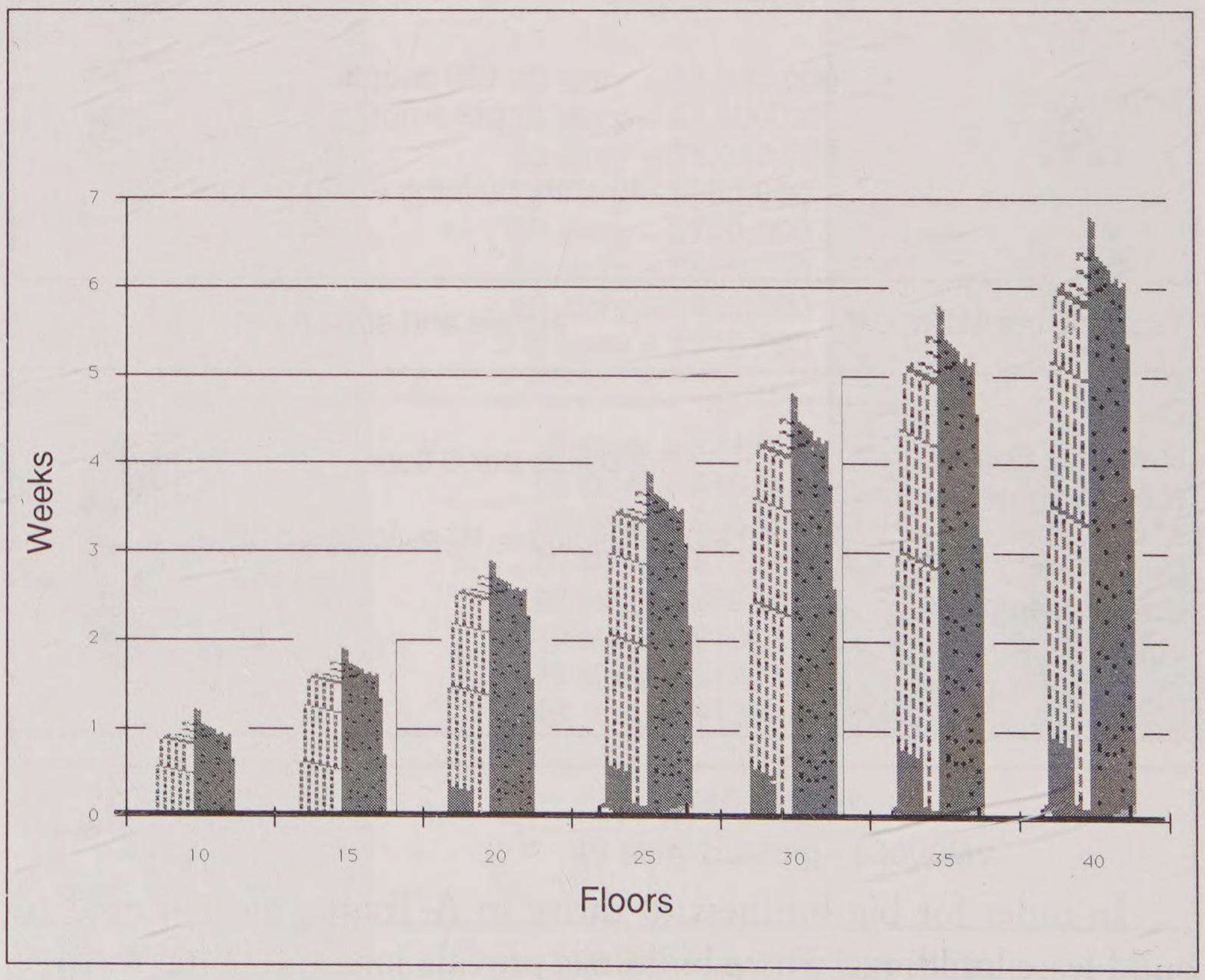
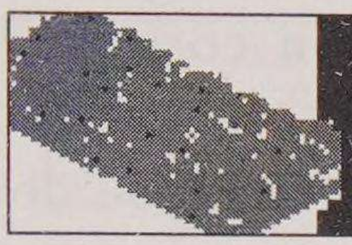


Figure 5.31 Weeks needed for construction of lease buildings according to number of floors completed



REAL ESTATE

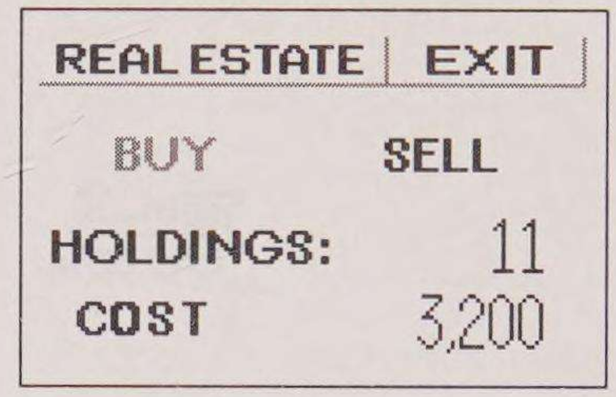


Figure 5.32 The Real Estate menu

When you want to buy some land, click the Buy button and then move the pointer over the map. Click on each parcel or block of land you wish to purchase, and the land will be cleared and added to your holdings. Conversely, to sell your land, click the Sell button and click on each block of land you want to get rid of.

Plain Land

Plain land is land which has no surface features or structures on it. All other types of land that you buy are automatically converted to plain land at the time of purchase. Once land has been cleared, it can never revert back to its original state. This means that forests, farms, and ranches, once bought and cleared, can never be restored. For example, if you buy some wooded land, the land is cleared of all the trees which will never grow back even if you sell the land. Therefore, exercise caution when buying land, for the land will never appear again as it did when you bought it.

When you buy plain land, there is no clearing cost, just the basic cost of the land itself. Plain land which is owned by rival firms has a dotted border circumscribing the block.

Increasing the Pace of Development



Residential houses, public buildings, and other rival subsidiaries will sprout much more quickly if you buy and then quickly sell the land. Buying and selling land speeds the process of growth because when you automatically clear land, local residents and businesses will be established more rapidly.

Land Value

The basic cost of plain land is $2,000, but your purchase price includes the cost of clearing the land of buildings and vegetation. Thus, a block of land with woods on it would cost $2,100 to purchase, since $2,000 is allocated for the land itself and $100 is

spent clearing the land of trees. Land conversion costs are summarized in Table 4.2 in Chapter 4.

To find out the value of a particular parcel of land that you do not own:

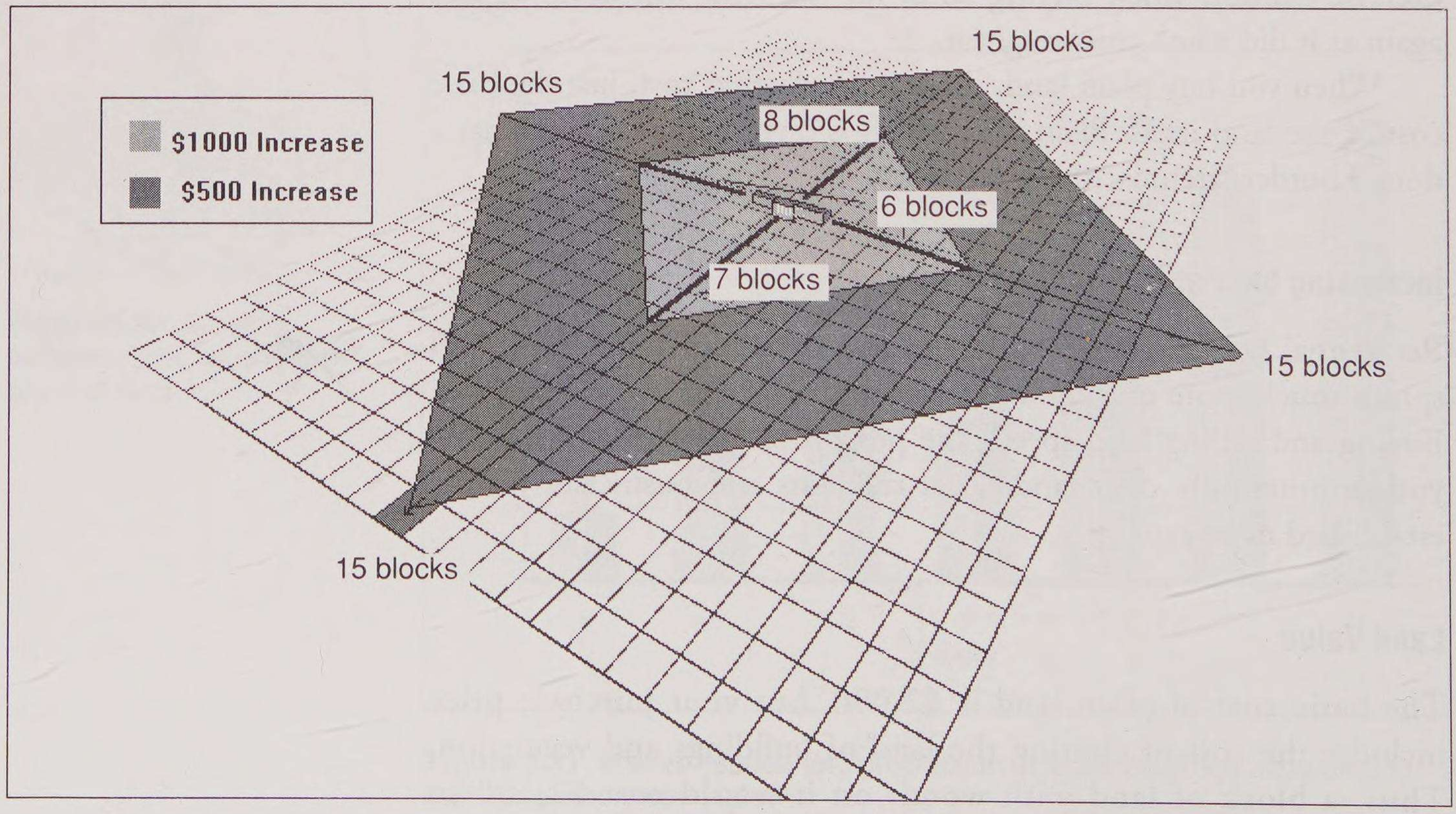
1. Open up the Real Estate sub-menu and click on the Buy button.
2. Position the pointer square over the block of land in question.
3. Read the value of the land in the Cost text box of the Real Estate window.

To find out the value of empty land you already own:

1. Open up the Real Estate sub-menu and click on the Sell button.
2. Position the pointer square over the block of land in question.
3. Read the value of the land in the Income text box of the Real Estate window.

Land values always rise when railroad stations, roads, crossroads, and bullet trains (Shinkansen) are established. Figure 5.33 illustrates how land values increase when a small railroad station is introduced into a

Figure 5.33 Small Railroad Stations increase land values by $500 and $1,000 per block depending on distance from station



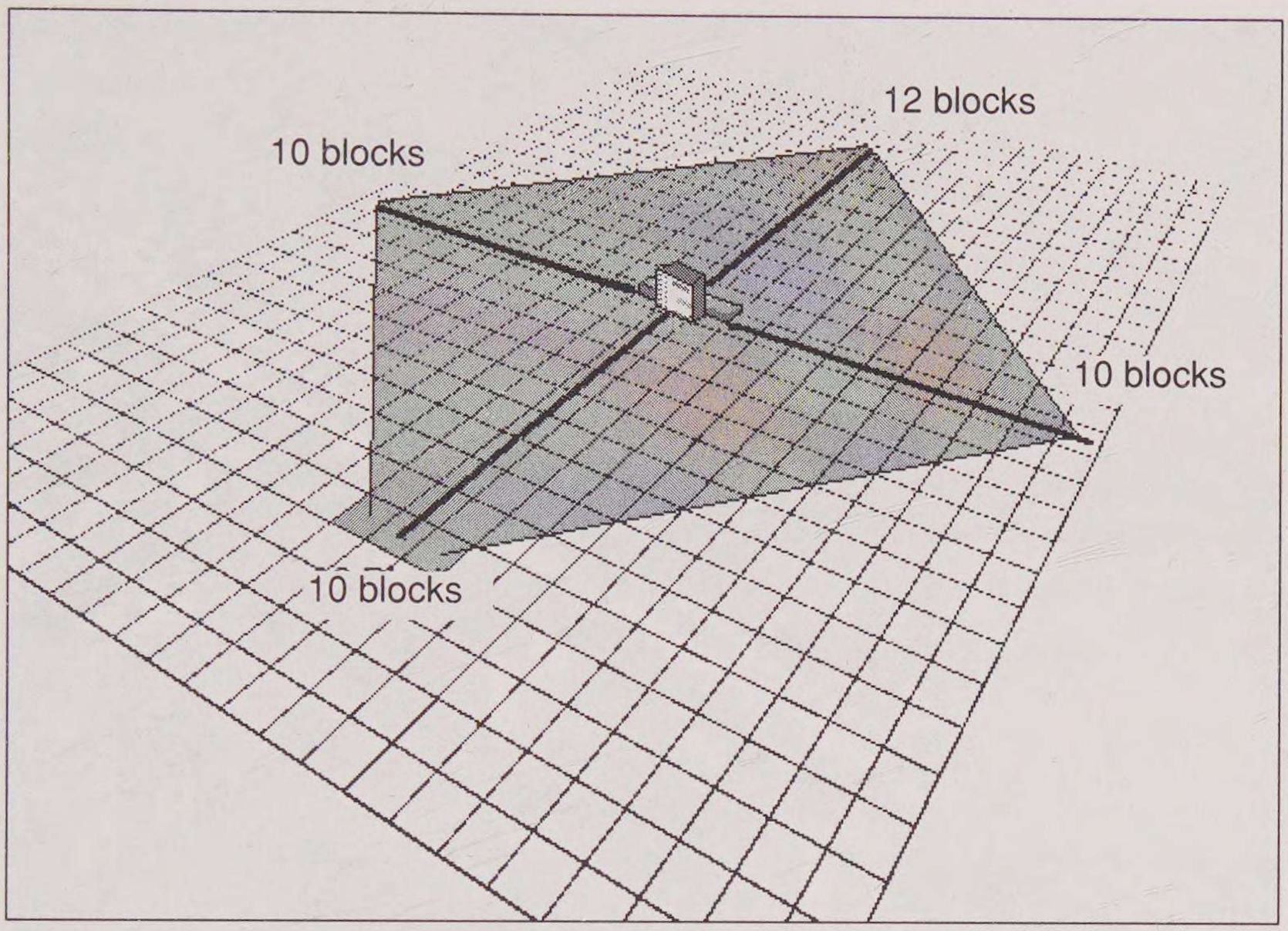


Figure 5.34 Large Railroad Stations increase land values by $500 per block in the shaded area

neighborhood. As you can see, prices shoot up by $1,000 if the land is six or fewer blocks away, and rise by $500 if the land is between seven and fifteen blocks away. In Figure 5.34 a large railroad station causes only a $500 increase in the 10 block-radius area shown.

Land prices are adjusted once a week, on Fridays. This means, for example, that if you put in a railroad station on a Monday, the land prices in the adjacent neighborhood will not rise until Friday, when the prices are updated. Thus if you attempt to speculate with land prices surrounding the station, and you buy and sell your real estate before Friday, you will gain nothing and probably lose money, since you will not recoup the land clearing costs.

Since you are the one that determines where stations, roads, and crossroads are to be placed, you already know where land is going to go up in value. Based on this insider knowledge, you can make fat profits by buying up land that will be close to future stations and roads and then reselling the land after the structures are put in. You can also speculate with land prices for the Bullet Train. Here is how: if you see the elevated tracks of the Bullet Train being built, buy the land that is directly ahead of its path. Once the trains are running, sell the land at its new inflated price to reap your profits.



Figure 5.35a Bullet Train is built along one of the four diagonal paths indicated above in picture frame

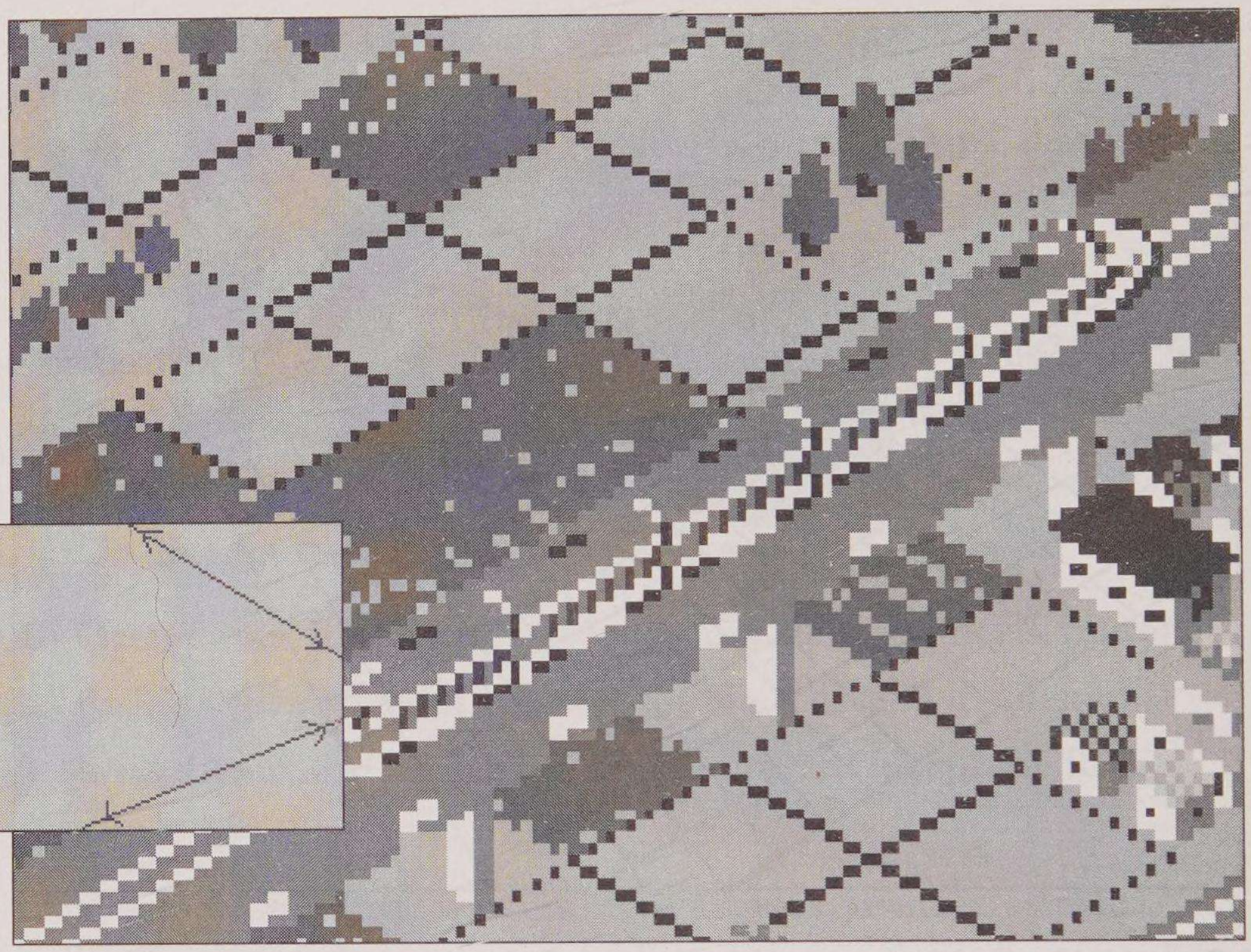


Figure 5.35 Shinkansen (*Bullet Train*) usually takes five months to construct

OTHER TYPES OF LAND OVER WHICH YOU HAVE NO CONTROL

Shinkansen (*Bullet Train*)

You cannot build or remove the Shinkansen or Bullet Train. It only makes its appearance when the city's population has reached 64,000 people and a certain level of building development has been achieved. Each map scenario has a different population threshold before the Shinkansen appears, and this figure is governed by the number of building points that a given city has. You can tell that you have crossed this threshold when your city scale changes from Small City to Medium City and the total building points add up to 200 or more. For more detailed information on building points and city scales, see Chapter 8.

Only the Shinkansen can be built over the sea or over a lake. Also, the Shinkansen usually takes five months to finish construction from the time that it is first announced, and does not use any construction materials.

Typically, land prices go up between $500 and $1,000 around the

elevated tracks of the Shinkansen. In Figure 5.35a you can predetermine the path of the Bullet Train along one of the four diagonal paths indicated.

Airport

The airport is only available in the Resort Development Map 3 scenario. It is mainly a cosmetic addition to the game, and has little impact on the local community. It brings in no freight materials and few passengers. The airplane itself is a DC-10, and it arrives every two days, staying for an 11-to-12-hour interval. You cannot build or remove an airport.

Harbor/Port

The port is found in the Bay Area Map 2 scenario. Every four days a freight ship arrives with a shipment of 14 construction material units, unloads them and stays for 10 hours before leaving. The ship was originally christened the *Yomatomaru* (a converted Japanese battleship), but has been renamed the *Bonhomme Richard*. You should increase the size of the loading docks to allow more materials to be unloaded. If you don't do this, the next time the ship visits it may fill the storage space to capacity and be forced to leave without unloading all the cargo on board. The materials can be used directly by you but



Figure 5.36 DC-10 lands at airport once every two days

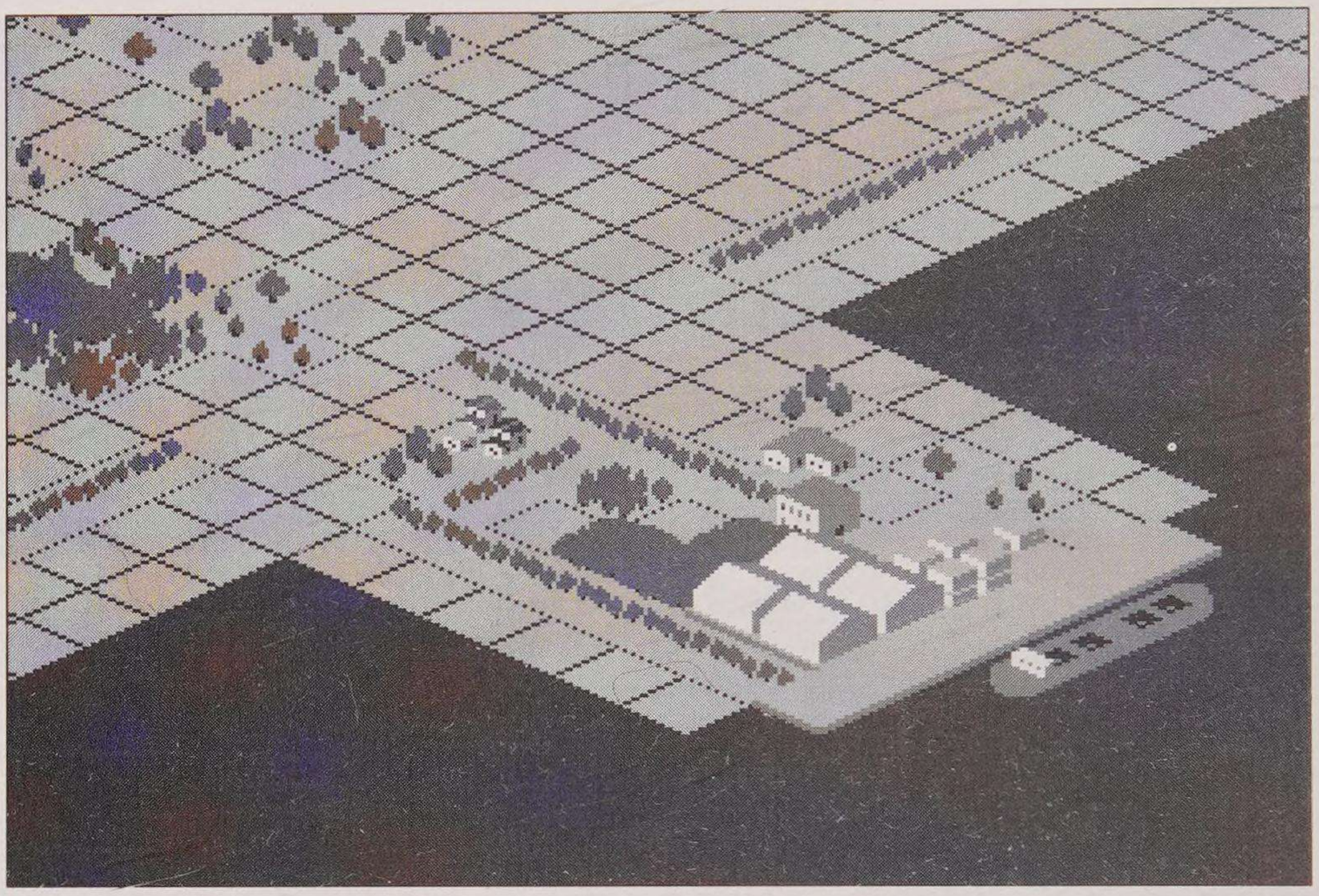


Figure 5.37 Ship delivers 14 material units to harbor every four days

not by the simulation. Any high rise lease/office building you construct cannot directly use the port materials until they have been moved by train. Thus port materials, like factory materials, must be transported by train before they can become truly useful. You cannot build or remove a port.

Parks

Table 5.10: Park

	
Construction Materials Needed to Build	4 Materials
Construction Expense	$0
Labor Force	0 people

Parks are automatically built by the simulation near stations with high land values. They will only appear if the city budget passes the $2,000,000 mark in Report 4. Although you cannot build parks directly, you can get rid of them by passing roads and rail lines through them. Unlike SimCity parks, A-Train parks don't increase land values.

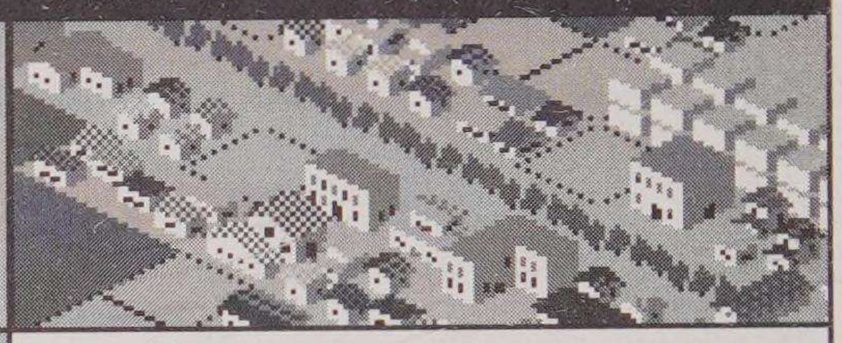
Public Buildings

Table 5.11: Public Buildings

	
Construction Materials Needed to Build	4 Materials
Construction Expense	$0
Removal Expense	$8,000
Labor Force	60 people
Building Points (counted by simulation as a means of determining city scale)	1 point

Public buildings are built by the simulation in residential areas and consist of schools, hospitals, and shops. Of the eight types of public buildings, the simulation determines which type to build according to the development process of the city. The larger a city is, the more public buildings there are. Public buildings count as one building point per block in the determination of city scale. Although you cannot build public buildings yourself, you can remove them by buying the land where they are built, laying tracks over them, or building subsidiaries on top of them.

Residences

Table 5.12: Residences	
	
Construction Materials Needed to Build	2 Materials
Construction Expense	$0
Removal Expense	$800
Labor Force	1/4 worker (4 blocks =1 worker)
Population	60 people (8 workers = 8 families with 7.5 members/family = 60 people)

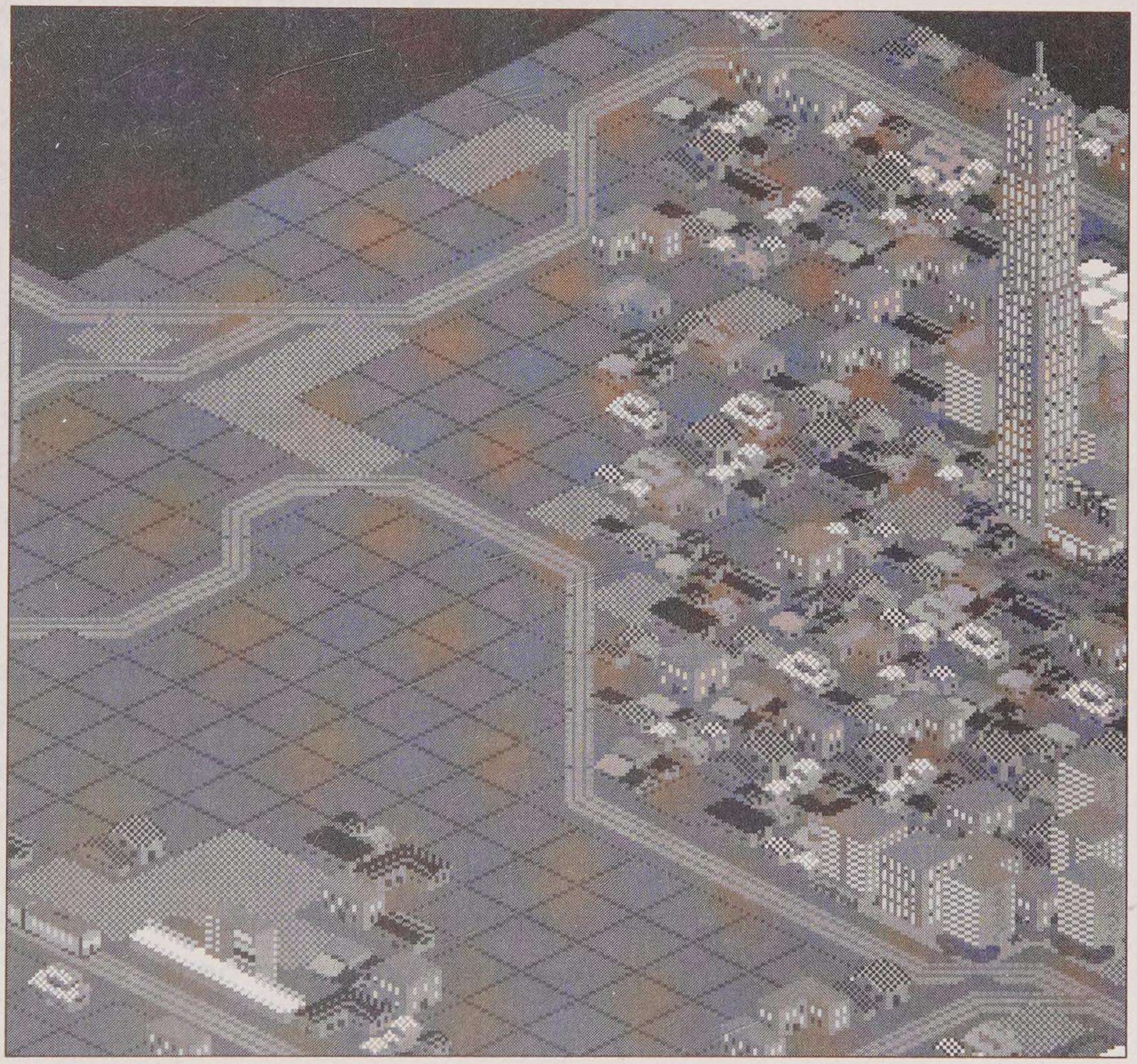
Residences consist of blocks of private housing which house the families of the labor force in A-Train. Each residence block contains 60 people, comprised of 8 families with 7.5 members per family. Only one member of each family is a worker in the A-Train labor force. Evidently in Japan, the dual-income family, with both the husband and wife working, has yet to catch on.

A-Train has 16 different types of residential housing. There are no quantitative economic differences between the residence types in this egalitarian workers' paradise, where everybody lives with the same standard of living, and nobody is homeless. Residences employ ¼ of 1 person, for purposes of housing stock maintenance. Thus, four blocks of residences would count toward one fully employed worker. Residential workers perform such tasks as carpentry, plumbing, electrical work, gardening, and utility services upkeep.

You cannot directly build residences, but you can encourage their development by clearing land, establishing a railroad line, and providing building materials.

CHAPTER 6

Tracking Your Progress



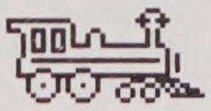
In this chapter, you will learn how to interpret and understand the various data that you see displayed in the Report windows. This information keeps you informed on your company's financial progress, and also your city's growth.

REPORT 1: RAILROADS

The Report 1: Railroads window is where you keep track of all your railroad operations[1]. It is best to keep this window partially open at all times so that you can monitor your company's economic health. All your railroad operating expenses and revenues are detailed and compiled by day, month, and fiscal year. This window, which opens up partially at three viewer-selectable levels, also shows your current cash balance, the total debts you owe, taxes due, and railroad profits. You can also view a bar chart graph of your monthly profit performance, examine your total track length, and see the total number of stations, trains, and switches you've added to your city.

Because you can see your railroad profits and losses tallied on a daily, monthly, and yearly basis in the Report 1 window, you can quickly figure out which trains are making or losing money. For example, if you want to find out if a particular train is profitable, stop all your trains except the train you're interested in. Next, watch the daily P/L (profit or loss) figures and see if the train is earning money (the numbers will be black) or losing money (the numbers will be red and have a minus sign in front of them).

While the Report 1 window is open, game play continues and the figures in the Report 1 window will be updated each hour.



To open the Report 1 window to the first level, click on the Report 1: Railroads menu. Click again to open the Report 1 window to the second level so that you can see more of the window's contents. Click a final time to open the window to the third level, where you will see the entire window. To close the window, click on the Exit button or click once more on the Report 1 menu.

First Level Report 1: Railroads

The first level shows only your available cash, debts, and taxes due. The cash figure will change as trains move or as a result of any financial transaction you make, such as buying subsidiaries or stocks, or taking out a bank loan.

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[1]Contrary to what the A-Train manual states, your subsidiaries' revenues and expenses are not included in the figures you see in Report 1: Railroads (except for the number labeled "Cash").

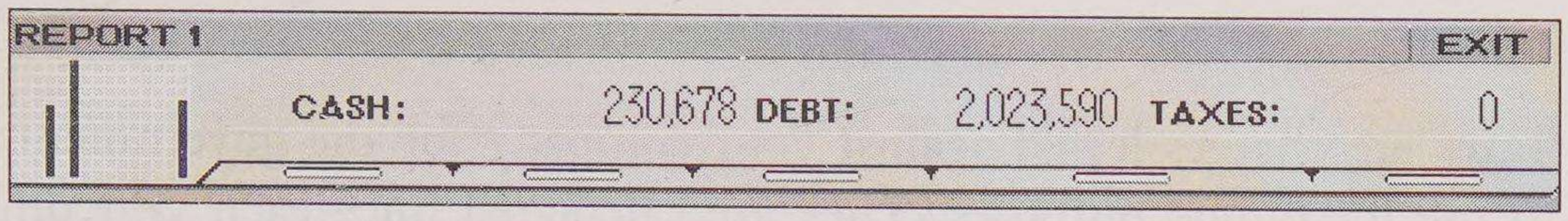


Figure 6.1 First level of Report 1: Railroad

Cash

Cash is the amount of money you have on hand at any given moment for your company's use. It is used for constructing subsidiaries, buying trains, laying track, or any other operation which requires money. If you don't have enough cash on hand to pay your tax liability or the operating expenses of your trains and subsidiaries, the game will end. Of course, you can always stave off the tax man or creditors by borrowing money from the bank or selling off assets. If your cash falls below $50,000, your accountant will appear from time to time to warn you of impending financial collapse.

The income and expenses from all your company's operations, including subsidiaries and railroads, is included in the aggregate total for your cash. However, the expenses and income from your railroad operations will not be subtracted from or added to your Cash figure until the end of each day.

All cash funds are deposited in a bank account that earns monthly interest at the rate of 0.1 percent (which translates to an annual rate of 1.2 percent). This interest is paid into your account on the 24th of each month.

Debt

Debts are bank loans you have taken out and which, for accounting purposes, are liabilities held against your company. All your bank loans are consolidated into one figure that is reported here as your total Debt. Debts must be repaid when they fall due. This is done automatically for you, but should you have insufficient cash on hand at the loan's due date, you will lose and the game will end.

To keep an eye on all your loan due dates, periodically open the Bank menu and click on the Debts button. When you do this, a list of all loans, repayment dates, and interest rates will appear in the Debts window. Notice that you only need to have enough money to pay off the loan that is nearest maturity, not the entire amount shown under the Debt figure, as shown in Report 1.

Taxes

Taxes are charges levied against your company for the government to use for public purposes. They are calculated once each year on March 31st, and are collected on June 1st. This is why you see $0 for your tax estimate for the first year of your game, although you can always get a "snapshot" estimate by opening up Report 2: Balance Sheet. Your cash on hand is taxed at a whopping rate of 50 percent, and your company's fixed assets, including subsidiaries, real estate, trains, stations, and tracks are taxed at 5 percent of estimated value. On June 1st, if you don't have enough cash to pay the tax man, you will lose and the game will end.

Second Level Report 1

The second level of Report 1 shows sales, costs, and profit/loss amounts for all your train operations. You can still see level one of the report, since the window scrolls upward as more of the report is unveiled. The sales, costs, and profit/loss figures are further broken down by day, month, and fiscal year.

Sales

Sales refers to the railroad income you earn from passenger ticket sales, freight hauling, selling trains, and railroad stations. Railroad stations earn income based on the number of passengers that pass through their portals, and they also generate rental and lease income from small shops and kiosks. Ticket sales and freight fares are income that is based on the type of train, the number of passengers or building materials carried, and the length of the train's journey between stations.

Daily sales income, which is updated hourly, is reported in the

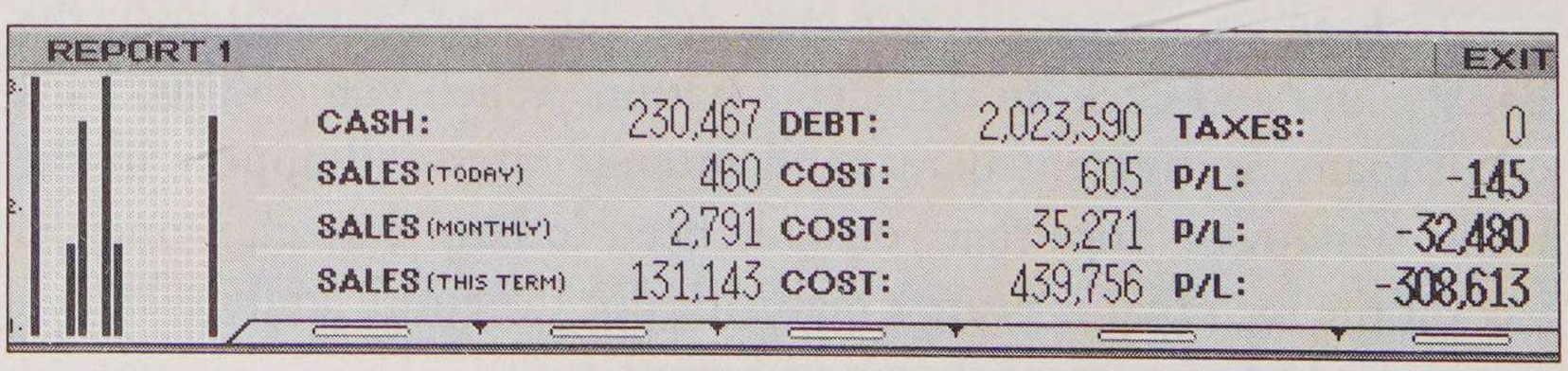


Figure 6.2 Second level of Report 1

"Today" row and is reset to $0 at midnight each day. Monthly sales income, shown in the "Monthly" row, accumulates income from the first of the month to the previous day, and is reset to $0 at the beginning of each month. Fiscal year income, shown in the "This Term" row, accumulates income from April 1st to the previous day, and is reset to $0 each year on March 31st.

In this report, sales only covers railroad income, not subsidiary income.

Cost

Cost is the amount of money you spend running your trains, managing your stations, and on other train-related expenses. These other expenses include laying and removing track, buying trains, scheduling trains and setting switches, placing and removing trains, and building and removing stations.

Like Sales, Cost is updated daily, monthly, and by fiscal year and only applies to your railroad operations, not your subsidiaries.

P/L: Profit & Loss

P/L, which is an acronym for profit or loss, is simply Sales minus Cost. If it is negative, you are losing money; if positive, you are making a profit.

As with Sales, P/L is updated daily, monthly, and by fiscal year. The monthly P/L totals are used to plot the Balance Graph that you see in level three of this report. The daily P/L totals are added to your Cash at the end of each day. Accordingly, if you are running in the red, your cash reserves will diminish by the amount of your daily loss.

P/L counts the profit or loss from your railroad operations. It does not include the profit or loss from your subsidiaries.

Timing of Railroad Station's Report

Each station reports its daily business at 9 PM daily (i.e., 21:00). At this time the Costs, Sales, and P/L figures for the Today row are updated to include any changes in both train and station operations. If you have many stations, it is very difficult to determine how an individual station's business is doing, since all the financial data is merged into one total.

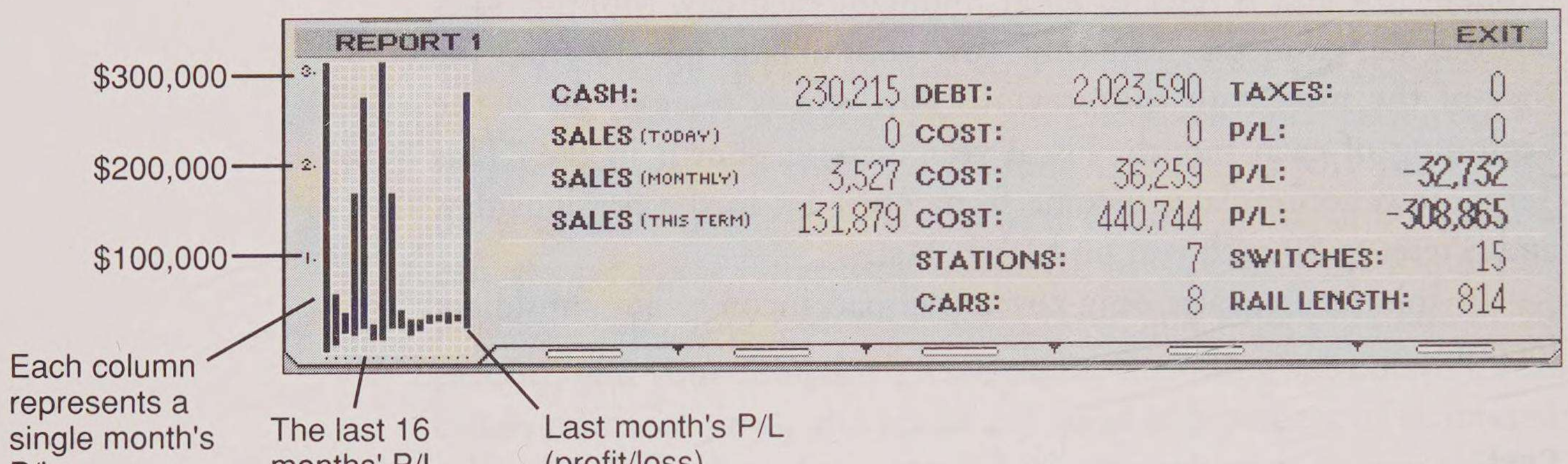


Figure 6.3 Third Level of Report 1

Third Level Report 1

The third level of Report 1 opens the window fully so that in addition to levels one and two, you can see a balance graph of monthly profits for the year and a summary of your railroad holdings.

Balance Graph

On the left-hand side of Report 1 you can see the Balance Graph, which shows a graphical depiction of your monthly profit or loss figures. Each month is depicted by a separate bar column; if the bar is red it represents a loss, and if it is black it represents a profit. The vertical axis depicts the amount of money, and the horizontal axis represents time. Each vertical tick mark equals $10,000 of profit or loss, and the numbers to the left of the balance graph represent multiples of $100,000. Thus, if the bar column reaches up to the "2," it means you have a profit or loss of $200,000. Profits or losses greater than $300,000 will be plotted to the top of the graph, but will not show any amounts past $300,000. Up to 16 months of P/L results can be displayed in this chart.[2]

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[2]In the PC version of A-Train, there is a small bug that incorrectly draws the origin for each bar column. The bottom of each bar column should be touching the base of the horizontal (X) axis, but this does not occur. As a result, a $50,000 profit which appears next to a $45,000 profit might look the same. To correctly read the graph, just mentally compare the lengths of each bar column, since each length is accurately plotted.

Stations

Stations shows the total number of large and small railroad stations on the map.

Switches

Under Switches you can find the total number of switches on the map.

Cars

The number of Cars refers to the number of trains you have purchased, not the number of trains that are currently running on the map. Each train counts as one car, even though it may have several coaches or trailers.

Rail Length

Rail Length is the number of blocks of track you currently have on the map.[3]

REPORT 2: BALANCE SHEET

In order to get a complete picture of your company's financial strength, pull up Report 2: Balance Sheet which shows a comprehensive summary of all facets of your business. From this report, you can obtain financial information on your railroad operations, subsidiaries, real estate, stocks, estimated taxes, and interest income. The only information you won't find here is your bank debts.

At the end of each fiscal year, Report 2 will automatically open and your accountant will appear to inform you of the past year's performance. Although game play is halted when this report window is open, there is a timer delay which will close the window for you. This is especially useful for unattended game play—for example, when you run the game overnight to see whether your city is stable or not.

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[3]As of this writing, there appears to be a bug in the program which miscounts the number of blocks of track you have on the map.

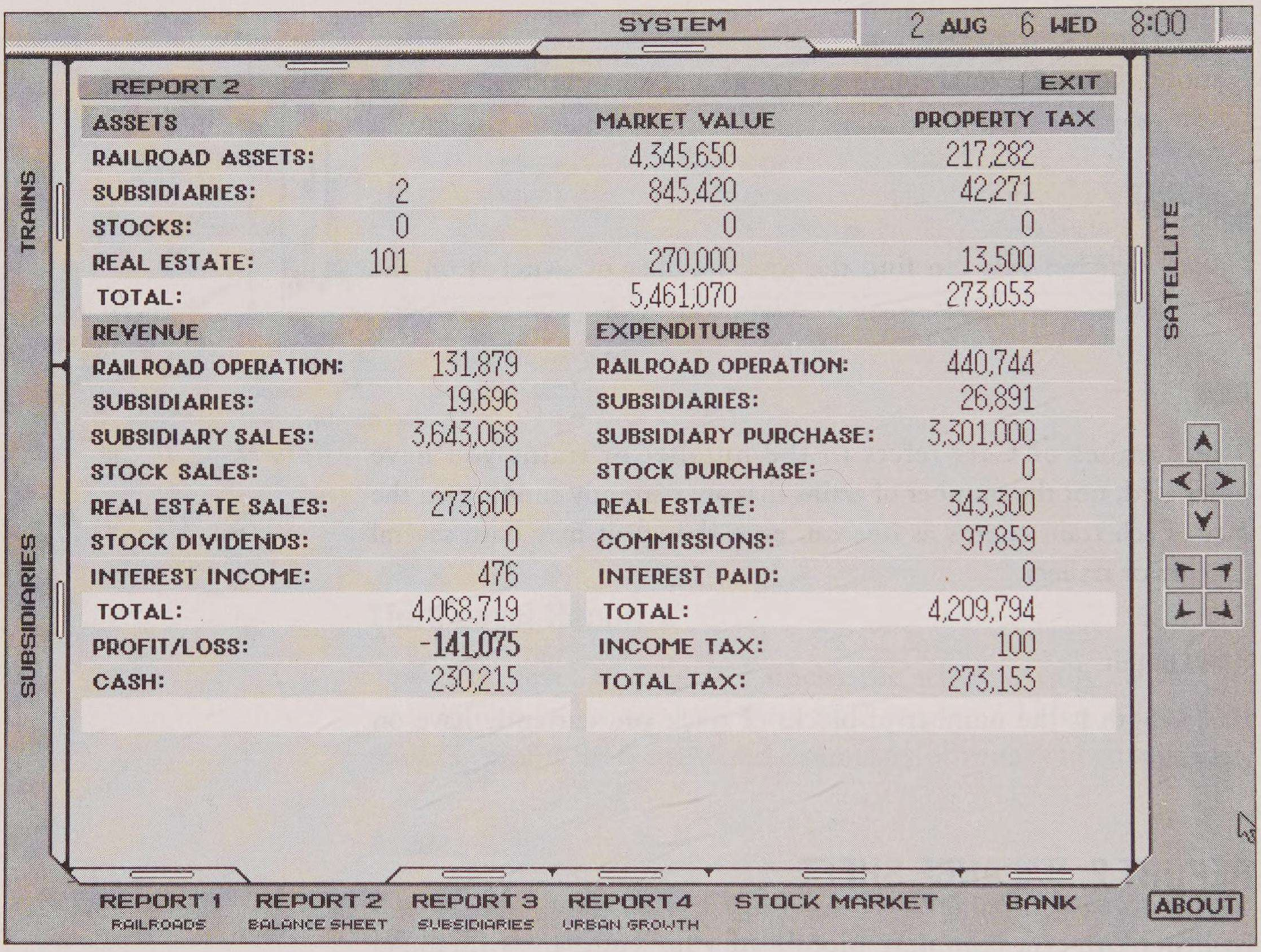


Figure 6.4 Report 2: Balance Sheet

There are three main parts to the Balance Sheet report: Assets, Revenue, and Expenditures. As you can see, for assets and revenues there are two kinds of taxes: Property Tax and Income Tax. For assets, a property tax of 5 percent is assessed against the market value of your railroad assets, subsidiaries, stocks, and real estate holdings. An Income Tax of 50 percent is levied on your Profit/Loss amount shown under Revenue. Even if you show a loss, there is a minimum income tax of $100 per year, as is pictured in Figure 6.4. The tax amounts in this report will fluctuate as conditions change with your company. On March 31st, which is tax estimation day, they will be fixed and you are obligated to pay them on June 1st.

Assets

Assets refers to your tangible property holdings, such as railroad equipment and track, subsidiaries, stocks, and real estate. The current market value of your assets and the calculated 5 percent property tax are displayed to the right of each asset name.

Railroad Assets

Your tracks, stations, trains, switches, and bridges are all included under Railroad Assets.

Subsidiaries

The total combined market value of all your subsidiaries is shown here. The appraised value of each subsidiary will fluctuate depending on the amount of money the subsidiary is earning. The number to the left of the Market Value column tells you the total number of subsidiaries you currently own.

Stocks

The total market value of all your stocks is displayed here. To the left of the Market Value column, you will see a number which represents the total number of shares you own of all stocks combined.

Real Estate

This includes the market value of all land you currently own. The number to the left of the Market Value column tells you the number of blocks of real estate you presently own.

Property Tax

For each of your tangible assets, property tax is assessed at a rate of 5 percent.

Reading the Revenue and Expenditures Columns

The dollar amounts you see in Report 2 under Revenues and Expenditures are all cumulative totals from the beginning of the fiscal year to the present. Thus, for example, the revenue you see next to Railroad Operations is a running count of your total sales from your railroad business from April lst to the present. Likewise, the total management expenses for your subsidiaries from April 1st to the present is listed in a running count next to Subsidiaries under the Expenditures column.

Revenue

Don't confuse Revenue with Profits, as they are not the same. The numbers shown under the Revenue column are your gross sales receipts *before* expenses and other costs have been subtracted.

Railroad Operation

Passenger fares and freight hauling income, rent from stores connected with stations, sales of trains and stations, and advertising income from stations are included under Railroad Operation. This number is a cumulative total of your Sales figures that appear under Report 1: Railroad.

Subsidiaries

Subsidiaries tells you the total sales income, or gross receipts, from your subsidiary businesses. This number records the cumulative total for all the subsidiary Sales figures that appear in Report 3: Subsidiaries.

Subsidiary Sales

The money you earn from selling your subsidiaries is listed here. All subsidiaries are counted except real estate, which is listed separately under Real Estate Sales. The money shown here does not include the commission fee, which you earn on top of the sales price of the subsidiary. Oddly enough, even though commissions are earned by

you and added to your cash when you sell subsidiaries, they are listed under the Expenditures column. I gave up trying to figure why this is so; there must be some logical explanation!

Stock Sales

The gross sales receipts from selling stock are reported here. This is not your net profit, since you may have sold the stock for a loss. Also, commission fees are not included in the calculation.

Real Estate Sales

As noted above, the money you earn from selling any land you own is shown here. Again, this number is not a profit, since it merely reports what you received for the land, not what you paid for it.

Stock Dividends

This number shows the dividends from all stocks you own. The dividend is paid once a year, on July 1st. Stock dividends should be between 8 percent and 28 percent of the total market value of your stock portfolio.[4]

Interest Income

Interest on your cash reserves is paid monthly at a monthly rate of 0.1 percent. This translates to 1.2 percent per annum. Interest is paid on the 24th of each month, but the number here shows total interest you have accumulated since April 1st.

Total

This is the subtotal for the Revenue column.

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[4]As of this writing, there is a bug which calculates your dividend at 1/10th of what it should be. If you have such a problem, contact Maxis for an updated version.

Expenditures

Under the Expenditures column all your costs, subsidiary management expenses, commissions, interest payments, and purchase expenses are listed.

Railroad Operation

The costs of building and operating your railroad business are summed up here. This number is a cumulative total of your Cost figures that appear under Report 1: Railroads.

Subsidiaries

All management expenses related to running your subsidiaries are added up here. This number records the cumulative total of all the subsidiary Cost figures that appear in Report 3: Subsidiaries.

Subsidiary Purchase

This number shows the total amount of money you paid for building and purchasing subsidiaries. It does not include the commission charges, which are reported separately under Commissions.

Stock Purchase

This is the amount of money you have spent on stock purchases. It does not include commissions that you have paid.

Real Estate

The total amount of money you have spent acquiring real estate is shown here.

Commissions

Commissions are charges incurred for buying and selling stocks and for buying subsidiaries. When selling subsidiaries the commission is considered income that is added to your cash.[5]

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[5]For a more complete explanation, see Chapter 5.

When you buy or sell stocks, the basic commission charge is $50 plus $10 for each share of stock bought.

The basic commission fee of $50 is charged separately for each stock transaction, so if you buy several different stocks at one time, you will still have to pay $50 for each group of stocks you buy. In mutual fund parlance, stocks are front-end loaded and back-end loaded. This means you pay the commission when you buy into the stock and also when you sell the stock.

For your subsidiaries, commission fees are charged only when you buy or sell a subsidiary, not when you build them. The fee is calculated at 2 percent of the current market value of the subsidiary plus a charge of $5,000 per transaction.

When you sell a subsidiary, the commission is extra money you earn from the sale rather than an expense you have to pay. Even though it shows up as an expense under the Expenditures column, the commission is money added to your cash, although your Profit/Loss figures will not show it.[6] Confusing, isn't it?

Interest Paid

This shows the amount of interest that you have paid on loans that are now paid off. Naturally, this does not include principal. Loan interest from debts still outstanding is not reported here.

Total

The subtotal for the Expenditures column appears here.

Profit/Loss

To arrive at this figure, subtract Total Expenditures from Total Revenues. For income tax purposes, commission income from subsidiary sales is reported as an expense, even though it is added to your Cash figure below.

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[6]Personally, I think that this is a bug in A-Train, and the subsidiary commission should be an expense charged to you regardless of whether you are buying or selling. But Maxis claims that this is the way the Japanese version of A-Train accounts for commission fees.

Cash

Cash is the amount of money you currently have on hand, after your profit or loss is figured from your revenues and expenditures. (Note, when selling subsidiaries, the commission is directly added to your cash, so the Profit/Loss figures do not accurately reflect your true expenses.)

Income Tax

Income tax is based on 50 percent of your Profit/Loss figure. When there is no profit or there is a loss, the minimum tax is $100.

Total Tax

Total Tax adds up all Property Tax from your Asset section of the report to Income Tax. This is the total amount of tax you would owe if taxes were due now. Since taxes are not assessed until March 31st, Total Tax is only an estimate of your present tax liability. Taxes are subtracted automatically from your cash on June 1st.

REPORT 4: URBAN GROWTH

In Report 4: Urban Growth, you can keep track of your city size, city type, budget, population, and the relative concentrations of different business activities. There are two graphs: the first is the Population Change graph, which shows changes in population over the last 18 months; the second is the Radar Chart, which shows the kinds of businesses which are thriving in the city.

Cities are classified by city scale and by city type. The city scale is

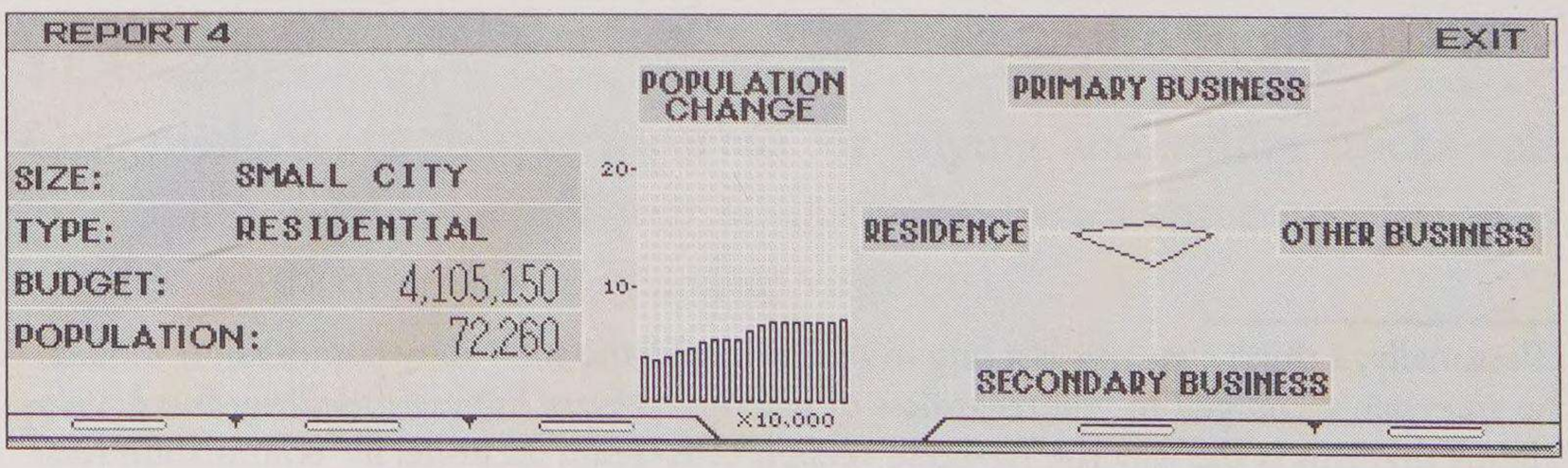


Figure 6.5 Report 4: Urban Growth

based on a combination of the city's population and the number of building points for the city. The number of public buildings and lease buildings in existence determines the number of building points. The city type is assessed by judging which industries dominate the local economy.

Game play freezes while this report is open.

City Size

Cities are classified under five levels of city scales in A-Train. They are: Small Town, Small City, Medium City, Big City, and Metropolitan Area. Table 6.1 shows the relationship between population and city scale. Because building points are tied into the city scale formula, exceeding the population for a particular scale is no guarantee that your scale will be upgraded to the next level. If your population has grown but the city scale has not advanced to the appropriate level, you need to build more lease buildings to increase the number of building points. About the time that your city scale reaches the Medium City level (your population must be greater than 64,000 and you must have at least 200 building points), the simulation will start constructing the Bullet Train.

Table 6.1: City Scale and Population

City Scale	Population
Small town	<24,000
Small city	24,000–63,999
Medium city	64,000–87,999
Big city	88,000–149,999
Metropolis	>150,000

Table 6.2: City Types
Agricultural
Industrial
Well balanced
Residential
Tourist
Underpopulated

City Type

The six city types are listed in Table 6.2. There is no hierarchy to the city types; the classification type merely tells you which industry is paramount in your economy.

There are various sub-industry groups which are compared with one another to see which is predominant. Farms and ranches are the first sub-industry grouping, and they determine the agricultural index; factories and lease buildings are the second sub-industry grouping, and they determine the industrial index; department stores and hotels are the third sub-industry grouping, and they determine the tourism index.

Thus, when the number of factories and lease buildings is high, the industrial index is high and the city is called industrial. If the number of farms and ranches is high, the agricultural index is high, and the city is called agricultural. Likewise, if the number of department stores and hotels is high, the tourism index will be high and the city will be classified as a tourist type.

When comparing index numbers, A-Train examines which index number is the highest to determine the city's type. If all the index numbers are roughly equivalent, the city is called well balanced. If all the index numbers are lower than what is considered average for the city scale, then the city is called underpopulated. Map scenario 4, Multi-City Connection, is one example of a city that has been designated underpopulated. Remember, underpopulated does not necessarily mean that the population is low; it could mean that any of the other previously mentioned indices of the economy are low.

Budget

The budget represents the amount of money the local government is spending on infrastructure such as roads, public buildings, bullet trains, etc. The bigger the budget, the more money is being invested in public works, and the more rapidly the city will grow.

Population

This shows the city's population. This number helps determine the city's scale and is updated every hour.

Population Change

This is a graph of the city's population over the past 18 months. Each bar column represents one month. At the end of the month, the bar chart is updated and the current month's population is graphed at the far right side of the chart. When this happens, all the bar columns move over to the left by one notch, and the last bar column on the left end is erased. Each vertical tick on the scale represents 10,000 people (the numbers 10 and 20 on the vertical axis translate to 100,000 and 200,000 people respectively).

Radar Graph

This graph depicts the relative concentration of the different kinds of businesses found in A-Train. The graph is called a Radar Graph because of the way the data is plotted on the screen. There are four axes, each representing a specific type of business activity. When there is a lot of activity in one of the four types, the graph will extend outward from the origin. The further from the center of the graph, the more intense the activity in the industry that is being plotted. For example, if residential growth is faster than all the other industry types, the graph will look like Figure 6.5. However, if all four industry types have an equal amount of growth, the radar chart will show a four-pronged diamond, with each tip extending out symmetrically for the same distance.

Primary Business

Your railroad company's transportation business is what is referred to as the Primary Business.

Secondary Business

Factories and lease buildings make up what is known as the Secondary Business. I believe commercial buildings are also included in this category, but am unable to corroborate this.

Other Business

Other Business consists of golf courses, amusement parks, ski resorts, stadiums, and hotels.

Residence

This category includes apartment buildings and small family residences.

CHAPTER 7

Money Matters:
Managing Your Money



Because A-Train is as much a financial model of the real world as it is a simulation of a railroad company, you need to know how to manage your money if you are to be successful. Making money in A-Train, as in the real world, is hard. The more cunning you are about money, the better equipped you will be to become a tycoon. This chapter will teach you the ins and outs of stock market investments, bank loans, and tax evasion. If you understand some of the basic principles presented here, you will much more in control of your financial destiny.

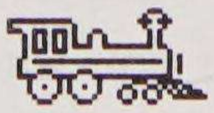
STOCK MARKET ROULETTE

There are 24 stocks that you can invest in through the stock market. Of this number, you can only own up to eight different stock types at any given time. Also, you are limited to buying 2,000 shares of any stock, although you can easily bypass this limitation by reopening the Buy Stocks window. Each stock has different performance characteristics, and over time its price will fluctuate independently of the others. However, there are stock market cycles which dictate when stocks will rise or fall. In general, each stock follows a 2-month cycle of gently rising and falling for about 1½ years. But at the end of this time, there occurs a huge stock market boom in which prices will rocket to stratospheric levels. This boom will last less than a month and will be followed by a stock market depression, during which prices will plummet to historically low levels.

Obviously, if you buy stock before the boom and know when to sell before the crash, you can make a killing in the market. Read on to learn more about what signals you should watch for.

Buying & Selling Stocks

Buying and selling stock is accomplished through the Stock Market menu. When you click this menu, the Today's Stock Market window will open and you can see Buy and Sell buttons, a stock graph chart, a scrollable list of stocks and their current prices, your current cash reserves, and the number of shares of stock you currently own. By clicking the two scroll arrows, you can pan the stock board up and down to see more stocks than those displayed. The two numbers to the right of each stock name refer to the current price per share and the price change from the previous day. If the price has dropped, you will see the second number colored red with a negative sign in front of it.



Click the Stock Market menu to open up the Today's Stock Market window, as seen in Figure 7.1.

To buy stock, follow these steps:

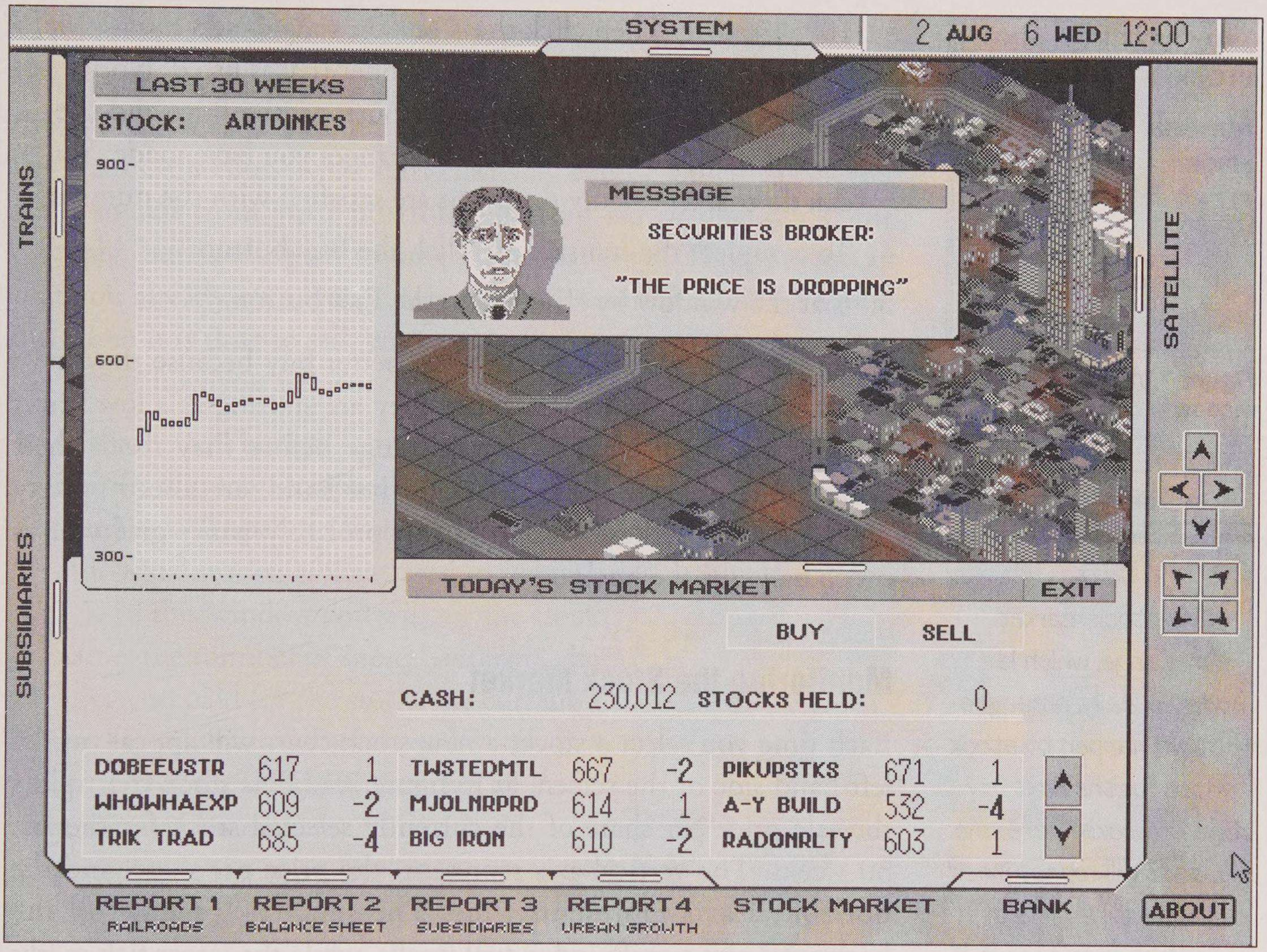


Figure 7.1 Today's Stock Market window

1. First, select the stock you want by clicking on it in the Today's Stock Market window. If it is not in view, click the up or down arrow to scroll the stock so that it appears on screen.
2. Click the Buy button. A separate Buy Stocks window will open up for the particular stock you have selected. In this window you will see the stock name, the default number of shares to buy, the current market price for purchasing the number of shares indicated, the commission fee, and several selection buttons.
3. Next, select the number of shares of stock you want to buy. Click the x100, x10, or x1, buttons to select share multiples of

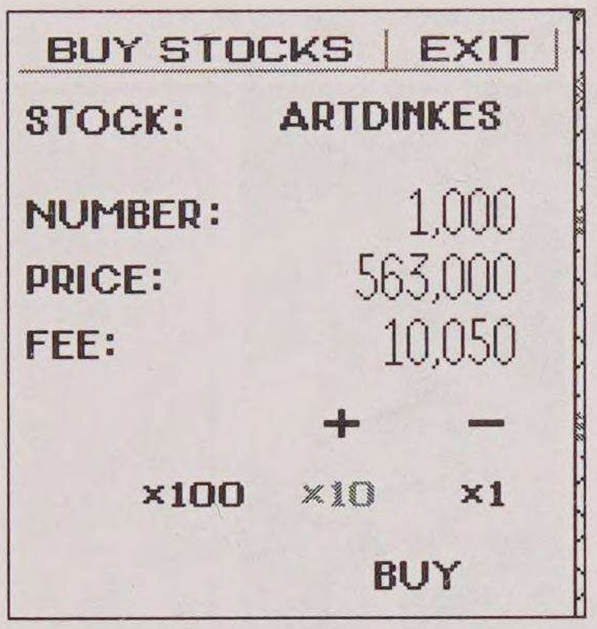
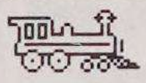


Figure 7.02 Buy Stocks window

100, 10, or 1. Then click the + or - buttons to add the multiple to or subtract it from the share number that is listed. Notice that each time you click the + or - buttons, the Price and Fee figures are updated to reflect the changes you have made. You can do this repeatedly until you are satisfied with the numbers.

4. To complete the transaction, click the Buy button.
5. Exit the window by clicking on the Exit button.

In general, lower-priced stocks are a better buy because they have much more profit potential. Since they are starting at a low price, they have a much greater growth range before they reach their ceiling. High-priced stocks, on the other hand, are already pretty much at their highest potential, and probably won't give you as much bang for the buck.



The stock market message, which is updated daily, presages what will happen to stock prices for the next few days or weeks. The same message will repeat itself daily until a general market change occurs. If you catch a message on its first day that prices are going up, buy stocks to take advantage of the market upswing. Watch every few days for a message warning you that prices are dropping or that the market is stagnating, and then sell to make a tidy profit.

Monitoring the Stock Market

Each time you select a stock, a new stock chart will appear on the left-hand side of the screen, as in figure 7.1. This stock chart plots the sale price per share of the currently selected stock for the last 30 weeks. The vertical axis represents the price per share, and the horizontal axis represents time. The small tick marks on the horizontal axis signify individual weeks, while the larger tick marks count five-week intervals.

The best way to follow the stock market is to frequently open the Stock Market window and read the daily message from the securities broker. He will tell you whether prices are rising or dropping and whether the market is stagnating or booming. You can also watch the stock chart graph that appears on the left-hand side of the screen to determine a particular stock's price trend. The stock market message and prices are updated daily, except for Sundays and holidays, so it is wise to check market activity at least weekly. Each message forewarns you of what is to come for the next few days or weeks, and it will repeat itself daily until the next mood change for the stock market.

Profits/Taking Stock of Yourself

When you decide to sell a particular stock, you can only liquidate the entire stock; you can't partially divest yourself by selling off a few shares. Of course, you can selectively choose which stocks you want to sell from your portfolio, getting rid of one stock, for example, but holding on to others you may own. Thus, for stocks that you already own, you can buy more shares of the same name, but when it is time to sell, you must sell all shares of the stock.

Here's how you sell stock:

1. Click the Sell button in the Today's Stock Market window. A separate Portfolio window will open up listing all your individual stocks, as illustrated in Figure 7.3. In this window you will see the stock name, the number of shares you own, the price you paid for the stock, the current market value for the stock, and at the bottom of the window, totals for all stocks combined.
2. Next, select the stock so that it is highlighted.
3. When your accounting manager appears on screen asking you to confirm your transaction, click Yes, as pictured in Figure 7.4. Otherwise click No if you made a mistake and select a different stock.
4. When finished click the Exit button.

PORTFOLIO EXIT

STOCK	NUMBER	PRICE	MARKET VALUE
ARTDINKES	1,000	447,000	447,000
WHOWHAEXP	1,000	355,000	355,000
TOTAL:	2,000	802,000	802,000

Figure 7.3 Selling stock using the Stock Portfolio window

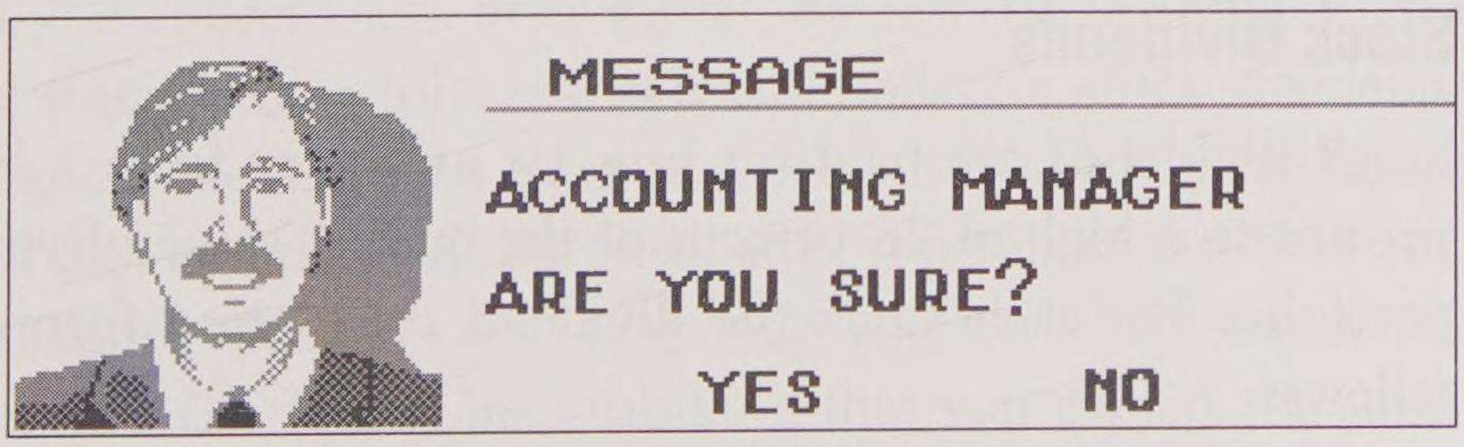


Figure 7.4 Confirmation message

Commissions

Commissions are charged whenever you buy or sell stock (if you are accustomed to mutual fund terminology, these stock funds would be called front-loaded and back-loaded). There is always a $50 basic fee per stock transaction plus a $10-per-share commission charge. The following formula describes this:

Commission = $50 + (Shares x $10)

Table 7.1 shows an example of how much the commission would be for buying 1, 10, 100, or 1,000 shares of a stock.

Table 7.1: Stock Market Commissions

Shares Bought	Basic Fee	$10-per-Share Commission	Total Commission
1	$50	$10	$60
10	$50	$100	$150
100	$50	$1,000	$1,050
1,000	$50	$10,000	$10,050

Stock Dividends

Stock dividends are paid on July 1st and vary from a low of 8 percent to a high of 28 percent of the market value of your stock portfolio. For each stock the dividend calculation formula is as follows:

Dividend per stock = Shares x Share price x (.08 to .28)

Your total dividend is the sum of all the individual stock dividends you collect. To calculate this on your own, you need to add up the total market value of your stocks and then multiply this figure by 8 percent to 28 percent, which is the dividend interest rate. You can see the market value of your stocks in the Portfolio window by clicking the Sell button in the Today's Stock Market window.

Total dividends all stocks =
Market value of stock portfolio x (.08 to .28)

Table 7.2: Stock Dividend Calculation

Each July 1st, the dividend for your stocks is calculated at 8% to 28% of the total value of your stock portfolio
• Example: 1,000 shares of a stock valued at $500 per share have a market value of $500,000. Your dividend on July 1st would be between $40,000 and $140,000 (8% to 28%)
• Example: 2,000 shares of a stock valued at $500 per share have a market value of $1,000,000. Your dividend on July 1st would be between $80,000 and $280,000 (8% to 28%).

Take Advantage of Dividend Day

Unlike the real world in which you collect dividends quarterly, in A-Train you collect them once a year, on July 1st. As long as you buy the stock before July 1st, you will collect a stock dividend. Thus a good trick to earn extra cash is to buy stock right before dividend day, and then sell the stock after you collect the dividend. The simulation doesn't know how long you have held the stock, and thus you can fool it into thinking that you owned the stock for the whole year. Note that the stock commissions will eat up some of your dividend profits.

Stock Descriptions

Table 7.3: Stock Listings

Stock Name	Description
Do-Beeus Trading	A worldwide general trading company
Twisstad Metal	A company that manufactures metal materials used for cars, trains, and ships
Pickupstik Construction	A construction firm skilled at building skyscrapers, halls, and domed stadims
Whozit and Whatzit Export	A general trading company that imports and exports various materials such as foods and chemicals
Mjollnir Products	A company that makes iron and steel products for building construction
Aahp-Yurs Building	A construction company that builds residences, factories, etc.
Tricks o' Trade	A general trading company
Big Iron	A big iron company
Radon Realty	A big real estate company that owns most office buildings in the big cities.
Anything Goes Trading	A general trading company
Taffy Steel	An iron company
Brauny Construction	A construction company that builds mainly residences
Heavy Water Chemistry	A company that produces chemical fertilizers and chemicals
Raxsoft Lighting	A general household electric applicance company that produces lighting equipment, audio-visual equipment, and computers
Artdink Estates	A real estate company that deals with residences and apartment complexes

Table 7.3: Stock Listings (continued)

Stock Name	Description
Tesla Electric	An electrical company that makes wires and electrical equipment used in factories and buildings
Maxis Motors	A general electrical company that makes household appliances and motors
Slippery Stuff Chemical	A chemical company that produces lubricants, detergents, and wax, etc.
Sticky Disks	A company that produces various magnetic media such as cassette tapes and floppy disks.
Spinnin' Wheels Auto	A big automobile company
JoeCo Gas	A city gas company
I.B. Breem	A big communication company that has the second largest share of the world market
JSmgmt	A company that is known for develping a new material with wide applications
JenSuz Power	An electric power company that supplies electricity for large cities

Stock Market Hours of Operation

The stock market and the bank are open from 9 AM to 5 PM, Monday through Saturday, except holidays. Table 7.4 lists all the principal holidays for both the stock market and the bank. If a holiday falls on a Sunday, the following Monday becomes the official bank/stock market holiday. This is in accordance with what happens in the real world.

Table 7.4: Stock Market and Bank Holidays
January 15th
February 11th
March 20th
April 29th
May 3rd
May 5th
September 15th
September 23rd
October 10th
November 3rd
November 23rd
December 24th–25th
December 30th–January 3rd

Stock Forecasting Tricks

There are two stock market cycles that operate with great regularity in A-Train. The first cycle is repeated every two months and starts with the security manager's message, "The market is stagnant," and ends with, "The price is dropping." The second cycle, which starts at the end of the first cycle, is repeated only once every year and a half. You can see this first cycle looping through seven messages in the top half of Figure 7.5. When plotted on a graph, as in the right top portion of the figure, you can see that the stock prices follow a gentle wave-like pattern from numbers one through eight. There are no dramatic ups and downs, just a moderate fluctuation in prices. It isn't easy to make much money by buying during this phase.

When you start a new game, the stock market cycle can begin with any one of the messages in the cycle. For example, in one game the stock market might begin with, "The market is stagnant." In another game it might begin with, "The market is

The Stock Market Cycle

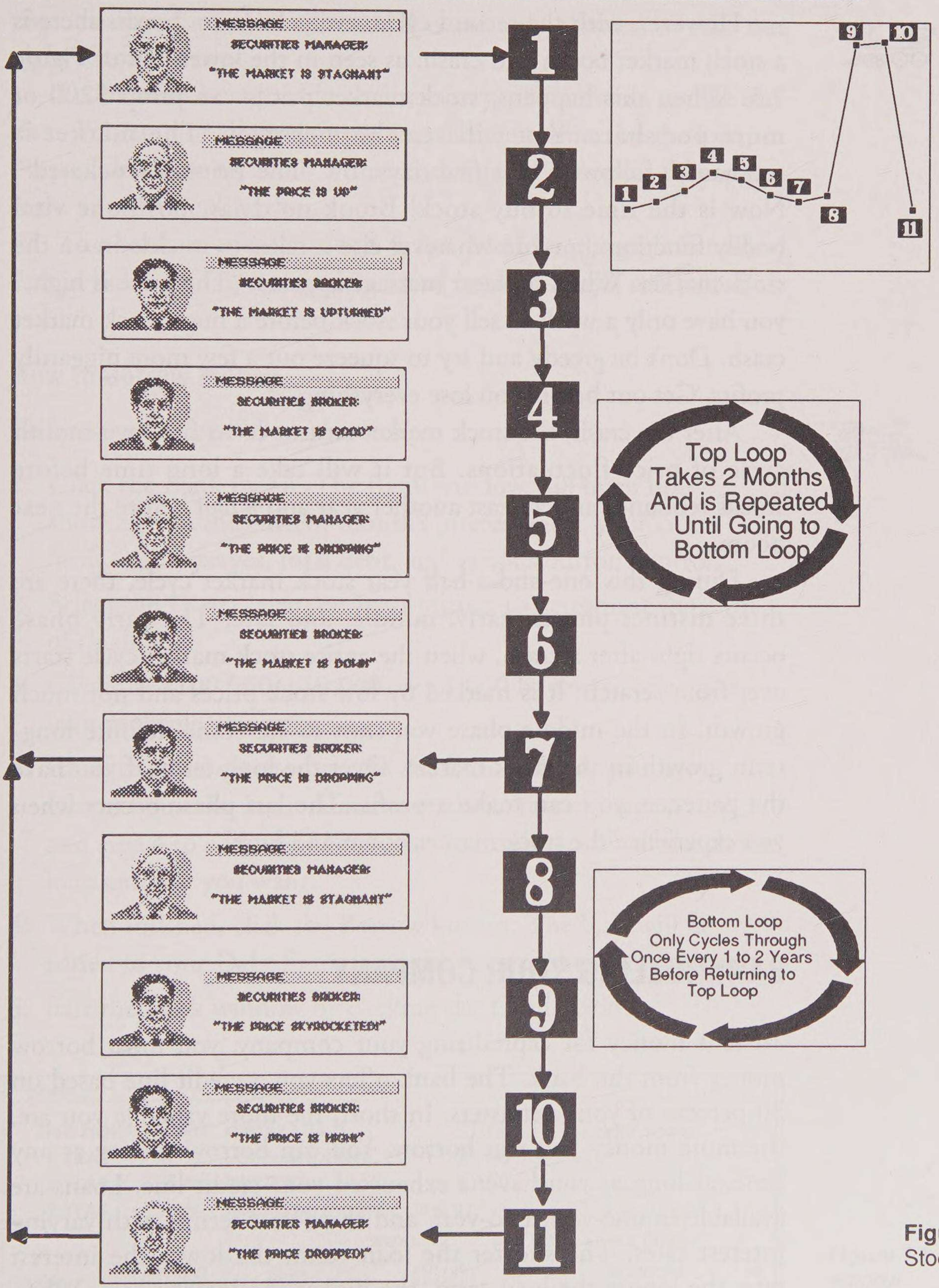
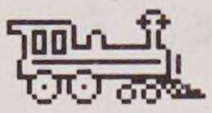


Figure 7.5 The Stock Market Cycle

down." Nonetheless, the progression of messages remains the same.



However, with the second cycle, every 1 1/2 to 2 years there is a stock market boom and crash, as seen in the lower half of Figure 7.5. When this happens, stock market prices can jump $200 or more per share. You will see the message, "The market is stagnant," followed in a few days, by "The price skyrocketed!" Now is the time to buy stock! Brook no delay, postpone vital bodily functions, and do whatever else it takes to muscle in on the stock market. When the next message appears, "The price is high," you have only a week to sell your stock before a huge stock market crash. Don't be greedy and try to squeeze out a few more niggardly profits. Get out before you lose everything.

After the crash, the stock market returns to its first two-month cycle of price fluctuations. But it will take a long time before stocks rebound, and at least another year and a half before the next boom.

During this one-and-a-half year stock market cycle, there are three distinct phases: early, middle, and late. The early phase occurs right after a crash, when the entire stock market cycle starts over from scratch. It is marked by low stock prices and not much growth. In the middle phase you start to see some definite long-term growth in the stock market. Over the long term, if you have the patience, you can make a profit. The last phase occurs when you experience the stock market boom and bust.

BANKROLLING YOUR COMPANY

To rent money for capitalizing your company, you must borrow money from the bank. The bank offers you a credit line based on 30 percent of your net assets. In short, the more valuable you are, the more money you can borrow. You can borrow money at any time, as long as you haven't exhausted your credit line. Loans are available in one-year, two-year, and three-year terms, with varying interest rates. The shorter the loan term, the lower the interest rate; the longer the loan term, the higher the interest rate. When

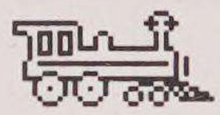
loans become due, you will have a message warning you two weeks in advance, but you must have sufficient cash on hand on the due date, or else the game will end. You are only allowed to take out eight loans at a time.

Loans must be repaid in their entirety, plus interest, on the due date. You are not allowed to pay installments, amortize the loan, or prepay the loan to avoid interest charges. Once you take out a loan, you are stuck with it.

The bank is open 9 AM to 5 PM, Monday through Saturday, except holidays. For a complete list of bank holidays, see Table 7.4.

How to Borrow Money

To borrow money, follow these steps:



1. Click the Bank menu. The Bank window will open up, showing you the current month's interest rates, your credit limit, cash reserves, total debt, and various button controls.
2. Select the 1year, 2year, or 3year button to determine the term of the loan.
3. Click the x100,000, x10,000, or x1,000 button to select the loan multiple you want.
4. Click the + or - button to add the loan multiple you have selected into the Loan Amount textbox. You can repeat step 3 and step 4 to add or subtract loan multiples until you reach the loan amount you want.
5. When finished, click the Borrow button. The loan will be added to your Debt figures and the loan credited to your cash.
6. Exit the Bank window by clicking the Exit button.

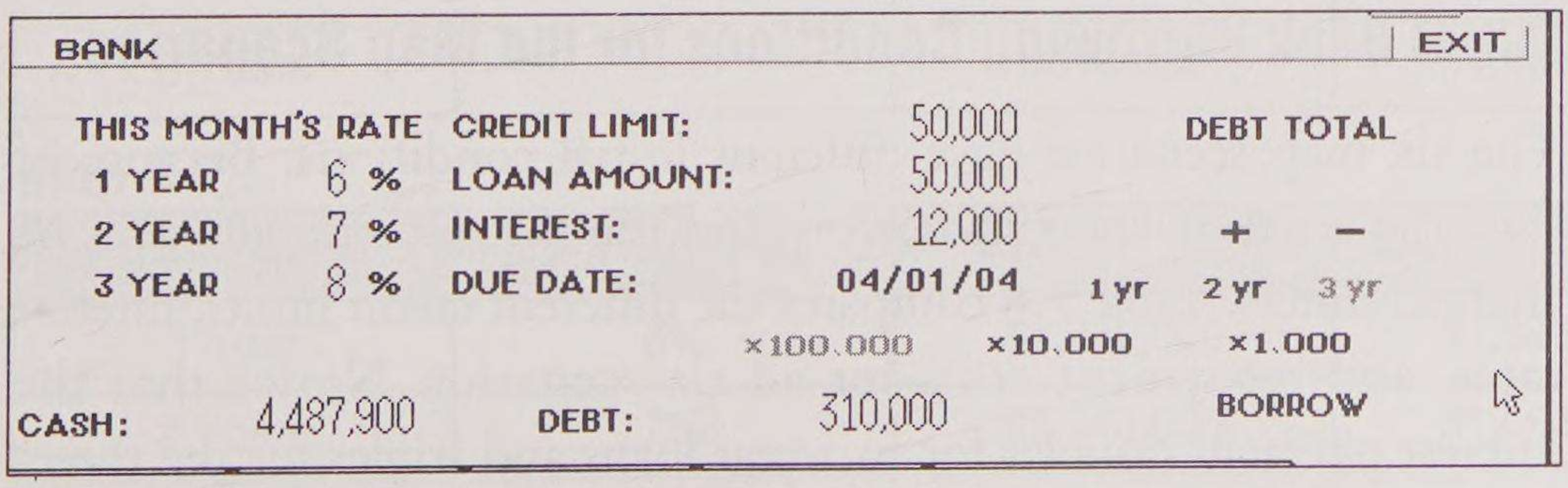


Figure 7.6 The Bank window

Fluctuating Interest Rates

Interest rates are not fixed. They will fluctuate each month according to business conditions in the simulation. Table 7.5 shows the upper and lower limits for interest rates for the one-year, two-year, and three-year loans.

Table 7.5 Interest Rate Fluctuation

Length of Loan	Interest Rate Variation
1 Year	2% to 9%
2 Years	3% to 10%
3 Years	4% to 11%

Keeping Track of Your Loans

Although you will get a two-week notice of impending due dates, this may not be enough time to generate enough cash to repay the debt. For example, if you borrow $1,000,000 and forget about the loan, only to have the bank remind you two weeks before it is due, you will probably lose the game, because it's unlikely you can drum up the cash in the short time remaining. Therefore, you should periodically remind yourself of when your loan due dates are.

To review all your debts and their due dates, follow these steps:

1. Open the Bank window.
2. Click the Debt Total button. In a moment, the Debts window will open, as in Figure 7.7, and you can see all your individual debts.

DEBTS

DUE DATE	PAYABLES	RATE
04/01/02	116,600	6
04/01/03	57,000	7
04/01/04	186,000	8
TOTAL:	359,600	

Figure 7.7 Total debts and due dates

Initial Bank Borrowing Conditions for the Map Scenarios

The six map scenarios have different initial conditions. Because of this, the amount you can borrow and the interest rate you will be charged differs. Table 7.6 compares the different credit limits, interest rates, and repayment costs for all six scenarios. Notice that the interest payment doubles for two-year loans and triples for the three-year loans. This fact should tempt you to stay with one-year loans.

Table 7.6 Bank Borrowing Statistics for the Six Map Scenarios

Map 1

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	6%	$117,000	$124,020	$7,020
2 Years	7%	$117,000	$133,380	$16,380
3 Years	8%	$117,000	$145,080	$28,080

Map 2

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	7%	$252,000	$269,640	$17,640
2 Years	8%	$252,000	$292,320	$40,320
3 Years	9%	$252,000	$320,040	$68,040

Map 3

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	6%	$177,000	$187,620	$10,620
2 Years	7%	$177,000	$201,780	$24,780
3 Years	8%	$177,000	$219,480	$42,480

Map 4

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	6%	$144,000	$152,640	$8,640
2 Years	7%	$144,000	$164,160	$20,160
3 Years	8%	$144,000	$178,560	$34,560

Map 5

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	7%	$816,000	$873,120	$57,120
2 Years	8%	$816,000	$946,560	$130,560
3 Years	9%	$816,000	$1,036,320	$220,320

Map 6

Length of Loan	Interest Rate	Maximum Loan	Repayment Cost	Interest Paid
1 Year	6%	$1,740,000	$1,844,400	$104,400
2 Years	7%	$1,740,000	$1,983,600	$243,600
3 Years	8%	$1,740,000	$2,157,600	$417,600

Table 7.7: Tax-Cutting Strategies

Strategy	Advantages and Disadvantages
Expand Railroad Business	**Advantages:** • Purchasing trains, stations, and track is a good way to lower your taxes. Your cash, which ordinarily would be taxed at 50%, will be converted into fixed assets, which are taxed at 5%. • You earn money from the operating revenue from stations and trains. • Increased rail traffic helps the city grow. **Disadvantages:** • If you try to sell your trains you will lose money, since you only get back half of what you paid. • Stations and tracks can never be converted back to cash, and will cost you money for their removal. • There are operating costs for running the railroad. • You have to make plans for designing your train line, which can be time consuming.
Build and Buy Subsidiaries	**Advantages:** • Converting your cash into subsidiaries is a good tax dodge. After taxes are estimated on March 31st. You can sell the subsidiaries to convert your investments back into cash, and you will only have been taxed at the 5% property tax rate. • When you sell subsidiaries, you can often reap handsome profits. • Subsidiaries generate income which you can collect. **Disadvantages:** • You may lose money when you try to sell the subsidiaries. • You might not be able to sell the subsidiaries if you go over your annual limit. • Subsidiaries have management costs which are passed on to you. Although they can be profitable, they can also bleed you dry financially.
Buy Stock	**Advantages:** • Buying stock is a good tax-evasion tactic. Stocks are considered as property and are taxed at 5%. • You can buy and sell stock at any time. • You will never have a problem finding buyers. **Disadvantages:** • Risk of stock market collapsing. • Stocks fluctuate in value, so you may lose money when converting back to cash. • You have to pay commission fees when buying or selling stock.
Buy Land	**Advantages:** • Buying land converts your cash into a fixed asset which is then taxed at the 5% property tax rate. • Land has no maintenance costs. • You can always sell land; there will always be a buyer • By building stations or railroad tracks near newly purchased land, you can increase its value. Then when you sell, not only have you avoided taxes, but you will have profited from land speculation. **Disadvantages:** • You need to spend money to clear the land of all terrain features. • It may be too much of a bother to buy large tracts of land.

EARNING YOUR BANK INTEREST

On the 24th of each month, the bank pays you 0.1 percent interest on your current cash reserves. This translates to an annual rate of 1.2 percent.

TAX EVASION

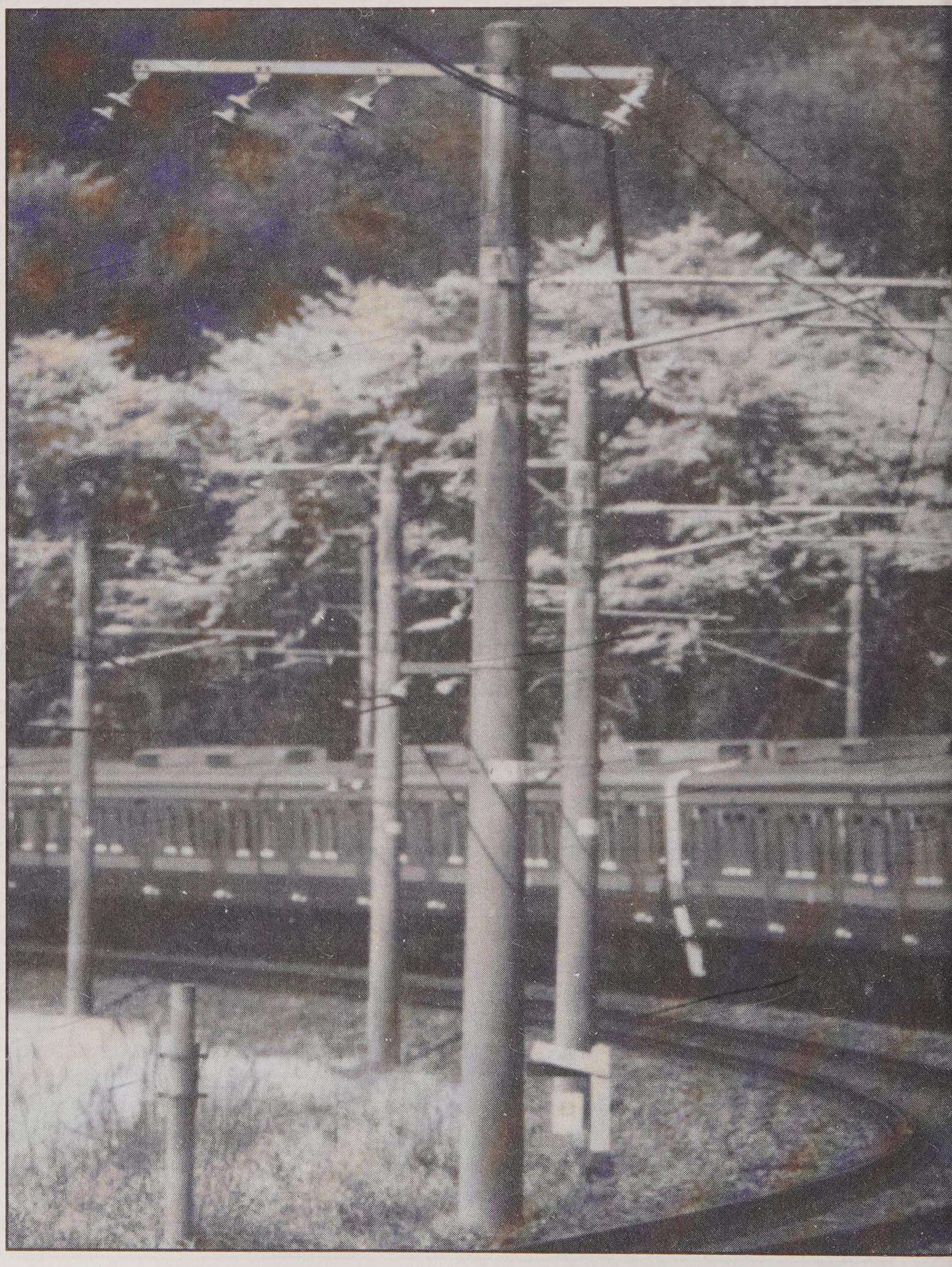
At the end of each year, on March 31st, your taxes are calculated. Taxes are automatically deducted from your cash on July 1st, and if you don't have sufficient funds, the game will end.

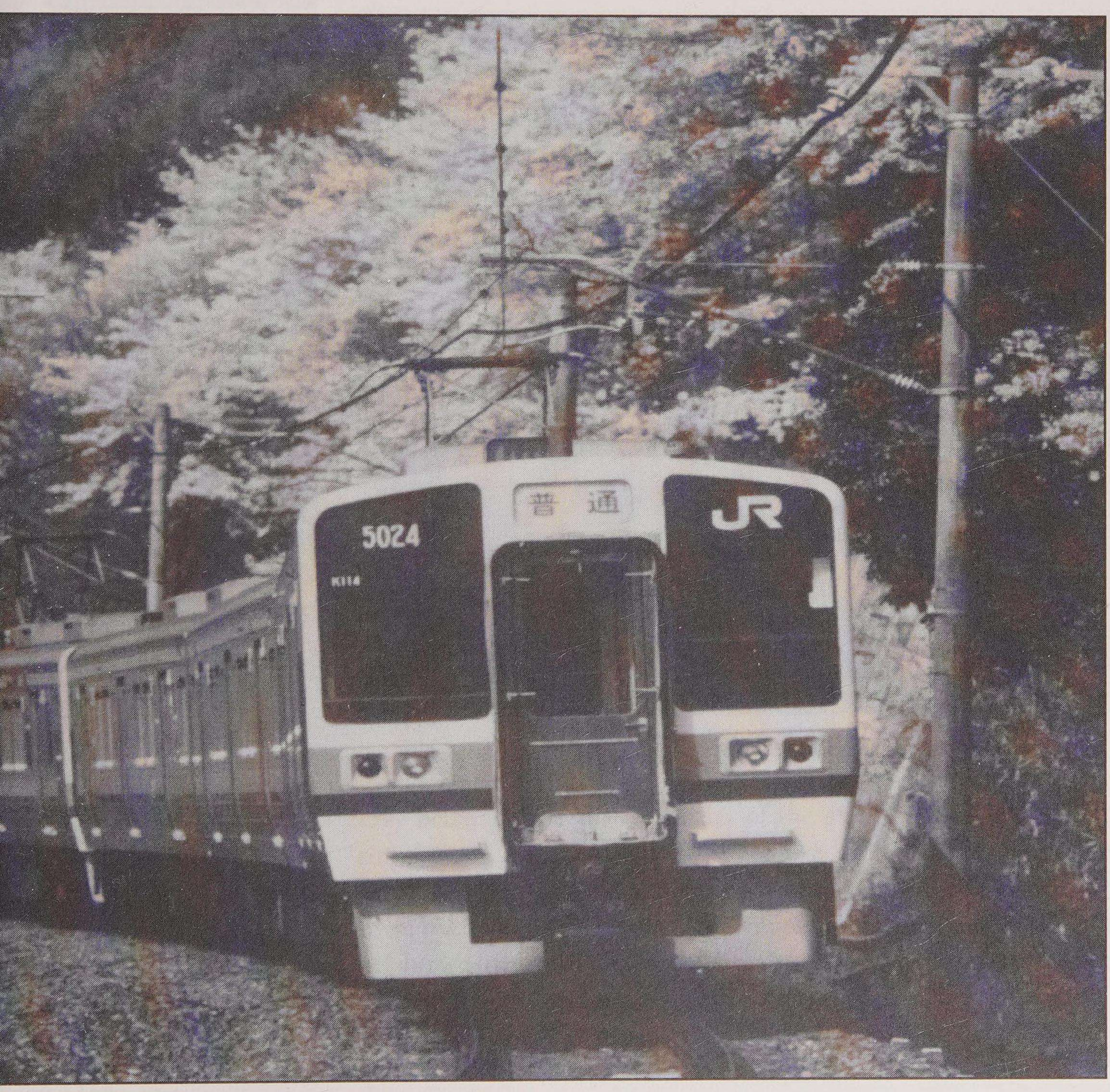
There is an income tax of 50 percent levied on your cash and a property tax of 5 percent assessed on all your stocks, subsidiaries, land, stations, tracks, and trains. The minimum income tax is $100, regardless of whether you lost money or not.

If you don't convert your profits to something else before March 31st, the tax man will gobble up 50 percent of it. Obviously, at tax time it makes good sense to convert as much cash as you can to fixed assets that are taxed at the 5 percent rate. After the March deadline has passed, you can convert the fixed assets back into cash, and you will have prevented yourself from being gouged by the government. Table 7.7 illustrates some of the pros and cons of the various tax dodges you can pursue.

PART TWO

Strategies and Secrets




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CHAPTER 8

A-Train Theory



This chapter reveals some of A-Train's inner workings so that you may better master the intricacies of the game. A-Train, like most simulations, is governed by a set of fixed rules that establish the working parameters of the game. You can play without knowing these rules, but if you spend a few moments to learn them, you will be shrewder in your business dealings and better able to surmount any challenges that come your way.

A-Train uses algorithms to calculate business conditions, using variables that keep track of such items as population, passenger counts, labor needs, cash, interest rates, stock market conditions, tax revenues, business activity in various industries, material availability, access to transportation, and the profitability of individual subsidiaries. Each of these variables, or factors, is influenced by other variables, and every hour the simulation updates the algorithms by recalculating all the variables. Your actions in the game directly influence the outcome of these calculations, and your job is to bring all the factors together in a positive confluence so that your city may thrive and prosper.

BALANCE BETWEEN SUPPLY AND DEMAND HAS GREAT EFFECT ON ECONOMY

A-Train is truly a game of juggling the competing interests of supply and demand. For example, a successful city requires a balance between job opportunities and the need for employment: a shortage of one and surplus of another creates an unstable, weak economy. The housing supply and the work force's demand for shelter is another example of where you must balance supply and demand. Likewise, building material supply and their consumption are powerful forces in the supply and demand equation. One of the premier challenges of A-Train is to maintain an equilibrium between supply and demand so that the economy can grow unabated.

MACROECONOMICS

An external economy influences A-Train's internal economy. The external economy consists of markets off the map, within which your city trades. The trains that travel off the map, for example, convey people and materials back and forth between the external economy off-map and the internal economy in your city. In fact, you may notice that materials are carried off the map. These materials are your exports, while materials brought in from off-map are imports. You don't really have control over the external market, and occasional

recessions will occur. When this happens, a 10 percent decline may occur in passenger traffic, and local business conditions may sour. But this condition will usually not last very long, and your economy will soon rebound.

In some of the scenarios you may notice residential dwellings springing up along the trunk line to the outside, even if you have not added any new subsidiaries. Quite simply, these residents are commuting to the external city and are using your city as a suburb to live in. They exist because of the external economy.

MICROECONOMICS

A-Train's internal economy represents the consumption of goods and services produced within your city. The building materials manufactured in your city, the business of your department/commercial stores, and other subsidiaries are examples of your internal economy at work. As your population grows, so does its demand for more internally produced goods and services. If your internal economy is healthy and vibrant, your railroad company is sure to be successful. On the other hand, if your internal economy is faltering, passenger traffic will decline and your railroad company will lose money. Also, if there is a shortage of building materials, not only will city growth cease, but your freight train business will lose money. In short, your railroad company is a barometer of the economic health of the internal economy.

CITY SCALE DETERMINED BY POPULATION AND BUILDING POINTS

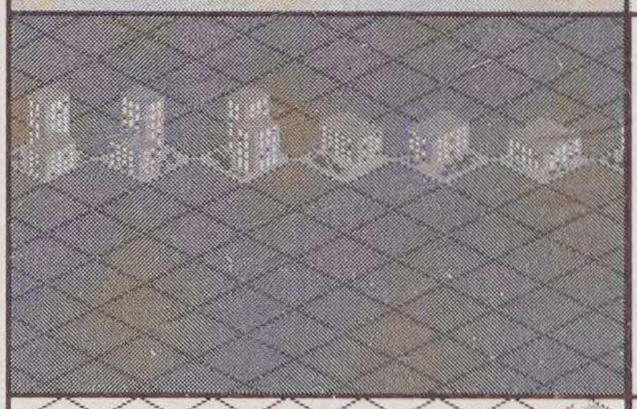
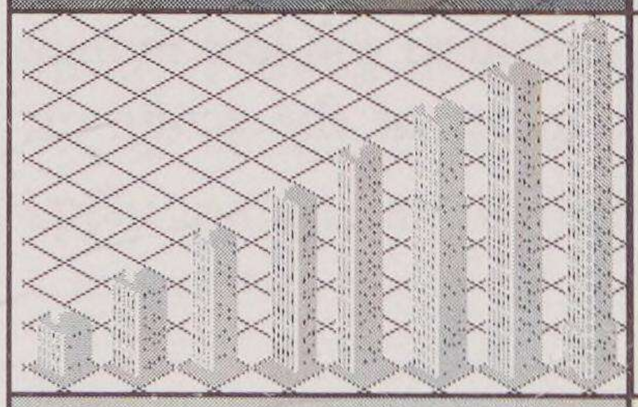
A-Train uses a combined population and building count to determine the scale of your city. You will remember that there are five city scale types: Small Town, Small City, Medium City, Big City, and Metropolis. For your city to advance to the next city scale, it must reach certain population and building count levels. Only public buildings and lease/office buildings are used in calculating how many buildings you have in your city. Public buildings count as one

building point, while lease/office buildings count as two building points for each five stories of building height. This means, for example, that a 40-story skyscraper would count as 16 building points (40 stories = 8 x 5 floors; 8 x 5 floors x 2 points/5 floors = 16 points).

If you are trying to increase your building points, you can only build lease/office buildings; you cannot build public buildings. Public buildings are built by the simulation in response to certain population and economic conditions.

You may wonder why your city doesn't jump to the next city scale even when you have enough building points. This is because your population has not increased enough to satisfy A-Train's minimum population threshold for each city scale. So when you have enough

Table 8.1: Building Points

	Building Type	Building Points
	Public buildings (regardless of size)	1
	Lease/office buildings	2 points for each 5 floors
	5 Floors	2
	10 Floors	4
	15 Floors	6
	20 Floors	8
	25 Floors	10
	30 Floors	12
	35 Floors	14
	40 Floors	16

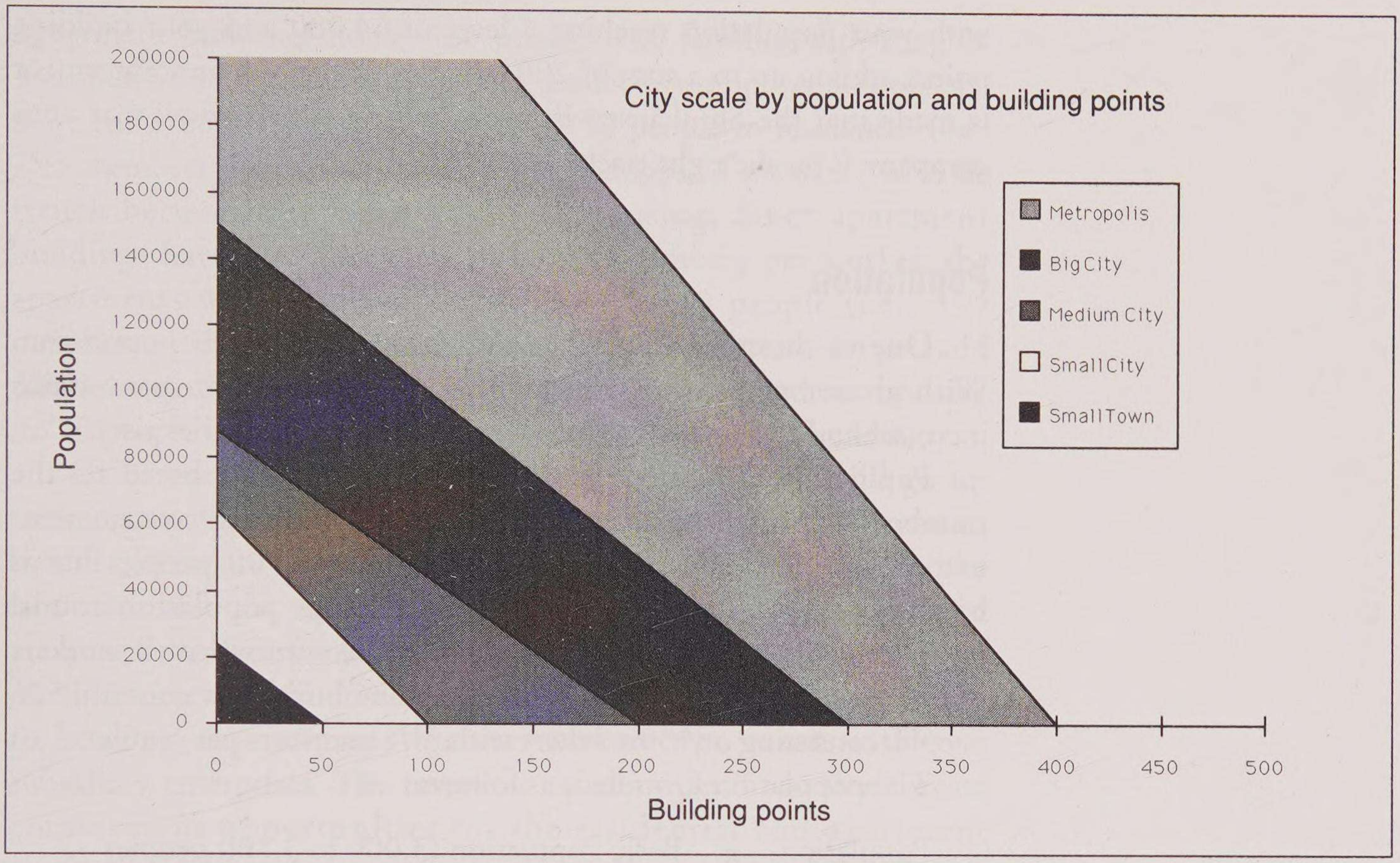


Figure 8.1 City scale chart

building points, start building apartment buildings to increase your population. This, in combination with the requisite building points, will bump you up to the next city scale. Figure 8.1 graphically plots the city scale by population level and building points, so you can see how far you have to go before attaining the next city scale.

By the same token, if you have enough population but not enough building points, just build some more high-rise lease/office buildings to jump to the next city scale.

Oddly enough, when I tested the transition from the first city scale, Small Town, to the second city scale, Small City, I could jump to Small City merely by increasing the population, while keeping the building points below 50. This should not happen (probably another bug), but the rest of the transitions work as advertised, according to the graph in Figure 8.1.

Bullet Train Is a Measure of Success

The Shinkansen (Bullet Train) will only be constructed when your city scale changes from Small City to Medium City. This coincides

with your population reaching a level of 64,000 and your building points adding up to a sum of 200 or more. When the announcement is made that the Shinkansen is being built, you will know that your company is on the right track.

Population

One of the most important elements of A-Train is population. With greater population, the number of passengers on your trains increases and the amount of sales revenue from subsidiaries rises.

Population is figured according to a set formula based on the number of residences and apartment buildings you have on your map. There is a core population of 3,000 to 3,700 people that is based outside the map but is included in your population count. Each residential block contains 60 people, comprised of 8 workers with $7^1/_2$ members per family. Apartment buildings contain 526 people, consisting of 150 workers with $3^1/_2$ members per family.

The population formula is as follows:

Population = Basic Population (3,000 to 3,700 people)
+ (# of residence blocks x 60 people)
+ (# of apartments x 526 people)

Table 8.2: Population Count Example

Using the population formula, calculate the population for Resort Development Map Scenario 3
• Example: Map 3 Number of Residences = 75 Number of apartment Buildings = 0
Population = 3,000 (basic population) + (75 x 60) + (0 x 526) = 7,500 people

Labor Force

As noted before, each worker in the labor force has a family which requires housing. However, family size is smaller for apartment buildings than it is for residences. Residences, you will remember, house 60 people comprised of 8 families with $7^1/_2$ members each.

Apartment buildings house 526 people: 150 families with roughly 3 1/2 members each. This means that if a factory employs 500 people, there must be housing available for 3,750 people in residences (i.e., 7 1/2 members per worker family x 500 workers) if a balance is to be struck between the labor force and housing. Since apartment buildings have a smaller ratio of family members per worker, the apartments would only need to house 1,750 people (i.e., 3 1/2 members per worker family x 500 workers). Therefore, when you add 500 jobs to the city, you are really creating a demand for housing 3,750 people in residences *or* 1,750 people in apartment buildings.

Of course, this doesn't mean that your population will go up immediately; first the housing has to be created, whether by you or by the simulation. Naturally, if there isn't enough housing to meet the labor demand, the equilibrium will be upset, growth will slow, and your customer base for your subsidiaries will stagnate.

The city will not develop quickly unless you pay close attention to housing requirements for the workers who must staff your subsidiary enterprises. The reverse is equally true: if you don't create employment opportunities for the residential and apartment populations, your city's economy will not grow. Table 8.3, on page 200 summarizes the relationship between the labor force and the amount of residential or apartment housing that you need to construct if an equilibrium is to be maintained. Thus, for example, if you will be constructing a factory, you should examine the table to find out that you will need three apartment buildings, *or equivalently* 63 residential blocks, to house the 500 workers and their families.

As you can see from the table, it is far more efficient to provide housing in the form of apartment buildings than to encourage residential developments. Residences will take up more land space and will cost more in building materials per worker housed. The only advantage residences have over apartments is that they are free; they are constructed at no cost to your company, while each apartment building you build costs between $340,000 and $374,000 (exception: rival firms can also build apartment buildings at their own expense).

GOALS IN CITY DEVELOPMENT

A-Train is not a competitive game of one upsmanship where you are intent on beating the computer. You win the game if, at any time,

Table 8.3: Labor Force and Population Increase

Type of Employment	Number of Workers	Number of Apartment Buildings Needed	Number of Residential Blocks Needed (in Lieu of Apartment Buildings)
Ski Resort	0	0	0
Residences	1/4	<1	<1
Apartments	10	<1	1
Public Buildings	60	<1	8
Small Railroad Stations	150	1	19
Large Railroad Stations	150	1	19
Stadiums	150	1	19
Amusement Parks	200	1	25
Golf Courses	200	1	25
Factories	500	3	63
Commercial/Department Stores	550	4	69
Hotels	550	4	69
Lease/Office Buildings 5 Floors	120	1	15
10 Floors	240	2	30
15 Floors	360	2	45
20 Floors	480	3	60
25 Floors	600	4	75
30 Floors	720	5	90
35 Floors	840	6	105
40 Floors	960	6	120

you have more than $50 million in cash. Other than this, the game is completely open-ended and you can develop your own goals. If you are interested in developing an aesthetically pleasing city, as opposed to a "Love Canal," then that may be your goal. Or perhaps you want to

see how profitable a train line you can develop within the constraints of your city's limited resources. You may even want to see how large a population and city scale you can develop without pushing yourself over the $50 million cash limit that will force you to win and exit the game.

Build Profitable Train Network

The key to winning A-Train is in building a profitable train network. For this to happen, you must have created the foundation for a healthy economy—including a prosperous industrial base, a thriving population, and a strong consumer market. Without this, you will never generate the passenger traffic to justify expanding your train company.

In researching how A-Train calculates ticket prices for the various trains, I inadvertently discovered that trains traveling long distances between stations were always more profitable than trains traveling short distances between stations. I also found that certain trains always lost money because of their low ticket revenues and high running costs. With a little bit of careful investigation, you can easily turn a money-losing line into a highly profitable one. In some cases, this may be as simple as replacing a train.

Also, when monitoring your train operations for profitability, always observe how many passengers you are carrying on the line in question. In Chapter 10 I have included some guidelines as to the minimum numbers of passengers necessary to break even. Keep in mind that if a train is losing money, you shouldn't be running it, unless you know how to reverse its bad fortunes.

Where to Focus Your Interests for Most Profitability

When you start with relatively undeveloped cities, it is wise to focus on population development. The way to do this is to create employment opportunities as well as the housing infrastructure to support the worker population. Once you have a stable consumer/passenger base, you can then turn your attention to expanding your train operations. This sequence of events is important to follow, because without an adequate passenger population, you will never be able to a profitable railroad.

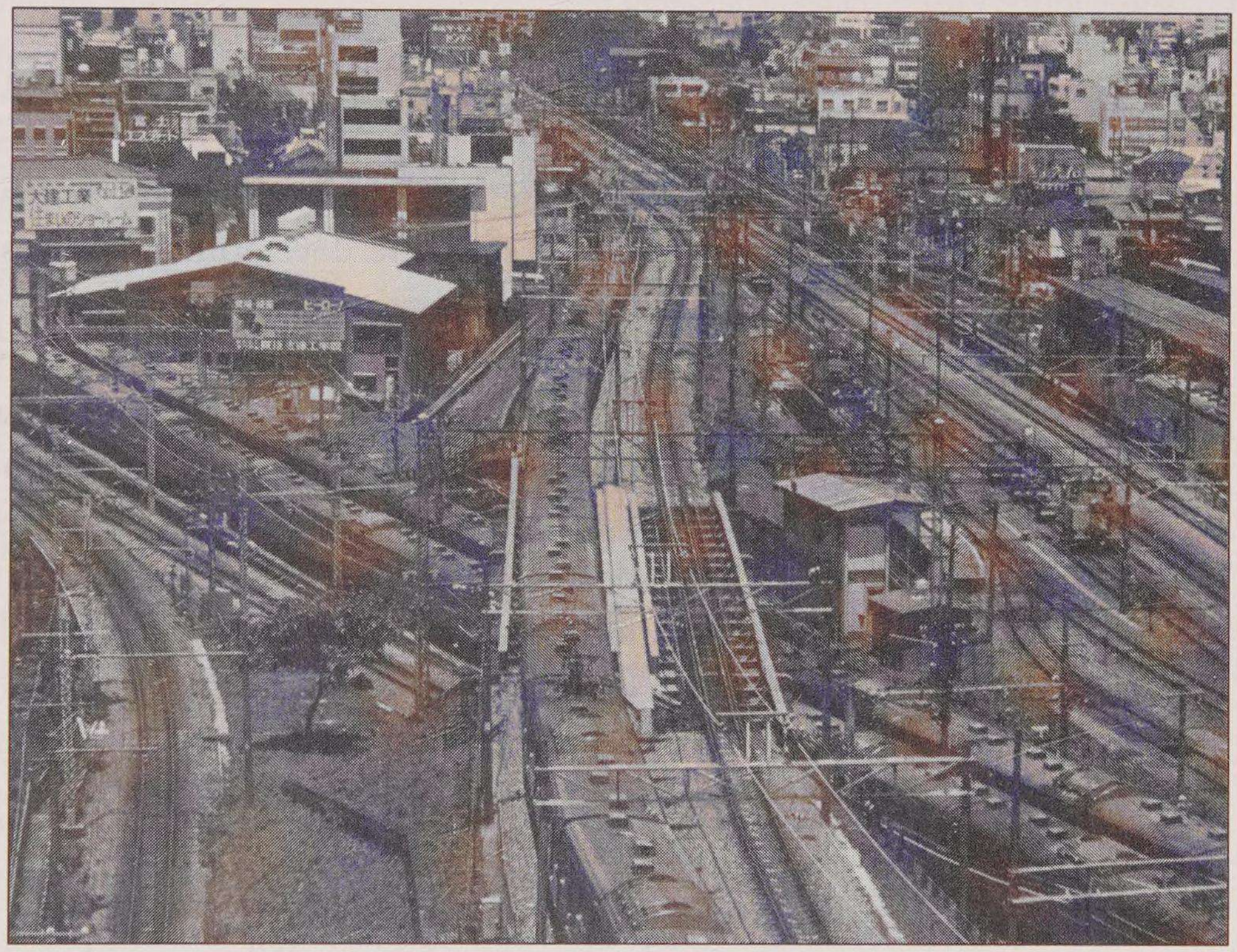
The best general advice is to earn your short-term profits from subsidiaries, earn your middle-term profits from the railroads, and earn your long-term profits from the real estate business.

Profit Making Strategy Time Line:

- Long Term (100 years): Real Estate Business
- Middle Term (50 years): Railroad Business
- Short Term (10 years): Subsidiary Businesses

CHAPTER 9

Railroad Line Design Strategies



This chapter will present you with some useful ideas on railroad engineering, particularly track design for various track and station configurations. You will also learn which trains are the most profitable to operate, and acquire a basic understanding of how ticket income and distance between stations are related. Armed with this knowledge, you can make informed decisions which will improve your company's bottom line and substantially boost your train profits. Interspersed with the game information, I have included some brief digressions on today's railroad technology, accompanied by photos of real trains that I hope will pique your curiosity about the wonderful world of trains.

STATIONS

Obviously, since large stations do twice the business of small stations and enable the construction of roads, you will want to build large stations where you believe a city is likely to grow. Since only two rail lines are allowed to stop in front of a station, you will need to pay attention to how many trains you plan to run and which direction they will move along the tracks.

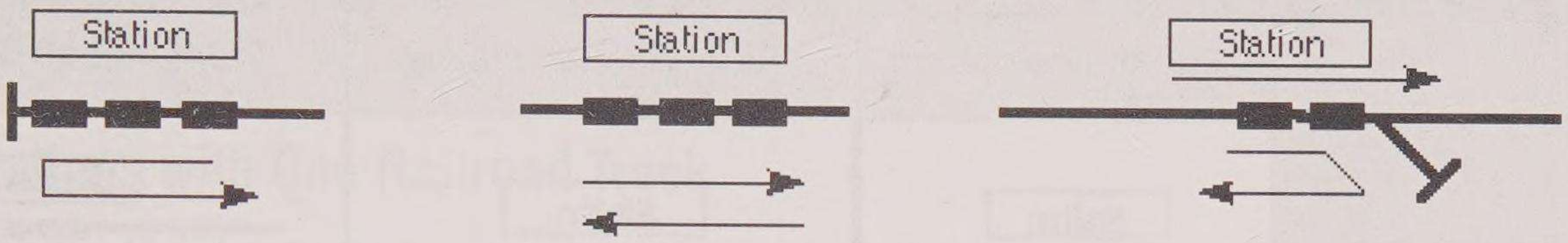
Stations and Development

Establishing stations in undeveloped areas is the key method by which you start the development process. Placing new stations and rail lines in isolated country portions of the map is not a good idea. Instead, you should direct development away from already established cities by running rail lines from populated areas to less populated areas. On such "development lines" you should set the departure times for the city station at those times when the station is most crowded, such as 8:00 AM and 6:00 PM. The country station, which should initially be a small station, should have the departure time set to a one-hour stop. By doing this, you will maximize the flow of passengers and goods migrating to the country station and then quickly turn the train around for a second wave of immigrants and materials.

At first, you should run only freight trains, laden with materials, to the country station. When you have enough materials stockpiled there, build a factory to get local production of materials going quickly. Then you can shift to passenger trains to start developing the local population.

Station Stops

Each station can stop two trains simultaneously, provided there are two perfectly parallel tracks in front of the station. In order for the train to stop, there must be at least as many blocks of track as there are cars in the train. This means that a two-car train needs at least two blocks of track to stop, and a three-car train needs three blocks of track. It isn't necessary to put in three blocks of track for a two-car tract; to do so would be wasteful. But in order to protect future track



End of the line station

B-directional station

One-block switch

The one block switch allows some trains to reverse direction at a station, while allowing other trains to proceed on.

Figure 9.1 Three kinds of station stops

right of ways you might want to purchase the land immediately surrounding the station platform to prevent high rises from blocking later track expansion.

There are three kinds of station stops: the end-of-the-line station, the bi-directional station, and the one-block switch. Figure 9.1 illustrates the three possible station stops.

The end-of-the-line station causes trains to reverse direction after stopping at the station. If a train is set for nonstop at the end station, the train will not linger but will immediately turn around and proceed back from whence it came.

Trains that enter the bi-directional station will stop and then continue on in the same direction in which they entered the station. It is not possible to turn such trains around unless you use the one-block switch technique, as described below.

The one-block switch is a very clever stopping technique developed by Takumi Yoshida of Japan. Using this sneaky trick, you can selectively cause certain trains to stop at a bi-directional station and force them to reverse direction. Alternately, you can allow other trains to behave as if the station were a bi-directional station and make them stop briefly before resuming their one-way journey. Here is how it works: you put in a switch for one block only, and then, using the Schedule menu, adjust the switch for those trains that you want to stop at the station. Trains that have their switches set to divert the train will enter the station and shunt over to the one block of track that is on the switch. Reaching what it perceives to be a dead-end track, the train will reverse direction, leaving the station in the direction opposite from which it originally came. All other trains

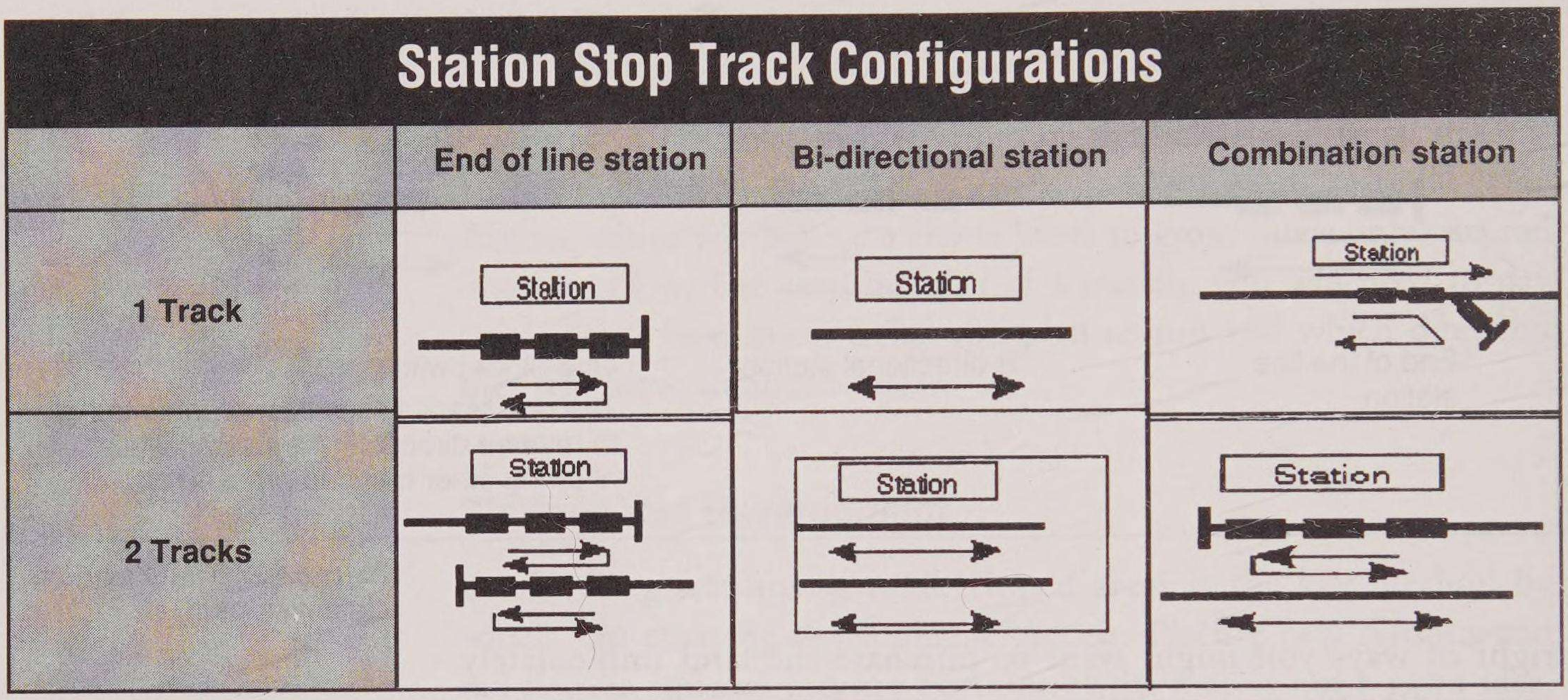


Figure 9.2 Station stop track configurations

entering the station will continue blithely on without changing direction, as if it were a bi-directional station. The placement of the switch is crucial; it must be placed outside the station platform for three-car trains.

You can use the one-block switch to stop and reverse trains along any track. This technique is not limited to stations.

Figure 9.2 shows various station stop track configurations for one-track and double-track lines.

TRACK DESIGNS

With the many track designs illustrated in this chapter, you should be able to find one that is uniquely tailored to your situation. Keep in mind that in order for these designs to work, you should use only trains of the same speed. You must also choose each train's starting position and direction precisely, and make sure that the switches are set and the schedules synchronized. If you are careless about any of these preliminary conditions, your trains will collide with one another and cause you untold grief. The whole process of balancing and fine tuning your train lines so that they are coordinated and running like clockwork is part of the fun of A-Train. Like a ballet

master, your challenge is to choreograph the motion of your trains so that harmony, functionality, and aesthetics blend together into a unified whole.

Two Stations with One Railroad Track

The next section details various track possibilities with two stations connected by only one railroad track.

Two Stations/One Train

In diagram A of Figure 9.3, connecting two stations via one rail line is the most basic of all track designs. Only one train can make a round trip on this track, since placing any more trains would obviously cause collisions.

Two Stations/Two Trains

There are two ways you can connect two stations with two trains on a single rail line. In Figure 9.3, designs B and C show how this can be accomplished. With design B, using the switching commands found under the Schedule menu, each train is assigned a separate "berth" in front of the station platform. When the two trains travel down the same line, each train can pop into its station slot without bumping into the opposite train. Make sure that you start the trains by placing them together in the same station, that the trains have the same schedule, and that they are of the same speed type.

Track design C illustrates a slightly different approach. Each train is placed on a sidetrack that is centrally located between station A and station B (the sidetrack must be equidistant between station A and station B). As you can see, the trains will never collide, since they will never come into head-to-head contact. When they meet in the middle, each train takes a different path that enables them to sideswipe each other, thereby keeping them separated. In order for this to work, you will need to synchronize departure times so that the trains meet at the sidetrack at precisely the same moment. One easy way to do this is to place the trains on the sidetrack, as shown in the diagram, pointing in the directions indicated. You don't need to set the departure times from the two stations, since by default, they will

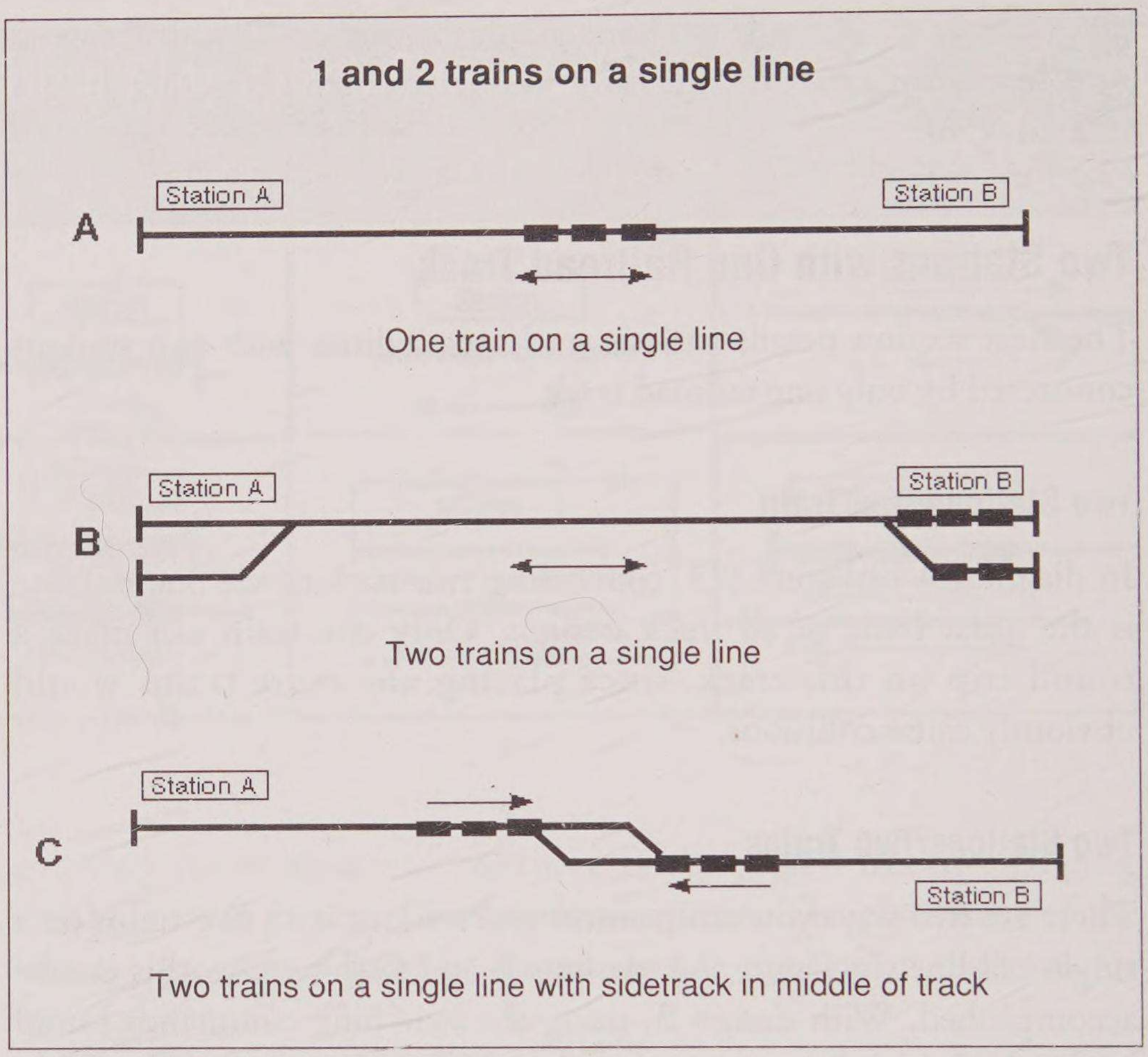


Figure 9.3 Two stations connected by a single rail line with one or two trains

each be assigned a one-hour stop. Also, if you place the trains exactly as they are shown in diagram C you won't need to set the switches because the trains will always take the straight path along the sidetrack.

Single Line/Three Trains

There are various methods of putting three trains on a single line without causing a traffic jam. You can design a four-station setup as in Figure 9.4, diagram A and B, or you can design a two station setup with a double crossover, as in diagram C. In diagram B, Stations A and D act as gatekeepers in holding back trains until the long stretch of single track between B and C is clear of traffic. Synchronizing the trains can be tricky, though. But when using the setup shown in diagram C you will have to limit the track distance between sidetracks because you don't have the same ability to restrict access to the single line. Note that the diagrams are not to scale.

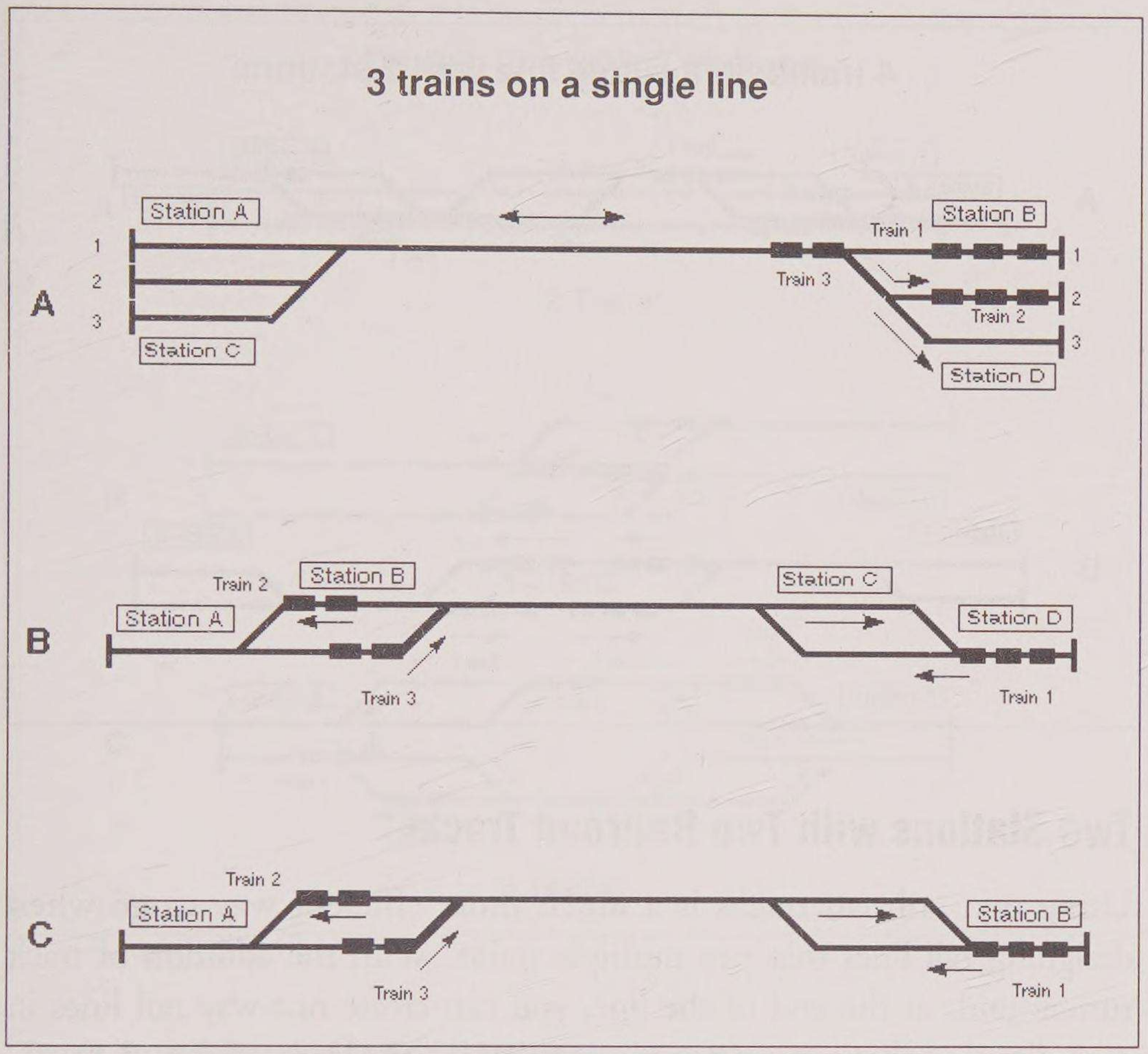


Figure 9.4 Single line with three trains

Two Stations/Four Trains

In Figure 9.5, you can see how it is possible to run four trains on a single line, separated by sidetracks, between two stations.

In diagram A, the track setup is not to scale. You can have as long a distance as you like in between the crossover tracks (where trains two and four are located, and Stations A and B), as long as they are symmetrically the same length.

Note that in diagram B, the distance between Station A and the first sidetrack (trains one and four) can be any length, as long as the distance between station B and the crossover (trains two and three) is the same.

I don't really recommend using three and four trains on a single line because of the complexity of synchronizing schedules. Usually, if I need this many trains, I just run double tracks between the stations. This ultimately allows a larger train capacity and more scheduling flexibility and makes it much less of a headache to juggle trains. However, if you enjoy train acrobatics, by all means go ahead and use these track ideas.

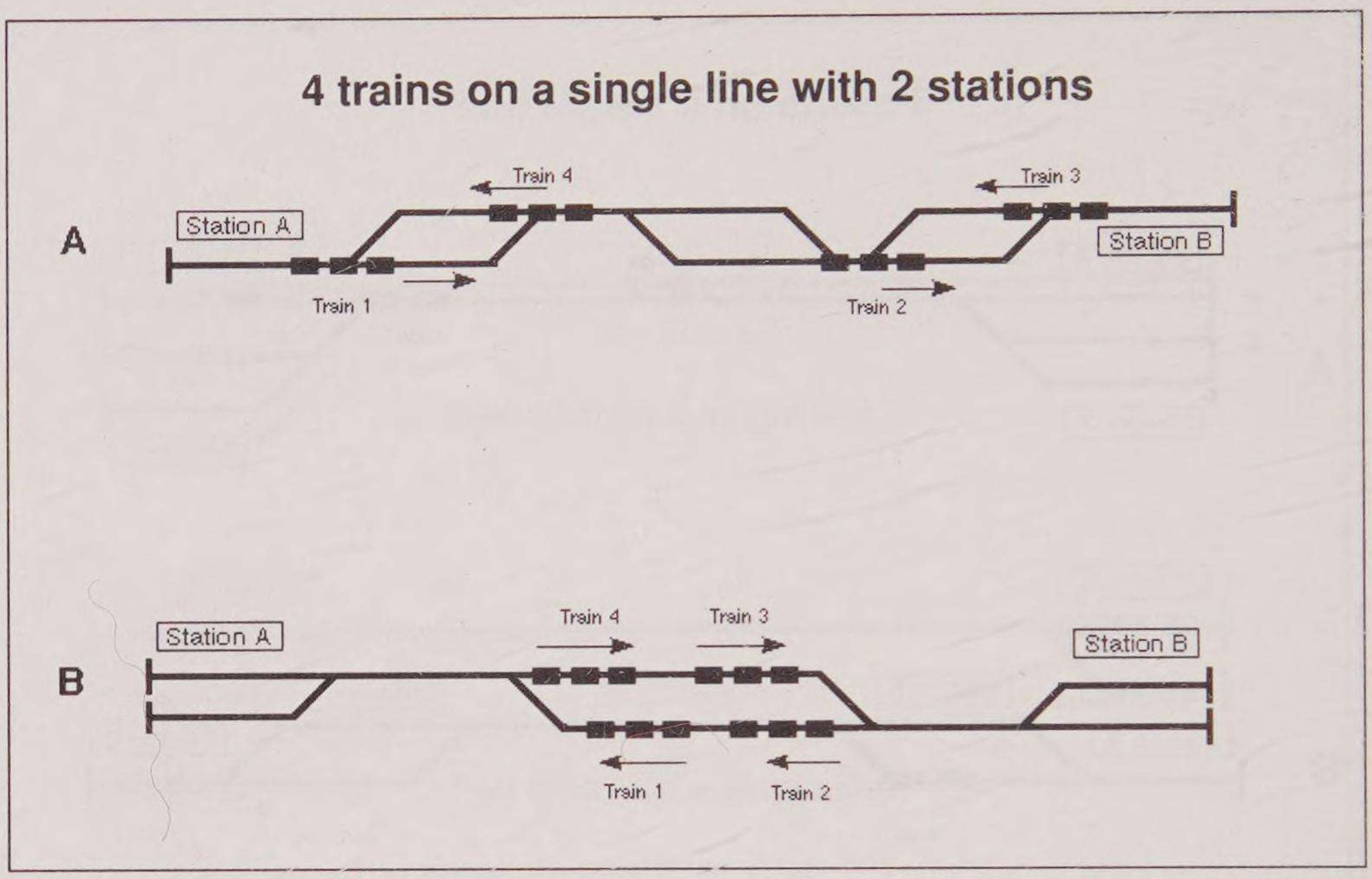


Figure 9.5 Two stations, single line, with four trains

Two Stations with Two Railroad Tracks

Using two railroad tracks is a much more efficient way to go when designing rail lines that run multiple trains. With the addition of track turnarounds at the end of the line, you can create one-way rail lines in each direction that can serve as many trains as you choose to run.

Two Stations/Two Trains

Two separate lines with one train each is the most basic setup for dual rail lines, as illustrated in Figure 9.6a. If you are planning on running only two trains, you might be better served by using the track design found in Figures 9.3b or 9.3c, which spares you the cost of installing a second track. The only logical reason you might have for using this setup is running two trains of different speeds.

Two Stations/Four Trains

With the addition of two sidetracks equidistant between the two stations, you can run up to four trains on the two lines. Figure 9.6b shows how this is done.

Two Stations/Six Trains

If you add dual sidetracks for each line, you can increase the number of trains running to six, as depicted in Figure 9.6c.

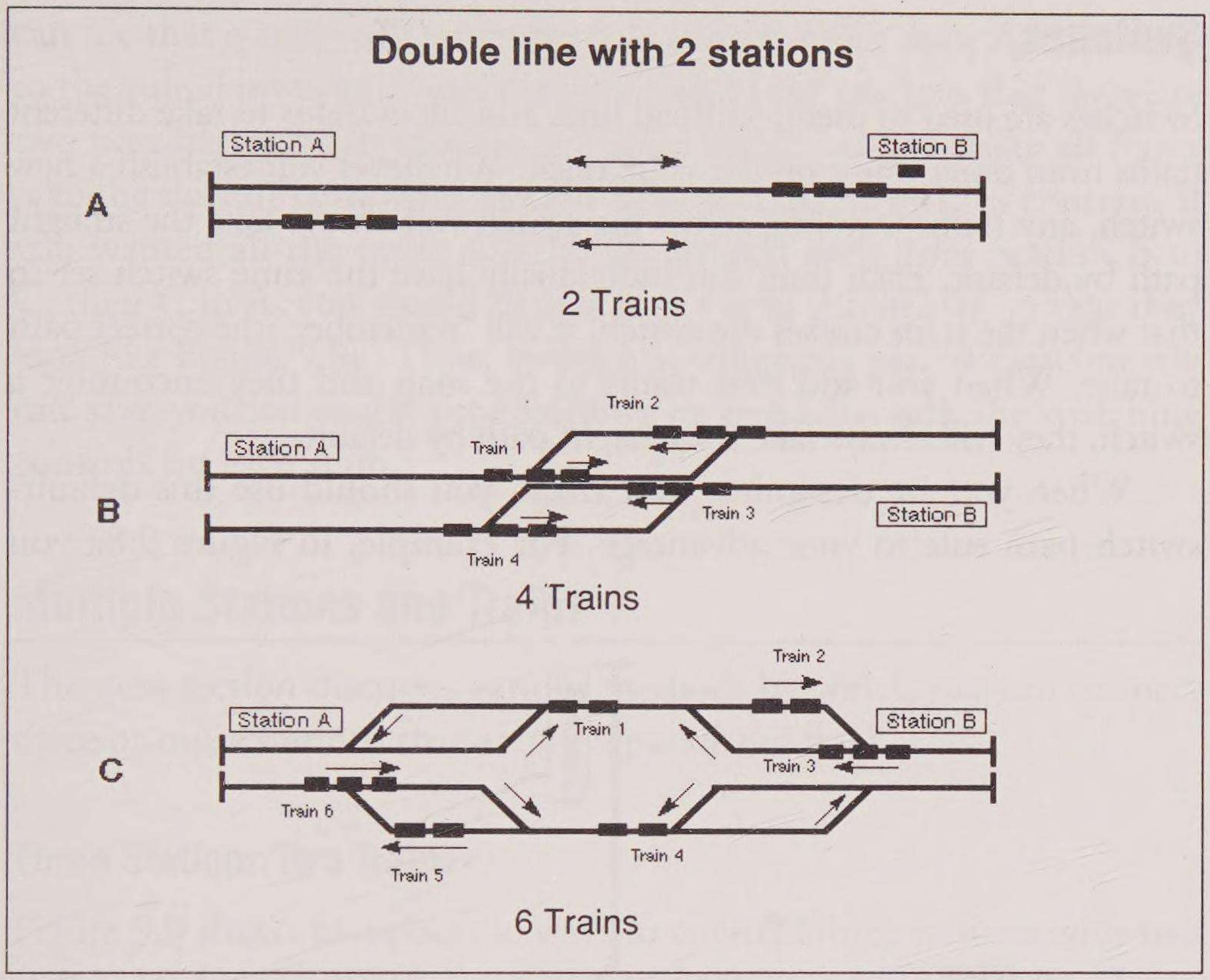


Figure 9.6 Two stations, double line, with two, four, and six trains

Track Turnarounds for End Stations

Track turnarounds allow you to vastly increase the amount of train traffic on dual rail lines. By enabling the trains to turn around and head back on a separate track, you can make each rail line one way, and there will be no possibility of traffic snarls. With this design technique, you can add as many trains as you like.

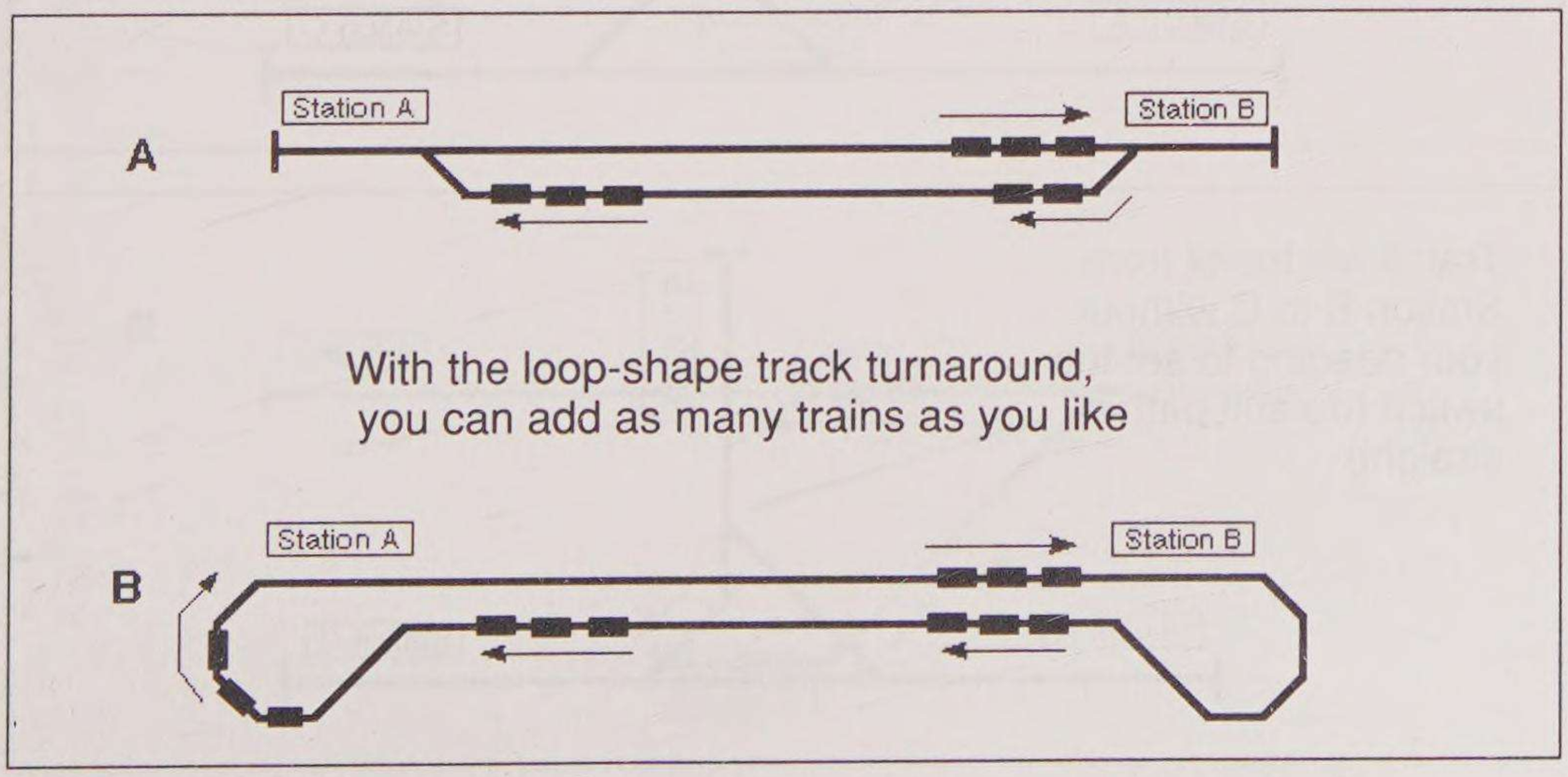


Figure 9.7 Track turnarounds for end stations. This allows multiple trains to share the same tracks.

Switches

Switches are used to merge railroad lines and allow trains to take different paths from other trains on the same track. Whenever you establish a new switch, any trains traveling across the switch will always take the straight path by default. Each train can individually have the same switch set so that when the train crosses the switch, it will "remember" the correct path to take. When you add new trains to the map and they encounter a switch, they will always take the straight path by default.

When you are designing your track, you should use this default-switch-path rule to your advantage. For example, in Figure 9.8a you

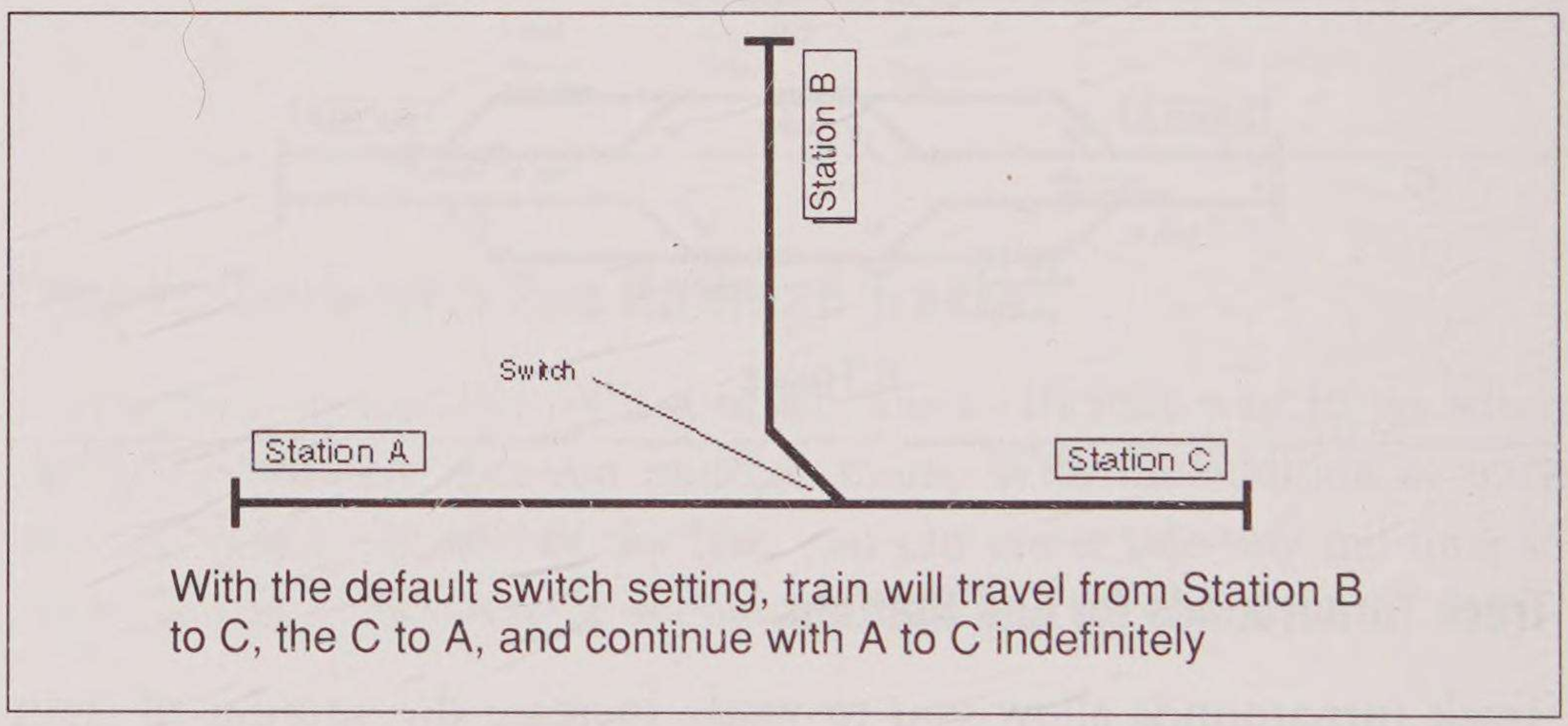


Figure 9.8a Default switch setting causes train to travel from station B to C, then A

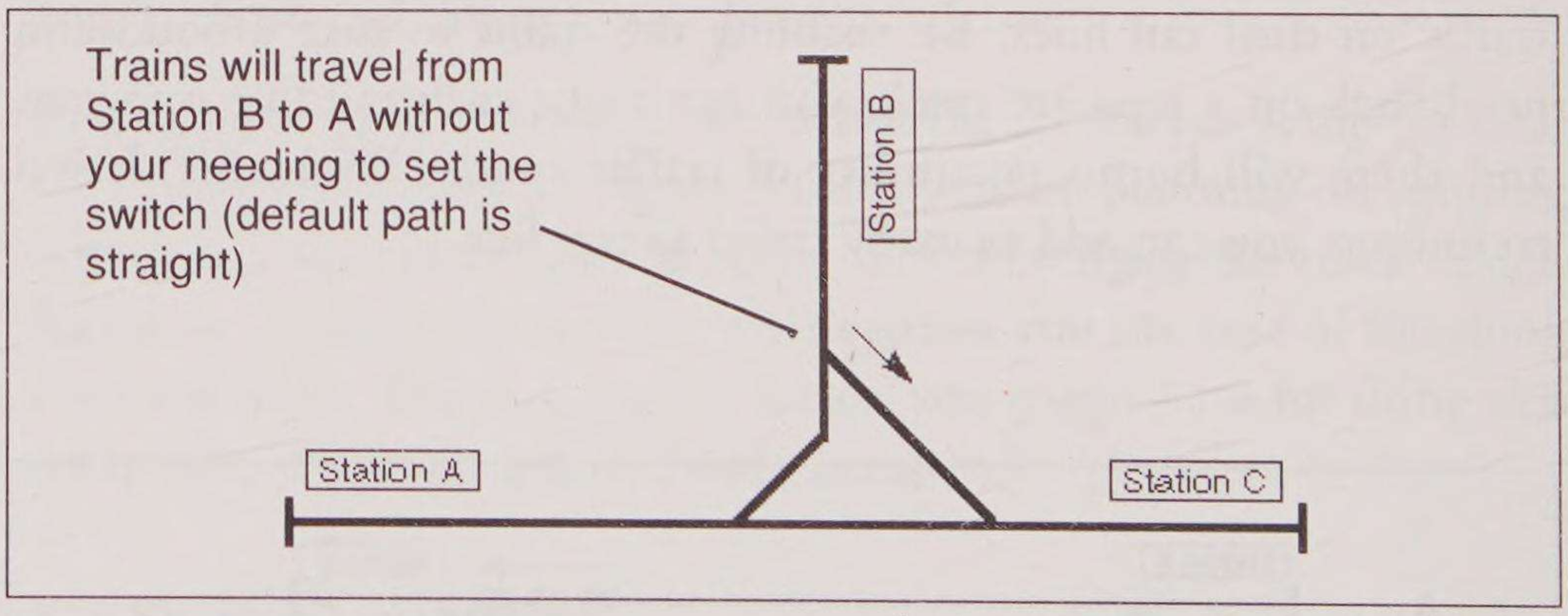


Figure 9.8b Default switch setting causes train to travel from station B to A, then C

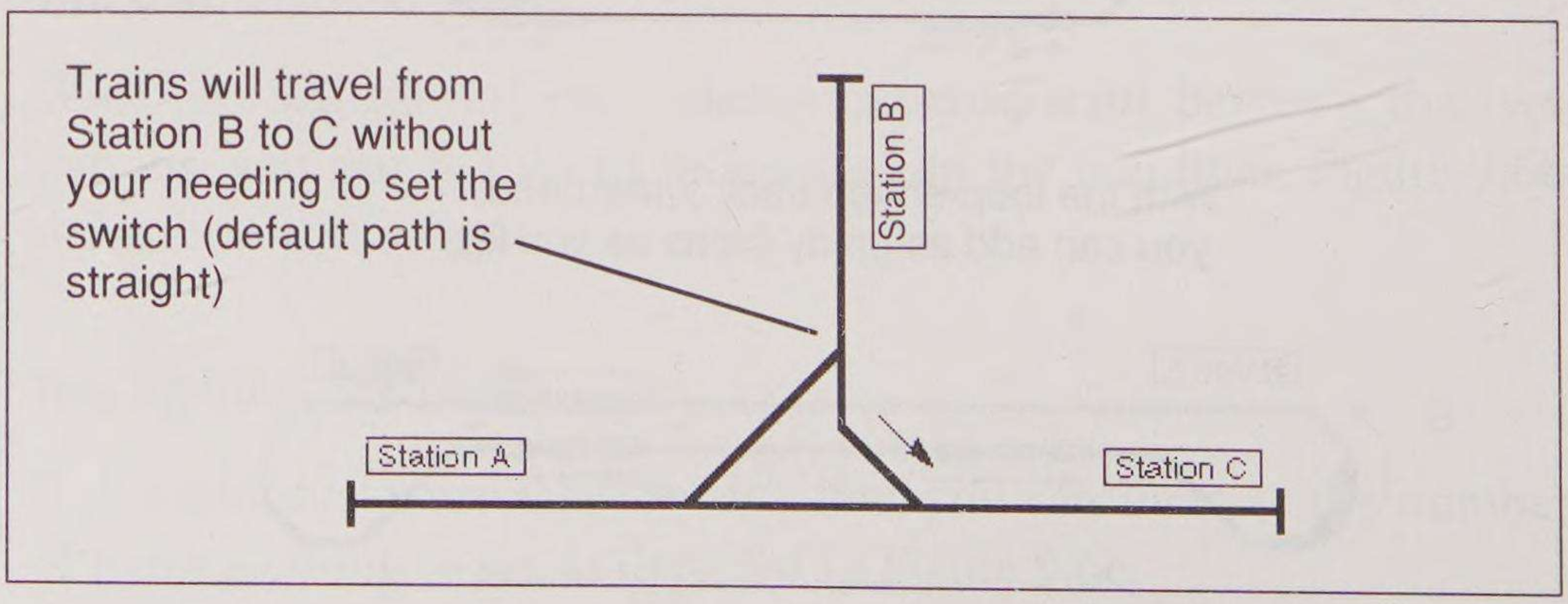


Figure 9.8c Default switch setting causes train to travel from station B to C, then A

can see that a train will travel from Station B to C, then A, according to the rule. However, if you design a fork in the track so that there are two possible paths to take, as in Figure 9.8b, you can make all trains take the default path from Station B to A, then A to C. In contrast, if you wanted all the trains to take the default path from Station B to C, then C to A, you would design your tracks differently, so that they look like Figure 9.8c. Thus, through intelligently placed switches you can save yourself much time fiddling individually with the switching controls for each train.

Multiple Stations and Trains

The next section discusses various methods by which you can connect three or more stations that are on separate rail lines.

Three Stations/Two Trains

Figure 9.9 shows two possible ways to connect three stations with two trains. In diagram B, if you desire to keep an extra rail right of way clear for other rail lines, you can connect up Station C to the rail line between Stations A and B via a switch.

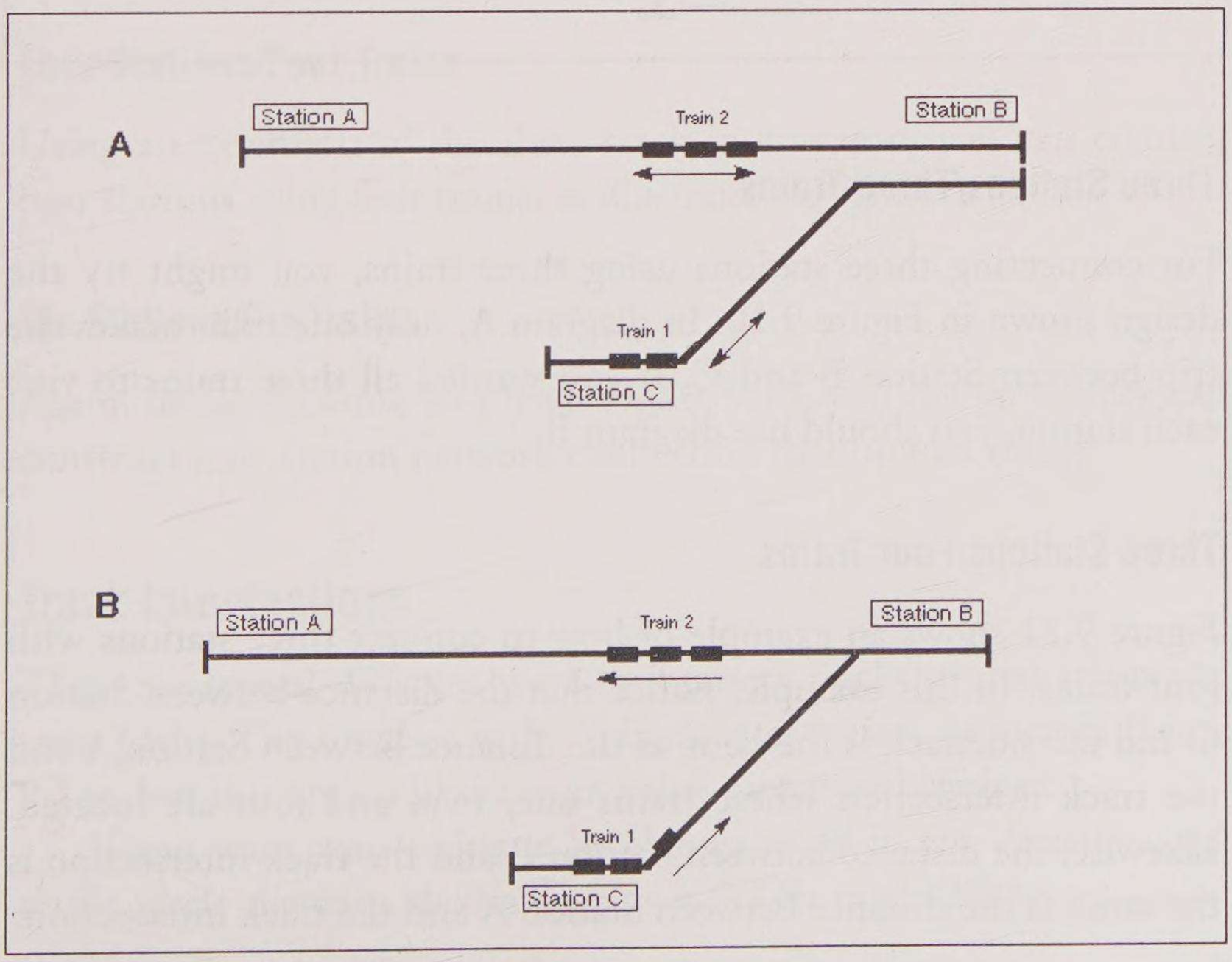


Figure 9.9 Connecting three stations with two trains

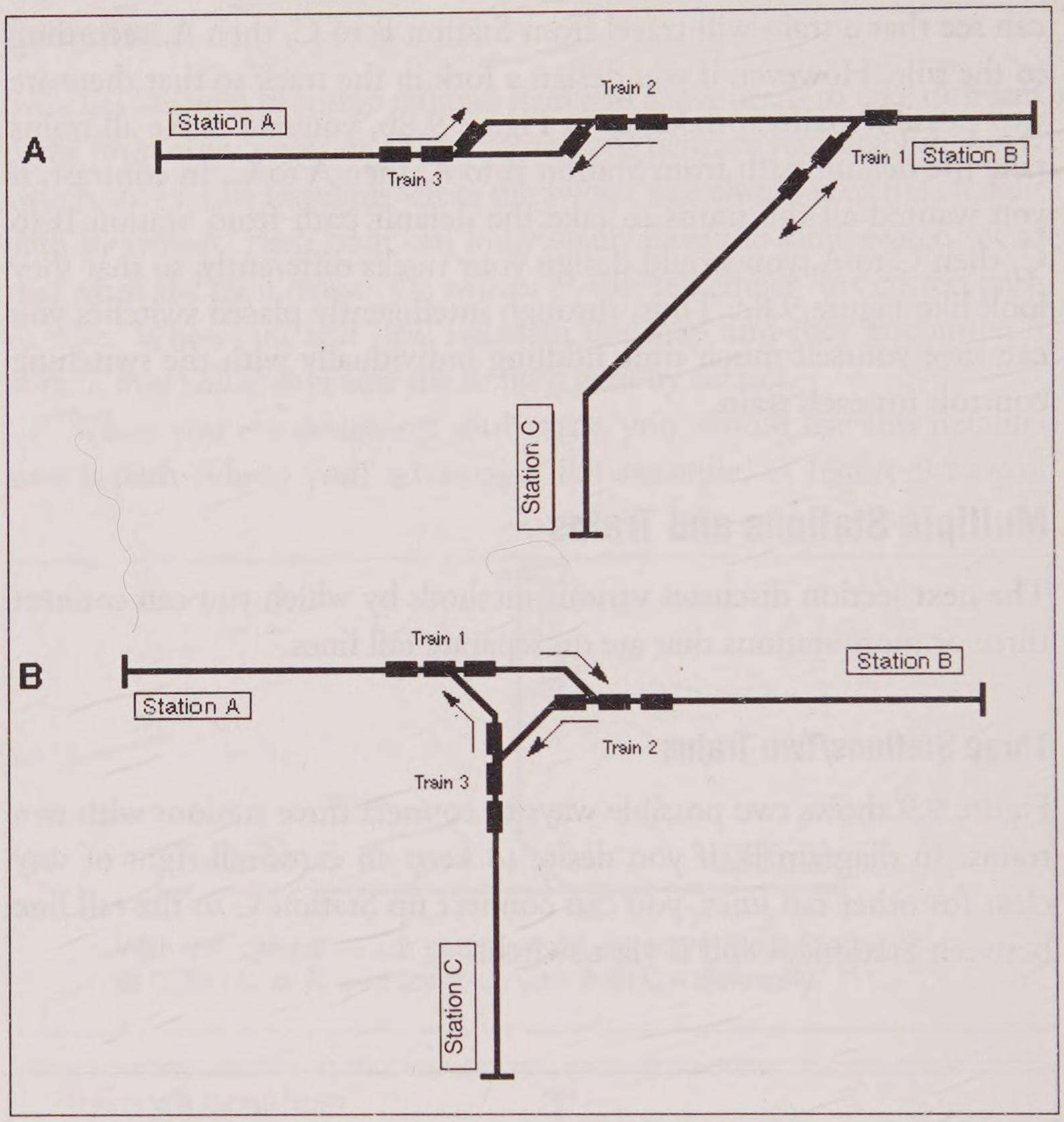


Figure 9.10 Connecting three stations with three trains

Three Stations/Three Trains

For connecting three stations using three trains, you might try the design shown in Figure 9.10. In diagram A, only one train makes the trip between Station B and C. If you wanted all three trains to visit each station, you should use diagram B.

Three Stations/Four Trains

Figure 9.11 shows an example of how to connect three stations with four trains. In this example, notice that the distance between Station C and the sidetrack is the same as the distance between Station A and the track intersection where trains one, two, and four are located. Likewise, the distance between Station B and the track intersection is the same as the distance between Station A and the track intersection.

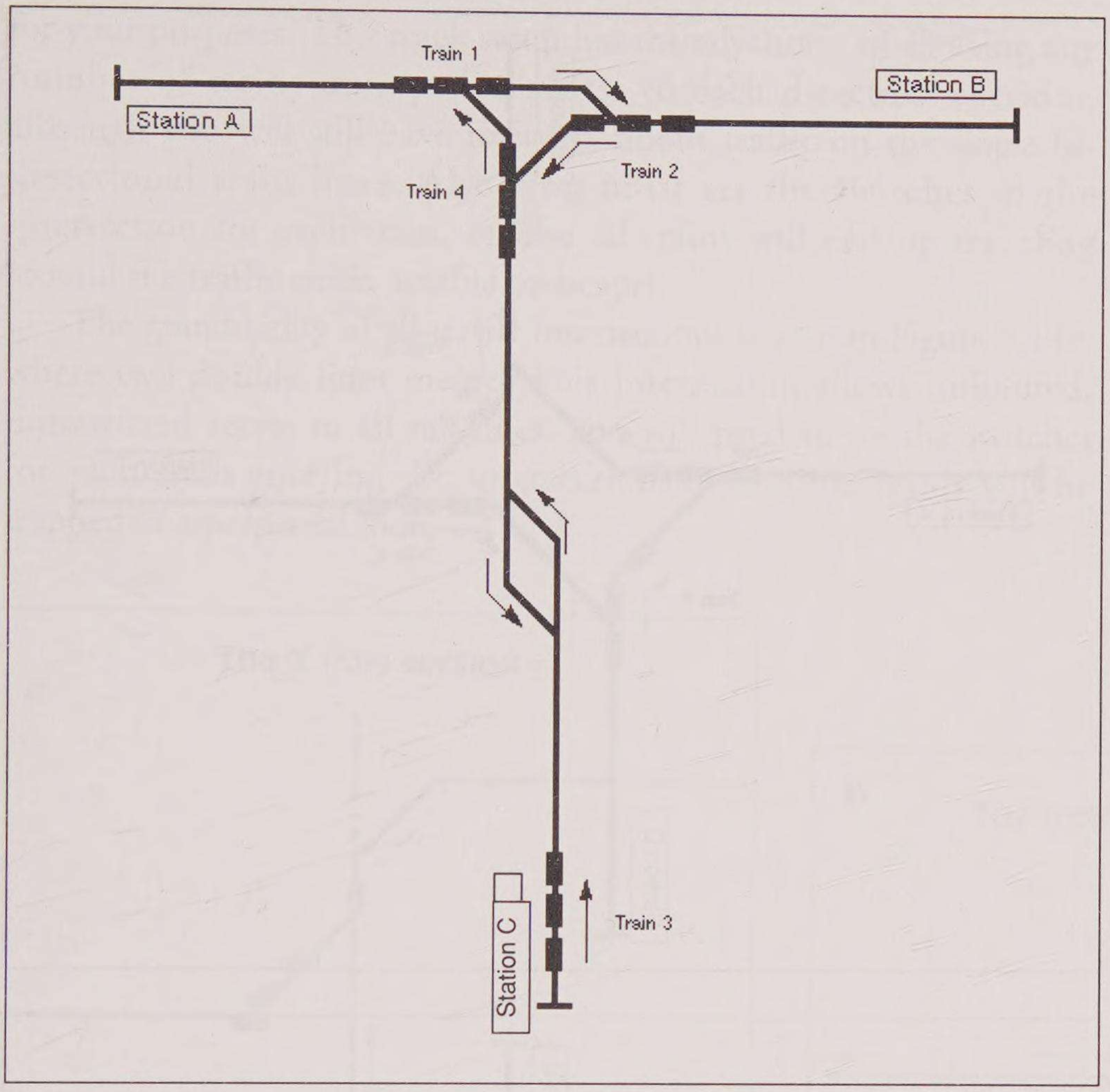


Figure 9.11 Connecting three stations with four trains

Four Stations/Four Trains

Using an extension of the three-track intersection, you can connect four stations using four trains, as illustrated in Figure 9.12.

Six Stations/Six Trains

Again, using the same idea from Figure 9.13, you can go further and construct a six-station network connection that uses six trains.

Track Intersections

There are several different ways to intersect tracks so that trains can cross paths. The simplest is the X track intersection, as seen in Figure 9.14a, but this option limits your train's directional choices.

If you want your trains to be able to travel in any direction, the traffic circle diagram shown in Figure 9.14b might be better suited

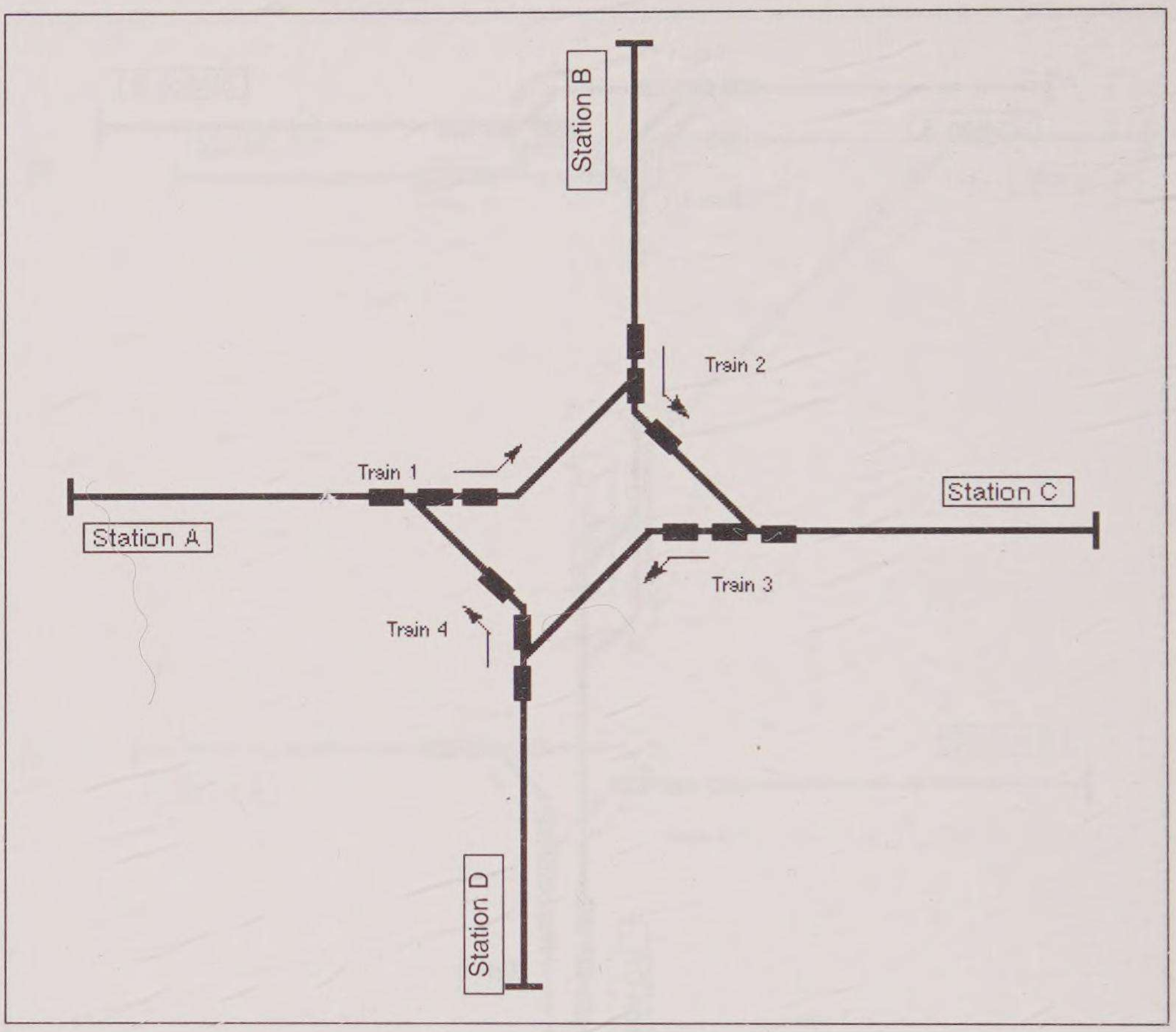


Figure 9.12 Connecting four stations with four trains

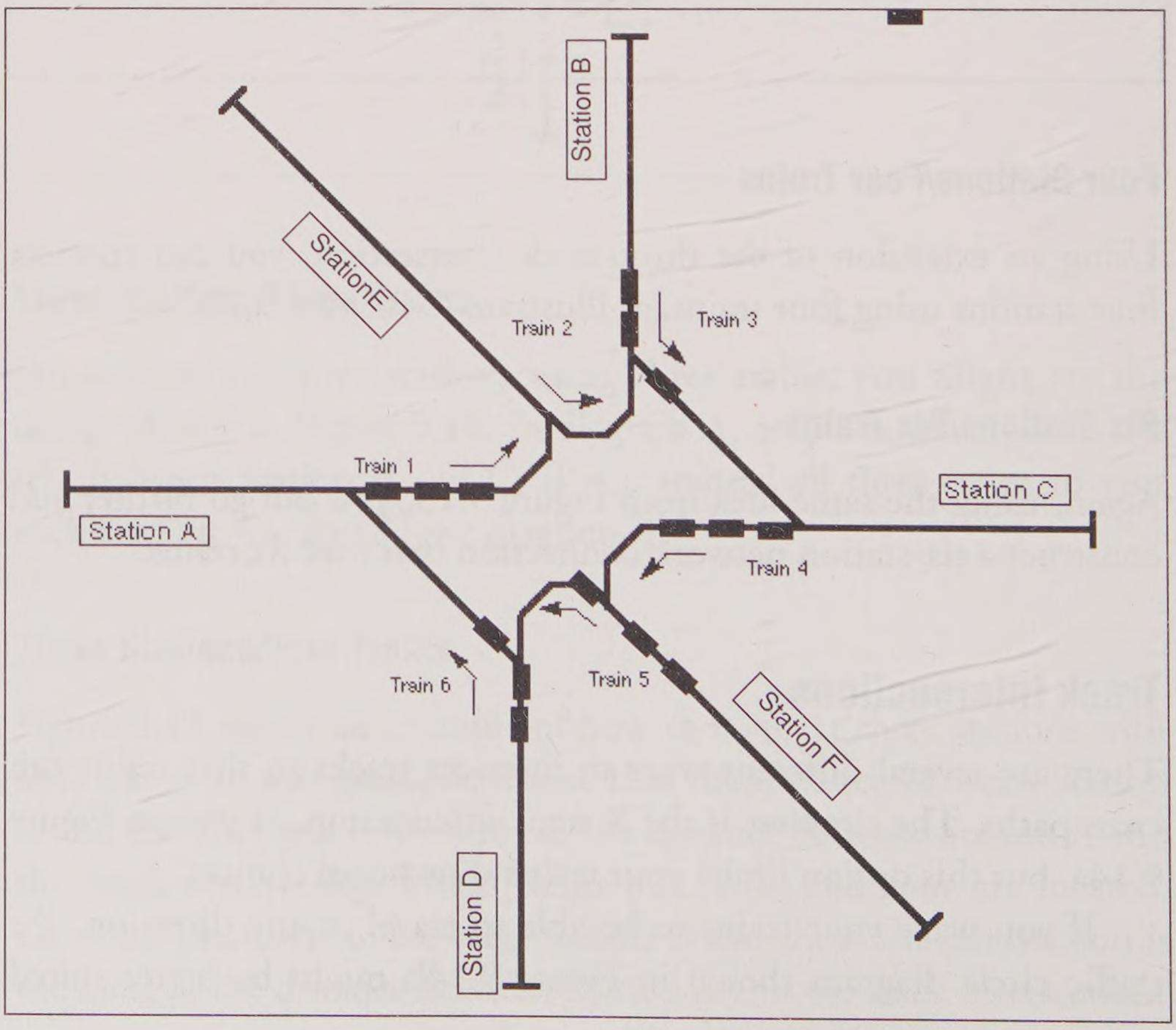


Figure 9.13 Connecting six stations with six trains

for your purposes. This track setup has the advantage of allowing any number of trains unimpeded access to each direction corridor, although you will still have to worry about traffic on the single bi-directional train lines. Also, you must set the switches in the intersection for each train, or else all trains will end up traveling around the traffic circle, unable to escape!

The granddaddy of all traffic intersections is seen in Figure 9.14c, where two double lines merge. This intersection allows unlimited, unrestricted access to all rail lines. You will need to set the switches for each train entering the intersection, or else the trains will be trapped in a perpetual loop.

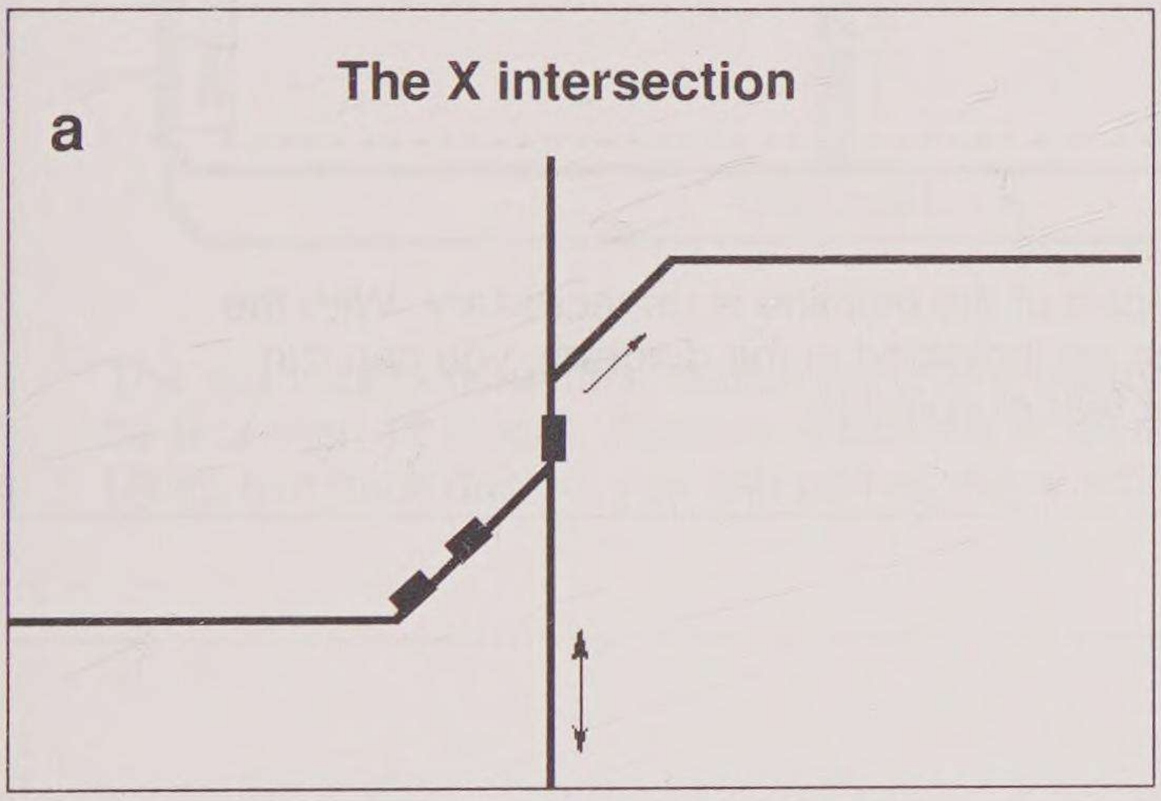


Figure 9.14a The X track intersection for two merging separate lines

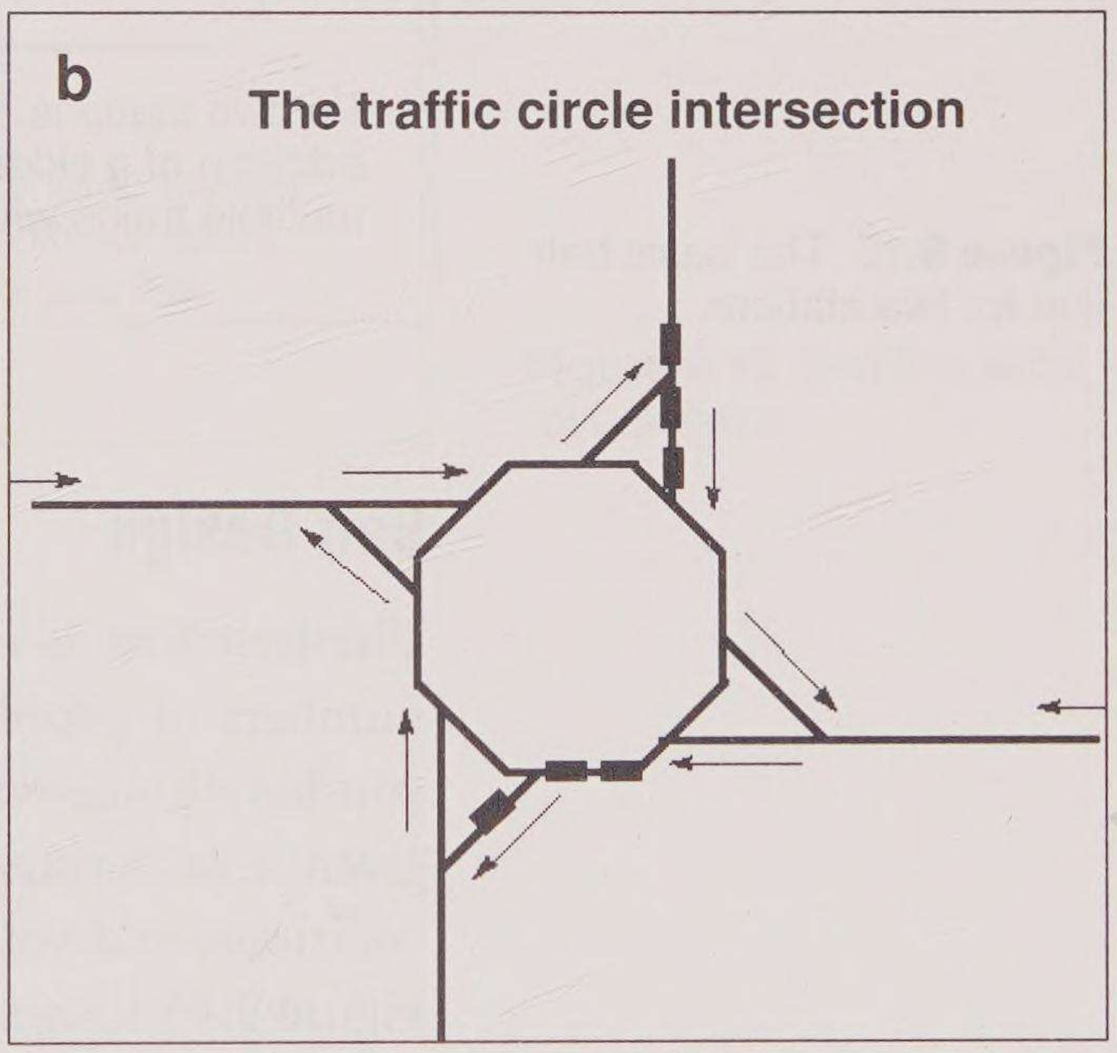


Figure 9.14b The traffic circle for merging two bi-directional lines

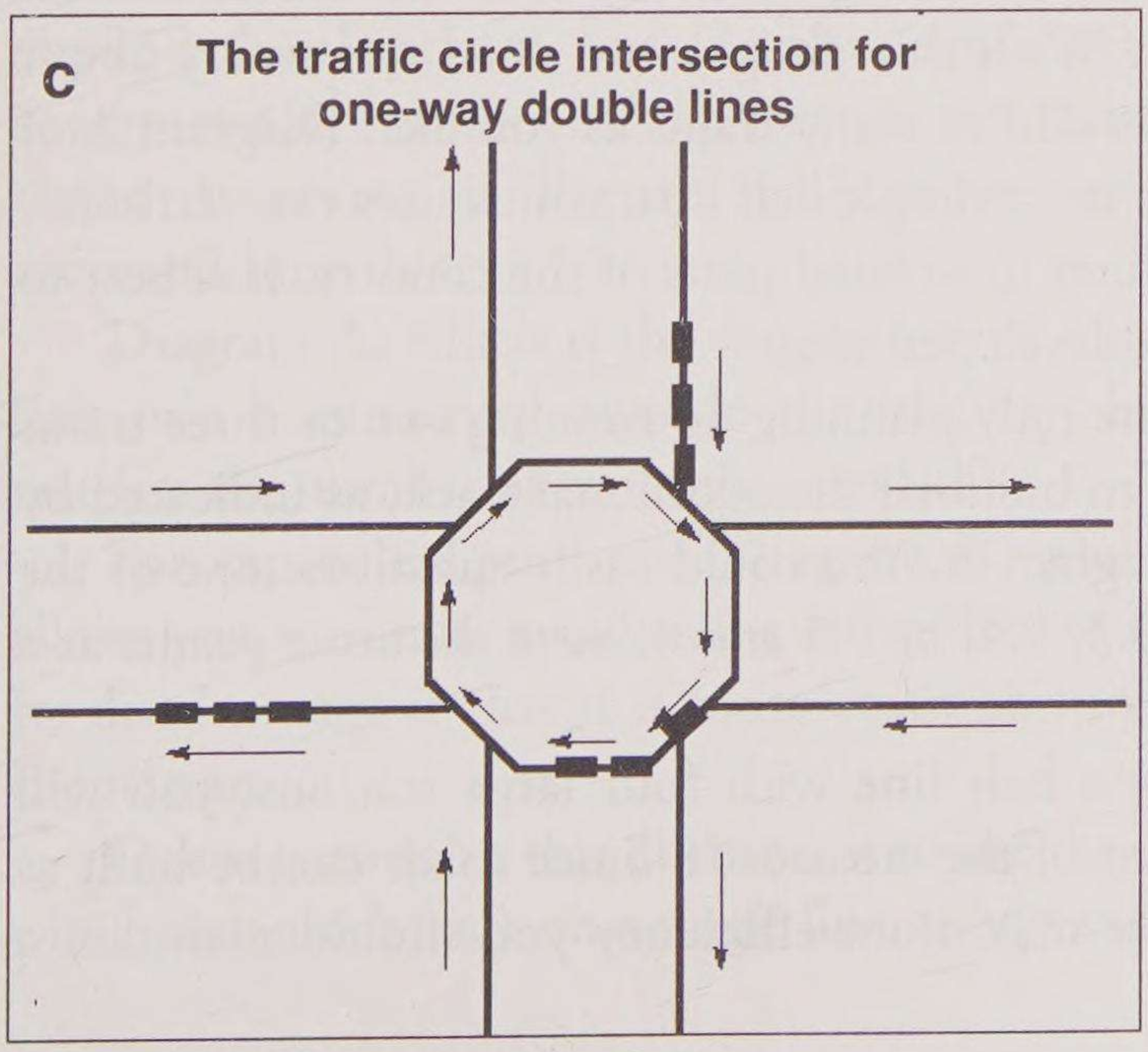


Figure 9.14c The traffic circle for merging double railroad lines. All tracks are one way.

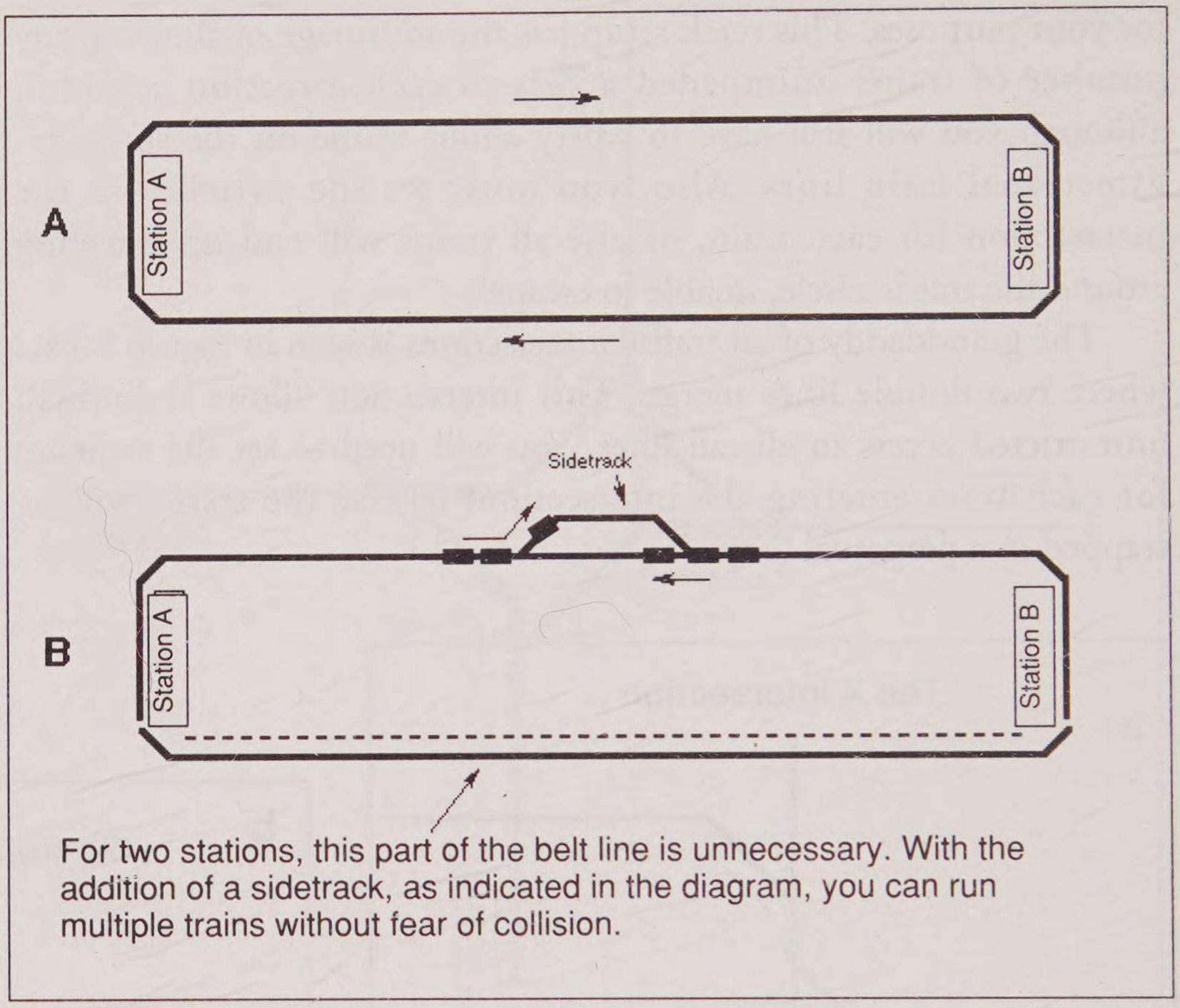


Figure 9.15 The basic belt line for two stations

Belt Design

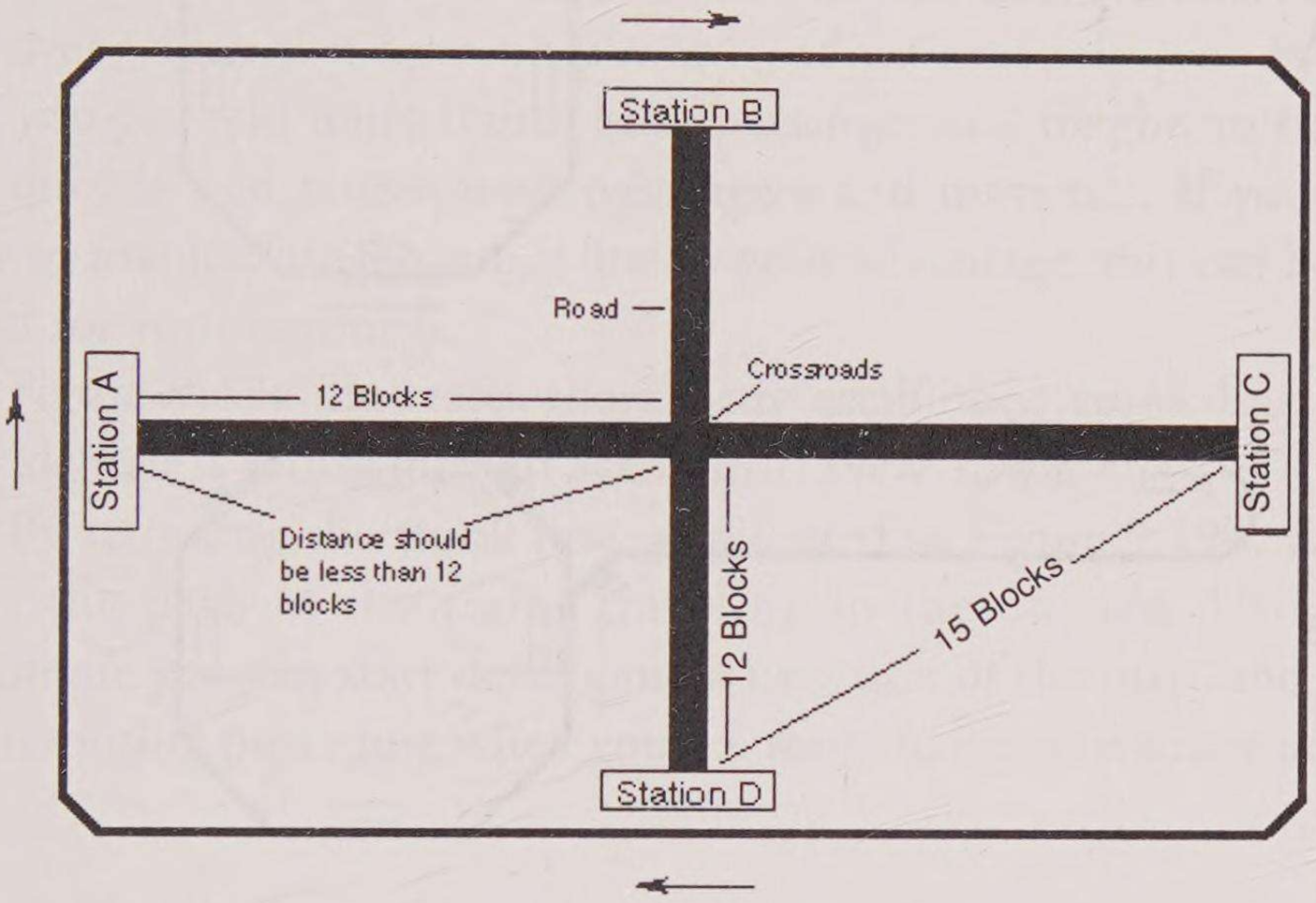
The belt line is eminently practical and efficient for moving large numbers of people and amounts of material. The basic idea is that you have a one-way "belt," or loop line, that allows trains to circle a given area constantly. With this design, you need not worry about collisions, and you can add as many trains as you like. Diagram A of Figure 9.15 shows the most simple belt line, which uses two stations.

Don't build belt lines in isolated parts of the country. It is best to start one near a major developed area.

However, if you are only planning on running two or three trains you don't really need to build all the additional track, as indicated by the dotted line in Diagram B. You could easily substitute one of the designs from Figure 9.3, 9.4, or 9.5 and achieve the same results at a much lower cost.

When you create a belt line with four large stations, you will foster the development of the crossroads. Since roads can be built as long as 12 blocks, for maximum efficiency you should maintain a

The traffic circle intersection for one-way double lines



The distance between the station and the crossroads should always be less than 12 blocks. Stations should be at least 15 blocks apart. Using this track design, you can add as many trains as you like.

Figure 9.16 Belt line with four stations

station-to-crossroads distance of 12 blocks and a station-to-station distance of 15 blocks. Figure 9.16 illustrates this concept.

After your belt line has become successful, when you wish to expand development outside the loop's perimeter, you should construct tangent lines off the loop to run trains to other areas. The three diagrams of Figure 9.17 show some possibilities for accomplishing this.

Diagram A, which is the simplest, runs a single train on a single line to a community outside the beltway. However, this design restricts the number of trains you can run.

For expansion purposes, Diagram B's plan is the best, since it allows you to run as many trains as you like to the undeveloped area. Its disadvantage is that it is more costly to run a double line out to the station.

One way to solve this dilemma is to use the design of Diagram C, which uses a sidetrack on a single line, to run two trains.

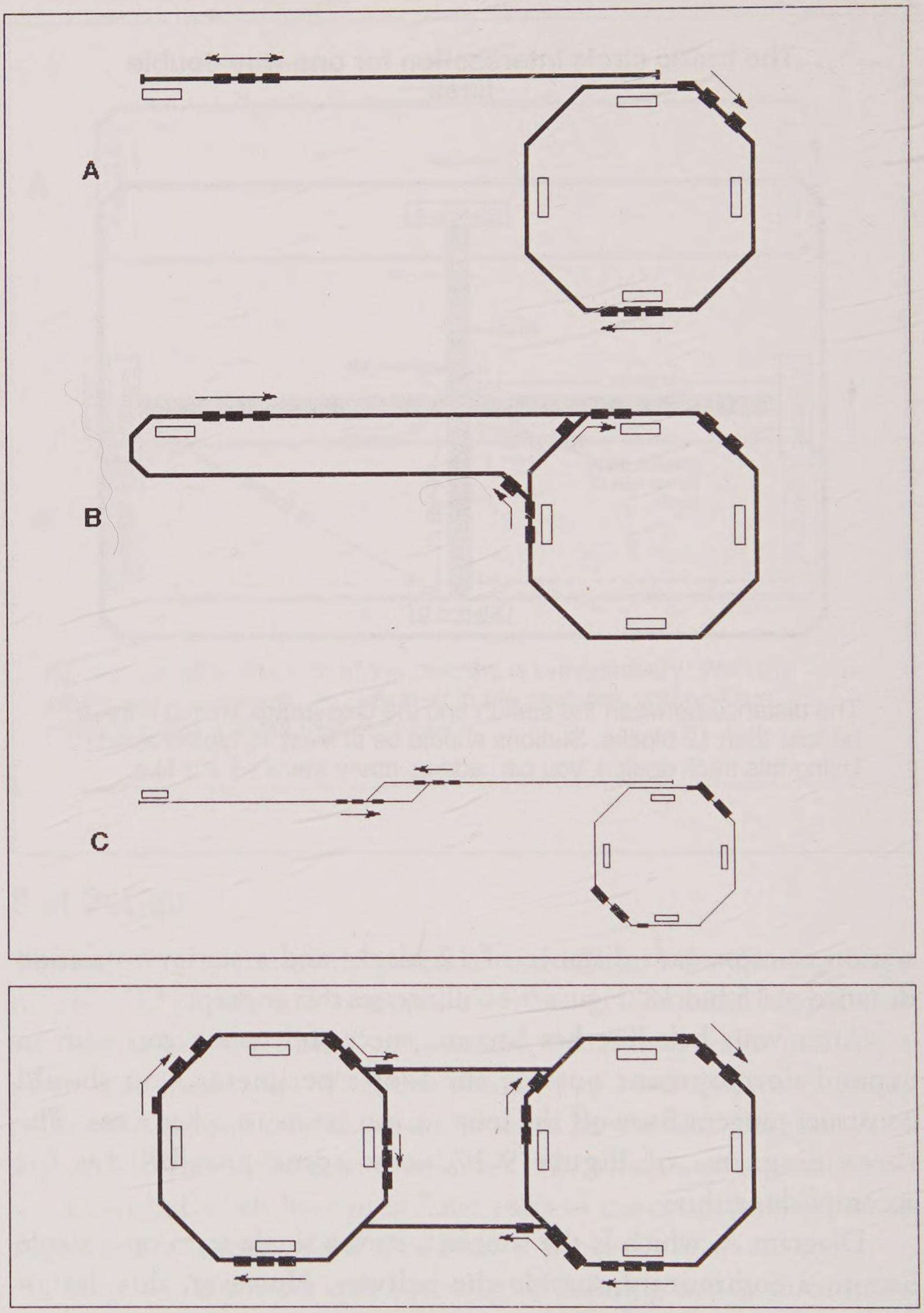


Figure 9.17 Connecting your belt line to outside rail lines

Figure 9.18 Double belt line connection

Interlocking or Interconnected Belts

Once you have two belt lines running, it is always a good idea to interconnect them to further enhance commerce. Figure 9.18 illustrates how you can do this without causing traffic imbroglios. You will still need to set the switches for trains that travel between the two beltway cities.

USING THE TRUNK LINE TO THE OUTSIDE

The trunk line to the outside world exists in each of the six map scenarios. There are two trains that run on this line, Numbers 25 and 26, over which you have no power to adjust scheduling or switches. But you can add more trains, both passenger and freight, to travel to the outside and return with passengers and materials. If you know how to manipulate the trunk line to your advantage, this can be a big boost for your economy.

Figure 9.19a illustrates the already established trunk line to the outside that is found in Map Scenario 1: New Town.

By rerouting the trunk line, as pictured in Figure 9.19b, you can alter the path of the trains traveling to the outside. Using this technique you can start developing a new part of the map, and repeat the rerouting procedure when you are ready to develop a new area.

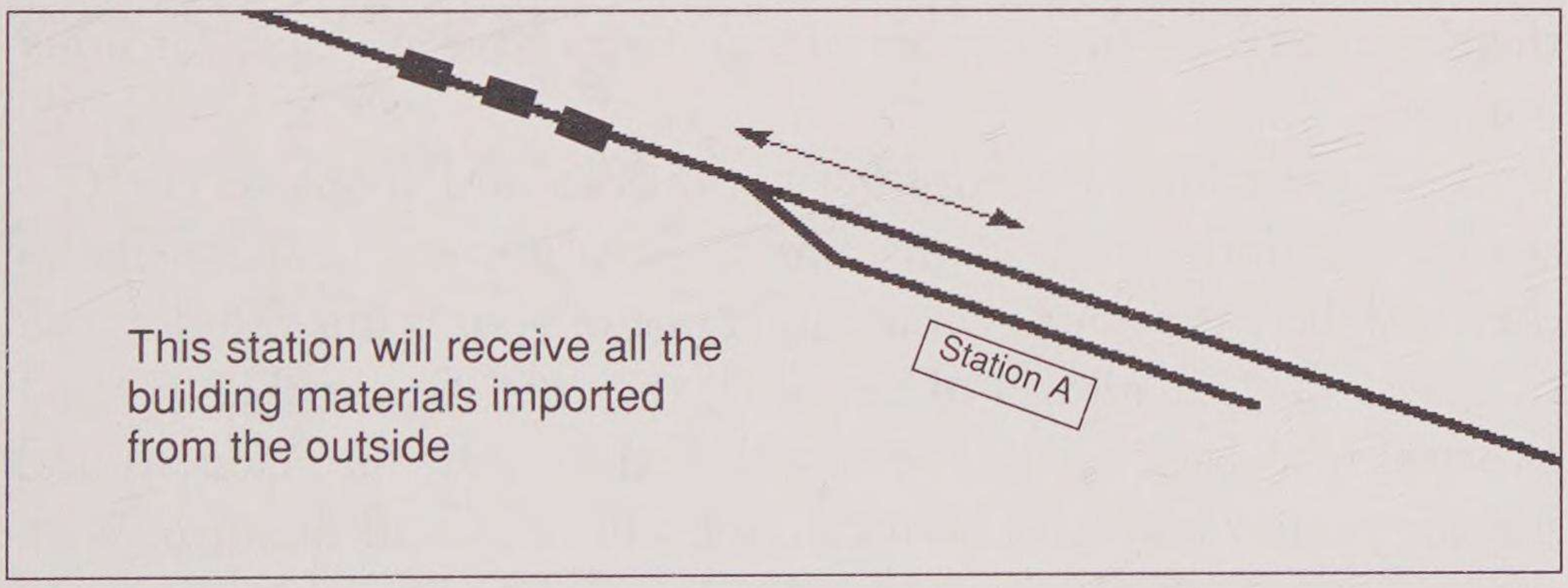


Figure 9.19a New Town: The already established trunk rail line to the outside

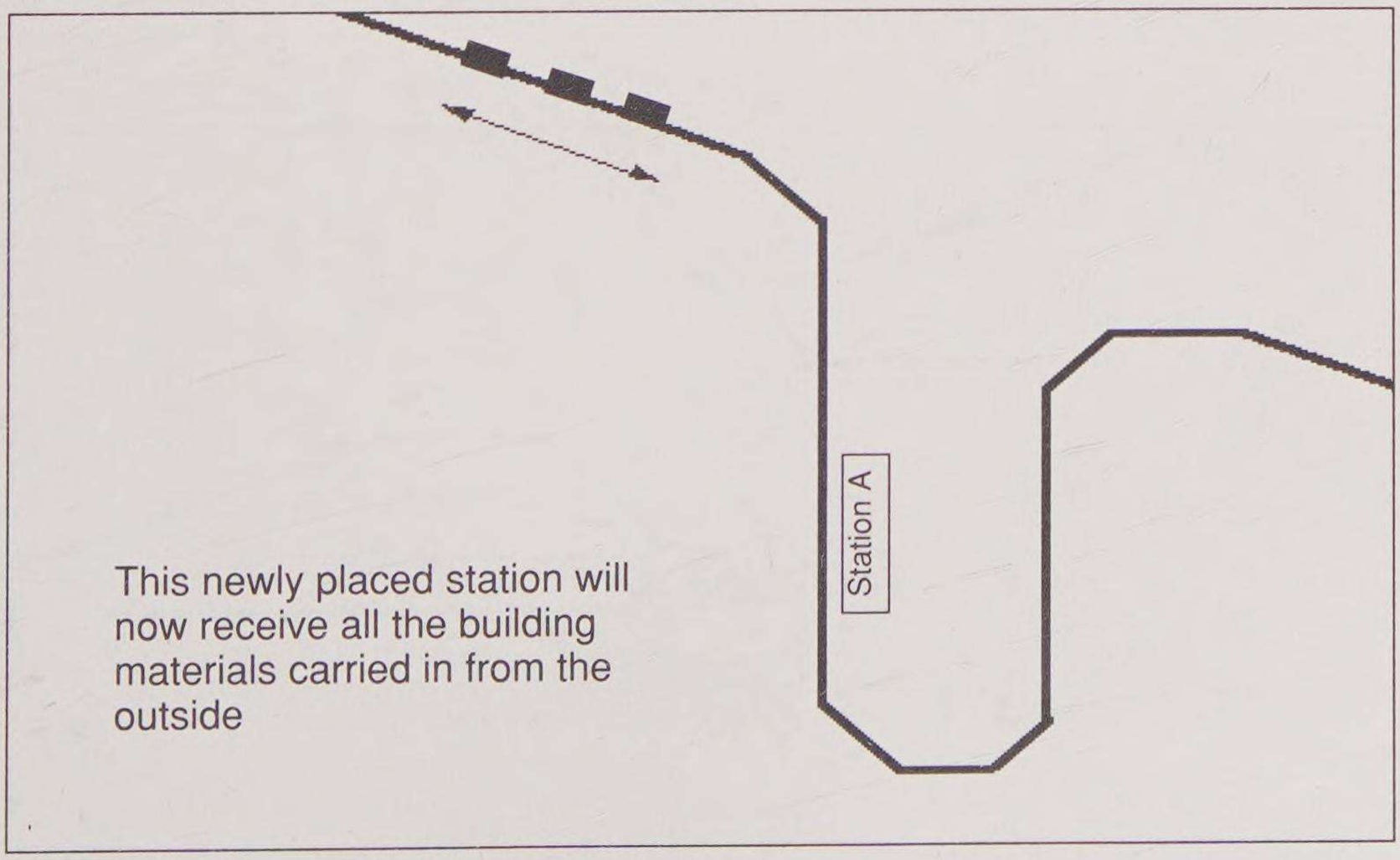


Figure 9.19b New Town: Rerouting the trunk line to shunt materials and passengers to other parts of your city

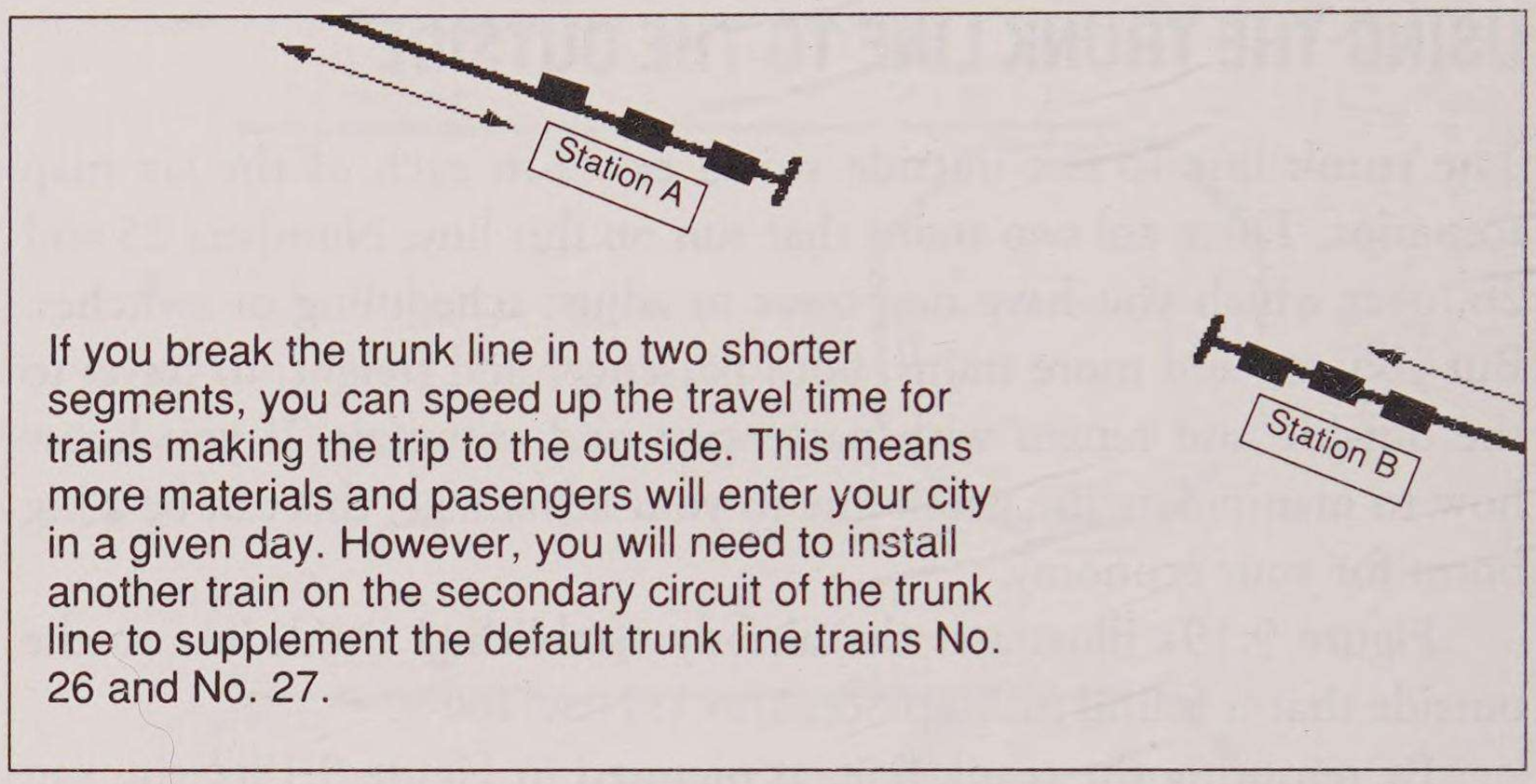


Figure 9.19c New Town: Carving the trunk line into two separate segments can make train trips to the outside faster

If you sever the trunk line into two segments, as in Figure 9.19c, you can speed up the travel time for trains making the trip to the outside. This helps increase the flow of passengers and materials into your city, but you will need to add trains into each broken segment, thereby decreasing the number of trains you have available for other purposes.

In a variation of Figure 9.19c you can add loops to the two severed portions of the trunk line to help prevent collisions from occurring between your own trains. If one of your trains collides with train #26 or #27, instead of stopping, they will force either of these two trains to back up and reverse direction. But the materials and passengers they may have been carrying will be lost off the map. With the loops, this will no longer be a problem.

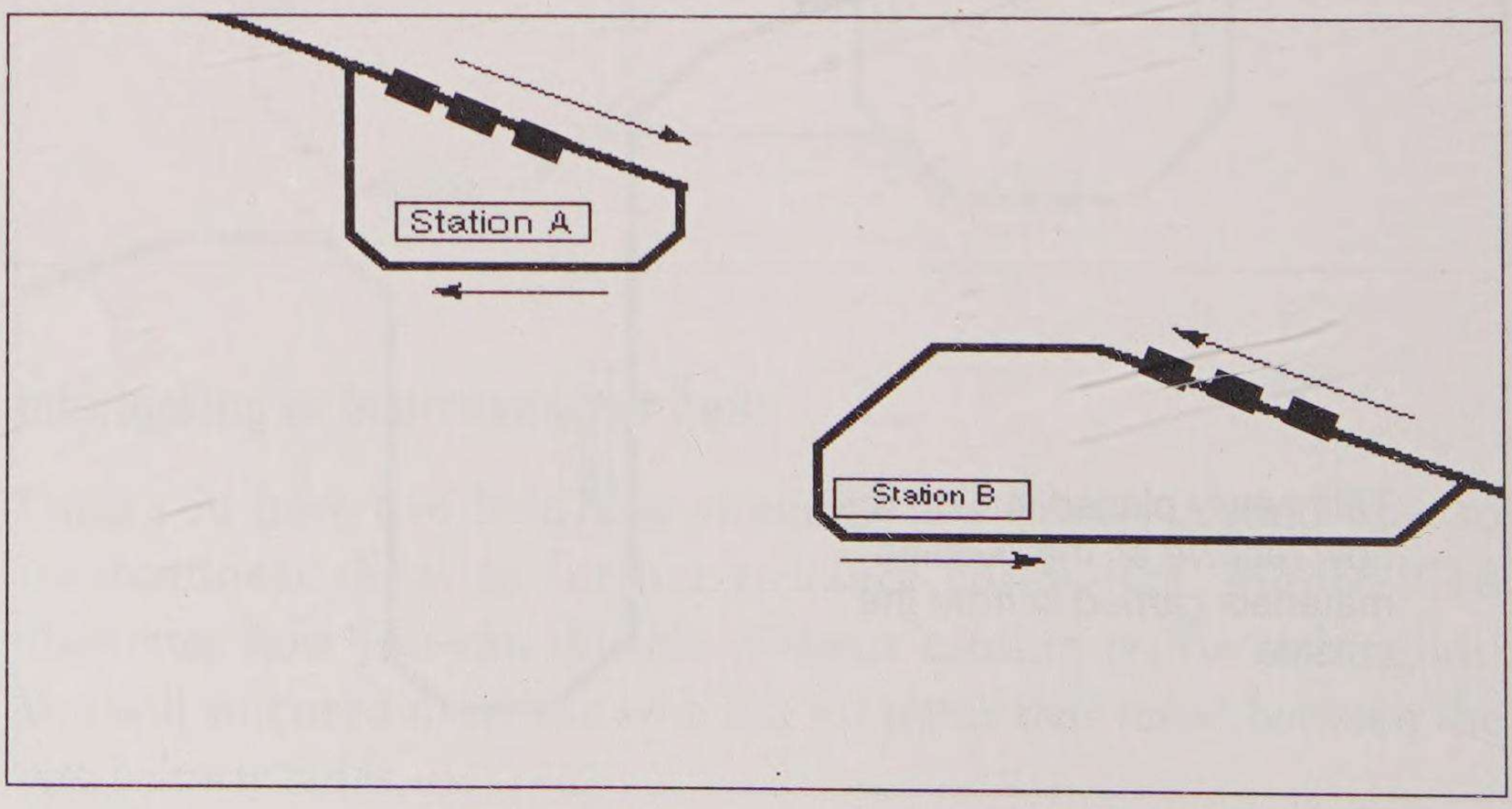


Figure 9.20 New Town: Adding a loop to the two portions of the severed trunk line will smooth the flow of traffic

THE WORLD'S LONGEST RAILROAD TUNNEL

The Seikan railroad tunnel, one of the great engineering wonders of the world, is over 33.45 miles long and crosses the treacherous Tsugaru Straits between the islands of Honshu and Hokkaido. This tunnel is the world's longest, surpassing the 13.8-mile Dai-Shimizu Tunnel in Japan and the Western Hemisphere's longest tunnel, the 9.1-mile Roger's Pass Tunnel in Canada's British Columbia. The $5.6 billion Seikan tunnel took over 24 years to construct, and was opened to traffic on March 13, 1988.

At its deepest point, the Tsugaru Straits plunge to a depth of 460 feet, but for reasons of safety the tunnel engineers decided to burrow 320 feet below the ocean bed, so that actual tunnel depth is 787 feet below sea level. The crushing force of the sea at this depth is over 24 gravities, which according to one Japanese newspaper, is the equivalent of "1,200 sumo wrestlers per square meter."[1]

Also in this tunnel is the world's deepest railroad station. The Tappi Undersea Station, located under the ocean bed, was constructed for emergencies. In it there is a shelter equipped with toilets, first aid stations, changing rooms, benches, a ventilation system, and vending machines. Of the 32 passenger trains that pass through the tunnel every day, only a few local trains actually stop at this station. Passengers on these local trains can debark and tour the station's extensive disaster-prevention and escape system, and buy a snack.

At present, no Shinkansen run through the Seikan tunnel. There are plans to eventually extend the Shinkansen from Tokyo, but this will take a number of years to complete.

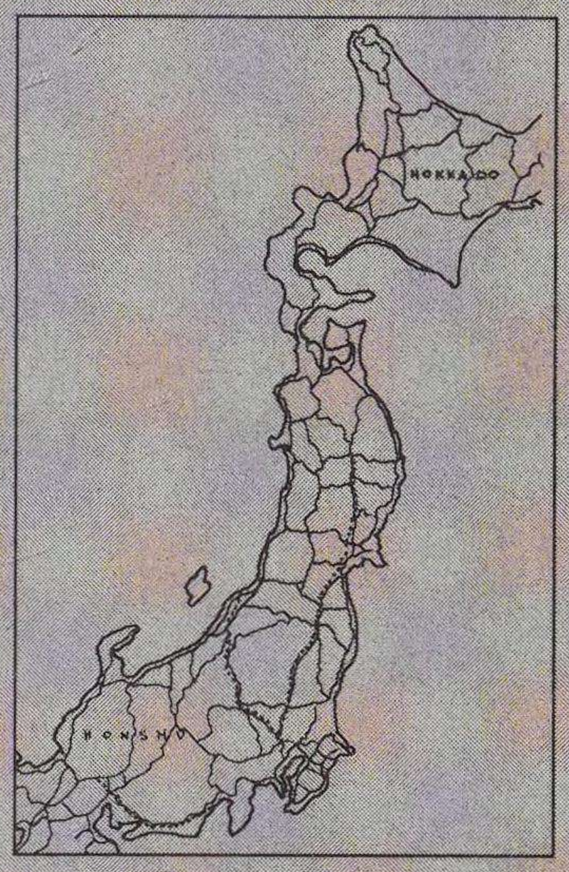


Figure 9.21 Japanese islands of Hokkaido and Honshu



Figure 9.22 An ED-79 electric locomotive of Japan Railways in the Undersea Seikan Tunnel (Copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

[1]Douglas W. Polinder, "Rails in the Rising Sun: A primer on Japan Railways," *Trains: the Magazine of Railroading*, May 1990, pg. 34.

EUROTUNNEL: THE CHANNEL TUNNEL

The Eurotunnel system is expected to open in the fall of 1993 for train service between Britain and continental Europe. For the first time, the English and French road networks will be connected via a dry land route, and vehicles can be transported across the English Channel in convenient auto and truck shuttle trains. The system will shorten the trip from the present 2 3/4-hour voyage on the ferry to a more reasonable 1 1/4-hour ride via train. High speed passenger trains will also scoot through the tunnel in less than 35 minutes, and will directly connect London, Paris, and Brussels.

The tunnel itself runs between 82 and 150 feet beneath the sea bed and is 25 feet in diameter. There are twin bores for the tunnel, one for each track direction, and between them a service gallery which is linked by cross passages every 1,237 feet. Frequent air ducts between the twin bores of the running tunnels help reduce the build-up of air pressure in front of the speeding trains. Eventually the tunnel will handle 600 trains a day in each direction.



Figure 9.23 View along a running tunnel (Courtesy of Eurotunnel)

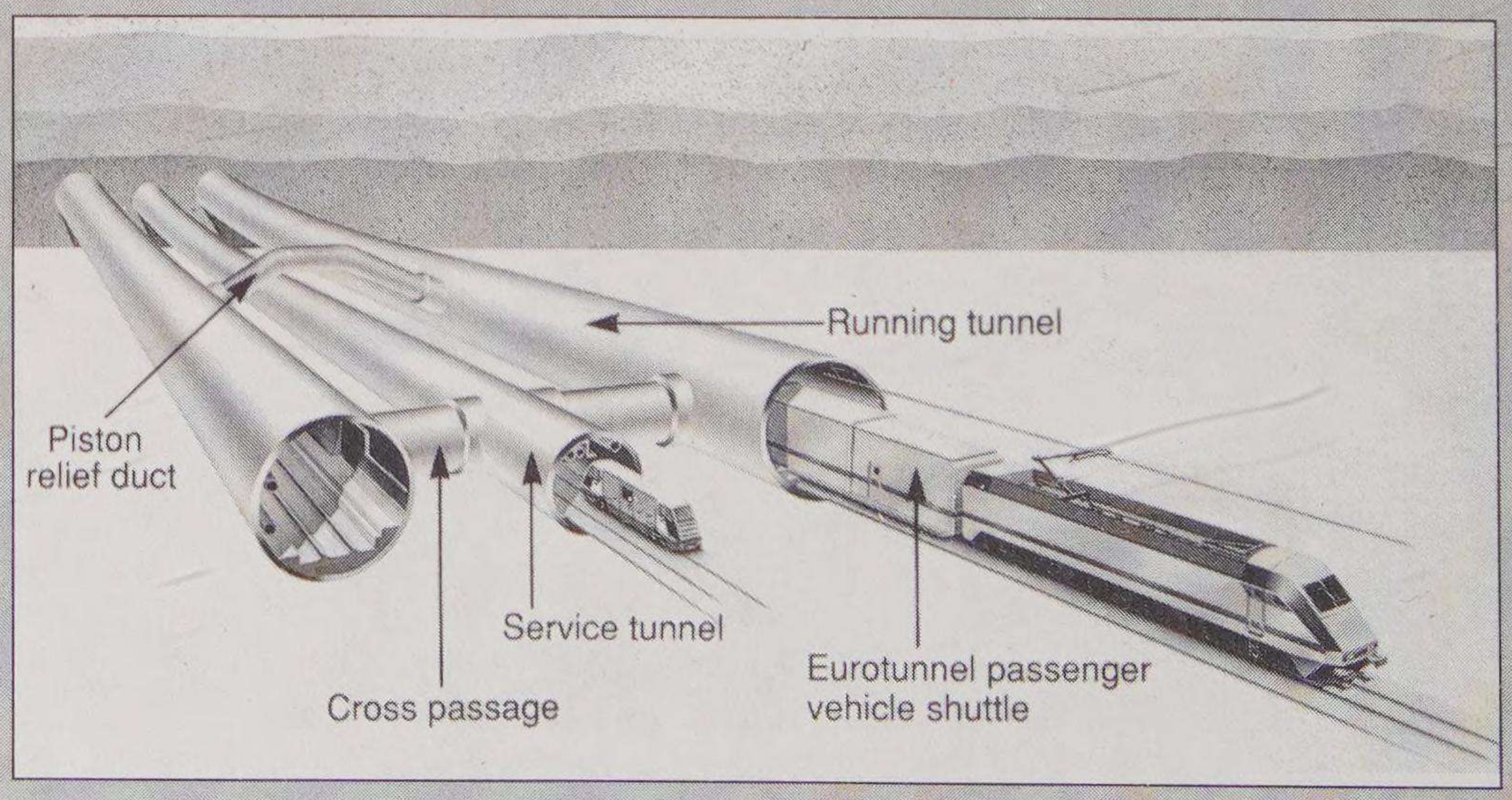


Figure 9.24 The three tunnels under the sea bed (Courtesy of Eurotunnel)



Figure 9.25 Inside the Auto Shuttle Train (Courtesy of Eurotunnel)

The idea of boring a tunnel beneath the Channel dates back almost two hundred years. Around 1804 Napoleon I was presented with a scheme to dig two stagecoach tunnels that would surface in mid-Channel on an artificial island. There would be a rest stop and carriage house on the island where horses could be changed. With the onslaught of the Napoleonic wars the proposal was put on hold until the 1830s, when a 26-year-old French engineer by the name of Thomé de Gamond undertook research on just about every possible method of bridging the Channel. He drew up plans for building a submerged tube, a concrete archway, a transporter able to carry four trains high above the water but riding on rails along the seabed, and creating a man-made isthmus with navigational channels. Gamond was so

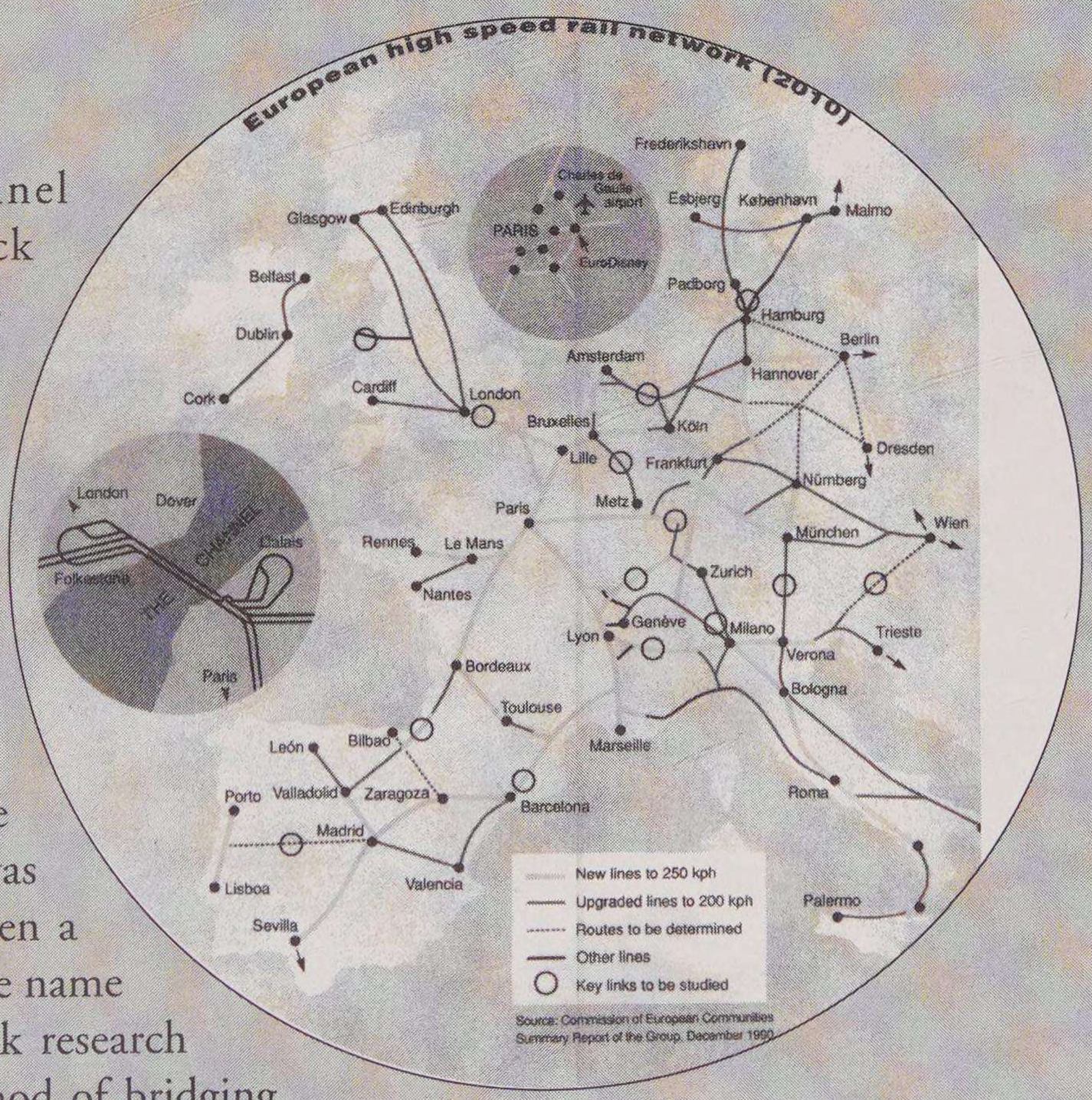


Figure 9.26 The European high-speed rail network by the year 2010 (Courtesy of Eurotunnel)

enamored with his work that he personally took great risks to test out his ideas. In one instance he "descended to a depth of about 100 feet to take sample of the sea bed (sic), loaded with weights and with a mouthful of olive oil to enable him to breathe out air without inhaling water; having accomplished his task he was fiercely attacked by conger eels before he got back into his rowing boat."[2]

In 1865, William Low, an English mining engineer, saw Gamond's plans for tunneling across the Channel. From his work in the mines, Low realized that the length of the proposed tunnel was little more than that of the longest mining tunnel then in existence in the Welsh coal mines. Using his mining expertise, Low produced plans for boring a twin tunnel, connected by cross-passages, across the Channel. By 1882, the South Eastern Railway Company obtained financing for Low's scheme and started construction. Two shafts were sunk at Shakespeare Cliff and reached a distance of about 2,000 yards before the government halted all work for reasons of national security. The incomplete 1882 tunnel stands to this day, a testimony to the great vision and engineering acumen of these early tunnel pioneers.

Although other tunneling attempts were made in the century that followed, they failed mostly because of inadequate funding or governmental interdiction. The main obstacle to bridging the Channel on the part of the British was political, not technological, for the means to dig such a tunnel existed even in the 19th century.

British fears of ways that armies from the European continent might overrun the country included invasion through a channel tunnel, and this scotched any plans for building one in the century that followed. Modern day fears in England, which have actually held up tunnel construction, include the fear of rabid dogs making their way through the tunnel and spreading rabies throughout the British Isles. This contemporary hysteria actually forced design changes in the tunnel to preclude any stray animals from making their way into French tunnel entrances.

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[2]Peter Haining, EuroTunnel: An Illustrated History of the Channel Tunnel Scheme, The Channel Tunnel Group, 1989, pg. 20.

Some noted English commentators express their opinions on the building of the Channel tunnel[3]:

What! You pretend to ask us to contribute to a work the object of which is to shorten a distance we find already too short?

Prime Minister Lord Palmerston, 1858

Can you be sure if you drove the Tunnel from the two ends at the same time you would meet in the middle?

Heckler at Public Meeting, London, 1907

Those poor creatures who have no stomach for an hour's sea passage obviously think the retention of their dinners is more important than the safety of their country!

Sir Algernon de Horsey

On the subject of the fear of invasion from the continent through the tunnel:

Nations are supposed to pay for their sins, but they pay an even higher price for their stupidities. And we deserve to pay it, for we have been very stupid, and have allowed ourselves to be frightened off from doing what was clearly to our advantage by the most absurd bogies, such as that we would be invaded through a rabbit burrow in the ground 26 miles long. I do not think national folly could rise higher than that.

Sir Arthur Conan Doyle

Comment made on the decision to abandon the tunnel project in July of 1924:

In forty minutes five ex- or future ex-Prime Ministers dismissed with an imperial gesture the important and complicated scheme of a Channel Tunnel for which the support of four hundred members of Parliament had, it is stated, been obtained... One spasm of mental concentration enabled these five super-men, who have spent their lives in proving each other incapable and misguided on every other subject, to arrive at a unanimous conclusion . . . The question is, was their decision right or wrong? I do not hesitate to say it was wrong.

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[3]Ibid.

But, we are told, they had the advice of the united general staffs of the Navy, the Army, and the Air Force. So clear, so cogent, so convincing were the arguments which the . . . three fighting Services presented in the forty minutes reserved to them, that discussion was superfluous or impossible. Why should we not have [the minutes of the meeting]? Why should this matter be wrapped in mystery? The public have a right to know what were [the] grounds on which a great decision like this was taken.

Without knowing the reasons advanced by the General Staffs it is difficult for the ordinary man to prevent his mind straying back to some of the similar decisions of the military mind in former years. We know how the Admiralty resisted the introduction of steam in the Royal Navy, we know how they opposed the ironclad ship, derided the propeller, and discounted the submarine. The great Duke of Wellington delivered a speech in the House of Lords proving conclusively that a locomotive engine could not draw any more than its own weight along a track of rails unless provided with a rack and pinion. The War Office pigeon-holed the "tank" before and did all it could to prevent its adoption during the war. The military and naval authorities together opposed the building of railroads from Portsmouth and Dover to London on the grounds that these lines would open the way to the capture of London by the French. In the same spirit they resisted the landing of a submarine cable on the shores of England for fear that invasion would follow along this slender thread. The exhibition of 1851 was objected to by the same authorities for fear that so great a congregation of foreigners in London might lead to an attempt on their part to seize our Island Home.

Rt. Hon. Winston S. Churchill in the Weekly Dispatch, July, 1924

There are few projects against which there exists a deeper and more enduring prejudice than the construction of a railway tunnel between Dover and Calais. Again and again it has been brought forward under powerful and influential sponsorship. Again and again it has been prevented.

Rt. Hon. Winston S. Churchill in the Daily Mail, 1936

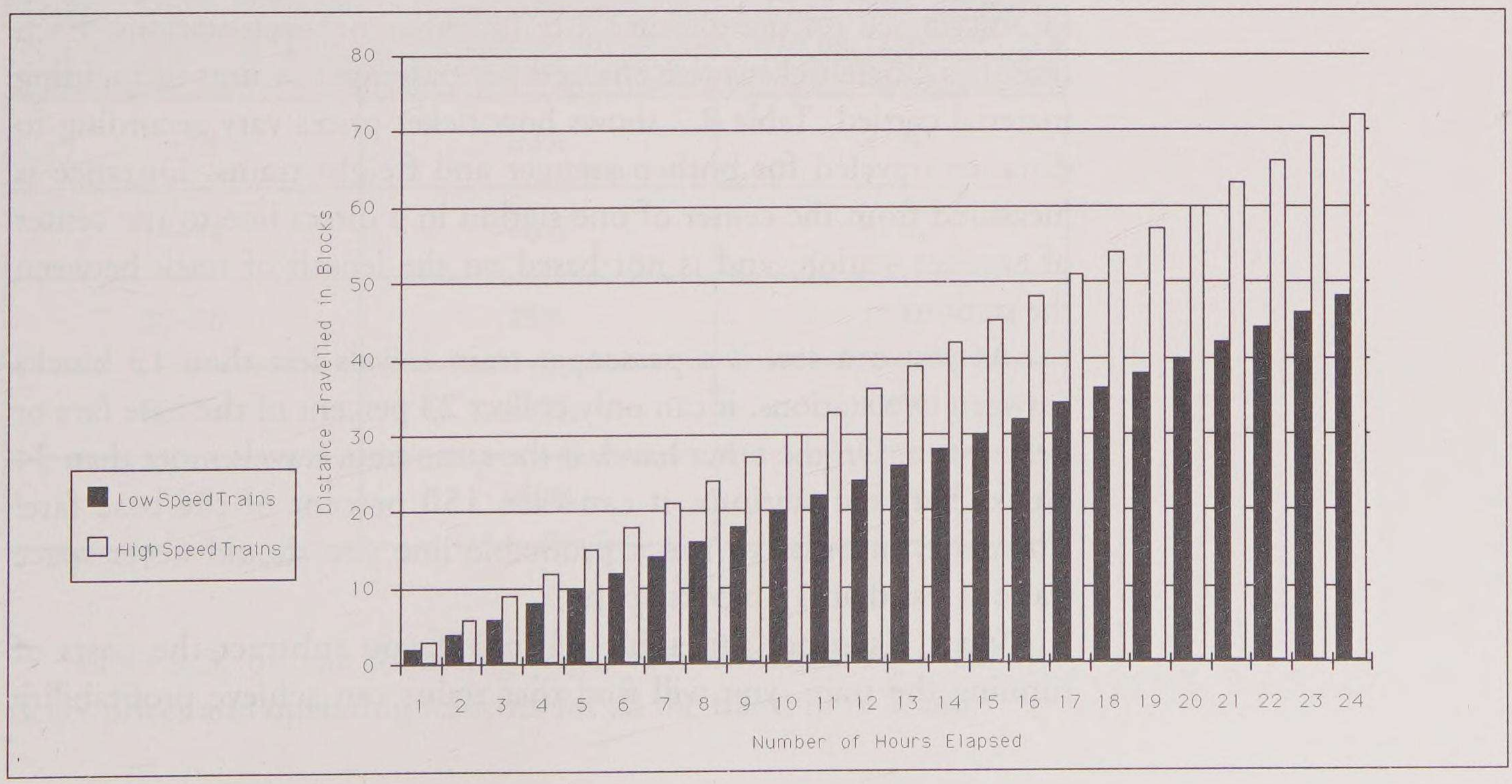
TRAINS

If you have had any experience playing with A-Train, you will have wondered about the differences between the 15 passenger trains and the four freight trains. Which train is best for your purposes? Well, that depends on how far apart the stations are, the amount of money you can afford to pay for the train, the number of passengers and materials you need to carry, the speed of the train, and the time you are willing to wait before the train turns a profit. Sound like a mouthful? Well it is, and so I have tried to condense down all this bewildering information into a series of concise tables showing which trains are best utilized for certain conditions.

High Speed Versus Low Speed

All trains are rated as either high speed or low speed. High-speed trains travel at three blocks per hour, while low-speed trains travel at two blocks per hour. To get an idea of what this really means to you, I have drawn a comparison chart showing how far a high-speed train outdistances its low-speed counterpart during a given number of hours. For example, you can see that in 24 hours, a high-speed train will have traveled 72 blocks, while a low-speed train will have travelled only 48 blocks.

Figure 9.27 Distance comparison chart for high- and low-speed trains



Operating Expenses and Ticket Income

How does A-Train figure out expenses and income for your train operations? Here's how: expenses for your trains are calculated by a set hourly rate and passenger surcharge based on the number of passengers carried. Table 9.1 shows how the hourly rate is determined based on train speed and the number of coaches in the train. Income is calculated from the ticket price each train is allowed to charge multiplied by the number of passengers or amount of materials carried.

Table 9.1: Train Operating Expenses

	2 coaches	3 coaches
Low speed (2 blocks/hr)	$4/hr	$6/hr
High speed (3 blocks/hr)	$6/hr	$9/hr
For all passenger trains	$1 for each 10 passengers	

Ticket prices, however, fluctuate according to the train type and a formula based on the distance a train travels between stations. Each train has a base ticket price charged per passenger or unit of building material carried. Table 9.2 shows how ticket prices vary according to distance traveled for both passenger and freight trains. Distance is measured from the center of one station in a direct line to the center of another station, and is not based on the length of track between the stations.

As you can see, if a passenger train travels less than 13 blocks between two stations, it can only collect 23 percent of the base fare or ticket price. On the other hand, if the same train travels more than 34 blocks between stations, it can earn 150 percent of the base fare! Therefore, in order to run a profitable line you should never space stations less than 15 blocks apart.

What else does this table tell us? If you subtract the costs of running the train, you will find that trains can achieve profitability

much more easily and with drastically lower numbers of passengers when they travel greater distances. Shorter lines will always be less profitable than longer lines! Of course, your main problem with this finding is that it is always hard to attract enough passengers to travel long distances. But then again, you can operate a train like the AR-III with only 127 passengers a day and break even, if the distance between stations is greater than 35 blocks. If stations were between 26 and 34 blocks apart, the same train would require 196 passengers per day to be profitable, and if the distance between stations dropped to between 20 and 25 blocks, the AR-III would need 270 passengers per day to turn a profit. If the AR-III were traveling a distance of between 14 and 19 blocks from one station to the next, it would need to carry 454 passengers per day to remain profitable, and if the station-to-station distance dropped to between one and 13 blocks, the passenger count would have to increase to a whopping 1,227 per day!

When running trains, longer distances between stations will always be more profitable than shorter distances.

Table 9.2: Distance Between Stations and Fare Calculation

Blocks Between Stations	Percent of Full Ticket Price Collected for Passenger Traains	Percent of Full Ticket Price Collected for Freight Trains
1–13	23%	21%
14–19	48%	47%
20–25	75%	73%
26–34	100%	100%
>34	150%	125%

Table 9.3, on the following page, lists in ascending order the ticket prices and operating statistics for all the trains in A-Train.

Table 9.3: Train Ticket Prices and Statistics

Passenger Trains	Ticket Price	Cost	Seating Capacity	Speed (blocks per hour)	Number of Coaches	Operational Cost Per Hour	Non-Stop Capability
KIHA-40	$0.18	$33,000	400	2	2	$4	No
201	$0.22	$50,000	600	2	3	$6	No
415	$0.22	$53,000	580	2	3	$6	No
205	$0.30	$46,000	440	3	2	$6	No
211	$0.33	$70,000	640	3	3	$9	No
AR	$0.40	$80,000	700	3	3	$9	No
KIN-30000	$0.67	$50,000	460	2	2	$4	Yes
KIHA-82	$0.70	$53,000	420	2	2	$4	Yes
NISHI 5000	$0.71	$80,000	600	2	3	$6	Yes
113	$0.73	$80,000	640	2	3	$6	Yes
FP-45	$0.78	$90,000	580	2	3	$6	Yes
MEI 7000	$0.82	$90,000	560	2	3	$6	Yes
381	$0.90	$98,000	470	3	2	$6	Yes
EF-6524	$0.98	$180,000	470	3	3	$9	Yes
AR-III	$1.20	$250,000	600	3	3	$9	Yes

Freight Trains	Freight Fare	Cost	Materials Capacity	Speed (blocks per hour)	Number of Cars	Operational Cost Per Hour	Non-stop Capability
DD-51	$24/Material	$46,000	2	2	2	$4	Yes
EF-62	$24/Material	$76,000	4	2	3	$6	Yes
ED-76	$38/Material	$73,000	2	3	2	$6	Yes
GP-40	$38/Material	$116,000	4	3	3	$9	Yes

HOW TO MAKE A PROFITABLE RAIL LINE

It will be evident from Table 9.4 on page 234–235 that some trains will always be unprofitable and should therefore be avoided. This table lists each train's estimated break-even point for the number of passengers carried and the number of days required to make a profit and pay off the train's purchase cost. Since trains can routinely carry twice their stated capacity, I have included two columns for the number of days required to pay off the train's cost. The first column, entitled "Number of Days Required to Make a Profit and Pay Off Train Purchase at Rated Passenger Capacity/Train Speed," is based on the train carrying its rated passenger seating capacity. The second column, entitled "Number of Days Required to Make a Profit and Pay Off Train Purchase at Maximum Passenger Capacity/Train Speed," is based on the train carrying *twice* its rated passenger seating capacity. In this second column, the number of days needed to pay off the train and make a profit will always be less than half that of the first column.

At the bottom of the table, I have issued recommendations on which trains would be best suited for particular distances you wish your lines to run. In Chapter 10, I have summarized some of the results into a more readable form, where you can see the minimum numbers of passengers you should have on your trains to maintain profitability.

This table, at first glance, may be a little intimidating to look at. Don't worry though, it is very easy to use. To use the table, first determine how many blocks apart your stations are and then jump to the portion of the table that corresponds to this station separation distance (the first row of the table is divided up into five separation categories: 1–13 blocks, 14–19 blocks, 20–25 blocks, 26–34 blocks, and greater than 35 blocks distance). Next, estimate the daily number of passengers you expect to travel on the line. Compare this number to the column titled "Number of Passengers Per Day Needed to Break Even." The trains with a break even passenger count less than your estimated passenger count are the trains you are interested in. To narrow the train choices further, compare the cost of each train and the number days needed to pay off the train, based on the station distance you have picked. Ideally, the fewer days it takes to pay off the train, the sooner you will reap profits.

At the bottom of the table, I have summarized some of the results and recommended the best trains to use for each station distance.

Table 9.4: Passenger Train Profitability Table

				1–13 Blocks (stations are 8 blocks apart)			14–19 Blocks (stations are 14 blocks apart)		
Trains	Ticket Price	Cost	Number of Full Fare Paying Passengers Needed Before Train is Paid Off	No. Passenger per Day Needed to Break Even w/ Operational Expenses	No. Days Req'd to Make Profit & Pay Off Train Purchase at Rated Passenger Capacity/Train Speed	No. Days Req'd to Make Profit & Pay Off Train Purchase at Max. Passenger Capacity/Train Speed	No. Passenger per Day Needed to Break Even w/ Operational Expenses	No. Days Req'd to Make Profit & Pay Off Train Purchase at Rated Passenger Capacity/Train Speed	No. Days Req'd to Make Profit & Pay Off Train Purchase at Max. Passenger Capacity/Train Speed
KIHA-40	$0.18	$33,000	183,333	Will always lose money	N/A	N/A	Will always lose money	N/A	N/A
201	$0.22	$50,000	227,273	Will always lose money	N/A	N/A	25,714	N/A	N/A
415	$0.22	$53,000	240,909	Will always lose money	N/A	N/A	25,714	N/A	N/A
206	$0.30	$46,000	153,333	Will always lose money	N/A	N/A	3,273	N/A	1,521
211	$0.33	$70,000	212,121	Will always lose money	N/A	N/A	3,699	N/A	581
AR	$0.40	$80,000	200,000	Will always lose money	N/A	N/A	2,348	1,084	220
KIN-30000	$0.67	$50,000	74,627	1,774	1,759	327	433	223	92
KIHA-82	$0.70	$53,000	75,714	1,574	1,651	331	407	246	101
NISHI 5000	$0.71	$80,000	112,676	2,275	1,743	339	598	258	105
113	$0.73	$80,000	109,589	2,121	1,092	275	575	223	93
FP-45	$0.78	$90,000	115,385	1,814	1,043	284	525	253	105
MEI 7000	$0.82	$90,000	109,756	1,625	865	256	490	242	101
381	$0.90	$98,000	108,889	1,346	483	178	434	176	78
EF-6524	$0.98	$180,000	183,673	1,722	944	301	583	317	133
AR-III	$1.20	$250,000	208,333	1,227	488	201	454	234	106
Best Trains to Use				**1. AR-III 2. 381**			**3. 381 2. AR-III**		

20–25 Blocks (stations are 20 blocks apart)			26–34 Blocks (stations are 26 blocks apart)			>35 Blocks (stations are 35 blocks apart)					
o. Passenger per Day Needed to reak Even w/ Operational Expenses	No. Days Req'd to Make Profit & Pay Off Train Purchase at Rated Passenger Capacity/Train Speed	No. Days Req'd to Make Profit & Pay Off Train Purchase at Max. Passenger Capacity/Train Speed	No. Passenger per Day Needed to Break Even w/ Operational Expenses	No. Days Req'd to Make Profit & Pay Off Train Purchase at Rated Passenger Capacity/Train Speed	No. Days Req'd to Make Profit & Pay Off Train Purchase at Max. Passenger Capacity/Train Speed	No. Passenger per Day Needed to Break Even w/ Operational Expenses	No. Days Req'd to Make Profit & Pay Off Train Purchase at Rated Passenger Capacity/Train Speed	No. Days Req'd to Make Profit & Pay Off Train Purchase at Max. Passenger Capacity/Train Speed	Seating Capa-city	Speed (blocks per hour)	Number of Coaches
2,743	N/A	N/A	1,200	N/A	1,917	565	N/A	399	400	2	2
2,215	N/A	1,812	1,200	N/A	452	626	1,339	229	600	2	3
2,215	N/A	2,422	1,200	N/A	518	626	1,694	257	580	2	3
1,152	1,573	227	720	585	153	411	288	99	440	3	2
1,464	860	185	939	448	132	547	248	90	640	3	3
1,080	356	120	720	254	94	432	169	69	700	3	3
239	161	70	168	136	60	106	111	50	460	2	2
226	179	77	160	152	67	101	124	56	420	2	2
333	187	80	236	159	70	149	130	58	600	2	3
322	165	72	229	141	62	145	115	52	640	2	3
297	190	82	212	163	72	135	134	61	580	2	3
280	183	80	200	158	70	127	131	59	560	2	3
250	139	63	180	121	56	115	97	45	470	3	2
340	249	106	245	217	96	158	171	77	470	3	3
270	193	89	196	172	80	127	139	66	600	3	3
1. AR-III 2. 381 3. KIN 30000			**1. AR-III 2. 381 3. KIHA-82**			**1. AR-III 2. 381 3. KIHA-82**					

SHINKANSEN–JAPAN'S BULLET TRAIN

Japan, an island nation of rugged mountainous terrain, has long had a national railroad network. The Japanese National Railways (JNR) was founded by Japan's government in 1872, when the first railroad was opened near Tokyo. In the 130 years that have followed, JNR has developed an extensive, efficient railroad network that has unified Japan and allowed it to remain in the forefront of innovative rail transportation technology.

However, by 1987 JNR's sterling reputation was in tatters, even after a century of ambitious railroad building. The government-run railroad had become horribly inefficient: "its employees had gained a reputation for indifference and even surliness, uncommon in Japan. Moreover, then-Prime Minister Yasuhiro Nakasone's administration felt that it would be rather difficult for JNR to repay its debt of $300 billion."[4]

Because of this, JNR was privatized, much as the Reagan administration had been trying to do for years with Amtrak. In its place a new private company called Japan Railways emerged from the ashes of JNR. Japan Railways (JR) is comprised today of six smaller regional passenger lines and one freight line serving the four main islands. So far, the experiment in privatization has paid off: in 1987, East JR, one of the subsidiaries of JR, earned a profit of $480 million.

Japan's first Shinkansen, or Bullet Train, was opened on October 1, 1964, and ushered in a new age of passenger rail travel. At the time these high-speed electric trains, which were the world's fastest, sped along at 137 mph. The Tokaido Shinkansen, as it was called, connected the cities of Tokyo and Osaka, and completed the 320-mile journey in only two hours and 30 minutes.

The next generation of Shinkansen, the Series 400, is scheduled to begin service between Tokyo and Yamagata in the summer of 1992. Although this train can exceed 186 mph, it is expected that it will not run much faster than the Series 100 due to neighborhood noise constraints and track restrictions. The original track was engineered for trains traveling at 137 mph, and the track's tight

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[4]Douglas W. Polinder, "Rails in the Rising Sun: A primer on Japan Railways," Trains: The Magazine of Railroading, May 1990, pg.33.

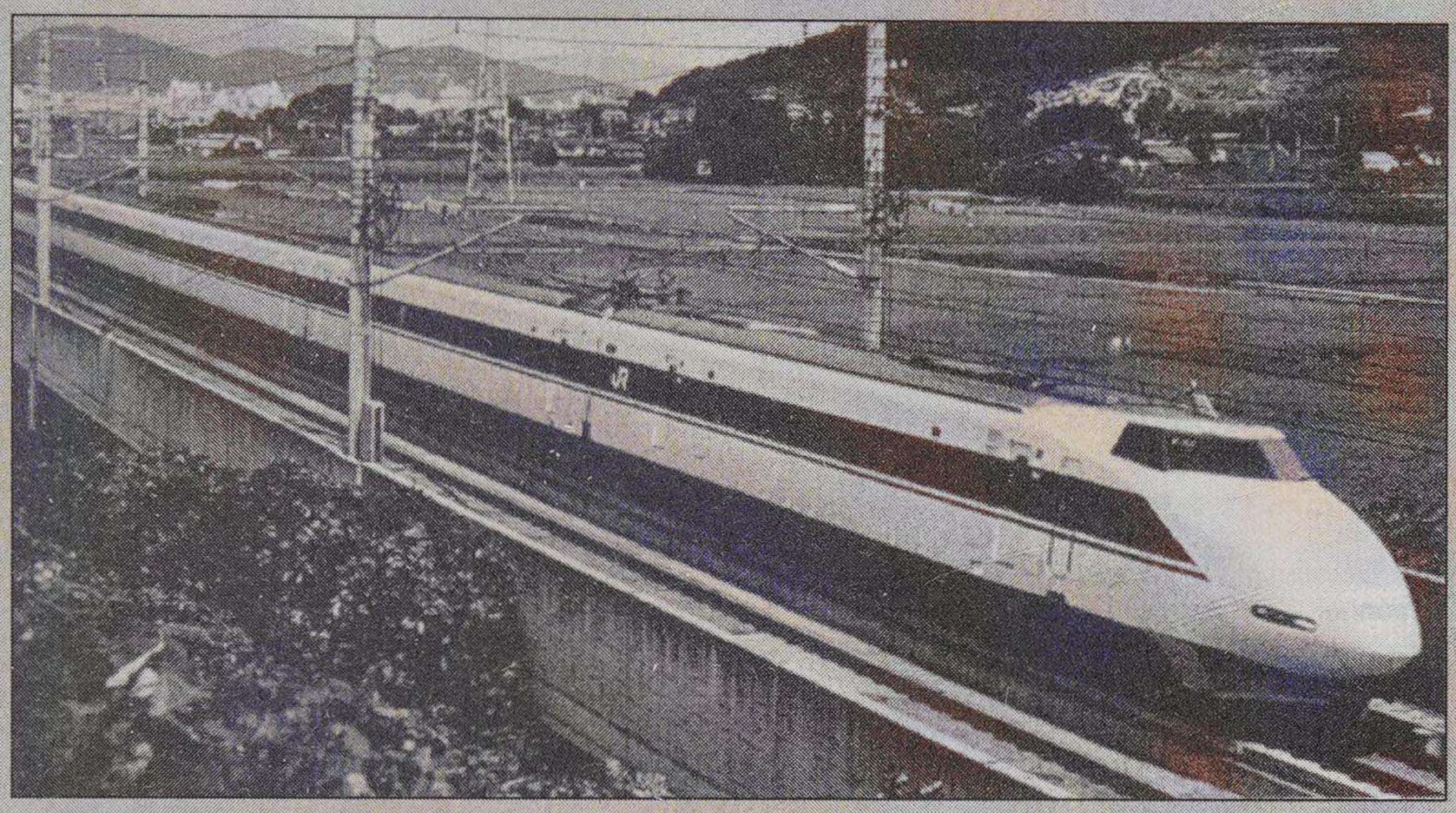


Figure 9.28 Japan Railways Shinkansen Series 100 Train Set (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

curves would create too much passenger discomfort in trains exceeding this speed. However, newer train lines now being designed are envisioned to reach track speeds of up to 248 mph, which seems to be the practical limit of steel wheel technology.

The Shinkansen have been plagued with noise ever since their inauguration. In part, the public outcry over noise may be due to the high density of residential housing in close proximity to the Shinkansen tracks. Noise baffles along the track, and other noise abatement techniques such as redesigning the pantographs and streamlining the trains, are being experimented with in an effort to



Figure 9.29 The latest generation of Shinkansen, the reduced profile Series 400 Shinkansen Train Set (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

increase speeds without further neighborhood environmental degradation (the pantographs are accordion-like metal frames atop the train which collect electricity from overhead high-voltage power lines). Until these problems are remedied, train speeds will be limited to 137 mph in urbanized areas.

Still in development, the prototype series 500 Shinkansen, dubbed the Win 350, is designed to travel at 217 mph. This train is even more aerodynamic than its predecessors, and features a cowling to further streamline the pantograph on top of the train.

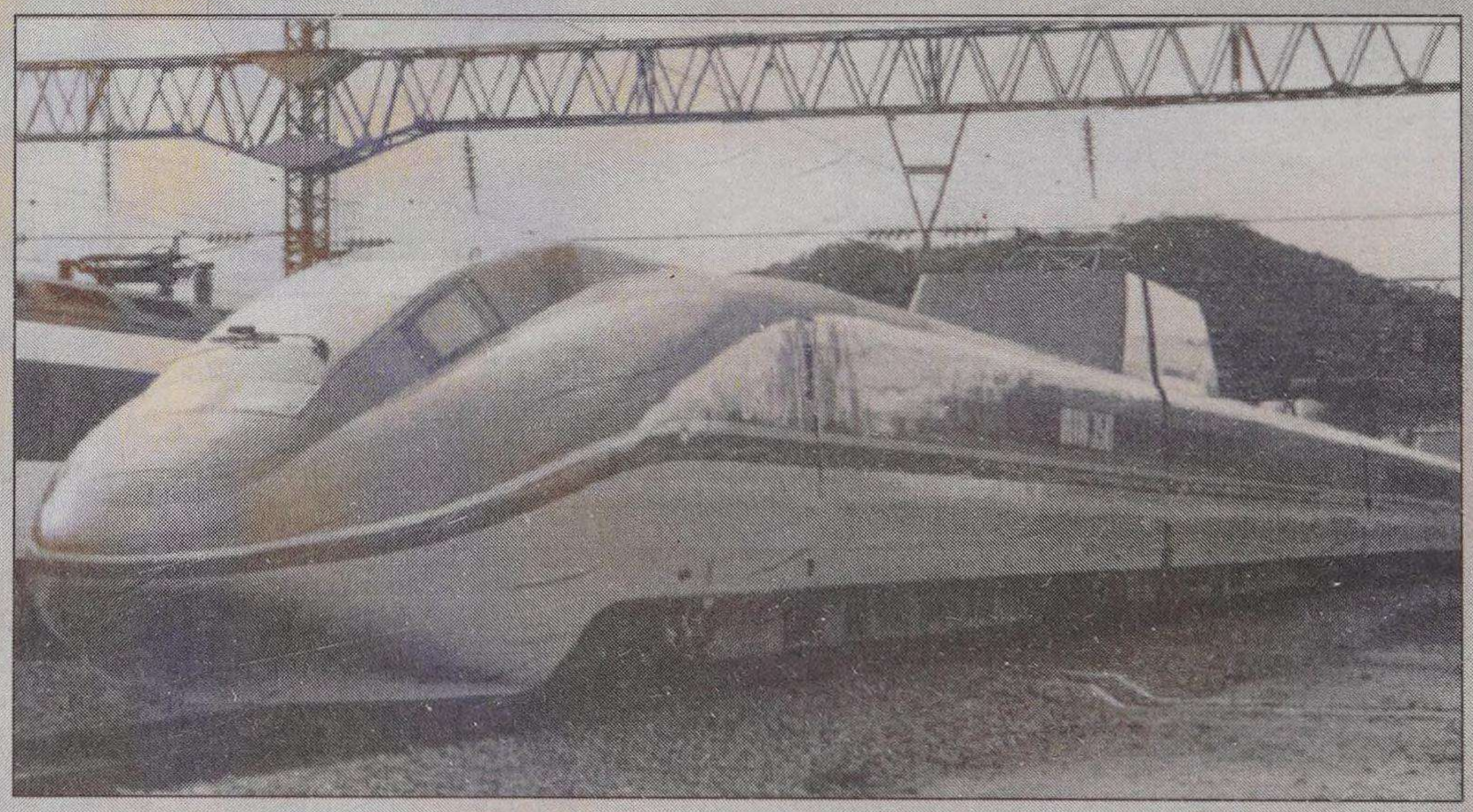


Figure 9.30 The first prototype Series 500 Shinkansen is rolled out for its unveiling. This six-car train will be called the Win 350, reflecting its top design speed of 350 km/hr (217 mph). (Courtesy of Railway Gazette International.)



Figure 9.31 Interior view of Shinkansen's dining room (copyright Jane's Information Group, 1987–88, 1990–91, reprinted with permission from Jane's World Railways)



Figure 9.32 Interior view of self-service cafeteria of the Series 100 Shinkansen (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

Japan's Bullet Train was so successful that a rapid program of expanding the Shinkansen network was undertaken. Today the Shinkansen runs almost the entire length of the island of Honshu and connects with the island of Kyushu via an undersea tunnel. Eventually a northern Shinkansen will connect up with the island of Hokkaido via the world's longest and deepest underwater tunnel, the great Seikan Tunnel.

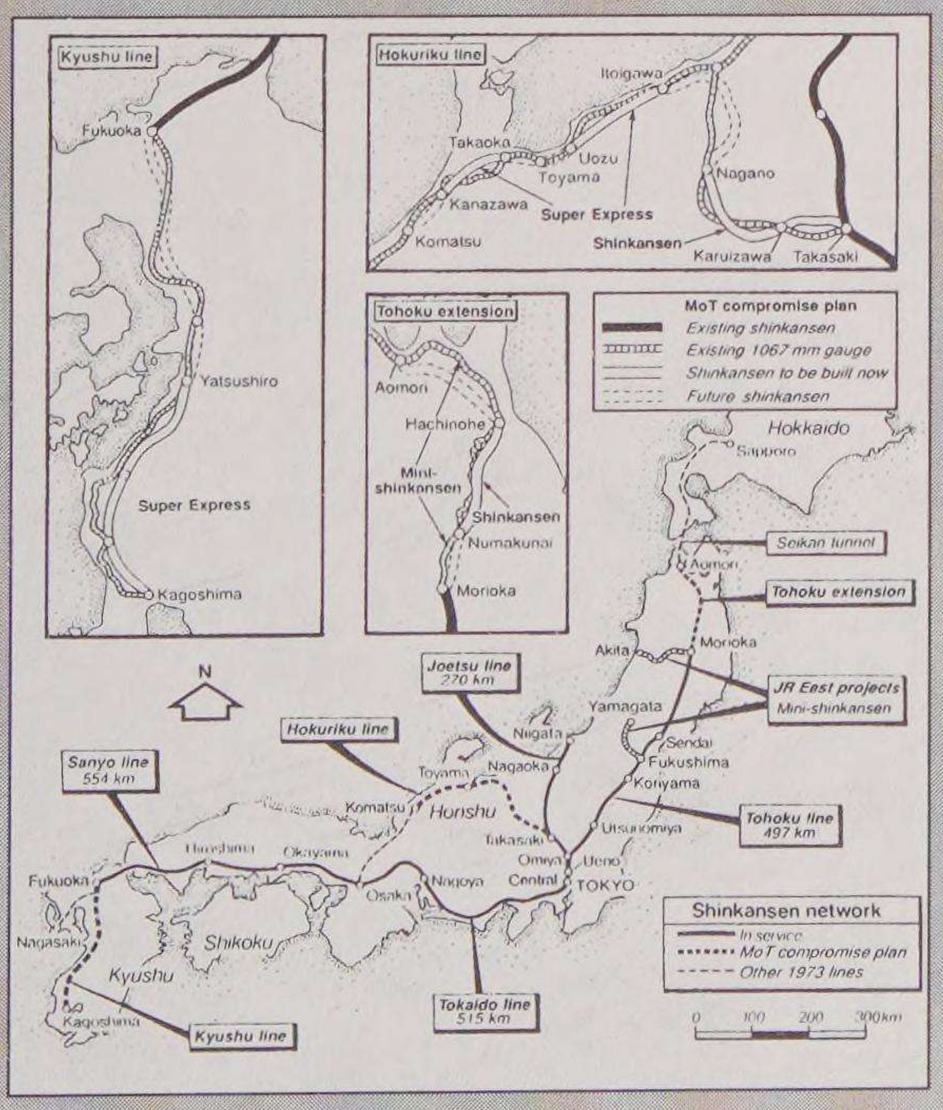


Figure 9.33 Japan Railways Shinkansen Network (courtesy of Railway Gazette International)

THE FRENCH TGV (TRAIN A GRANDE VITESSE)

Today, France holds the lead in high-speed-rail technology. The French National Railway Group, SNCF (Société Nationale des Chemins de Fer Francais), has built a high-speed train, the TGV (Train á Grande Vitesse), to serve much of France. There are four routes in existence: the TGV Paris-Sud-Est (Paris-Lyon-Marseilles), the TGV Atlantique (Paris-Le Mans-Nantes-Bordeaux-Brest), the TGV Nord (Paris-Calais-Lille-Brusssels-Cologne-Amsterdam), and the TGV Est (Paris-Rheims-Metz-Strasbourg-Nancy). The newest TGV-A train sets have a maximum speed of 186 mph, besting the Shinkansen's 137 mph. These trains are luxurious, offering catered meals, restaurant and bar cars, club cars with pairs of seats grouped around a table, telephone kiosks, children's playing areas, video entertainment, and first-run movies. With microprocessor-controlled trains, the TGV is highly automated, using advanced state-of-the-art equipment to make the trains safer and more reliable.

It is intended that all of Europe will eventually be linked together by an integrated high-speed-train network. Some of the network pieces are already in place, such as the TGV, but work is proceeding on other train routes to link the entire European Common Market together seamlessly. The Swedish entry into the high-speed-train race, the 125-mph ABB X2000, tilts the body of the train to negotiate curves at high speed. Amtrak is evaluating this train for service along the Northeast Corridor line in early 1993. In Spain, a new high-speed-train line

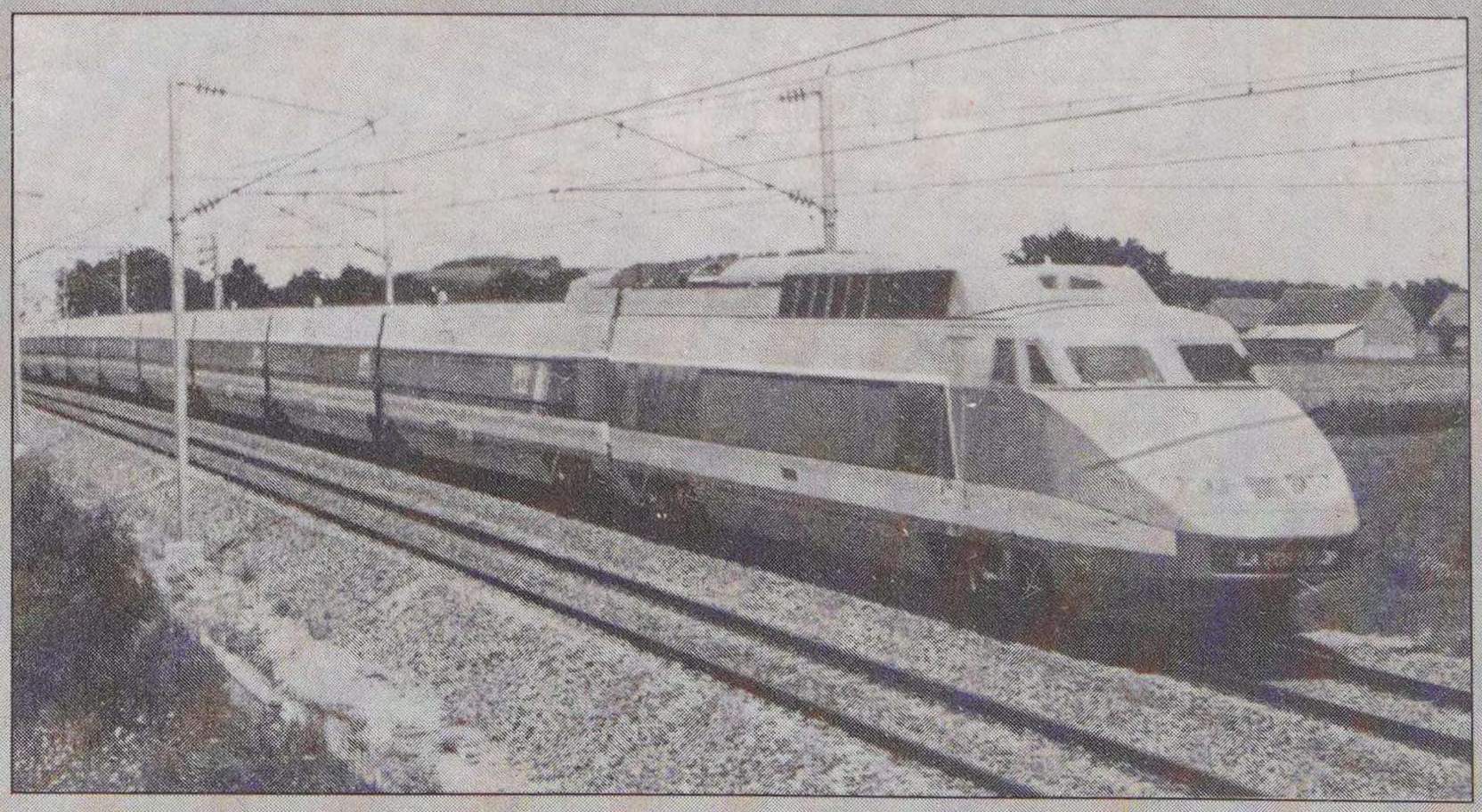


Figure 9.34 The French TGV (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

between Madrid and Barcelona was completed for the 1992 Summer Olympics, and a new line to Seville is now under construction. A newly designed high-speed Eurotunnel shuttle for the Channel Tunnel will ultimately link Paris, London, and Brussels, thereby closing one of the most vital missing links of Europe's rail transport system.



Figure 9.35 Meal service in first class TGV (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

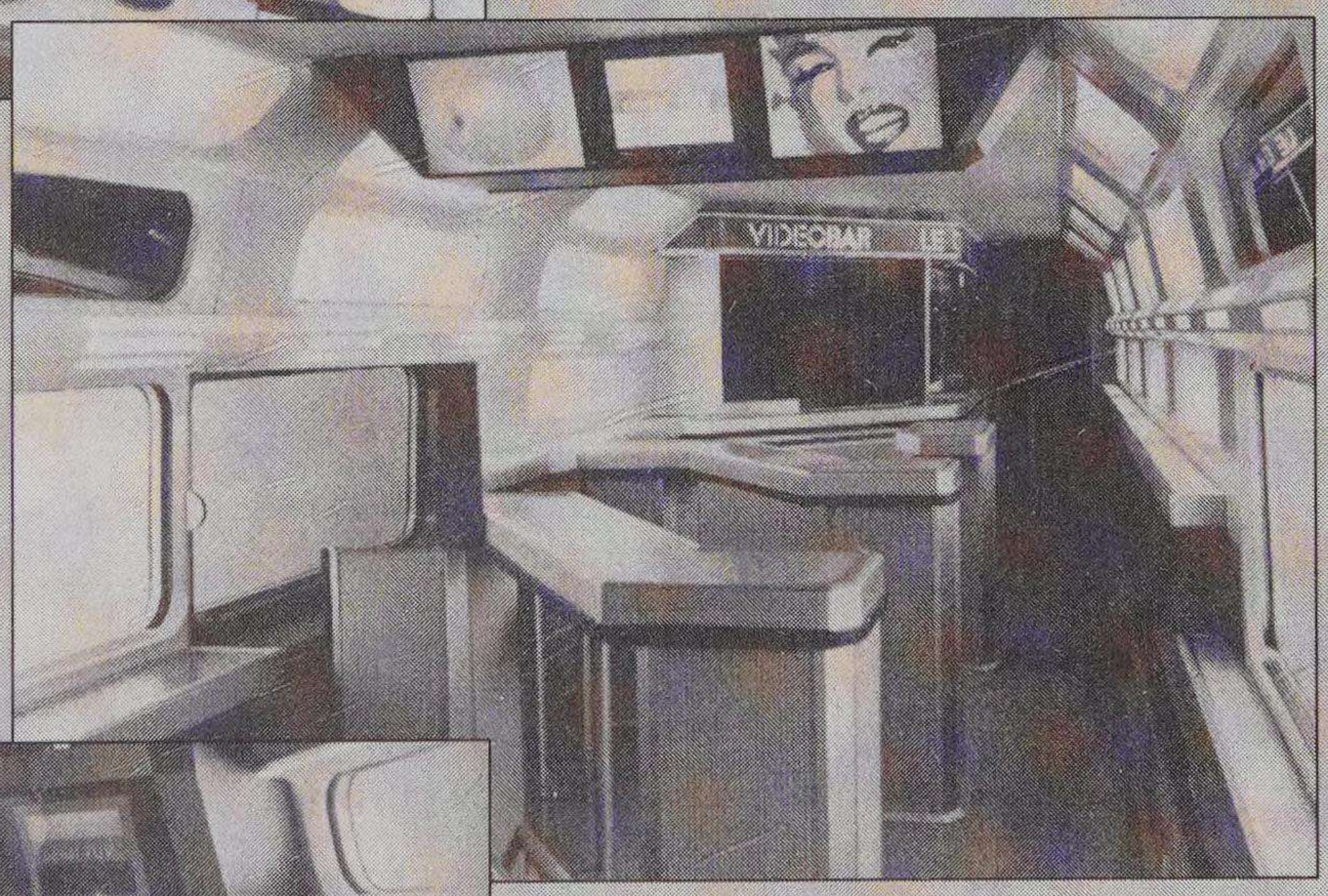


Figure 9.36 TGV bar car interior (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)



Figure 9.37 Club cars with video entertainment (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

TRAINS OF THE FUTURE: THE MAGLEV

With the advent of the French TGV and the new prototype Shinkansen, we are reaching the limit of conventional steel wheel technology. Even with further refinements in track technology, for reasons of passenger comfort and track maintenance, the maximum speed for commercial service is likely to be limited to between 170 to 210 mph. Faster speeds are possible, but the tremendous pounding the tracks receive from the trains would necessitate frequent and costly replacement of trackage.

Maglev trains, on the other hand, are not limited by such speed constraints. This is because maglev trains don't ride on rails at all. Instead, they glide over a trackway suspended above the track by a magnetic cushion. Powerful superconducting magnets levitate the train, and magnetic coils built into the guideway push and pull the train along the track. Because of the frictionless ride, the maglev is easily able to attain high speeds of 250 mph or greater, although noise concerns may limit speeds through residential areas. This technology is now being tested by Germany and Japan, and it is expected that some maglev routes will be in place by 1996.

THE GERMAN TRANSRAPID

The German Transrapid 07 is the world's first commercially available maglev train. It uses a technology known as electromagnetic suspension (EMS), which harnesses the attractive forces between magnets in the car and track. Unlike the Japanese maglev, no superconductors are used to levitate the train. Top test speed achieved so far by Transrapid 07 is 270 mph, although when finally in operation it is expected to cruise at 250 mph.

As a showcase of maglev technology, the Transrapid is expected to be built in the busy 13.5-mile corridor between Orlando International Airport in Florida and DisneyWorld. The plan is to have this short line built by 1996 as the world's first commercially operating maglev train. Though the line is very short, the train will accelerate rapidly from a standstill to 250 mph in under three miles, and reach its destination in a matter of minutes. In order to pay off the high capital costs for the guideway and trains, ticket prices will be fairly expensive, amounting to $20 per passenger.

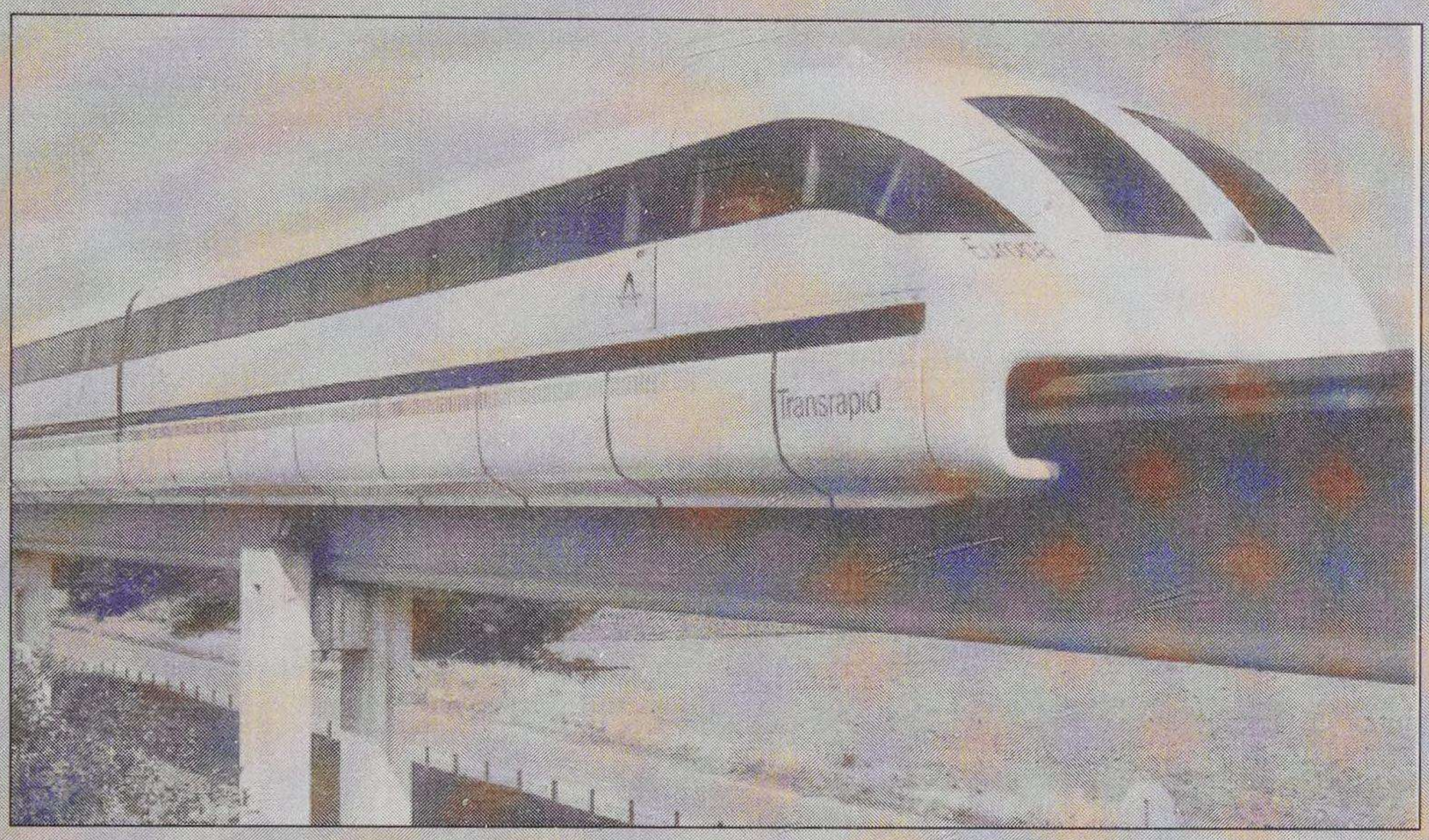


Figure 9.38 The German Transrapid 07 prototype maglev vehicle (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

THE JAPANESE MAGLEV

Japan's maglev, still in development, uses a much more complex technology than does the German Transrapid. It uses a technique known as electrodynamic suspension (EDS), which uses superconducting magnets to levitate the train repulsively. This advanced technology is preferred by many American scientists, but it is a long way from realization. The design goal is to have a 310-mph train that can make the 300-mile trip between Tokyo and Osaka in under an hour. However, there have been some setbacks with the program, most noticeably when the research vehicle caught fire and was gutted.

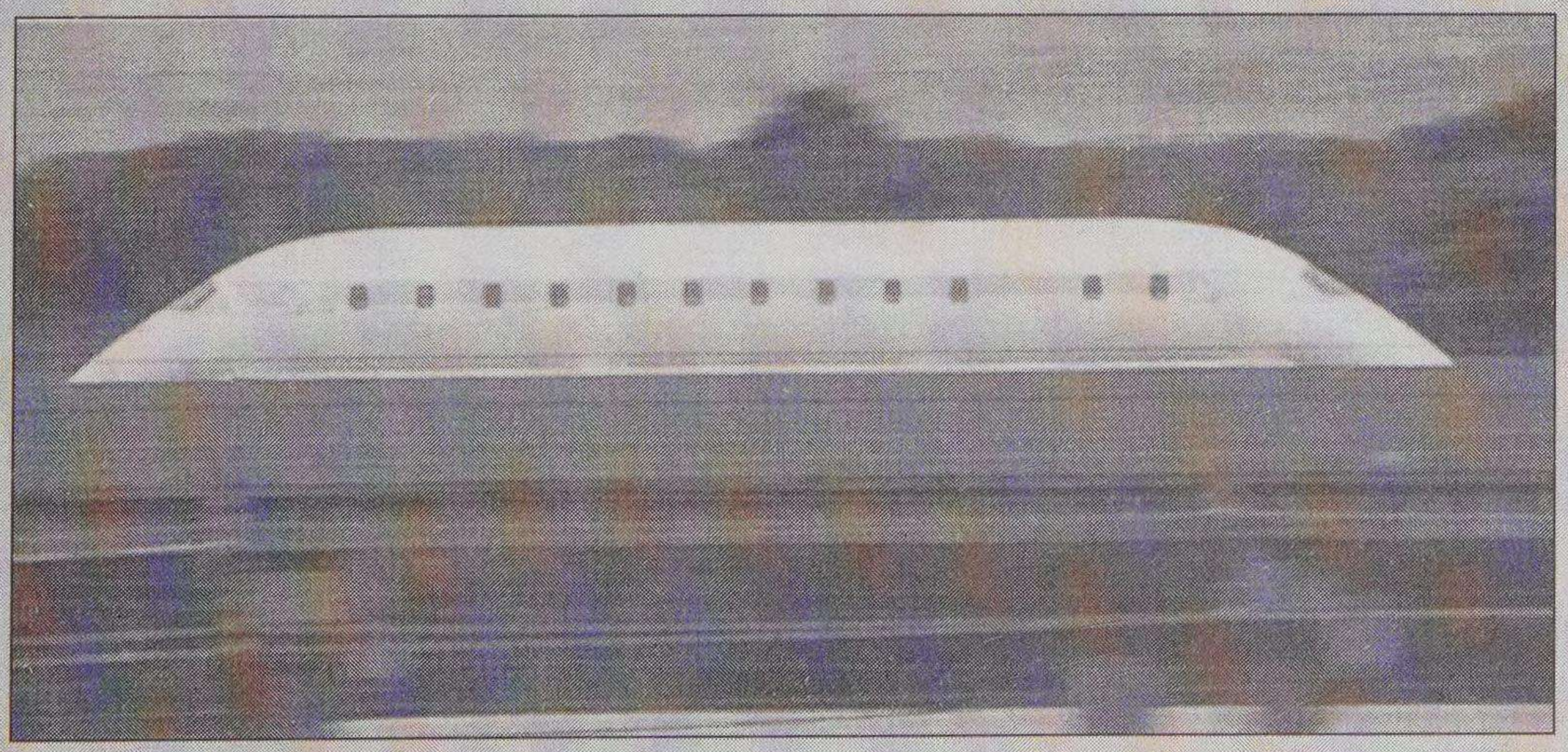


Figure 9.39 Japan's maglev research vehicle MLU-002 (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

THE AMERICAN MAGNEPLANE

Although the United States did pioneering work in maglev, research was abandoned in 1975 by the Nixon Administration because it was decided that money was better spent on highway construction. Recent advances in high temperature superconductor materials have rekindled interest in the technology and, as a result, Senator Daniel Moynihan successfully ramrodded a $725 million appropriation for maglev development in the six-year $151 billion highway bill signed by President Bush for fiscal year 1992. However, the Bush Administration is philosophically reluctant to pursue any government interference in commercial technologies and, as a result, is proposing no maglev development appropriations for 1993.

One design being pursued for the American maglev, dubbed the magneplane, has a magnetically levitated vehicle glide down a trough like a bobsled. The magneplane, which acts more like a plane than a train, is levitated above a curved cylindrical trough using digitally controlled superconducting magnets and would bank at angles of up to 45 degrees for curves. However, researchers are concerned that passengers might object to the ride sensation and centrifugal gravity forces encountered when riding this train, since it differs dramatically from the ride one experiences on a 747 at 40,000 feet.

One problem to be surmounted by all maglev designs is that of track switching. Today's maglev designs rely on primitive electromagnetic switches to allow trains to change track directions. The whole process of switching is cumbersome and slow and, as a result, few trains can be accommodated on a track. If American engineers could develop a more sophisticated electronic switch that would enable trains to switch tracks at high speed without slowing down, the American maglev effort could easily surpass the limitations of the German and Japanese maglev systems.

JAPANESE TRAINS

The trains that A-Train emulates are, for the most part, Japanese in origin. Maxis substituted the GP-40 freight train in place of another train which had Japanese markings. The AR-III is not based on any

particular train, but is a close approximation of the Izukyu Series 2100 (see photo in Chapter 10). The following illustrations show what some of the real Japanese trains look like.

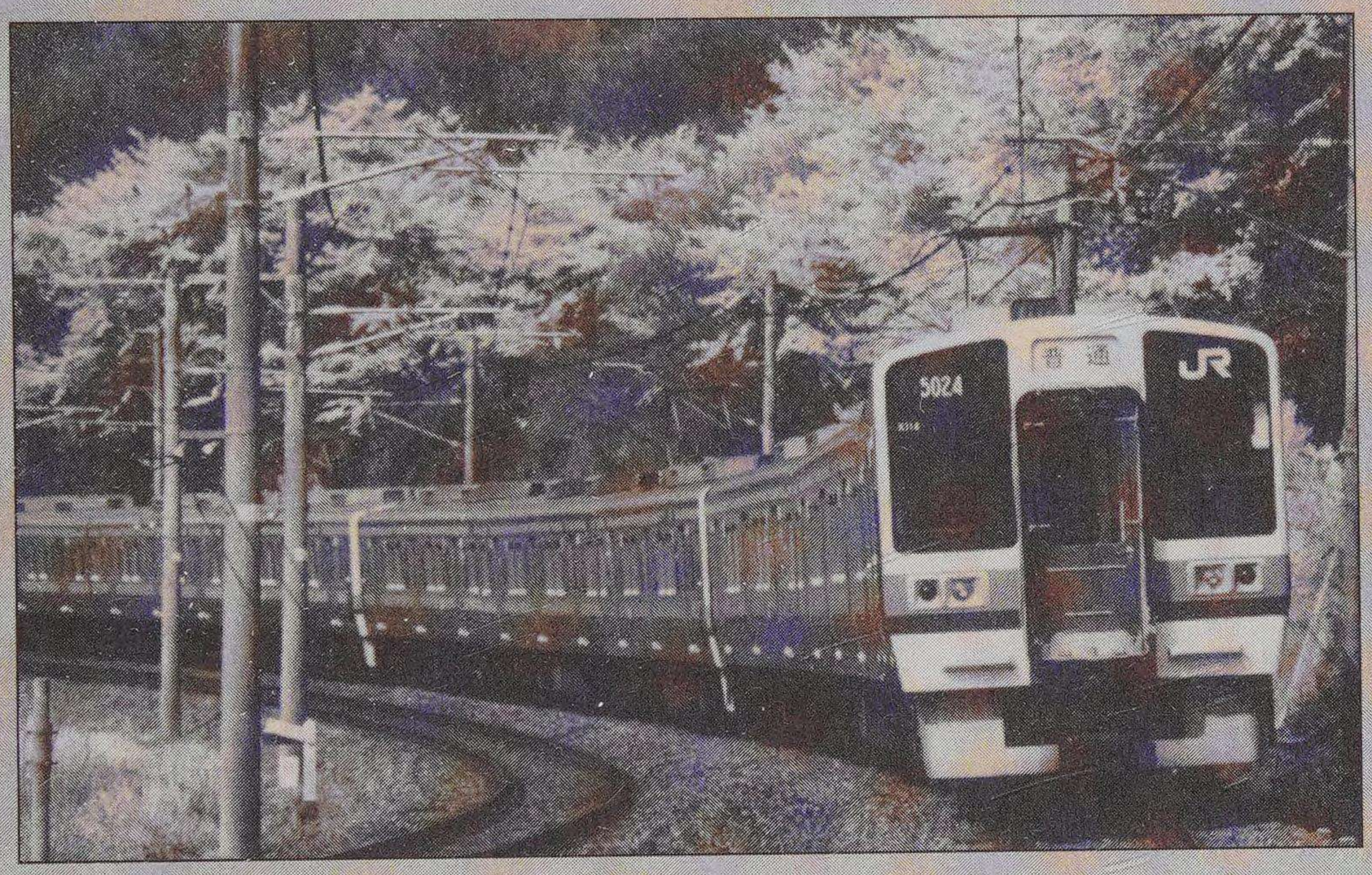


Figure 9.40 The 205 (Series 205, introduced in 1985) (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

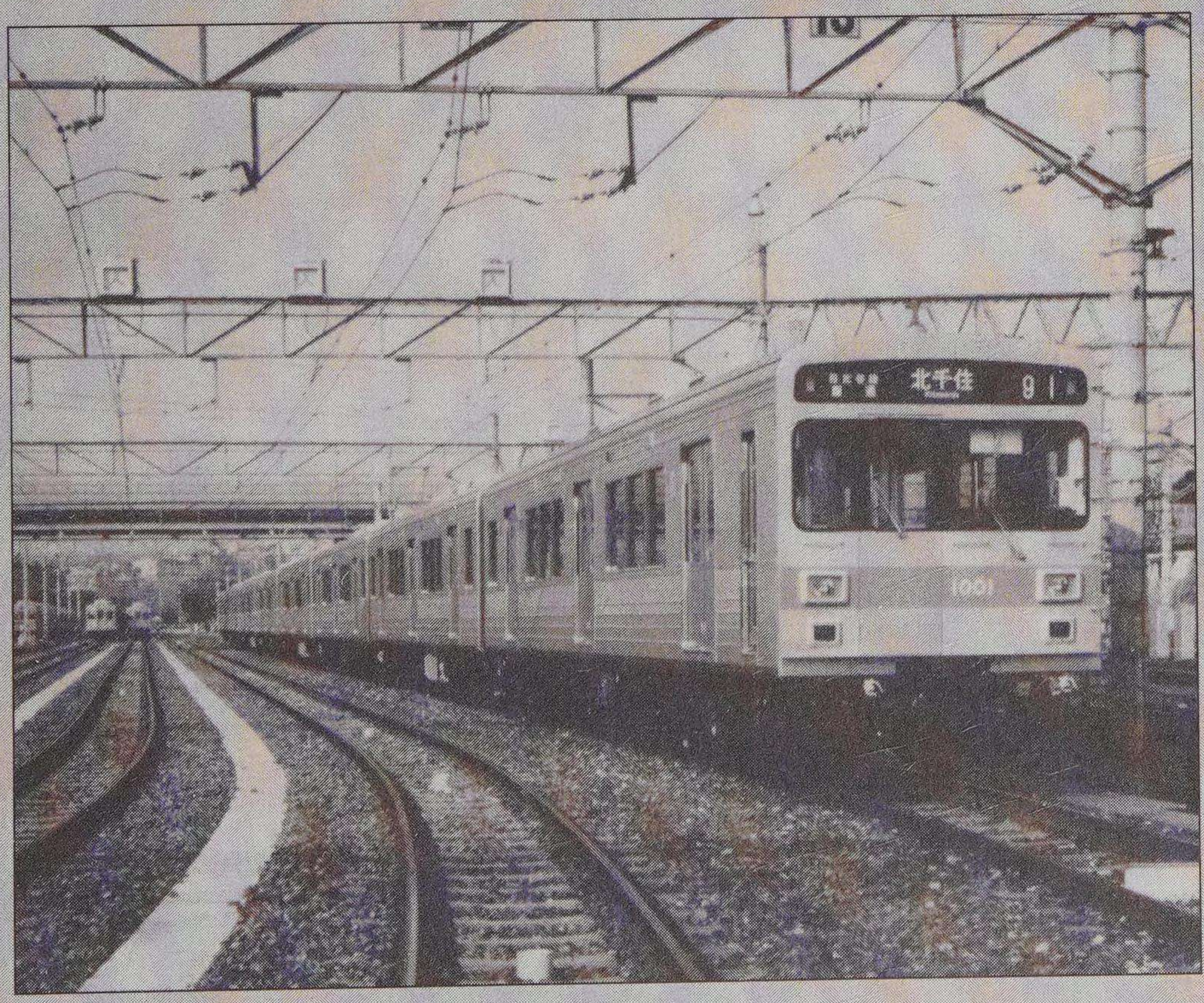


Figure 9.41 The 211 (Series 211, introduced to the 1067 mm-gauge Tokaido line in March 1986) (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

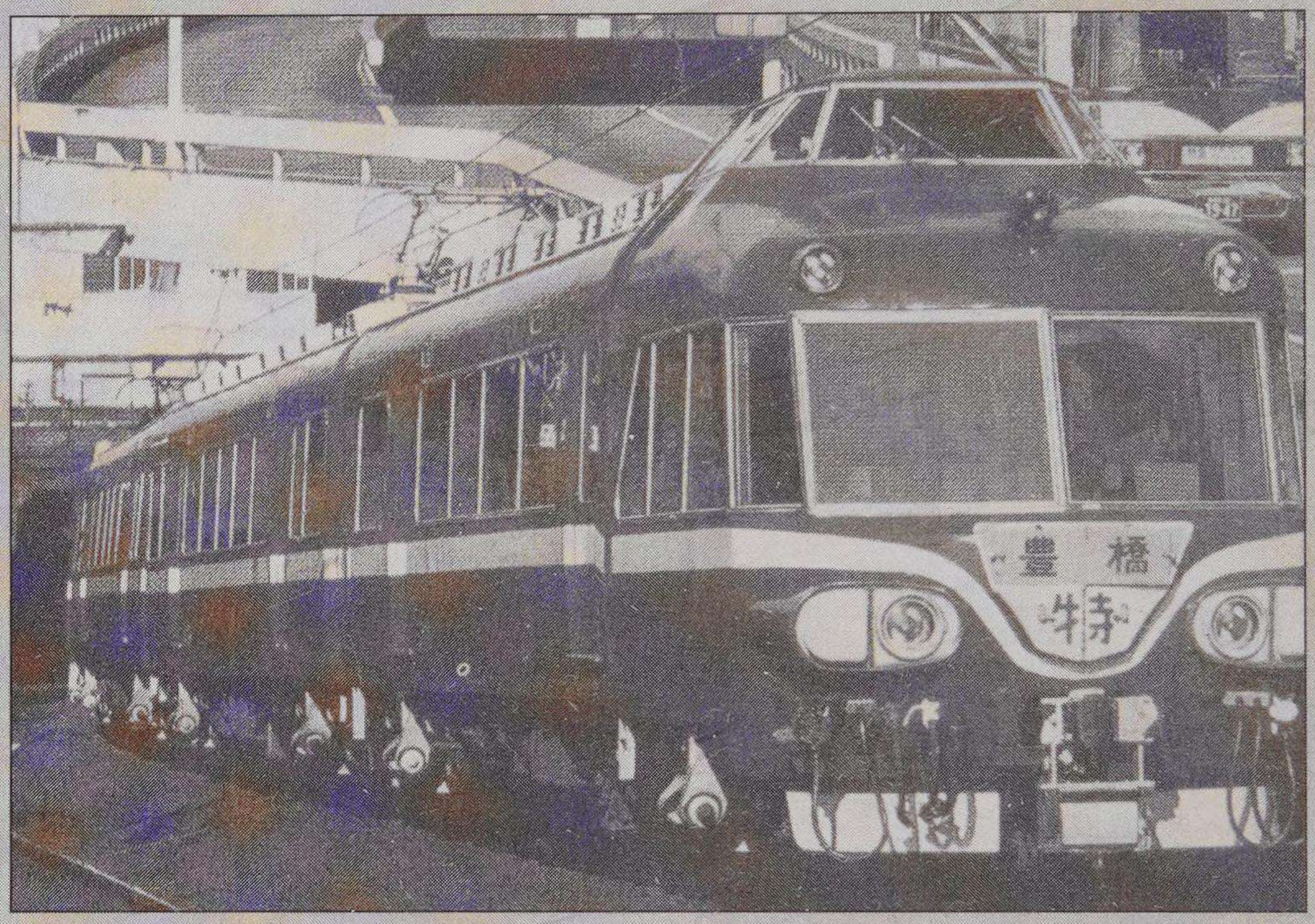


Figure 9.42 The MEI 7000 (Nagoya Railroad Series 7000) (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

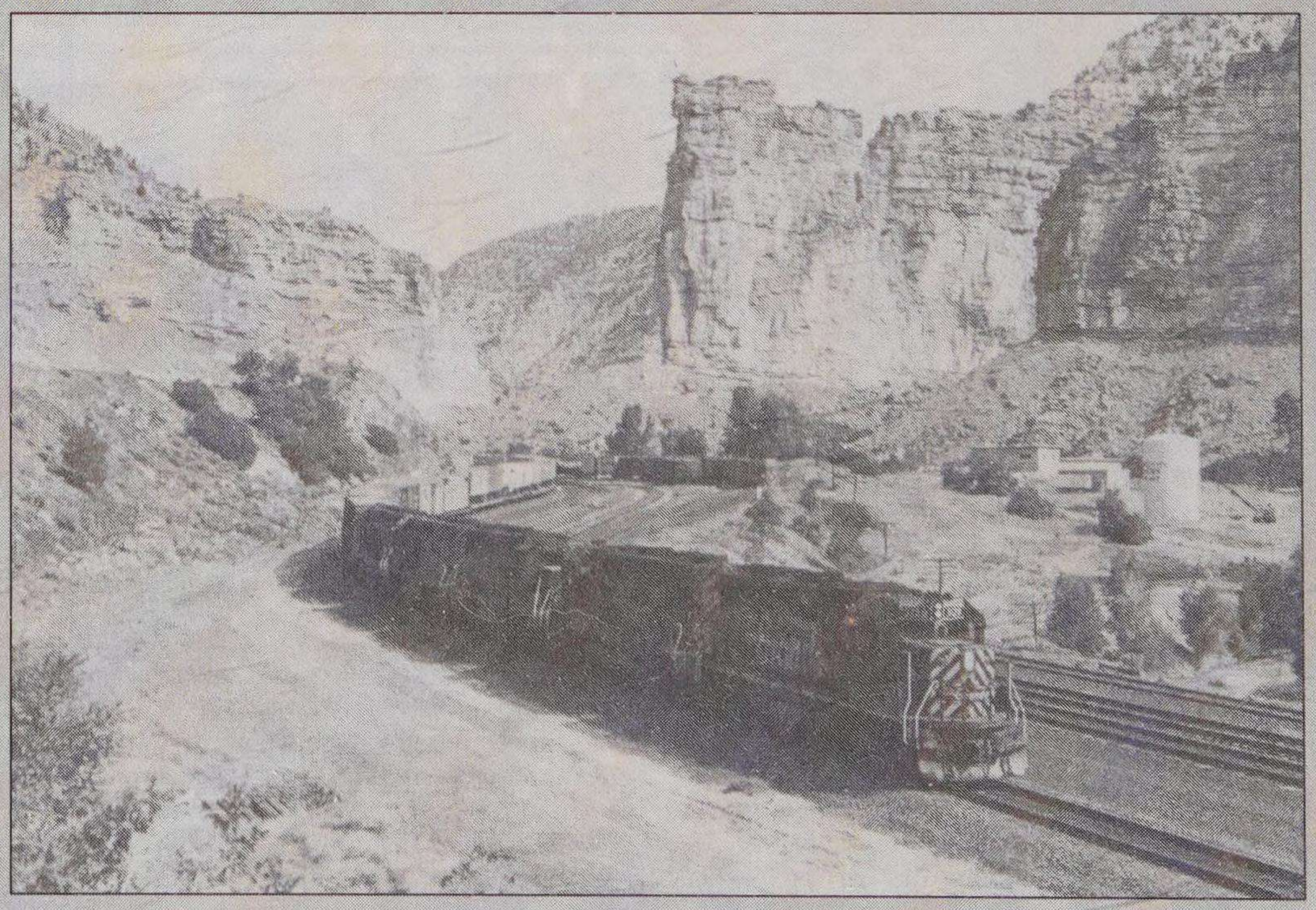
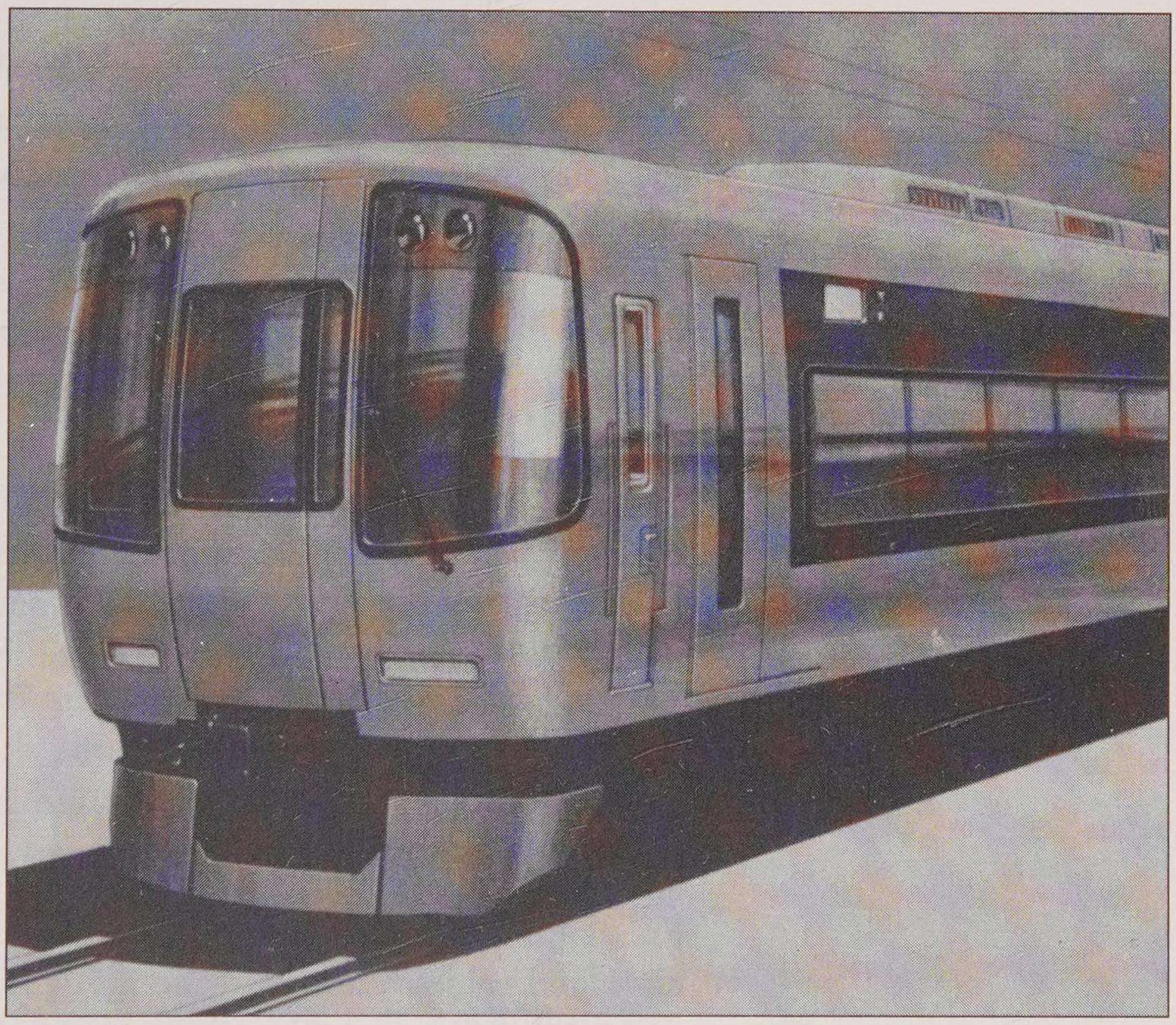


Figure 9.43 The GP 40 freight locomotive (five GP-40s and GP-40-2s descend from Soldier Summit, Utah, with Salt Lake City-Denver bound freight) (copyright Jane's Information Group, 1987-88, 1990-91, reprinted with permission from Jane's World Railways)

CHAPTER 10

Tips and Tricks



MATERIALS

You should clearly understand the difference between factory-made building materials and normal building materials. Factory materials can only be used directly by you, not by the simulator or by rival firms. In order for materials to become "normal" they must be transported by freight train at least once. Once they are normal, they can be used by the simulation and by other companies.

The port materials in the Bay Area Map Scenario 2 should be treated as factory materials. Therefore, if you want lots of local development to occur, you will have to put in a short-haul freight train line to move the materials and make them normal.

In order for materials to be delivered to a railroad station, you must buy some real estate to create storage yards. For stations that are 15 blocks apart, it is best to locate the material storage yards equidistant between the two stations so that the materials have the widest possible radius of coverage.

Materials can be used within a 10-block radius of the storage yard, although office/lease building expansion can occur within 12 blocks. Storage yards need to be placed within an eight-block radius of the station for freight trains to pick up and deliver materials.

STATION PLACEMENT

Don't place stations so that they face mountains, lakes, rivers, or oceans. Most development is centered around the back of the station, so you will want to have plenty of room for city expansion without having the terrain bottle up any development.

ROADS

Roads are very desirable in A-Train because they promote growth and high land values. Each road tile needs two building materials nearby and takes six days to complete. Usable building materials are those that have been transported by freight train. Factory materials cannot be used directly. Incidentally, roads can cross rivers on bridges that the simulator builds for you. Just make sure that the road approaches the river at a right angle.

Establishing Crossroads for Maximum Development

By building a belt line with large stations facing inwards, you can create an intersection of two roads, otherwise known as a crossroads. The crossroads is one of the most powerful development tools in A-Train, for it creates a strong incentive for subsidiary growth. To

increase its effectiveness you can shift large stations over by one block and create double or even triple crossroad intersections. Sometimes, however, other company's buildings or subsidiaries will block the road's path. When this happens, try buying the subsidiary and removing it. If it is not for sale, check often at the beginning of each month to see if it has been put up for sale, because A-Train will eventually condemn it and force it on the market.

CHEATING

There are various ways to cheat in A-Train. There is a built-in Easter egg cheat in the PC version of A-Train that allows you to embezzle $1 million and fill up your empty land with free building materials. Using this method, though, you are limited to cheating a certain number of times, after which A-Train will kick you out of your game for being too greedy.

To avoid this situation, on the PC you can use DOS's Debug program, or a disk utility such as Norton Utilities or PC Tools to hex edit city files so that they contain more money than before. On the Macintosh, you can use a similar hex edit cheat using a separate utility called ResEdit. Hex editing essentially means replacing the old hex codes in the city files with new hex codes that represent a higher number. Data on both the PC and the Macintosh are represented in a hexadecimal notation system, where the characters 0 through 9 and A through F represent the numbers 0 through 15. We will discuss each method separately in the next section.



Only city files with the DOS extension **.a_t** or Macintosh city files can be edited. Do not attempt to hex edit the A-Train program itself. You will wreck the program. Note that the six scenarios can only be hex edited if you first save them to disk as city files.

Alternatively, if you own the Construction Set, a separate terrain editor program available from Maxis, you can edit your cities in any way you like. This may be the most effective way of all to cheat, since you can not only add money to your coffers, but you can also directly customize any city features. For example, through the Map Editor you can expand your city's population by adding new residences, subsidiaries, roads, building materials, rail lines, and trains, and also improve the terrain so that it is more suitable for your urban design purposes.

Cheating on the PC

The following examples show you how to use the built-in embezzlement Easter egg function along with the hex edit cheat. With the hex edit technique you can add more money than you can with the other embezzlement schemes. For example, using hex editing, you can add $16 million to your budget, but if you use the Easter egg cheat you can only embezzle $1 million up to 11 times, for a maximum of $11 million. With the Construction Set you are limited to adding a maximum of $9.9 million.

The Embezzlement Easter Egg

To embezzle $1 million and fill up all your empty real estate with building materials you must hold down the Shift and Ctrl keys simultaneously and type[1]:

peter cheater cheater wimp

Immediately after you type the "p" in peter, you should see a message from Manny, or someone even more ominous. Keep holding down the Shift and Ctrl keys and continue typing the rest of the characters in the sentence (don't type any spaces between the words). If you have done this successfully, the computer will beep and you will now have $1 million added to your cash, and building materials will magically appear on any empty land that you currently own.

You may notice that the stolen building materials are not completely drawn on the screen. This seems to be a graphics bug in the program. To remedy this problem easily, just refresh the display by scrolling the map.



For maximum effectiveness, you should buy up lots of real estate before using the cheat. The more empty land you have, the more building materials will be placed on the map.

Perils of Being Too Greedy

Each time you use the embezzlement function, a different message will appear on screen. You are limited to cheating about 10 or 11

[1]In some earlier versions of A-Train, this embezzlement function was not implemented. Contact Maxis for an upgrade.

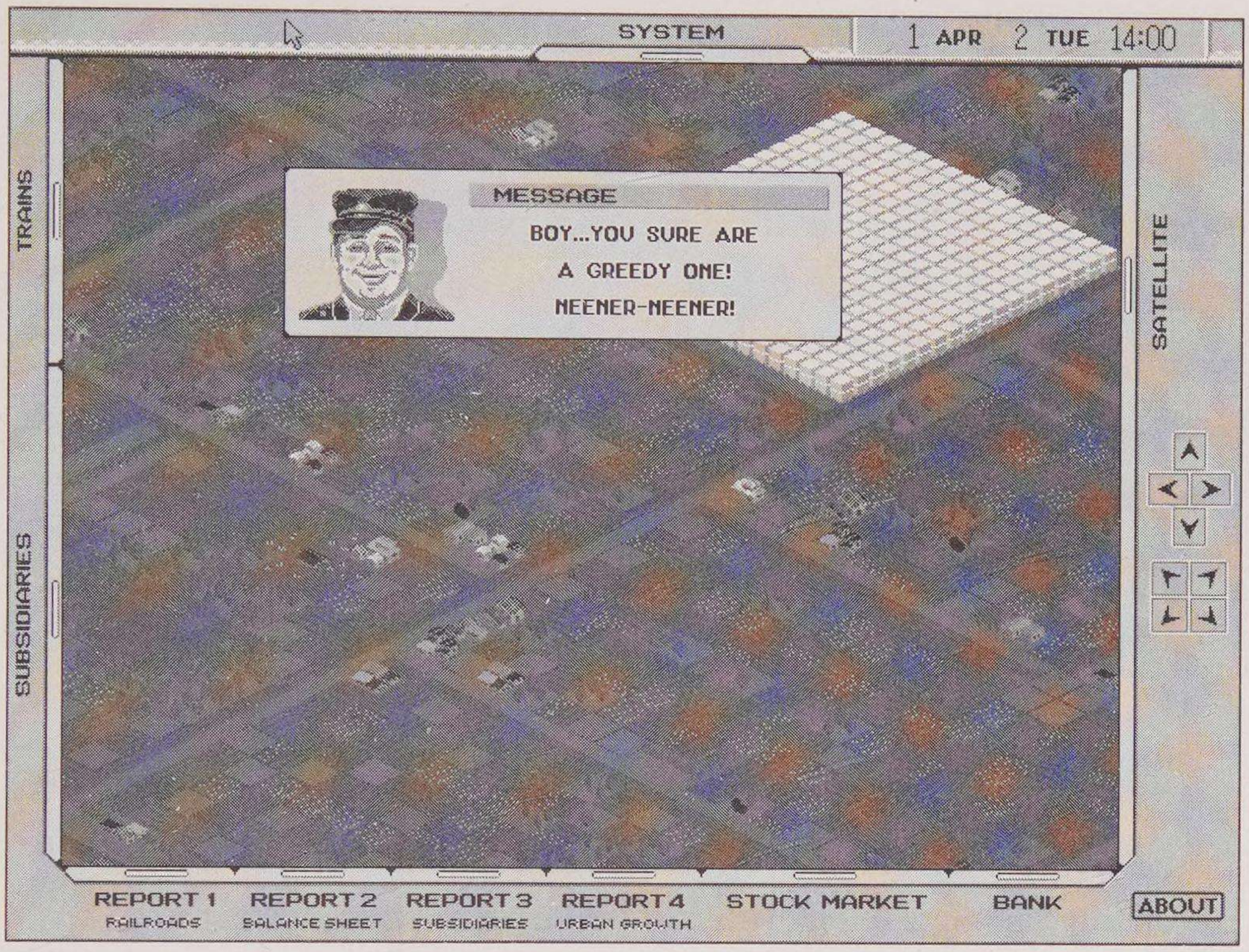


Figure 10.1 Embezzling money and stealing building materials with Manny's help

times, after which the game will end. The warning messages to watch for when you have exhausted your limit are as follows:

1. **"Get Back to Work" from a stern-faced Joe Sirica**
2. **"What's Going On Here?" from a perplexed Jeff Braun.**

If you persist in cheating once more, a message from Jeff Braun (Maxis' president) will appear saying, "Jeff is back, but this time it's personal," at which point the game will end and you will lose your city. Another small Easter egg occurs after this message. Instead of having the game-over message crumble apart on screen, which is what would normally happen when the game ends, a scanned image of the two PC programmers will appear. As a joke, they are comparing bug reports and bellybuttons.[2]

You can easily bypass this cheating restriction by saving your game, exiting A-Train, and then restarting the game and your city. The built-in cheat counter will be reset to zero and you can embezzle another 10 or 11 times.

[2]This graphic occurs only in the color version of A-Train.

IBM AT and Compatibles Hex Editing Your Funds for $16 Million

You can use DOS's Debug program to hex edit your city files' fund information, thereby adding over $16 million to your cash reserves. First you must save a city to disk, giving it a name such as **MyTown.a_t**. In order to run the Debug program, you must have your DOS directory listed in the PATH statement of your autoexec.bat file, or Debug must be in the same directory as your city file.

Here's how to do this:

1. At the DOS prompt type

```
DEBUG MyTown.a_t
E D78C
87
W
Q
```

2. Restart A-Train and load MyTown. You should see some congratulatory messages telling you that you have reached several cash plateaus. Depending on the initial conditions of your game, you will find that you have increased your cash by approximately $16 million.



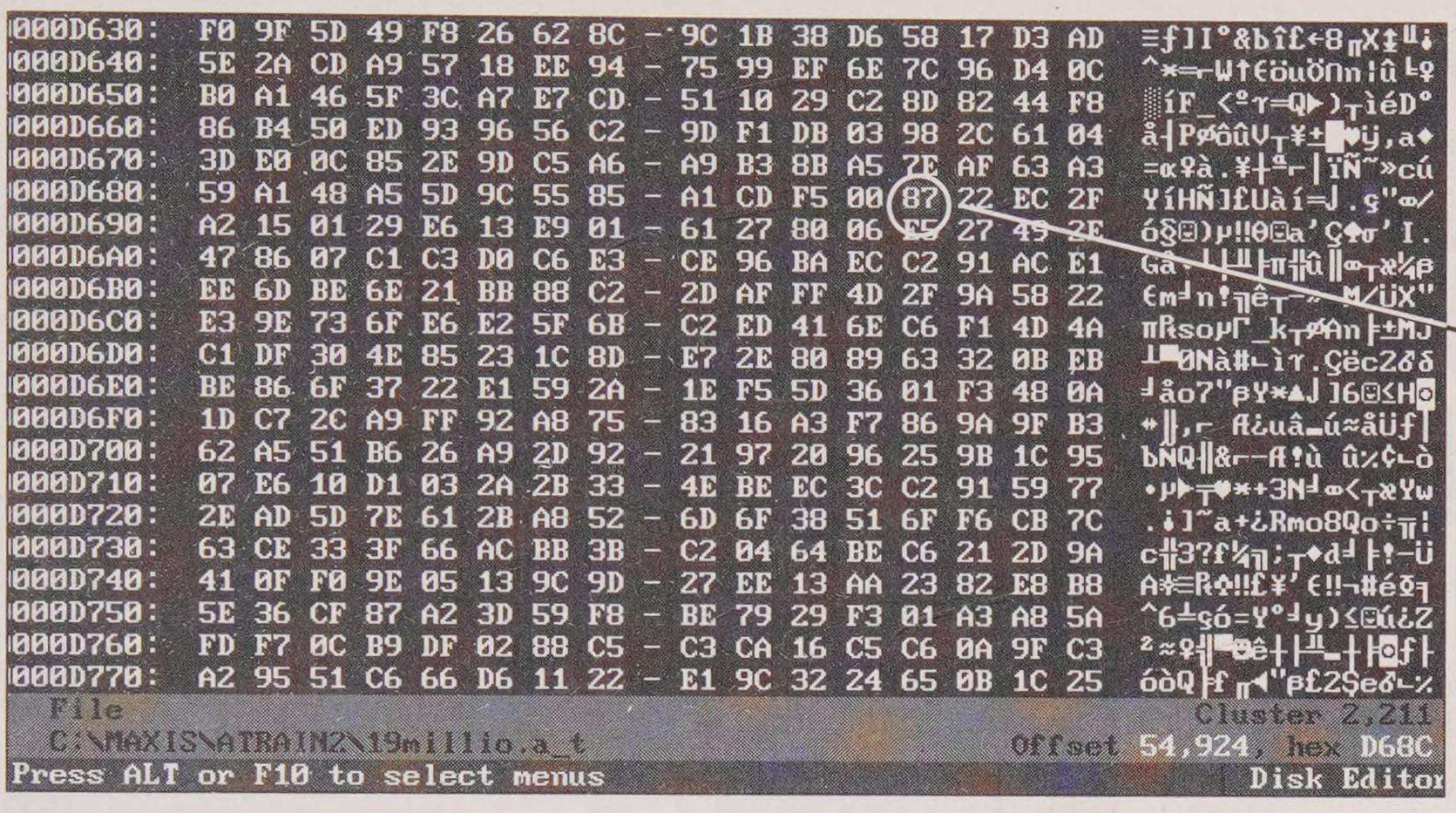
If you are using a disk utility such as Norton Utilities instead of Debug, you will find that your funds are stored at hex location D68C. (Debug and Norton differ in the way they count the header of each file. This accounts for the 100 hex location discrepancy between Debug and Norton.) Changing hex location D68C to 87, as shown in Figure 10.2, will give you over $16 million.

Using DOS's redirection capabilities, you can even automate your hex editing to work with any city file using one simple step. You must first create a text file containing the hex code using a text editor or DOS's COPY CON: command. To try this, enter your A-Train directory and type the following lines at the DOS prompt:

```
COPY CON: BANK.TXT
E D78C
87
W
Q
```

Then press Ctrl Z. Your text should be copied into a new text file called BANK.TXT. Now to hex edit your city all you need to do is type the following at the DOS prompt:

```
DEBUG MyCity.a_t<BANK.TXT
```



Change this Hex to 87

Figure 10.2 The Hex location to change if using Norton Utilities

With this method, you can add $16 million to any city file that you substitute for MyCity.a_t.

Cheating on the Macintosh

On the Macintosh, you can hex edit your city files using a file utility sold by Apple called ResEdit. Using this technique, you can add as much money as you like. In the example presented here, we will add $49 million.

Hex Editing $49 Million into Your Macintosh City File Using ResEdit

To add $49 million to your city file using ResEdit, follow these steps:

1. Start the ResEdit program.
2. Select the City file you wish to edit and click the Open button.



Figure 10.3 The ResEdit Program icon

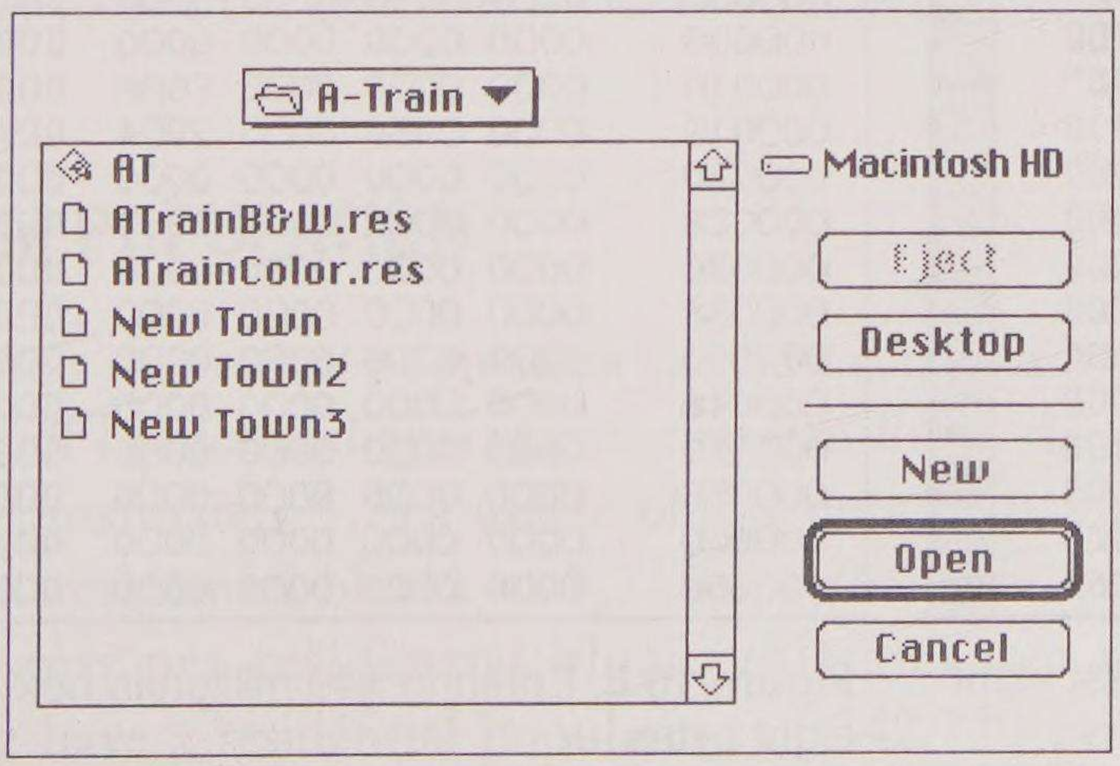


Figure 10.4 Selecting the City file for ResEdit

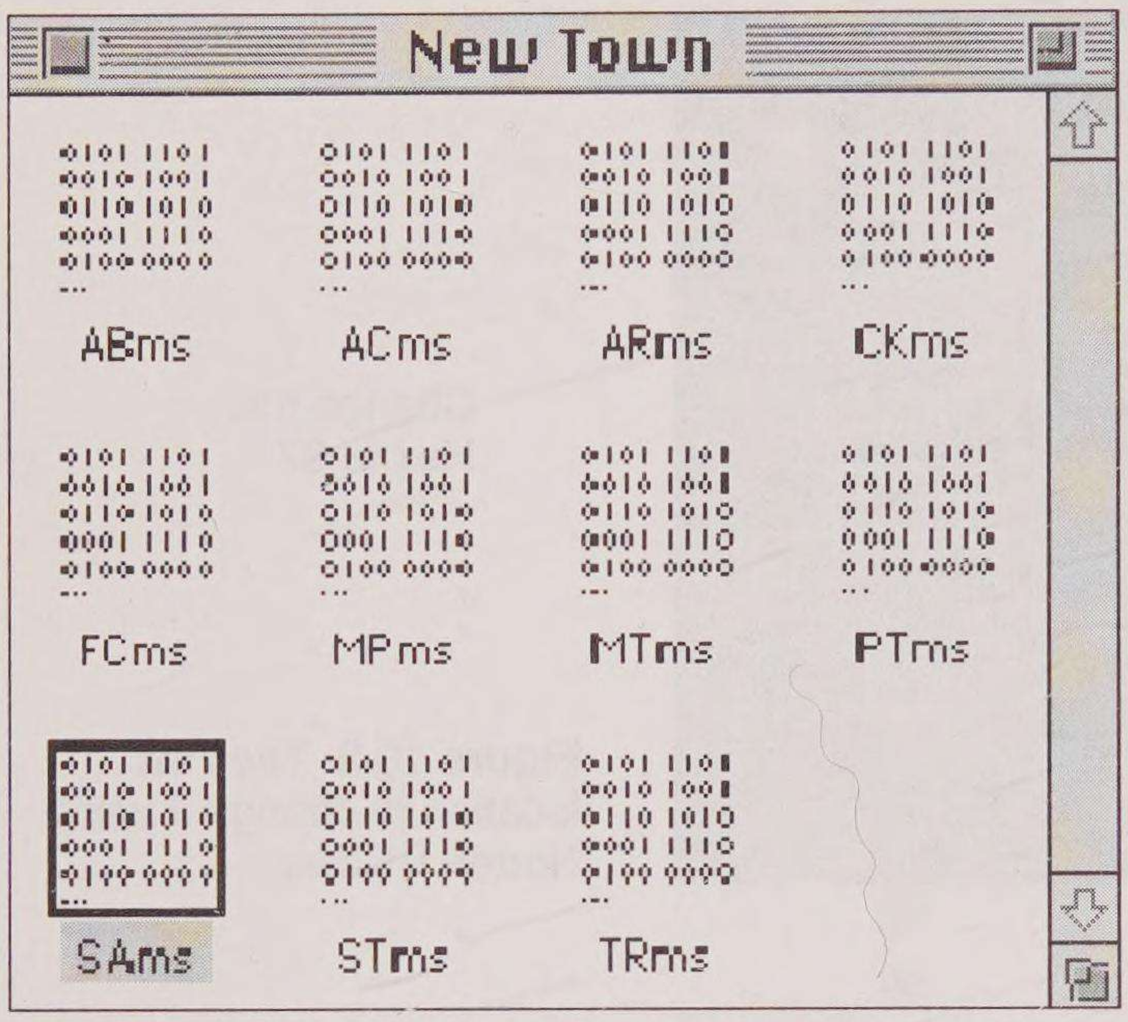


Figure 10.5 Selecting the SAms resource fork

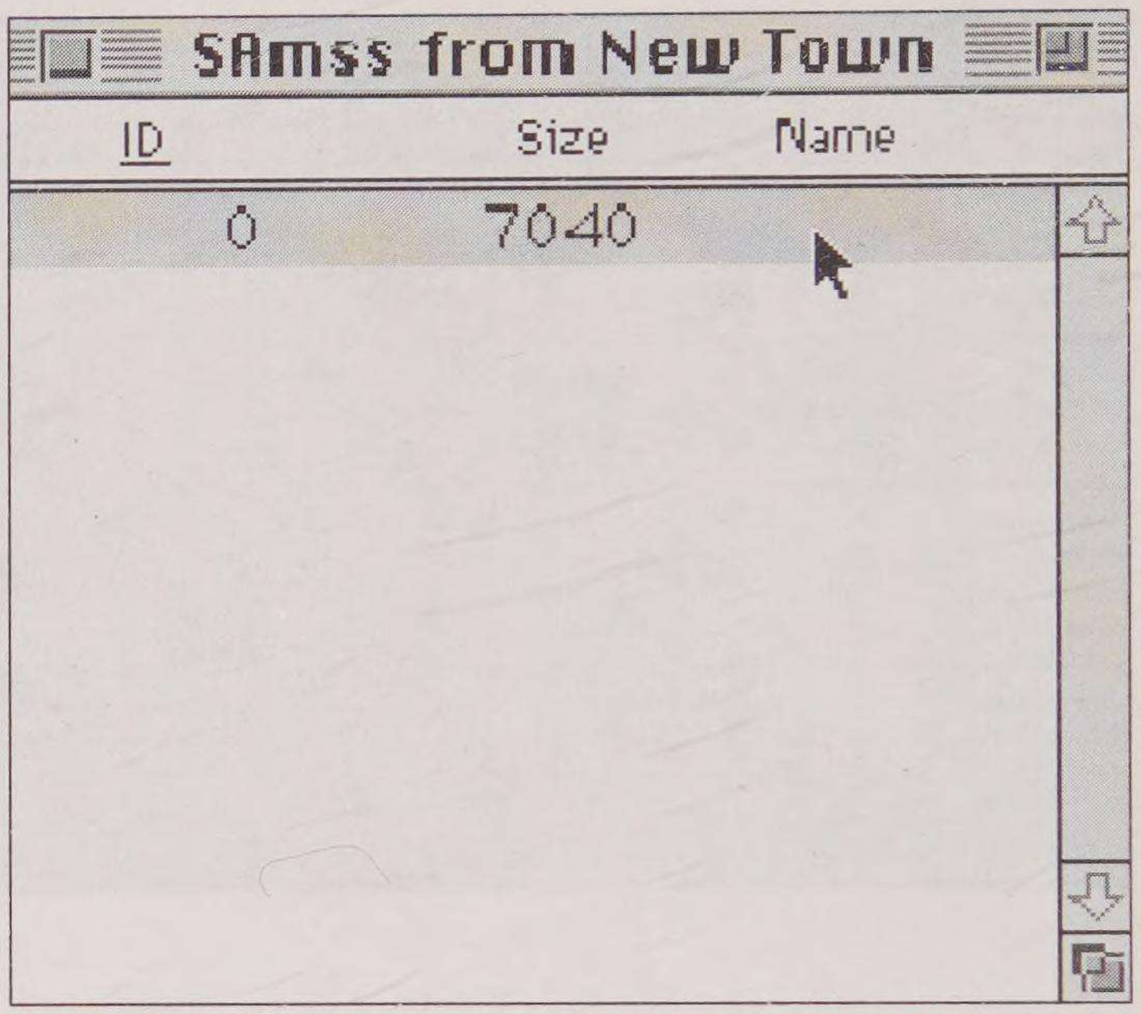


Figure 10.6 Selecting the ID 0 from the SAms resource fork

3. In the Resource window of your city's file, double click on the SAms resource fork.
4. When the SAms resource fork opens, double click on the ID 0 line.
5. When the ID 0 window opens, highlight the first eight bytes of data, as shown in Figure 10.7.
6. Type in 02EBAE40 (make sure to type in zeros, not the letter O). You should see your new hex characters replacing the first eight bytes of the ID 0 resource fork. This hex code is the decimal equivalent of $49,000,000.

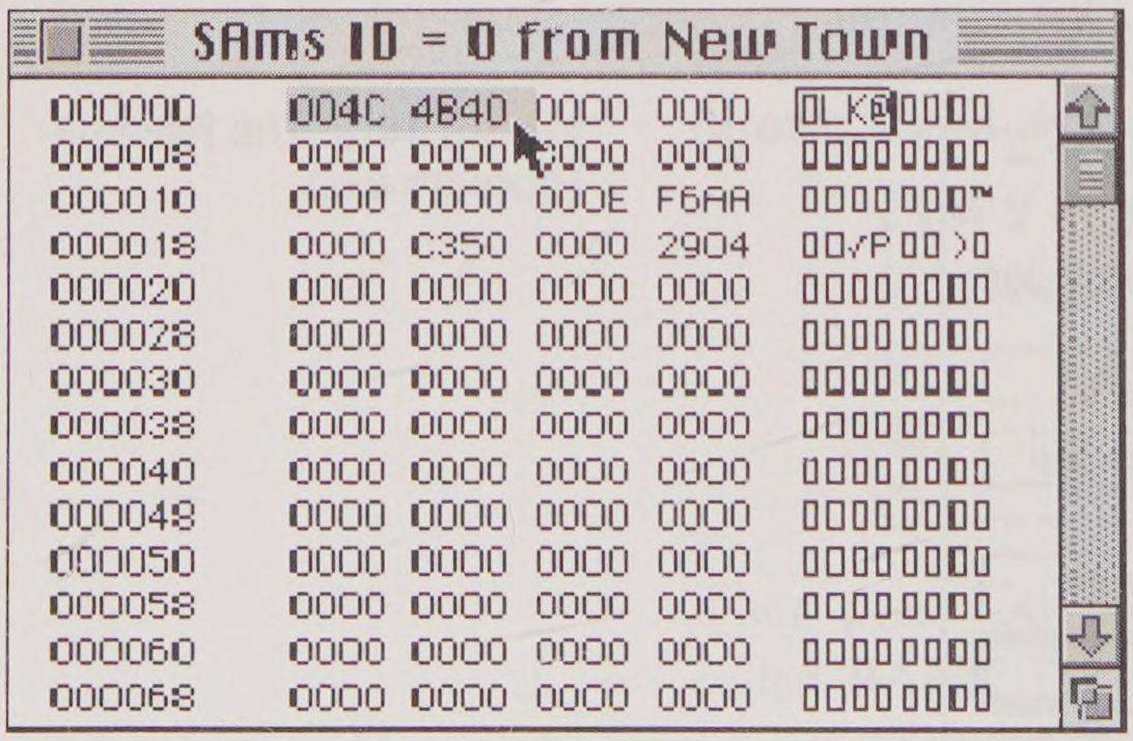


Figure 10.7 Selecting and highlighting the first eight bytes

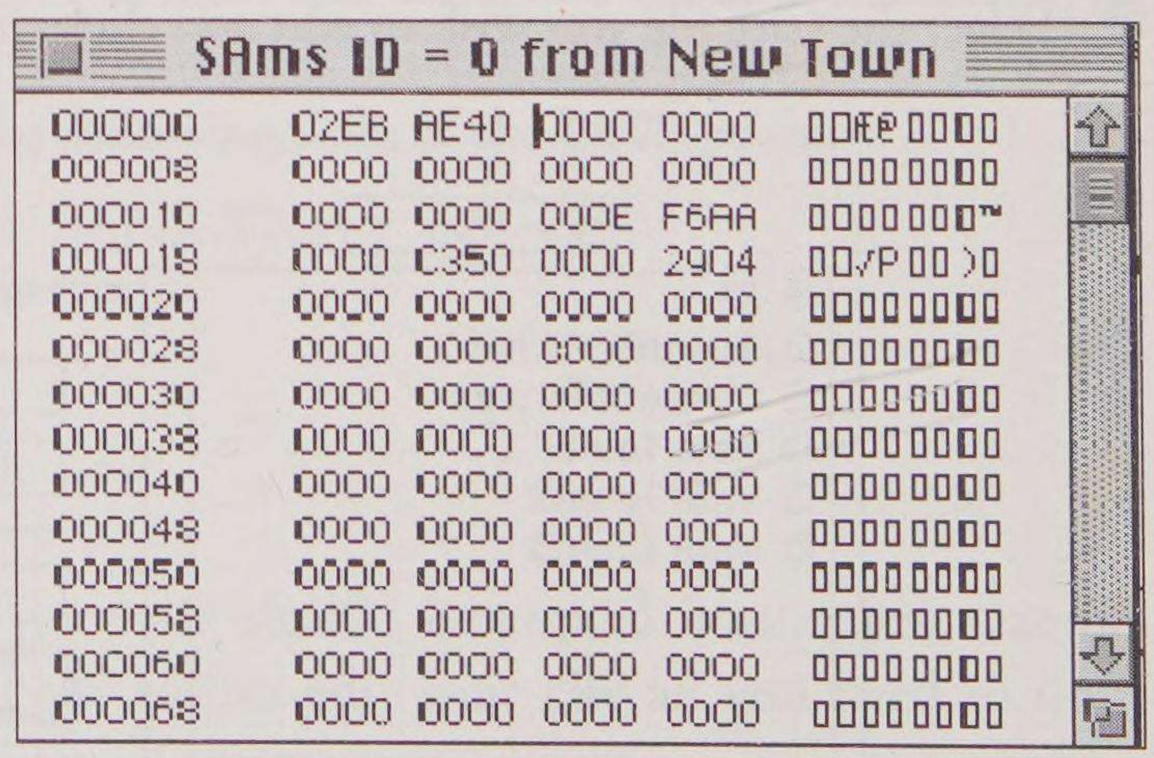


Figure 10.8 Entering $49 million in hex for the first eight bytes

7. Pull down the File menu and select Save.
8. Exit ResEdit and start up A-Train.
9. Load the City file. You should now have $49,000,000.



Figure 10.9 Saving the City file in ResEdit with the $49 million hex edit

Predicting the Stock Market and Collecting Dividends

There is a regular stock market cycle that is repeated every two months. Every year and a half, however, there is a stock market boom followed by a crash. In the two-month cycle, a gentle upswing is soon succeeded by a mild downturn in stock market prices. For more information on how to interpret where you are in the cycle using the stock market advisory messages, see Chapter 7.

You should always take advantage of the yearly stock dividends that are paid out on July 1st of each year. To collect the dividends, you must buy stock shares before midnight on June 30th. Once the dividends are disbursed, you can sell the stock to recoup your cash investment. By using this technique, whereby you buy stock just before July 1st and then quickly liquidate the stock after dividend day, you limit your exposure to the market volatility, yet you still reap the benefits of dividend interest. Stock dividends range from 8 percent to 28 percent of the market value of your stock portfolio.

LIMITED BANK LOANS AND STOCK PURCHASES

A-Train limits you to holding eight separate bank loans and up to eight different stocks. Even though you may not have reached your bank credit limit, you cannot exceed this number, so plan wisely any bank loans you may make. If you run short of funds later on, you won't be able to borrow again until one of your eight debts is paid off.

MAXIMUM POPULATION

The maximum theoretical population can be calculated by estimating the number of houses and apartments that can fit on the map. Since there are approximately 5,712 usable blocks on a map, you could fit either 5,712 residential blocks or 5,712 apartment buildings. With 60 inhabitants per residential block, this means a map could theoretically have a residential population of 342,720 people. Or, if

you substitute apartment buildings for residences, with a population of 526 people per building, you would have a population of 3,004,512 apartment dwellers. Since your cities will have other types of land use, figure that your population will probably never exceed 418,000 people. (I took the average of the two populations, and assumed that one out every four blocks would be allocated for dwellings, to arrive at this figure.)

Maximum Apartment Population = (5,712 blocks) x
(526 people per apartment building block) = 3,004,512 people

Maximum Residential Population = (5,712 blocks) x
(60 people per residential block) = 342,720 people

MAXIMUM INCOME FROM RAILROAD OPERATIONS

It's possible, in theory, to earn over $1,080,000 a month gross sales revenue from your railroad operations. Here is how I figured this out: take 25 AR-IIIs and multiply their assumed maximum passenger load of 1,200 passengers times the ticket price of $1.20 per passenger. Adding all this up equals approximately $36,000 a day, which in a month amounts to $1,080,000. Note that this figure does not include operational expenses of running the trains and stations.

Maximum Income = (25 AR III trains) x
(1,200 passengers per day) x ($1.20 fare per passenger) x
(30 days/month) = $1,080,000 per month

Of course, this hypothetical amount is not realistic, since you probably wouldn't run 25 AR-III passenger trains, and you most assuredly would not average such high daily passenger loads on a consistent basis. I would vouchsafe that a truly exceptional company would earn $600,000 a month in train revenues.

WINNING

Although you must have $50 million in cash to win the game, you may have won even if you have less than this amount. If your fixed

assets, including stocks, subsidiaries, trains, etc., are combined with your cash and they exceed $50 million, you have won the game! All you have to do is liquidate your fixed assets into cash to push yourself over the $50 million mark.

The maximum amount of cash you can have in A-Train is $49,999,999, although your net worth may be much greater than this if you include your fixed assets.

LOSING

There are only three reasons for losing a game in A-Train:

- Can't pay your taxes on June 1st
- Run out of money to pay operating expenses of your trains and subsidiaries
- You don't have enough money to pay off a loan debt that falls due

When your funds are low, your accountant will periodically appear to remind you if your cash reserves have dipped below $55,000.

RUNNING THE PROGRAM UNATTENDED

One of A-Train's best aspects is its ability to function unattended. For example, you can leave the simulator running overnight on your computer and wake up in the morning to find out how your city has evolved or changed. (To save your screen, turn off or darken your monitor.) This allows you to prototype and test to see if your city has a viable design. If your city is stable, it won't fall apart and you will have proved your planning prowess. If it is not stable, you can try again with a different design approach until you get it right.

A-Train's ability to function alone is also useful in accumulating large surpluses of funds for your budget. After leaving the simulator on all night, if you have a stable company operation with positive cash flows, you will wake up richer than before. Of course, if you are too successful, you may win the game overnight and find that the game is over in the morning.

DON'T CUT OR REMOVE THE PRIMARY TRACK

Don't sever the primary trunk railroad line to the outside world. It is your lifeline to the outside economy, and if it is cut, the trains that bring in trade will not be able to function correctly. This will harm your local economy. You cannot directly control the two trains that appear on this track at the beginning of each Map scenario. You can alter the route of the trunk line, but you can't divert these two trains off this line through switches, nor can you adjust their schedules. These trains can only be manipulated inside the Construction Set (see Appendix B). There you will find that your Train Registry contains two additional trains, #26 and #27, which you can select when using any of the Trains menus.

SPEEDING UP THE SIMULATION

To speed up the simulation when you want time to pass quickly, perform these steps:

1. First, move the speed control to its fastest setting.
2. Scroll the map to a barren, inactive part of your city where there are few if any train lines.
3. If you are using the PC version of A-Train, open the Subsidiaries and Trains menus (and if need be, Report 1).
4. Close the Satellite window.
5. Move the mouse pointer over the Trains menu. You should notice the clock speed up slightly.

The idea is to have as little animation appear on screen as possible, since this is what primarily slows down your computer.

How Much Time Is Required to Play a Game?

The number of years required to play and win a game will of course vary. For a crackerjack player, a single game might be won in less than seven game years; for others it may take 20 years or more. Because you must earn $50 million to win, the more money you take in per year, the sooner you will win. A game year on a 386 25 MHz machine will take about 75 minutes of real time. This means that a

typical game can last anywhere from 9 to 20 hours.

Speeds are slightly slower than this for A-Train running on a Macintosh IIsi.

LAND SPECULATION

Since you are the one who knows where all future development is going to occur, you can make lots of money through land speculation. Before you build any railroad stations or tracks, buy up all the surrounding land. After you put in the stations and tracks, you can sell the land for a hefty profit. You can generally make $1,000 per block around small stations and $500 per block around large stations.

You can also employ this technique to make easy profits when the Bullet Train comes through. The Bullet Train always appears crossing one of the four corners of the map, so when you see the tracks under construction, buy up as much land along the right of way as you can. After the Bullet Train is in operation, sell land for hefty profits.

SPEEDING UP LAND DEVELOPMENT BY BUYING AND RESELLING

If you want to speed up development in your city, buy up vacant land with vegetation on it and then sell it. It turns out that A-Train residents and rival companies don't like to clear the land themselves, and so will avoid moving in until it is done for them (although eventually they will get around to it). Make sure that there are plenty of normal building materials nearby.

CONSTRUCTING STADIUMS AND RESELLING CAN OFTEN NET YOU $2 MILLION!

One of the most outrageous profits you can make in A-Train is through constructing and selling stadiums. The larger your city, the better the profit. For small towns, such as New Town Map Scenario 1, it is not advisable to construct a stadium until you have brought the population up to a higher level. With large cities, such as the Downtown Reorganization Map Scenario 6, you can net a cool $2 million.

FACTORY STRATEGIES

Factories, which produce construction materials, can be combined to multiply their output. For a view of the best orientations, consult Chapter 5. In order for factories to remain profitable, you must not allow materials to stack up in the factory storage yard. Either use the materials directly yourself, or cart them off in a freight train to some other location.

THE PROFITABILITY OF GOLF COURSES, AMUSEMENT PARKS AND SKI RESORTS

If a Golf Course is doing spectacular business, it can earn over $800,000 per year. Amusement Parks can earn up to $408,000 per year, and Ski Resorts, which operate only during the winter seasons, can earn around $100,000 per winter.

LARGE STATIONS BRING IN DOUBLE THE BUSINESS

Constructing large railroad stations, besides causing roads to be built, brings in twice the business of small stations. With a small station, the simulation will build only buildings and subsidiaries smaller than commercial/department stores. No high rises or large-scale developments will occur around small stations. Development around small stations eventually reaches a plateau and soon levels off. Large stations, however, have a different effect; they constantly encourage large-scale, high-density developments, and they act as a lightning rod for attracting more and more passengers.

AR-III STANDS FOR ARTDINK

Artdink, the original designers of A-Train, named the AR-III in honor of their company. The AR in AR-III stands for Artdink. The AR-III is probably based on a Japanese train called the Izukyu Series 2100.

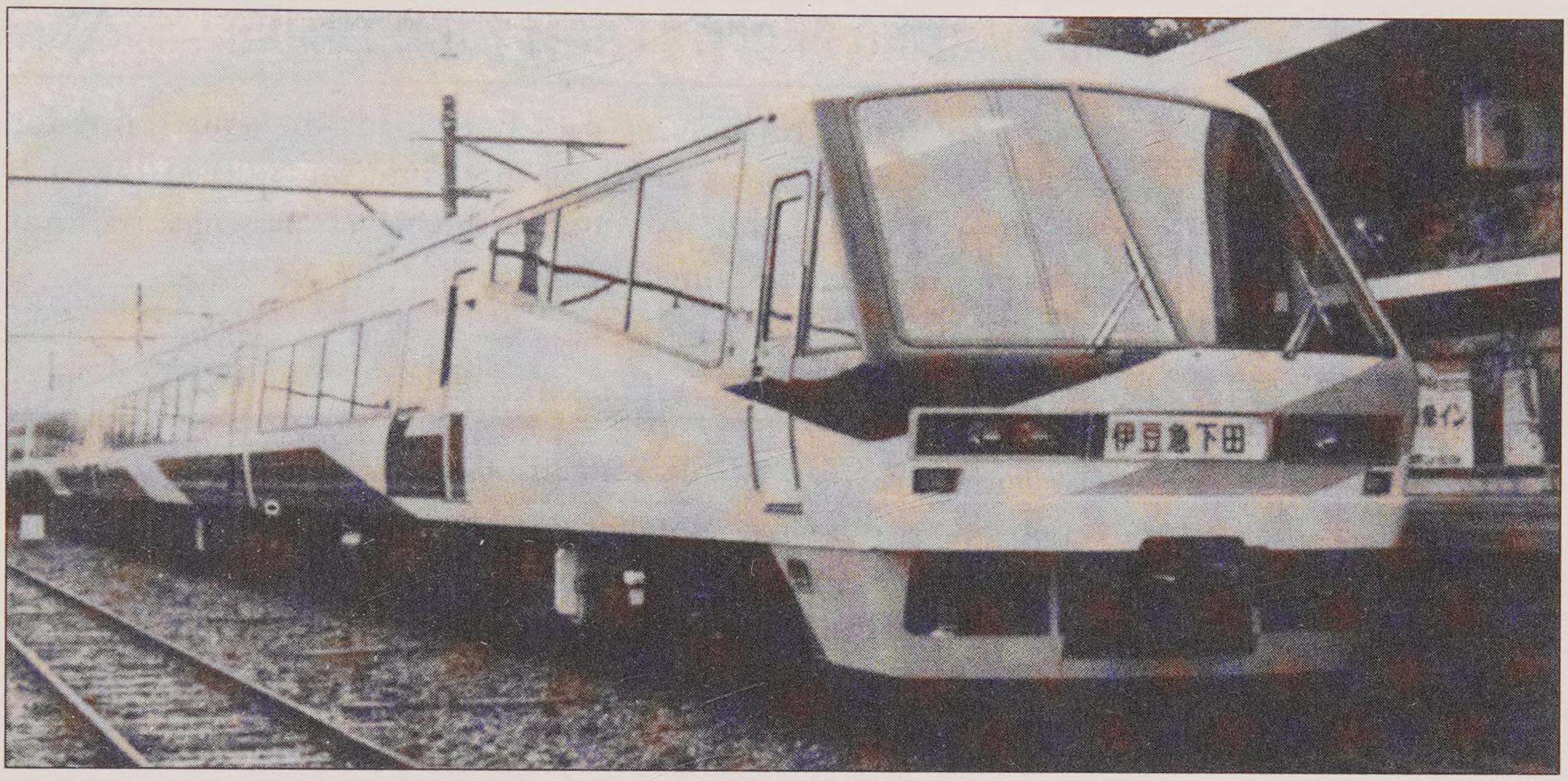


Figure 10.10 The AR-III is probably based on the Izukyu Series 2100 train

BUYING AND SELLING SUBSIDIARIES

You are allowed to buy and sell up to 30 subsidiaries in the first game year and approximately 15 or more in subsequent years. Chapter 5 discusses the formula by which you can calculate the exact number of subsidiaries you are allowed to sell per year.

If you sell your allotted number of subsidiaries in a given year, you must wait until April 1st before you can start selling them again. I like to think of April 1st as payday, since I usually use up my subsidiary limit long before this time, and eagerly await the chance to again make some quick bucks through building and selling new subsidiaries.

Tax Strategies

To avoid taxes, just before the March 31st tax assessment, convert as much of your year's cash profits as you can to subsidiaries, stocks, and real estate. Immediately after this day, on April 1st, you can convert these holdings back into cash. This will get you out of paying the 50 percent income tax on your profits. Your cash profits, which you have plowed into material assets, will instead be taxed at the much lower 5 percent property tax rate.

MAXIMIZING PROFITS FROM YOUR TRAINS

If you are trying to increase passenger loads on your trains for increased efficiency, set the departure time for 8:00 AM at each station. As it happens, each station has the highest passenger traffic at this time. The next best time is 6:00 PM.

Stations Less than 13 Blocks Apart

For stations that are less than 13 blocks apart, you should only run trains that carry at least 2,300 passengers *per day* (not per trip). This means you should have an average load of 600 passengers per trip to break even. (This will vary with train type). Do not use the following trains for distances less than 13 blocks; they will always lose money:

- KIHA-40
- 201
- 415
- 206
- 211
- AR

Stations 14 to 19 Blocks Apart

Stations that are between 14 and 19 blocks apart should only run trains that carry at least 600 passengers *per day* (not per trip). This means you should have an average load of 300 passengers per trip to break even. (This will vary with train type). Do not use the following trains for this distance; they will always lose money:

- KIHA-40
- 201
- 415
- 206
- 211

Stations 20 to 25 Blocks Apart

Stations that are between 20 and 25 blocks apart should only run trains that carry at least 350 passengers *per day* (not per trip). This means you should have an average load of 175 passengers per trip to break even. (This will vary with train type).

The following trains should be avoided for this distance unless they are carrying greater than 1,500 passengers per day:

- 206
- 211
- AR

These trains should not be used at all:

- KIHA-40
- 201
- 415

Stations 26 to 34 Blocks Apart

Stations that are between 26 and 34 blocks apart should only run trains that carry at least 300 passengers per day. (This will vary with train type).

The following trains should not be used unless they are carrying at least 950 passengers *per day*:

- 206
- 211
- AR

These trains must carry at least 1,200 passengers per day to break even at this distance:

- KIHA-40
- 201
- 415

Stations Greater than 35 Blocks Apart

Because the ticket prices jump by 50 percent for stations that are greater than 35 blocks apart, minimum passenger requirements to break even drop considerably for each train. As long as you are carrying more than 160 passengers, you will make a profit with the following trains:

- KIN-30000
- KIHA-82
- NISHI 5000
- 113
- FP-45
- MEI 7000
- 381
- EF-6524
- AR-III

At this station distance, if you are carrying more than 700 passengers you will make a profit with these trains:

- KIHA-40
- 201
- 415
- 206
- 211
- AR

BULLET TRAIN

In order for the Bullet Train to be constructed, your population must have reached at least 64,000 people and you should have at least 200 building points. Building points are awarded according to the number of public buildings and lease/office buildings that are on the map. Each public building is worth one building point, and each five floors of a lease/office building is worth two building points.

ORDINARY EVENTS

Here is a summary of some ordinary events that occur during the course of the game:

Table 10.1: Ordinary Events

Date	Event
March 31st	Annual determination of taxes
April 1st	Fiscal year financial report (subsidiary selling limit reset)
June 1st	Taxes due from March assessment
July 1st	Stock dividends paid out
24th of each month	Bank interest on cash reserves paid out
December 24th through February 28th	Winter season: snow appears, golf courses close, and ski resorts open
March 1st through December 23rd	Spring, Summer, and Fall seasons: golf courses reopen, ski resorts close

For a list of the Bank and Stock Market holidays, see Chapter 7.

For diurnal events, the day is broken up into hourly increments. At specific times, reports are updated, money is debited and credited

to your accounts, and trains, ships, and airplanes are moved. Here is a brief summary of what happens on a daily basis:

Table 10.2: Diurnal Events

Time	Event
Hourly	Trains, ships, and airplanes move. Train income and expenses updated in Reports 1 and 2
11 AM and 7 PM daily	Subsidiary income and expenses updated in Reports 2 and 3
9 PM daily	Sation income reported in Reports 1 and 2
9 AM daily	New stock market results available

EASTER EGGS

There are a few interesting Easter eggs buried in the PC version of A-Train. In computer programs, the term Easter eggs refers to hidden or undocumented features that are inserted by programmers for their own vicarious enjoyment. In most cases, nobody knows about them, and they remain secret and undiscovered. For example, one classic Easter egg in Microsoft Windows 3.1 is found under the Help menu in the Program Manager. Select About Program Manager and then, while holding down the Ctrl and Shift keys, double click on the Windows 3.1 icon. Close the window and then open it up again. You will see an interesting animation sequence. If you repeat this trick again, you will see something even more interesting.

Another Easter egg is found in Windows 3.1 Solitaire. If you reach a stalemate in Solitaire, you can employ a secret cheat to obtain more cards from the deck. Here's how to do this: click on Undo, then hold down the Ctrl, Alt, and Shift keys and click on the deck. Now, instead of being dealt three cards at a time, you will be switched to single card mode. This allows you to use cards that were previously unavailable in the deck.

Aside from the previously mentioned embezzlement function, in

the PC version of A-Train there are some special Easter egg messages that are triggered by certain actions you undertake.

Keyboard

From the keyboard, type in the following characters or words to trigger the following messages or events (be sure to hold down both Shift keys):

Table 10.3: Some Secret Keyboard Commands

Type in:	Message Result:
Ctrl Shift Alt V	What version of A-Train you own
Ctrl Shift Alt F	Bullet train coming through
Ctrl Shift Alt A	How much track you have
Ctrl Shift bellybutton	When you lose the game, a picture of the two PC programmers will appear

Clicking on the Stadium

When you click on the Stadium, a message will pop up on screen with some idiotic nonsense. For this to work, all your reports and menus should be closed. The messages change each day. On special drinking holidays there are some ribald messages (29 in all) which I won't mention here. Some of these holidays are listed below, although for the first six months of your game the messages will not appear:

- Halloween night
- November 1st
- January 1st
- January 26th
- March 18th

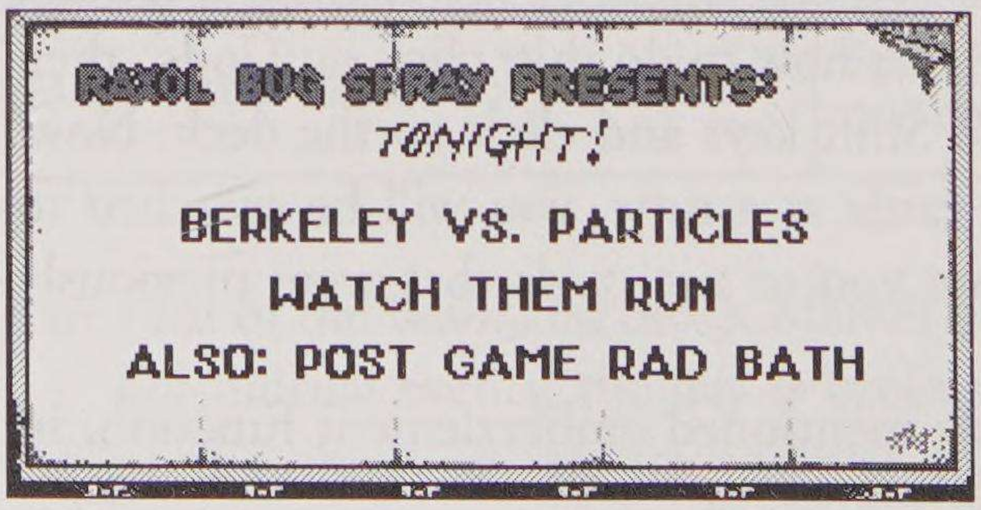


Figure 10.11 Easter egg stadium message

If you manage to view all the major drinking holiday messages for 7 1/2 years, you will see a congratulatory message: "You achieved your goal. You are now ready to be a grand Yak Master Hurler."

There are also a few birthdays celebrated through the stadium message forum. Some important dates are August 9th and January 27th.

Special Events

Some interesting events that occur during the year are listed below:

Table 10.4: Special Events

Date	Event
February 29	Leap year occurs once every four years
April 5 and April 6	Birds migrate north
July 7	UFO flies from the northeast to the south
Saturday nights in August at 9 PM	Amusement park fireworks
October 1 and October 2	Birds migrate south
Christmas Eve, December 24 10 PM to 1 AM	Santa Claus rides in his sled pulled by his reindeer. He flies north on the far left hand side of screen and exits off the northwest corner of the map.

Mannyville

Named in honor of the legendary Manny from Maxis, Mannyville is the opening city you see each time you start up A-Train. Though this isn't really a Easter egg, most people don't know that you can play this city by first saving it, then loading the newly saved game from the System menu.

WHAT HAPPENS AFTER 100 YEARS?

When the simulator reaches the year 99, it resets the date to the year 1. Your game will continue on as if nothing had happened. You can play on indefinitely, but A-Train will not record how many centuries have elapsed.

GETTING HELP WHEN YOU ARE STUCK

There are many on-line services with expert players who can help you when get stuck with a particular problem. There is help available on Prodigy, CompuServe, AmericaOnLine, and many local BBS (Bulletin Board Service) services. Since most services, with the exception of Prodigy, stick you with an hourly connect charge, your best bet for seeking advice at the lowest cost is on Prodigy.

To join Prodigy, or any other service, you must have a modem and special telecommunications software. Prodigy has a special low-cost kit you can buy which contains the software and local log-on telephone numbers for you to access the service. The monthly rate is $12.95, and you are allowed to send E-Mail messages to any other Prodigy member at a cost of 25 cents per message (the first 25 messages a month are free). Reading messages and leaving messages on the bulletin boards, however, is free. There is no file transfer capability as of yet, which is one big drawback to the Prodigy service when compared to other services such as CompuServe and AmericaOnLine. This means that you can't exchange or share city files on Prodigy as you can with the other on-line services (although there is an unofficial way to do this, as you will see shortly).

To obtain help with A-Train on Prodigy, jump to the Computer Club and then select the Bulletin Board. In the list of topics, choose Other Games, and then look for the subject A-Train. You can leave or read new messages, and you can reply to previous messages on a particular A-Train subject.

TRADING YOUR A-TRAIN CITIES WITH OTHERS

One of the most exciting aspects of A-Train is that you can create cities and share them with others. There are two ways to do this:

- SneakerNet (you walk your disk over to somebody else's computer). Simply copy your city files with the extension **.a_t** to a floppy disk, then transfer the file to the other person's A-TRAIN directory.
- Via modem (you transfer your city file over the telephone at the speed of light). For example, using a Practical Peripherals PM14400FXSA V.32bis high-speed modem and the telecommunications program Procomm Plus for Windows, you can transfer entire cities over the telephone in less than 30 seconds.

Recently, new high-speed modems have become available and it is now possible to send data over the telephone faster than ever before. These new modems are called V.32bis 14,400 bps (bits per second) and are six times faster than the standard 2,400 bps (also called 2400 baud) modems they replace. Most of these modems also offer send/receive fax capability, meaning that they have the ability to send and receive faxes from any fax machine in the world. One such modem is the Practical Peripherals PM14400FXSA V.32bis with send/receive fax built in. This modem is still compatible with all older modems, including 1,200 bps, 2,400 bps, and 9,600 bps models. As an added feature, it also has a liquid crystal display that shows text messages of various conditions such as line quality, carrier speed, error correction, number of fax pages sent, etc. I tried this modem while transferring several city files and was amazed at how fast the files were sent. You can expect to send 1,600 bytes per second, which is the equivalent of 96,000 bytes per minute or 5.6 Mb per hour.

Transferring Files Through Prodigy: An Unauthorized Approach

In an interesting development, some creative wizards have figured out a way to send and receive city files using the E-Mail capability of Prodigy. Even though this is not officially approved by Prodigy, this file transmittal method works and can be used to send files to and receive files from any other Prodigy member. Technically, you can also leave the data files on the bulletin board for public dissemination, but this is a controversial issue with the Prodigy authorities, who frown on this kind of activity. However, you can certainly use your own private messages (i.e., E-Mail) to send and receive city files, since Prodigy is legally restricted from censoring private mail.

In order to transfer files via Prodigy, you must have *either one* of these Prodigy utilities:

- ProUtil version 5.0. This Prodigy utility is available from Royston Development for $20. You can order it directly through Prodigy by jumping to PROUTIL on-line. The program allows you to upload and download text files to disk, or to your printer, and to create automated macros and other time-saving tools for using the Prodigy service.
- VGAUTIL. Shareware utility available on many local BBS services. Allows you to upload and download files to disk from Prodigy.

In addition, you must have PKZIP and PKUNZIP, which are file compression/decompression programs needed to reduce the size of your file before transferring it via Prodigy. You will also need ENCODE and DECODE (comes with VGAUTIL) to break up your messages into the 2,880-byte chunks that you are allowed to send for each E-Mail message. You can obtain these utilities from many local BBS services or other on-line services such as CompuServe.

File compression/decompression and conversion utilities needed are (both are required):

1. PKZIP and PKUNZIP
2. ENCODE and DECODE

Here is how to trade cities (or any other files) using the Prodigy on-line service:

1. Compress your file using the PKZIP compression program. Before decompression, the city file is 62,090 bytes in size; after being compressed with PKZIP it will be approximately 9,996 bytes in size. Assuming PKZIP and your city file are in your Prodigy dictionary, type the following:

   C:\PRODIGY>pkzip Yourcity Yourcity.cty

2. Use the ENCODE program to break your compressed file into 2,880-byte pieces that will fit in the six pages of text that you are allowed to send for each Prodigy message. You should be able to fit your compressed city of 9,996 bytes in four E-Mail messages and have room left over. ENCODE version 2.01 will create a

series of files named UPLD0001.txt through UPLDnnnn.txt that you must then send individually as E-Mail messages. ENCODE version 1.00 will create a series of files named UPLOAD00.txt through UPLOADnn.txt. ENCODE version 2.01 first displays the number of required messages, and then waits for you to press {Y} to continue. The only other major difference between the two ENCODE versions is that version 1.00 has a 48K file size limit, while version 2.01 can handle files up to 20 Mb (MegaBytes)! Assuming that ENCODE and your zipped city file are in the Prodigy directory, type the following:

```
C:\PRODIGY>encode YOURCITY.zip
```

3. Log onto PRODIGY and send each UPLDnnnn.txt (UPLOADnn.txt if you are using ENCODE version 1.00) file as a separate E-Mail message. VGAUTIL users should upload the UPLDnnnn.txt files as is. Do not enable BIN, HEX, or SKIP.

To download your files from Prodigy:

1. Inside Prodigy, PRINT to disk each of the messages in the proper order (i.e., UPLD0001.txt, UPLD0002.txt, UPLD0003.txt, etc.).

2. You next need to concatenate all the messages into ONE file using DOS's COPY command (I named the concatenated file "Yourcity.txt"). While in the Prodigy directory type the following:

```
C:\PRODIGY>copy UPLD0001.txt + UPLD0002.txt
+ UPLD0003.txt...YOURCITY.txt
```

3. Now you will need to assemble the file for decompression using DECODE. Assuming DECODE is in your Prodigy directory, type the following commands:

```
C:\PRODIGY>decode YOURCITY.txt YOURCITY.zip
```

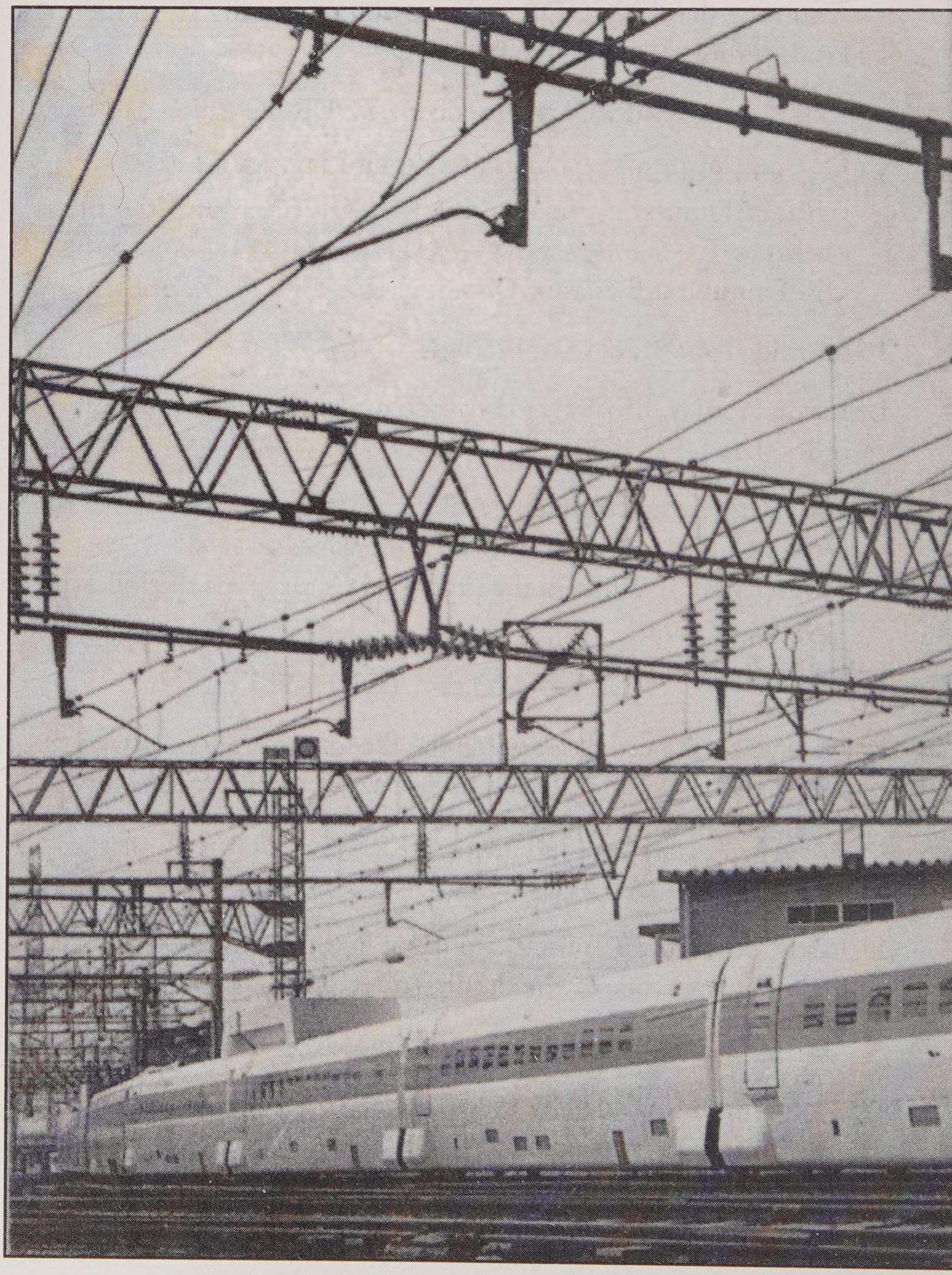
4. Lastly, decompress Yourcity.zip using PKUNZIP. To do this, type the following while in the Prodigy directory:

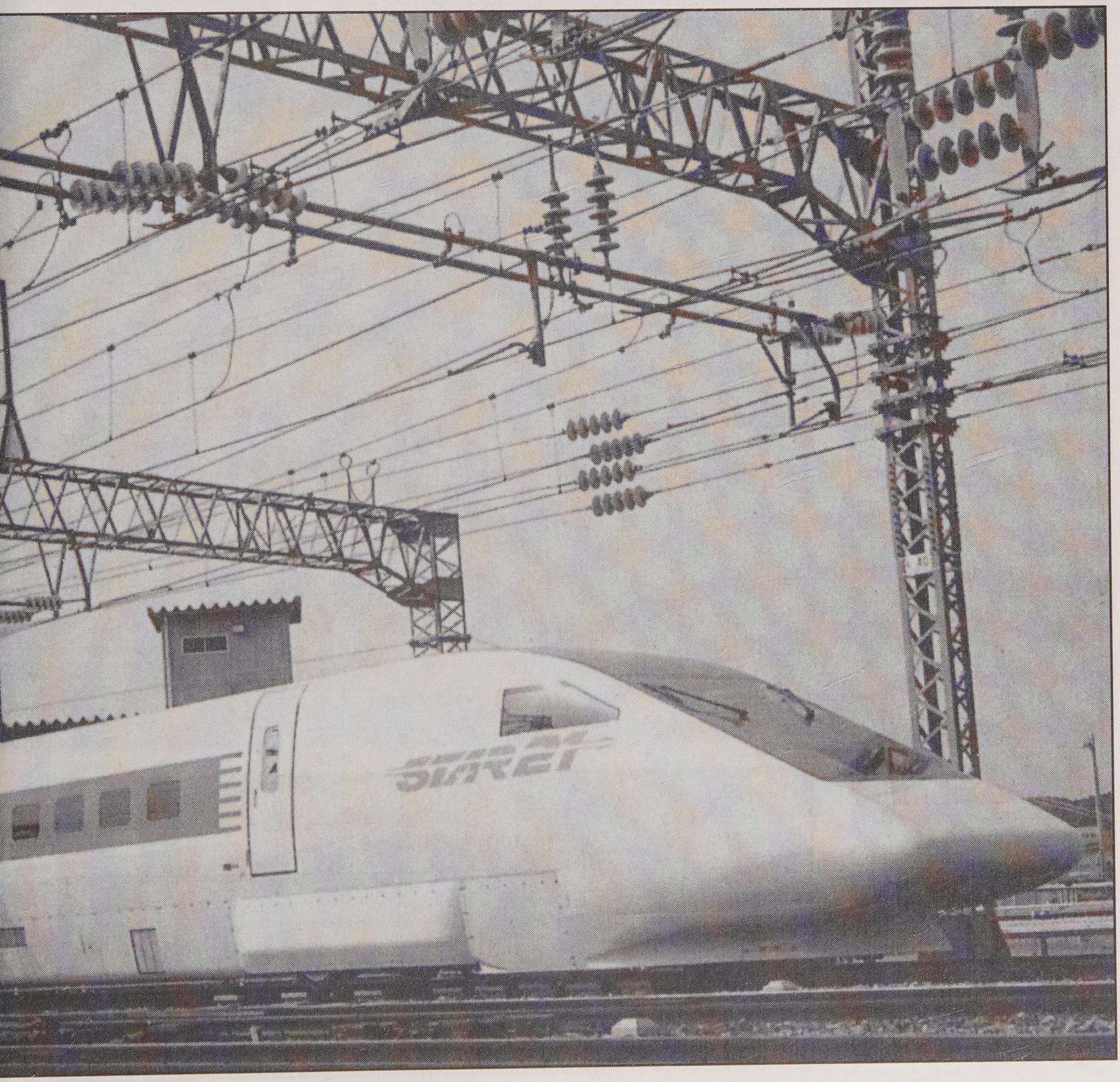
```
C:\PRODIGY>pkunzip YOURCITY.zip
```

After decompressing the city file you need to move the decompressed city file Yourcity.a_t to your A-TRAIN directory, and you will then be able to play!

PART THREE

Winning Strategies for the Six Scenarios




START

1 MAP

New Town



Table Map 1.1: Game Parameters	
Difficulty	Easy
City planning flexibility	Unlimited
Growth rate of city	Highest
Goal	Develop city into a metropolis
Complications	None

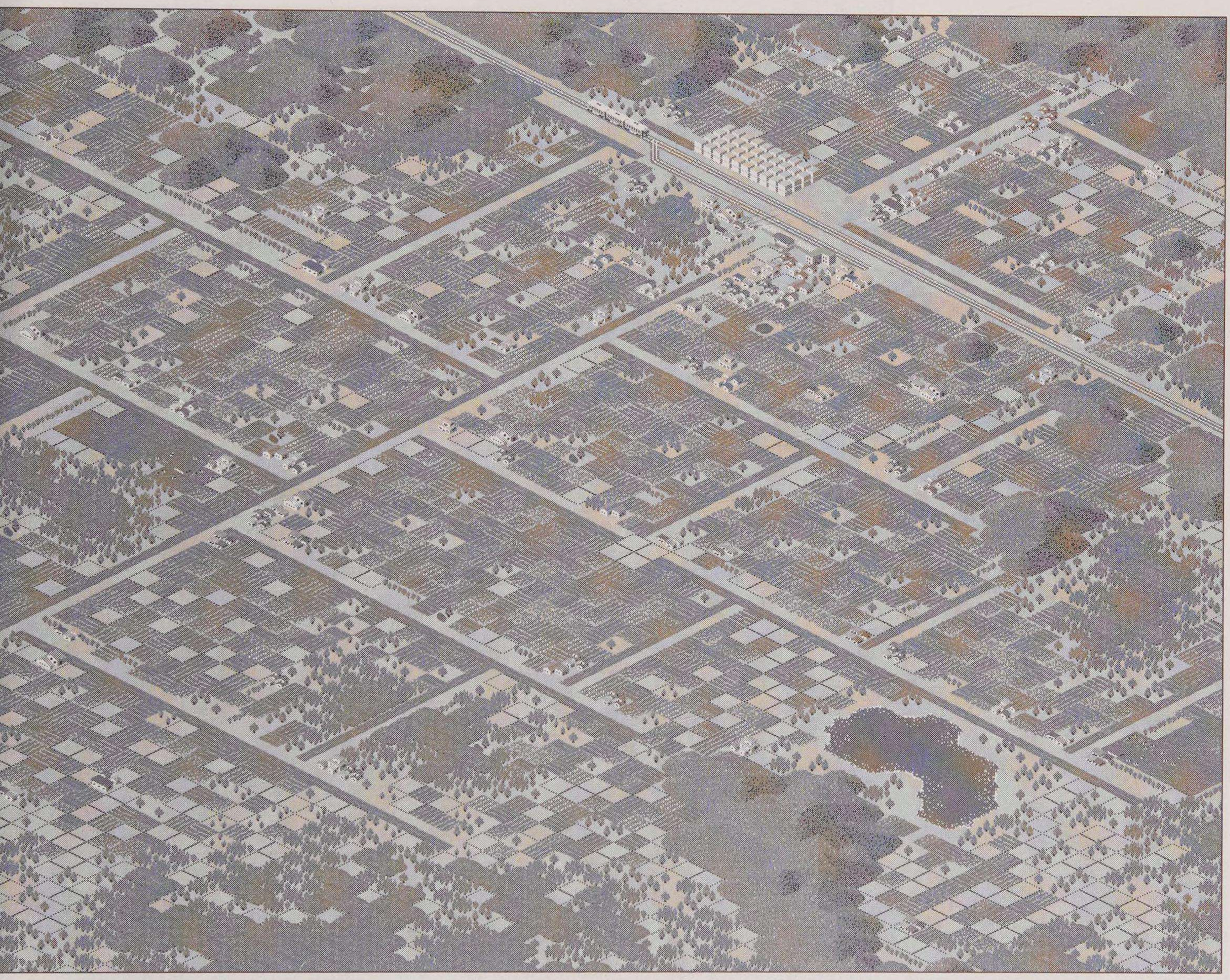


Figure Map 1.1 New Town

Table Map 1.2: City Statistics	
Size	Small town
Type	Agricultural
Budget	980,650
Population	10,501
Labor demand (# of workers needed)	50,000

Table Map 1.3: Railroad Company Statistics	
Cash	$5,000,000
Credit limit	$117,000
Blocks of land owned	21
Number of trains	0
Number of stations	1
Number of switches	1
Track segments	83

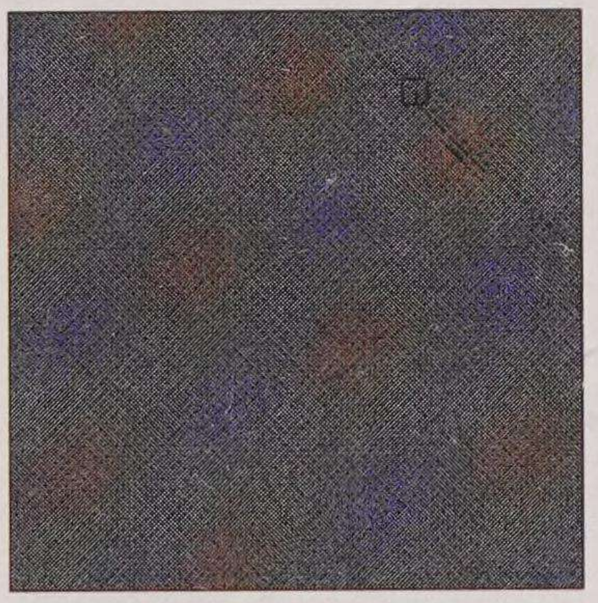


Figure Map 1.2 Railroad Map

According to the map designer, New Town is based on a country city in the Saitama Prefecture of Japan. This map is the most basic of all the scenarios and is perfect for the beginning A-Train player. You can design the city as you see fit without any restrictions.

GOALS

Your goal in this scenario is to develop New Town into a thriving metropolis. New Town starts out as a suburb of a big city that is off the map. Since the population is growing, you should expand the transportation network, and accommodate the needs of the consumer public.

STRATEGY

The labor demand and growth rate of New Town are very high. When developing the city, try to increase the frequency of the trains transporting construction materials from the outside. This means adding new freight trains to supplement the two initial trains. Remember the trunk line to the outside is your lifeline to the large city that is off the map.

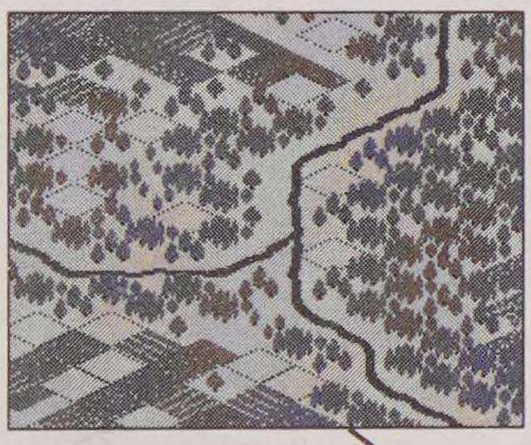
Since New Town starts out as a suburb of the off-screen city, you should add belt lines with stations south of the first station. Before you build the belt line, buy all the real estate inside the belt, then build the rail lines. Wait a week before selling the land to reap a hefty speculation profit. After the land is sold and the trains are running, watch the houses quickly sprout up like mushrooms (remember the rule that land that is cleared by you, such as when you buy and sell land, will always develop faster than undeveloped land).

Start first with one belt line, than add a second belt line when the first area starts to show some growth. Continue in this fashion, building upon your success.

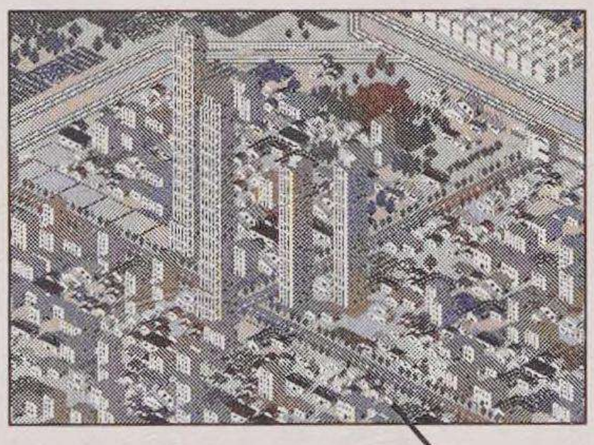
Next, construct some factories, and link them together to increase their output, as is demonstrated in chapter 5. Early on, you'll want to have as many construction materials as possible. Once you have a steady, reliable flow of materials, build some apartment buildings and lease buildings around the first station. This will help jump-start development around this station.

Because suburban dwellers in New Town need places to shop, construct department stores as soon as it is feasible. Then build more lease/office buildings to create a local service economy for the white collar workers.

You can use the suggestions in Figure Map 1.3 to aid you in your quest for global domination.



You must develop your city's rail lines, stations, and roads so that they are not hindered by the river. Large stations should always face away from the river, so that roads can extend for at least 12 blocks.



Build belt lines south of the first station. Replace first station with large station. Encourage development in the areas inside the belt lines.

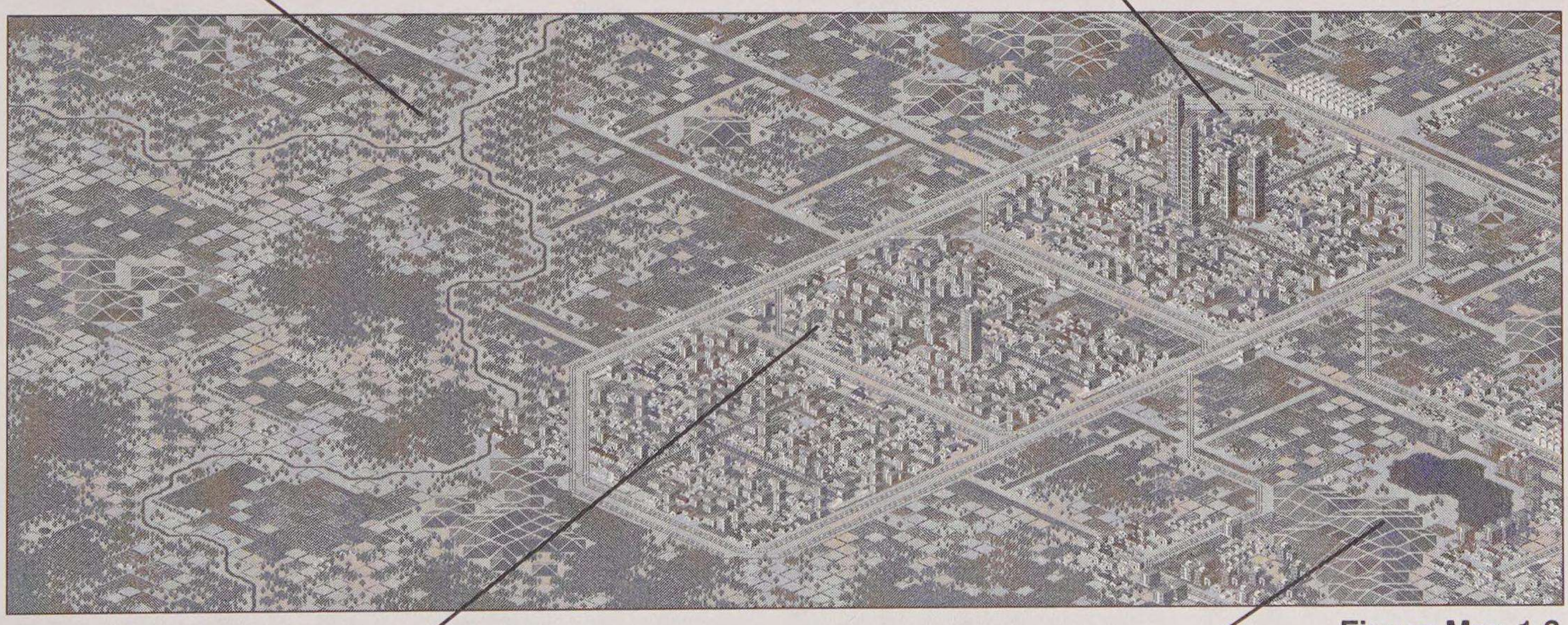
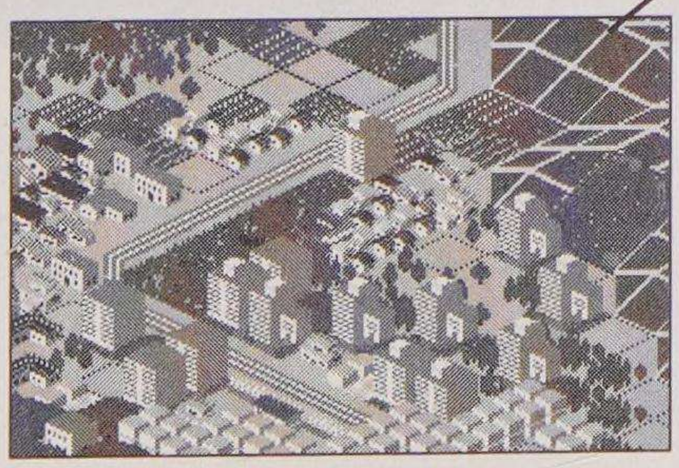
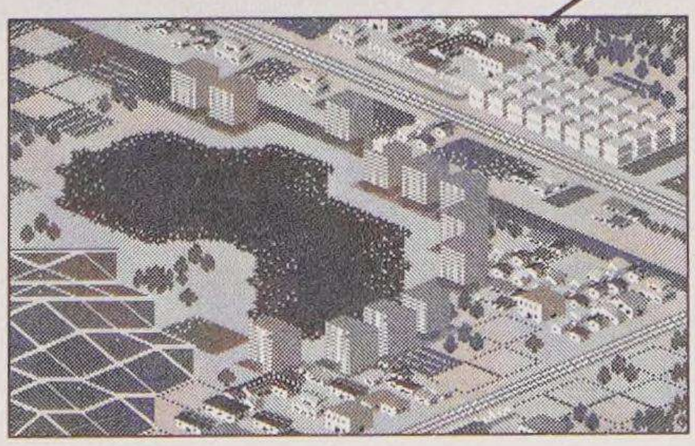


Figure Map 1.3



Establish a ski resort and golf course in this area. Create a resort development for the yuppies.

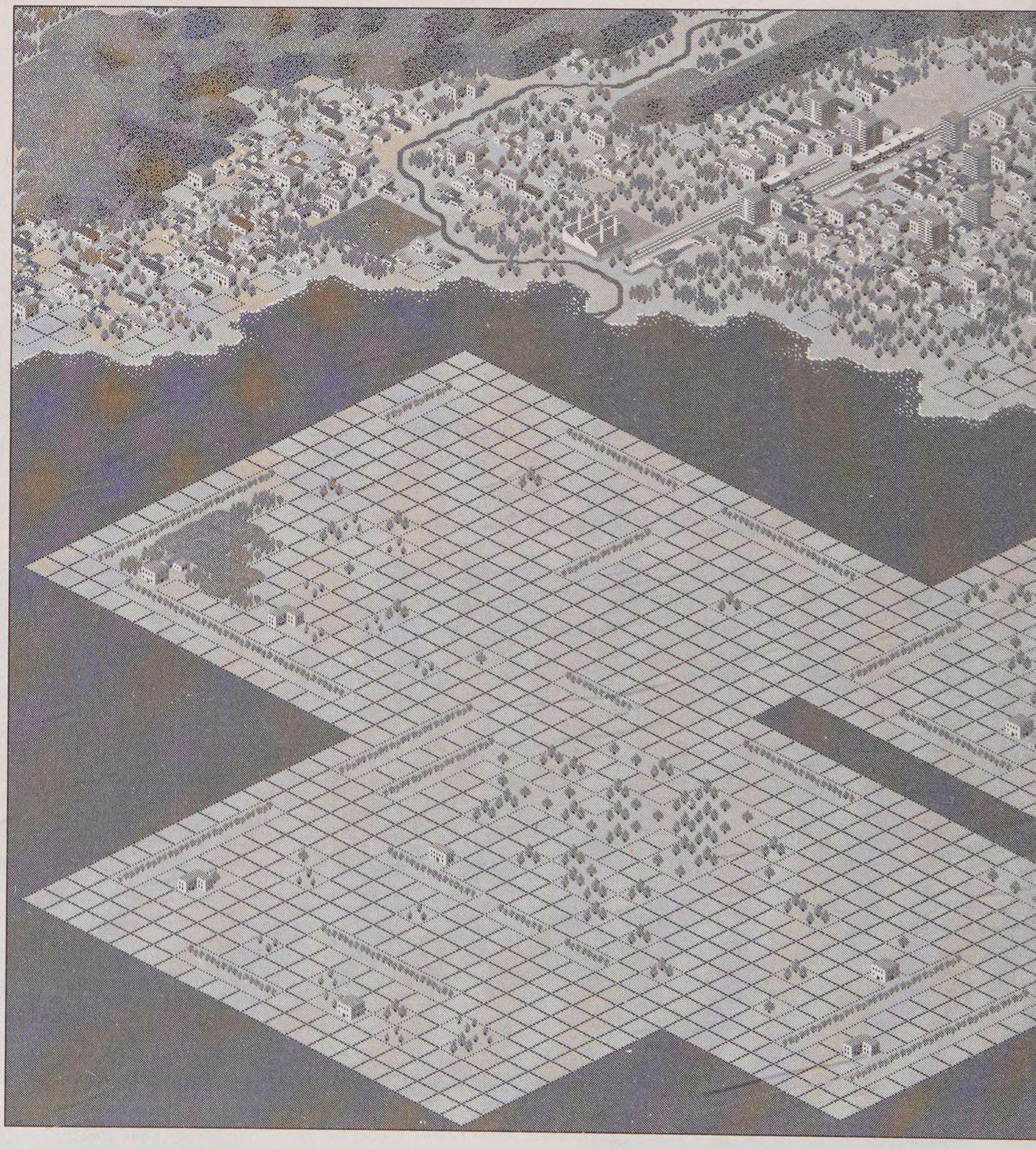


Don't forget about the lake. This area is really a hot prospect for development.

2

MAP

Bay Area



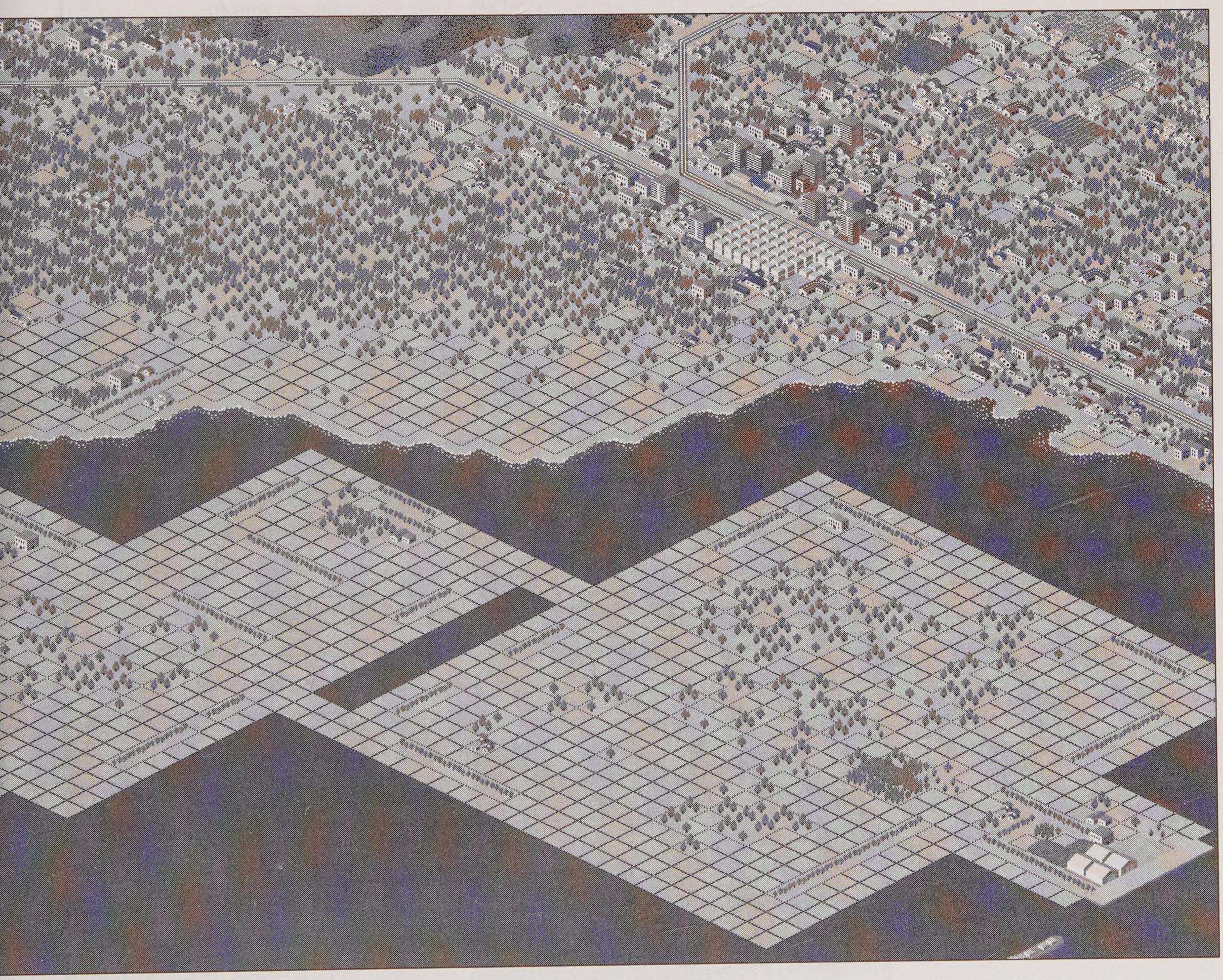


Figure 2.1 Bay Area

Table Map 2.1: Game Parameters	
Difficulty	Average
City planning flexibility	Slightly limited by terrain
Growth rate of city	High
Goal	Develop unused bay fill land into metropolis
Complications	Difficult terrain access for establishing economic ties to the rest of the city

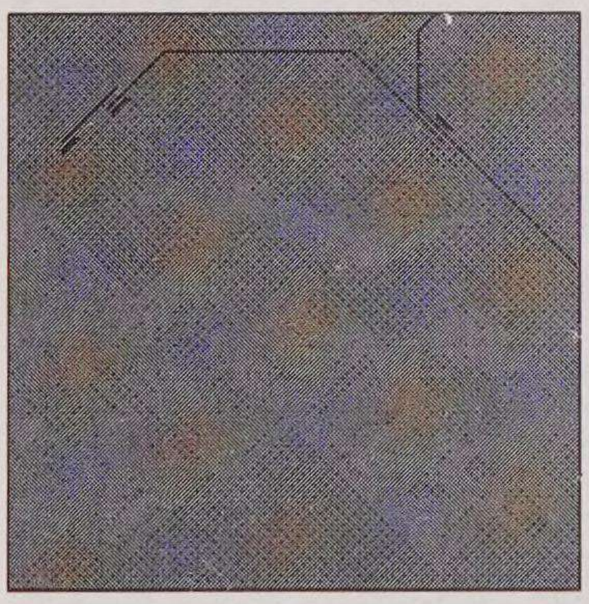


Figure Map 2.2 Railroad Map

Table Map 2.2: City Statistics	
Size	Small city
Type	Well-balanced
Budget	$2,249,030
Population	39,018
Labor demand (# of workers needed)	30,000

Table Map 2.3: Railroad Company Statistics	
Cash	$2,000,000
Credit limit	$252,000
Blocks of land owned	27
Number of trains	2 Total 1 DD-51 Freight train 1 211 Passenger train
Number of stations	3
Number of switches	0
Track segments	153

The map designer intended this map to resemble the Urayasu Chiba Prefecture in Japan 20 to 30 years ago. Today, this waterfront city

along Tokyo Bay is a trendy, cosmopolitan home to over a half million people.

The Bay Area scenario already has a substantial population. All that is needed is for you to prime the city's economic pump, through expansion of your railroad company and subsidiary businesses. Again, like New Town, this scenario is suitable for beginners because of its high growth rate, and wide latitude for city design. It is slightly more difficult, because of the restricted access route between the mainland and the bay fill land. This necessitates a little more creative track design, in order to route the necessary materials and passengers to maintain development.

GOALS

Looking around the map, you will notice a huge tract of bay fill, or reclaimed land, that is connected to the mainland by a slender thread of land. Your job is to establish a rail line that will join the mainland with the new bay fill island, and develop the area into a metropolis.

STRATEGY

As you can see from the track diagram, you already have a working train line with one DD-51 freight train, and one 211 passenger train. Unfortunately, the trains are losing money, so your first order of business is to make the lines profitable. First, replace the unprofitable 211 passenger train with a 381 or AR-III passenger train, then be sure to set the departure times at all stations for 8:00 AM. Next, observe how the freight train makes many unnecessary trips, often empty, between the factory and the station. The premise of this line is a good one: that is, by transporting the factory materials, they can be used by the simulation. But there are not enough materials to make it worth running a train full time. Therefore, you should reduce the service, perhaps only running the train when there is a surfeit of materials waiting to be used at the factory. You can adjust the schedule so that it leaves only once a day, or you can remove it entirely. Next, after you have eliminated your operating deficits, develop the property adjacent to the port. The port, at the lower-right corner of the map, is a significant source of building materials. Every four days a ship arrives at the port carrying a cargo of 14 building materials. Since the

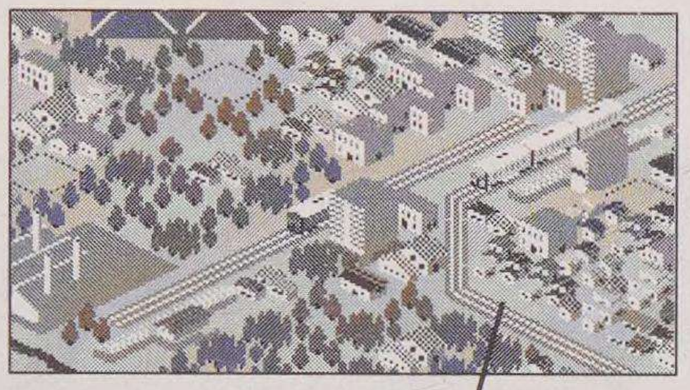
port's loading area will quickly fill to capacity, you should immediately buy up all the land around the port. This way the ship will always be able to disgorge its cargo of building materials, and you can stockpile materials to be used elsewhere.

Keep in mind that the building materials brought in by the ship can only be used directly by you. They must be transported at least once, in order for the simulation to make use of them (exactly like factory materials). Also, for some peculiar reason, high rise lease/office buildings can't be finished unless the materials have been moved by train. High rise buildings can't directly use port materials for building expansion.

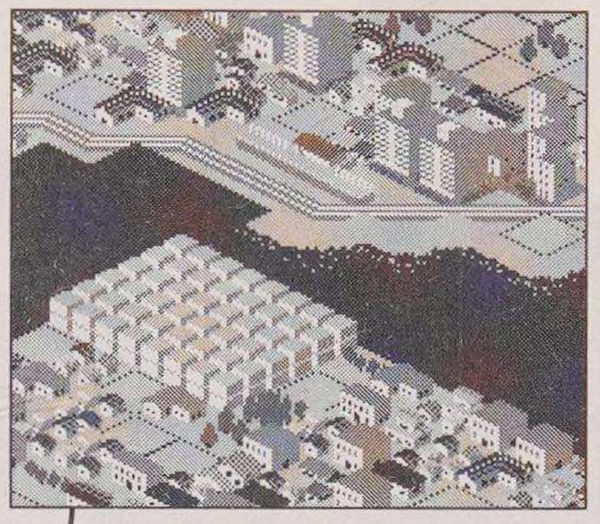
To distribute the port materials, you will want to build a station and train lines. Rail lines should be placed along the waterfront as much as possible. The interior land area should be reserved for development, not for transit corridors. (Also, in one part of the map, you can actually sneak materials across the water from the mainland, if there is station on the mainland with materials within eight blocks. (See Figure Map 2.3.)

For additional tips, consult Figure Map 2.3

Replace the small station with a large station. Remove the 211 passenger train and replace with a 381 or AR-III. Reset departure times to 8:00 AM. Reduce the frequency of freight train service.



If you build a railroad station and rail line on the mainland at this point, then establish a materials storage yard within 8 blocks on the opposite shore, you can fool the simulator into shipping materials across the water



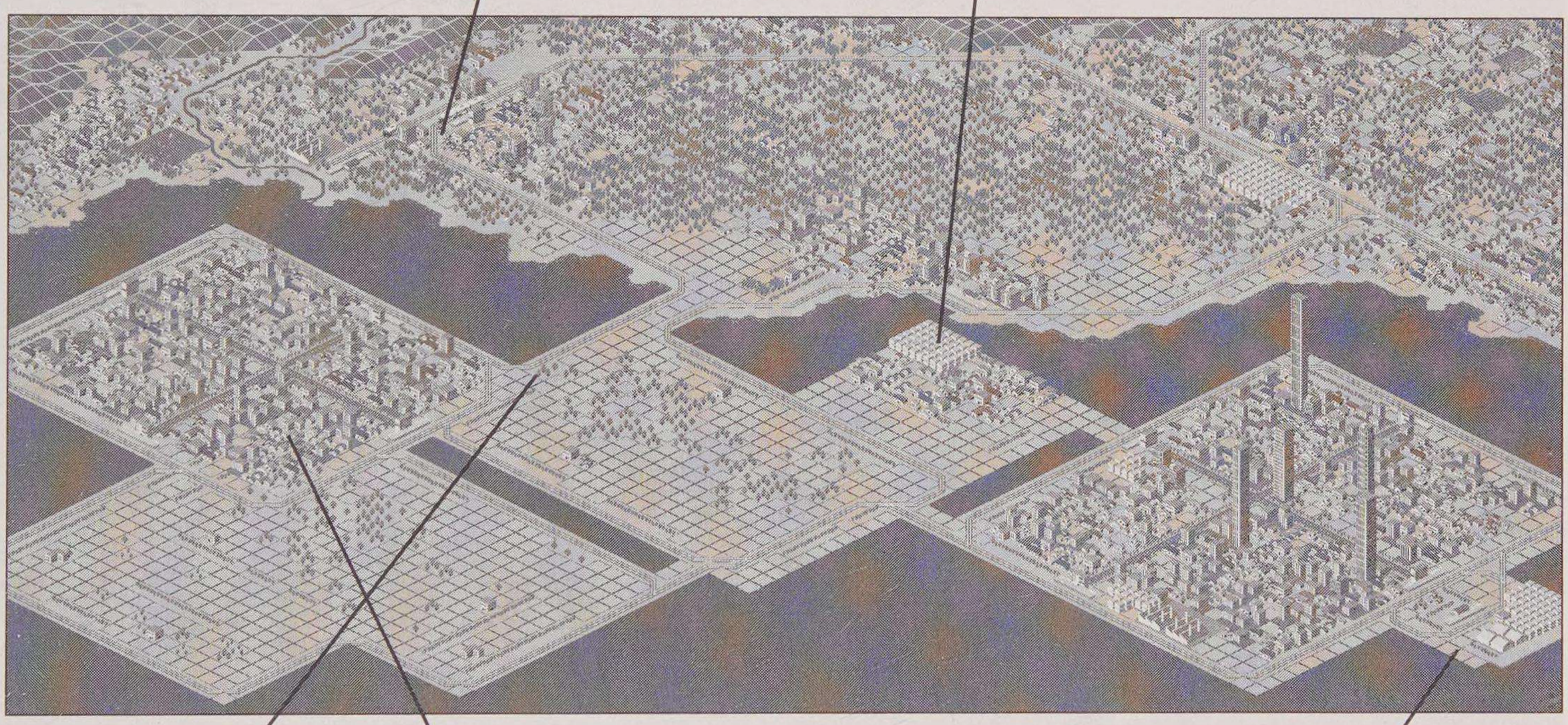
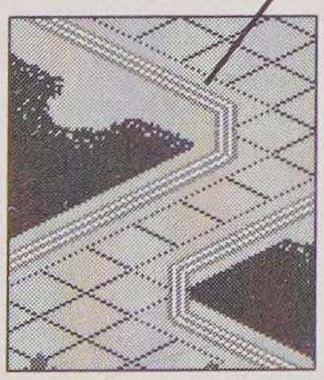
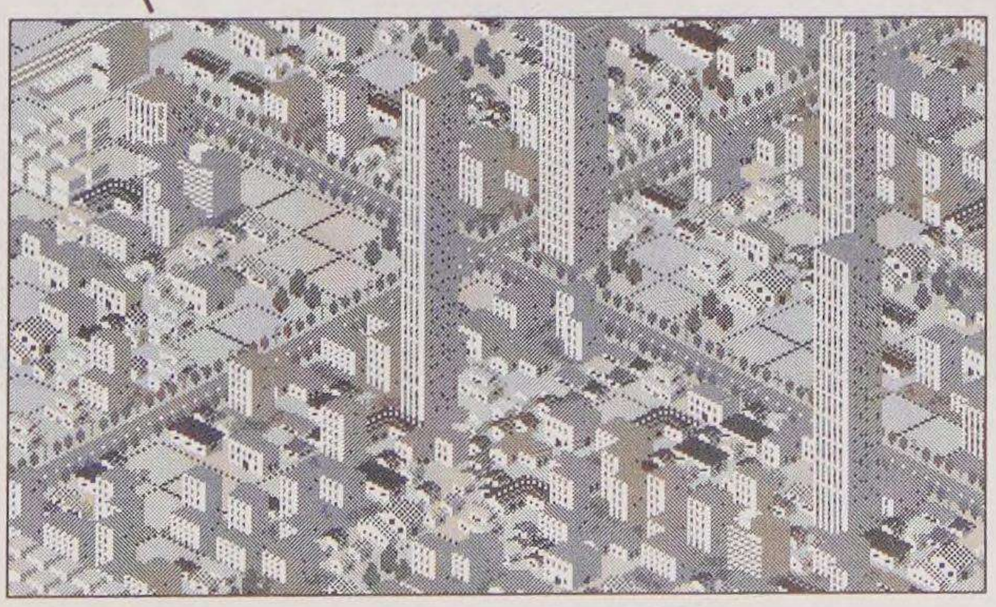


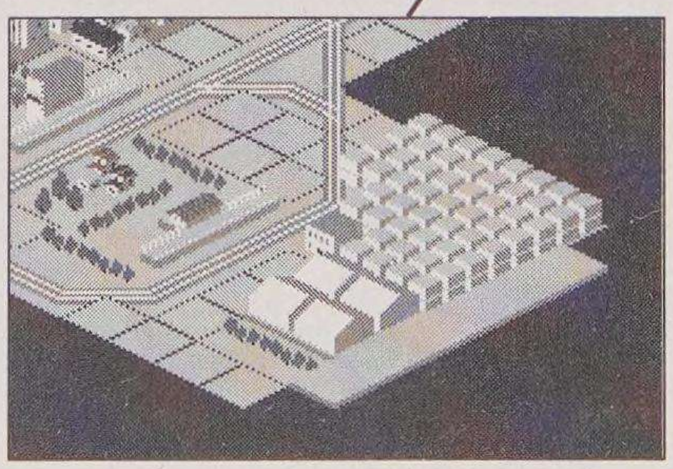
Figure Map 2.3



This narrow passageway is the only way you can connect the mainland with the reclaimed land. Be sure to keep this passageway clear for train lines



One possible strategy for developing the reclaimed land is to establish belt lines with crossroads.

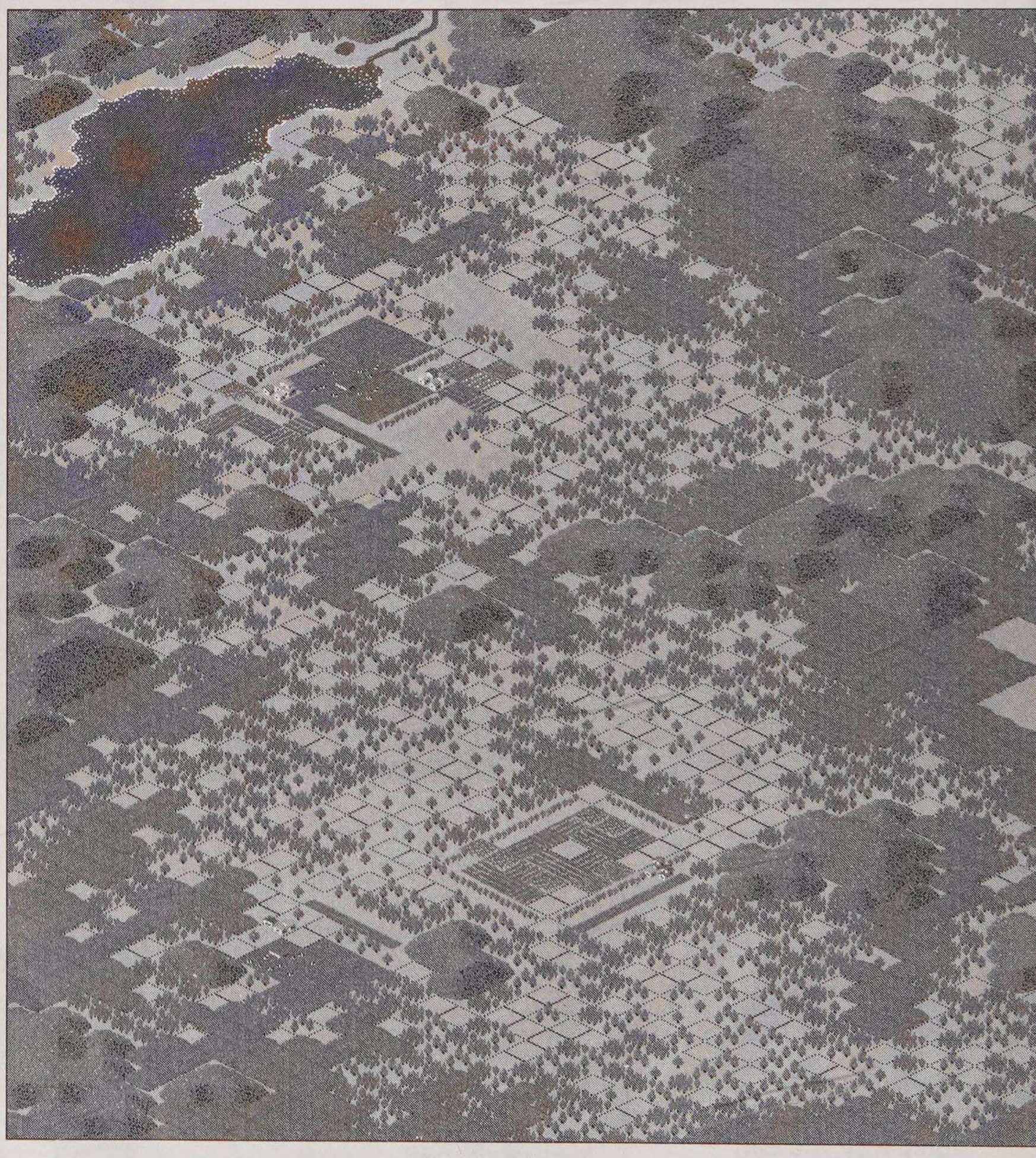


The port's limited storage facilities quickly fill up with building materials from the ship. If you don't create additional space, new materials cannot be shipped in. Buy lots of land around the port to stockpile materials.

3

MAP

Resort Development



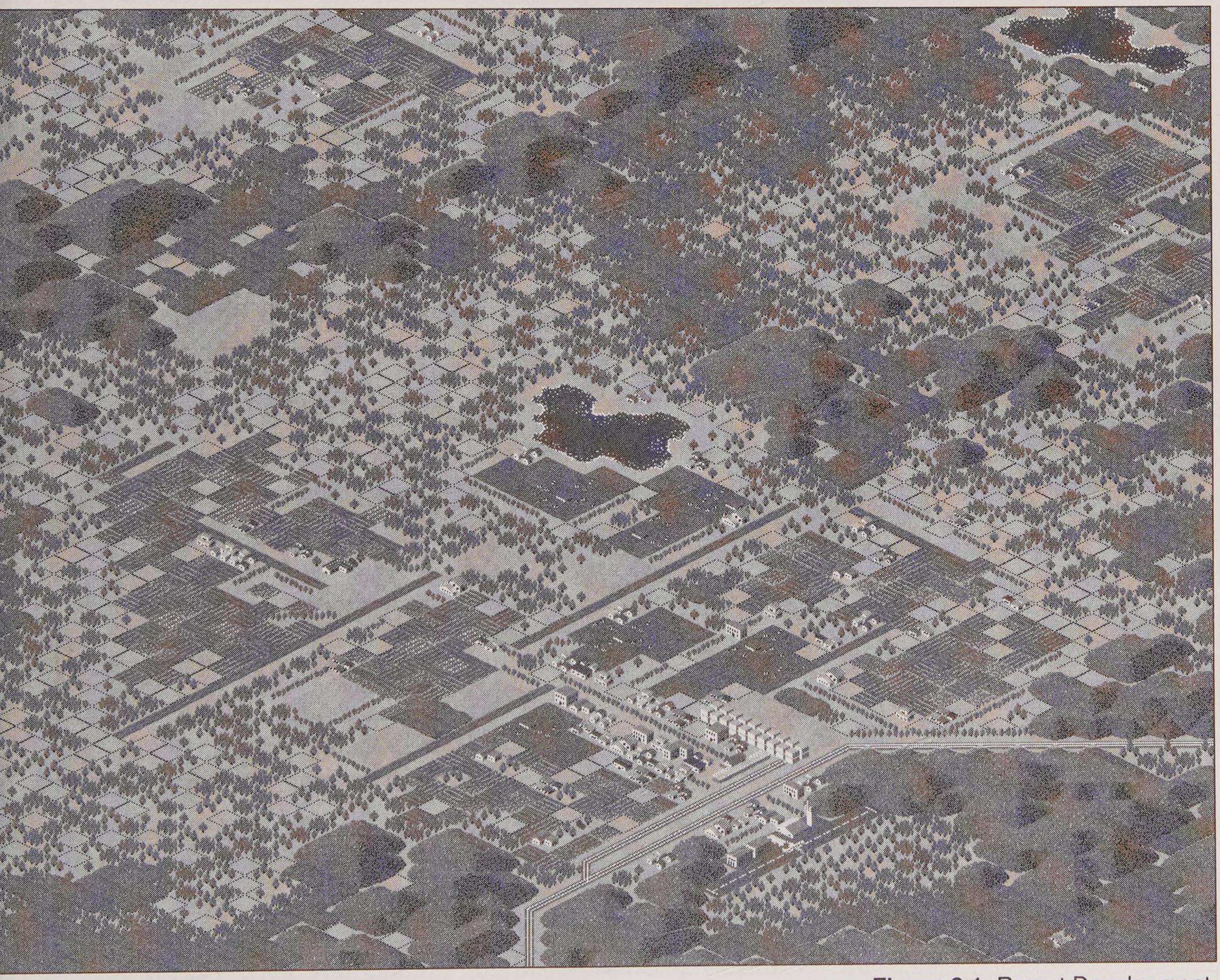


Figure 3.1 Resort Development

Table Map 3.1: Game Parameters	
Difficulty	Higher than average
City planning flexibility	Slightly restricted—emphasis is on developing leisure institutuions
Growth rate of city	Medium
Goal	Develop golf courses, ski resorts, amusement parks, and stadiums to make city a prime tourist destination
Complications	Not much money

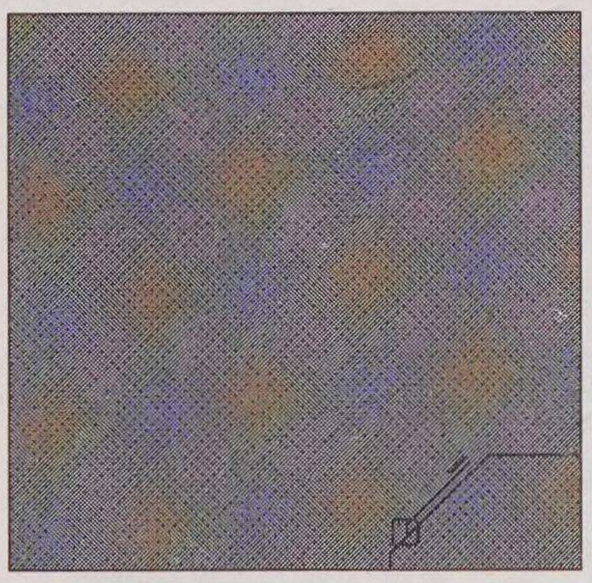


Figure Map 3.2 Railroad Map

Table Map 3.2: City Statistics	
Size	Small town
Type	Agricultural
Budget	$832,040
Population	7,511
Labor demand (# of workers needed)	12,000

Table Map 3.3: Railroad Company Statistics	
Cash	$1,000,000
Credit limit	$177,000
Blocks of land owned	151
Number of trains	0
Number of stations	1
Number of switches	1
Track segments	63

Resort Development is based on a resort area in Japan known as Karuizawa. Because this area is far away from the city, there is a much smaller demand for labor and as a consequence, development proceeds at a slower pace than in the first two scenarios. This map

scenario is more challenging than the first two due to low labor demand, relative lack of money, slower growth, and city planning restrictions.

GOALS

Your goal in Resort Development is to develop the area into a prime recreational tourist destination, through judicious placement of golf courses, ski resorts, stadiums, and amusement parks. You will want to preserve as much of the natural settings as possible, but at the same time, allow limited development to create the conditions for economic prosperity. In doing this, you will want to change the city type from agricultural to well-balanced.

STRATEGY

Because of your limited capital and the low labor demand, your task of developing this scenario is more difficult. Even with new developments, the population will not rise quickly, so you must be very patient. Also, to avoid bankruptcy, you must not hastily construct too many subsidiaries early in the game. Husband your resources carefully, and concentrate on developing your rail lines and producing materials before venturing into expensive subsidiaries.

To this end, you should start off by expanding your materials storage yard on the main trunk line to the outside. This will allow you to stockpile more materials as they are imported into your city. Next, choose a good site to establish your commercial center. One good place for the downtown would be the area around the railroad station. Replace the small station with a large station, and build a factory to get your production of materials going. You can ignore the airport; it is there only for cosmetic purposes. It does not add people or materials to your city. However, the area around the airport is an excellent prospect for development, especially the oft ignored bottom-right corner of the map.

A sneaky trick you can try in this scenario is to build a no-destination train, with station and tracks. The no-destination train leaves a station, then travels only one block before returning to the station. Although you don't earn any train ticket revenues, this scheme fools the simulation into thinking there are many more passengers entering and leaving the station than is actually the case.

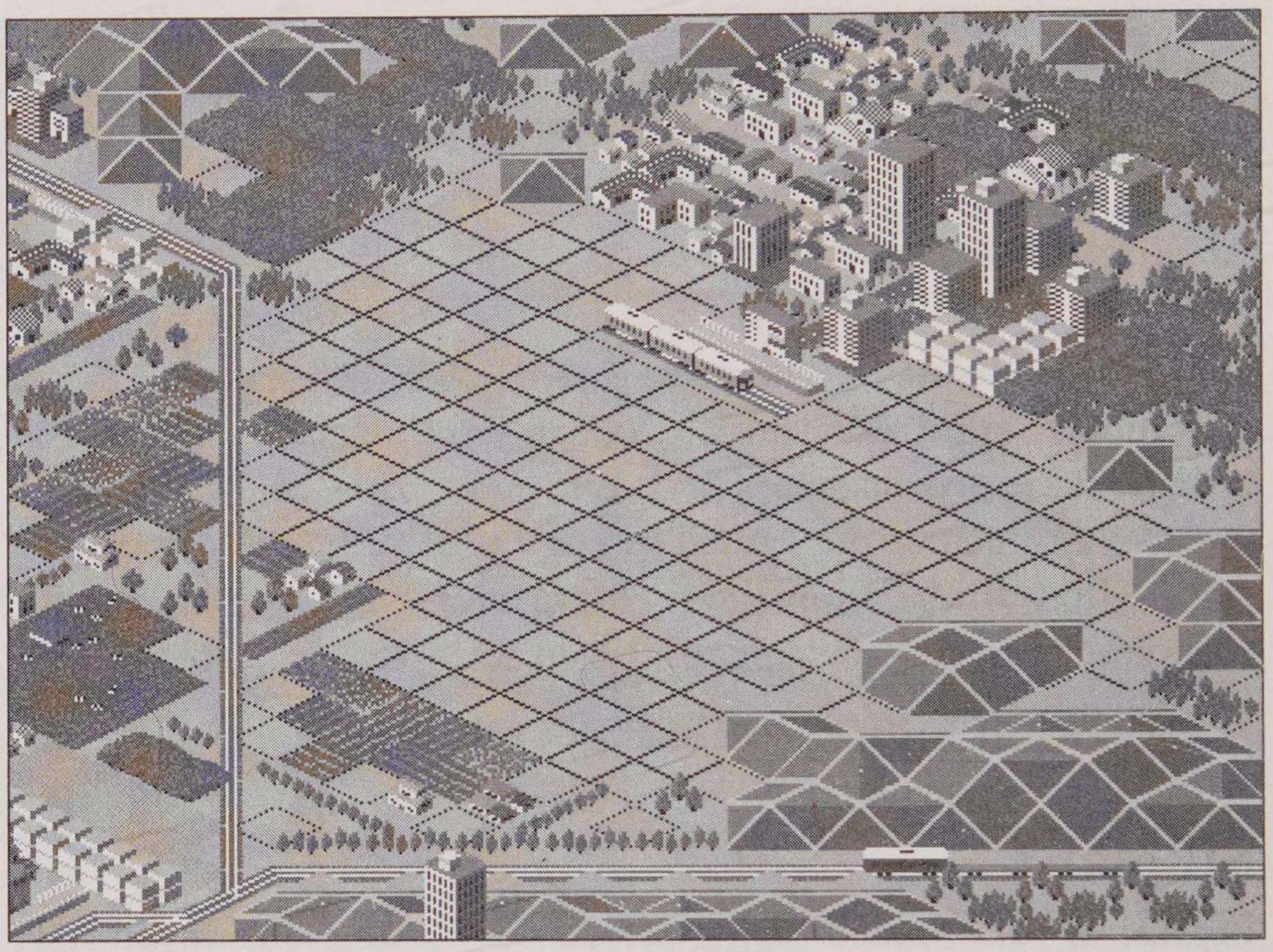


Figure Map 3.3 The no-destination train scheme allows you to vastly increase the number of passengers traveling through a given station. The phony train does not earn any you any ticket revenues, but the station registers many phantom passengers, and this increases development in the area.

Of course what is really happening is that passengers get on the train, travel one block, and then return to the station, where they get off. They haven't really gone anywhere, and your trains will not register any profits, only operating expenses. However, the operating loss may be more than offset by the benefits of exploding growth brought on by the perceived increase in phantom passengers.

After you have established a toehold in the city, you can turn your attention to developing the nearby lake and mountain. The mountain is the place to put a ski resort, but you should hold off on this until late December, when ski season begins. When you have enough money, you can put in a connecting rail line, station, golf course, apartment buildings, hotels, etc. in preparation for the hordes of tourists you hope to attract.

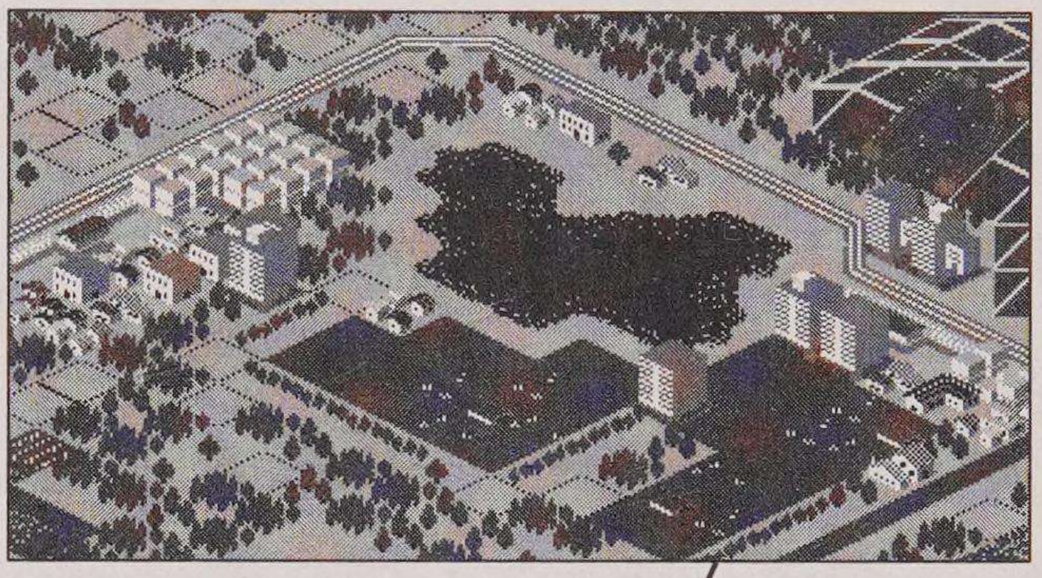
At the beginning of this scenario, there are 151 blocks of land which belong to your company scattered around the map. If you sold all the land immediately, you could net as much as $302,000. But you can make even more money by first developing the areas surrounding these plots of land, to increase their value. You can also use this land to construct your subsidiaries, stations, or storage yards, in an effort to save money on land acquisition costs.

Figure 3.4 highlights some important areas on the map that will help you conquer this scenario.

This is the largest lake on this map. Even though it is far away from your train line, the lake is a popular tourist destination, Keep it in mind as a future development location for recreational facilities, especially golf courses and hotels.



You should develop this area as your first resort location. It has an attractive lake, and a perfect mountain slope for a ski resort.



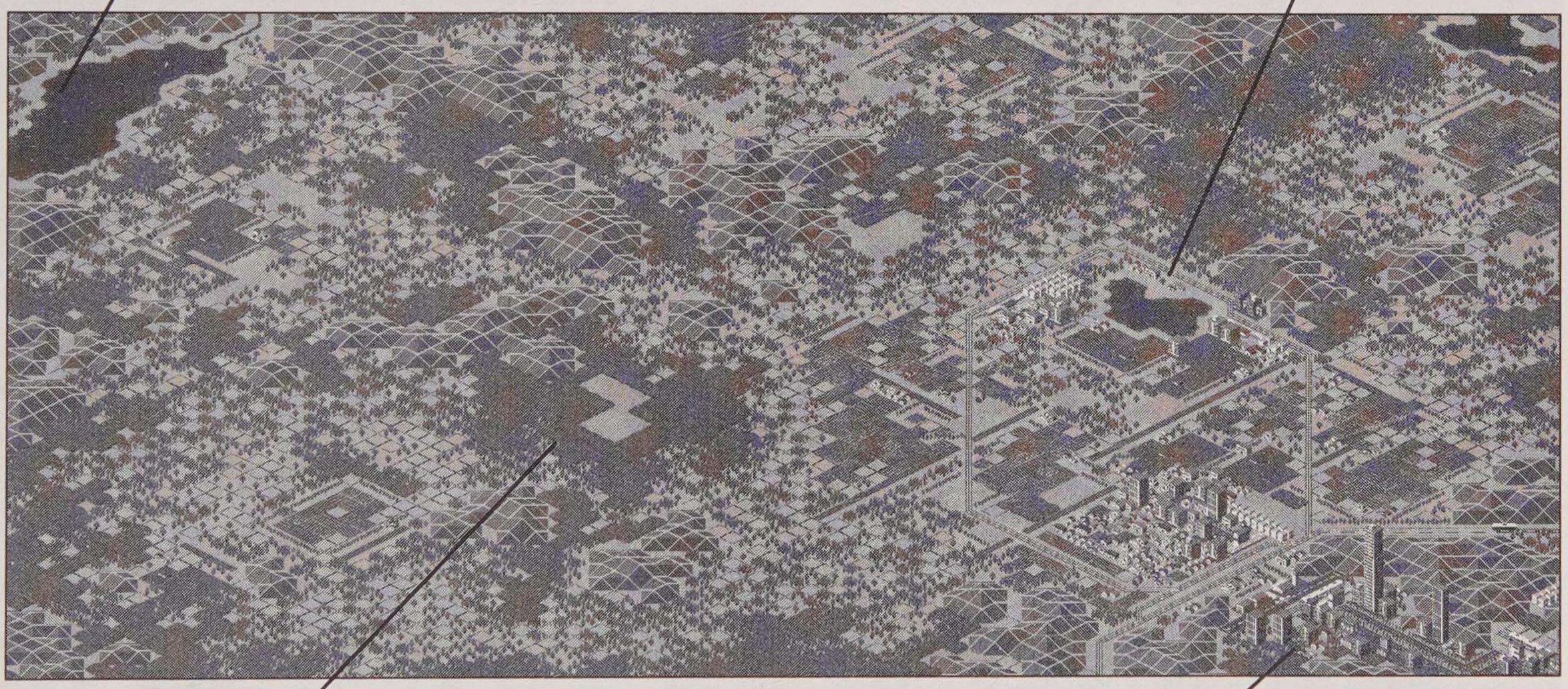
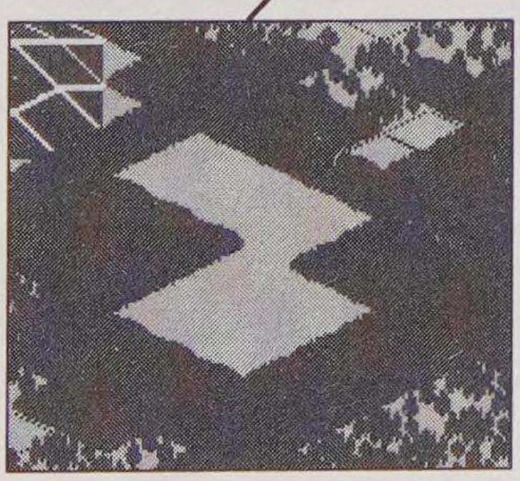
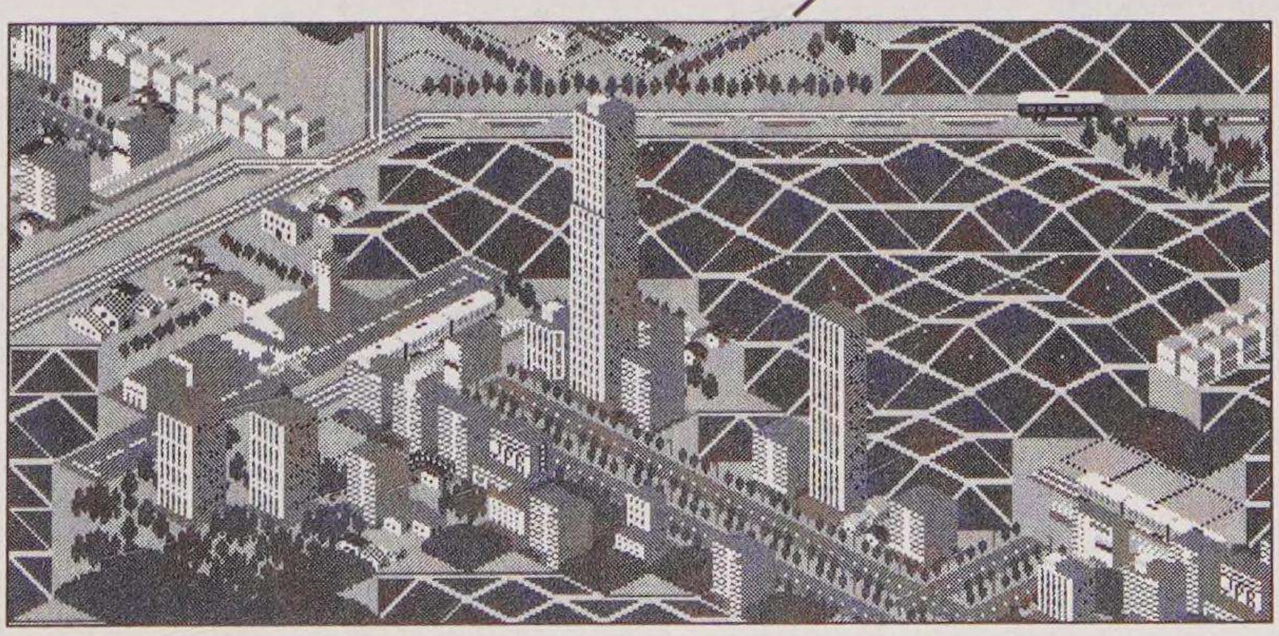


Figure Map 3.4



At the beginning of the game, there are 151 parcels of land that belong to you. If you sell them all, you can net as much as $302,000.



Don't miss the golden opportunity to exploit the area below the airport. This prime land can be developed into a mini-city, complete with crossroads. You can try using the no-destination train scheme to create phantom passengers.

4

MAP

Multi-City Connection

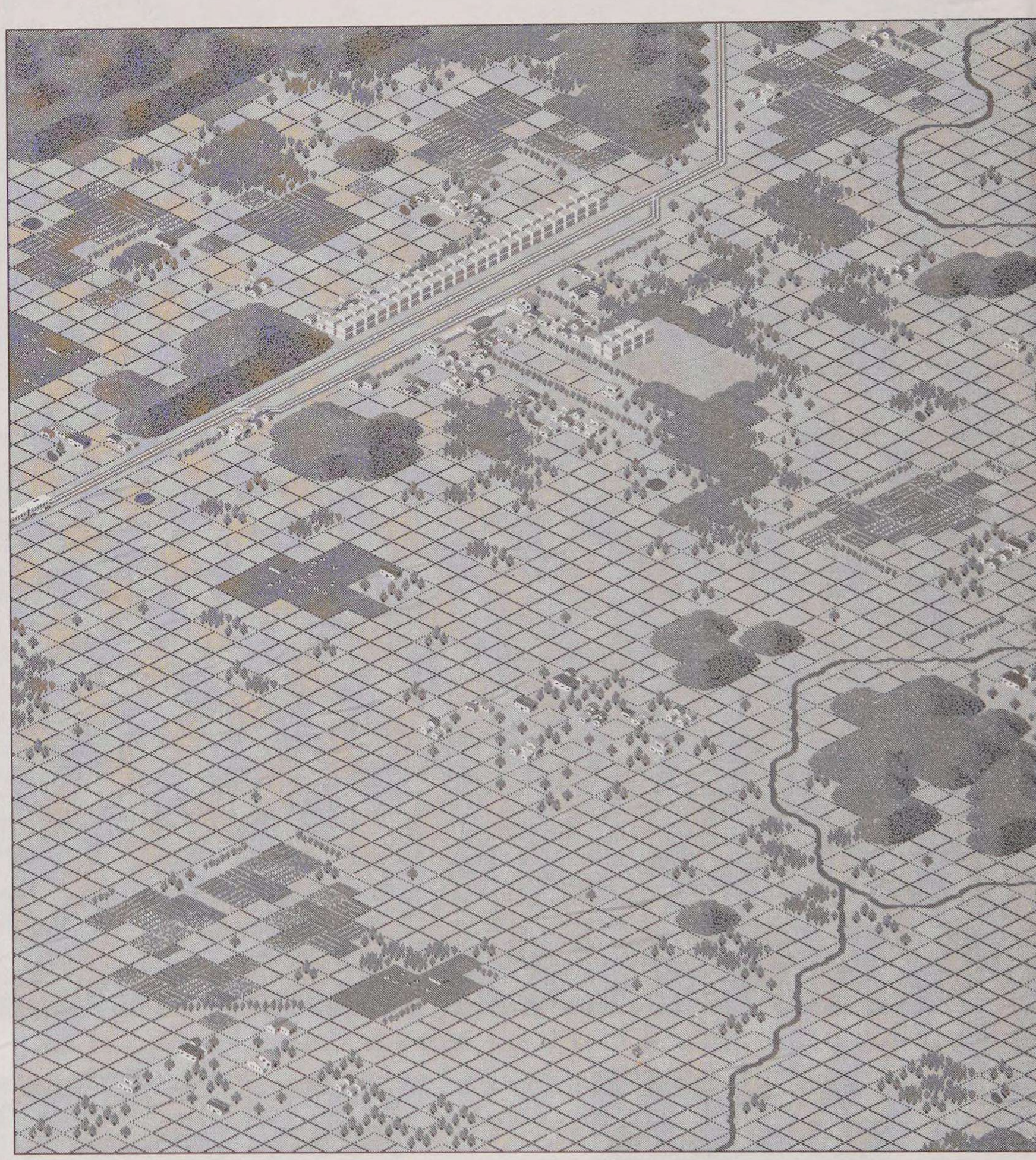


Table Map 4.1: Game Parameters	
Difficulty	Extremely difficult
City planning flexibility	Limited by lack of materials and money
Growth rate of city	Stagnant
Goal	Develop city into a metropolis
Complications	Lack of growth, and employment hinders development

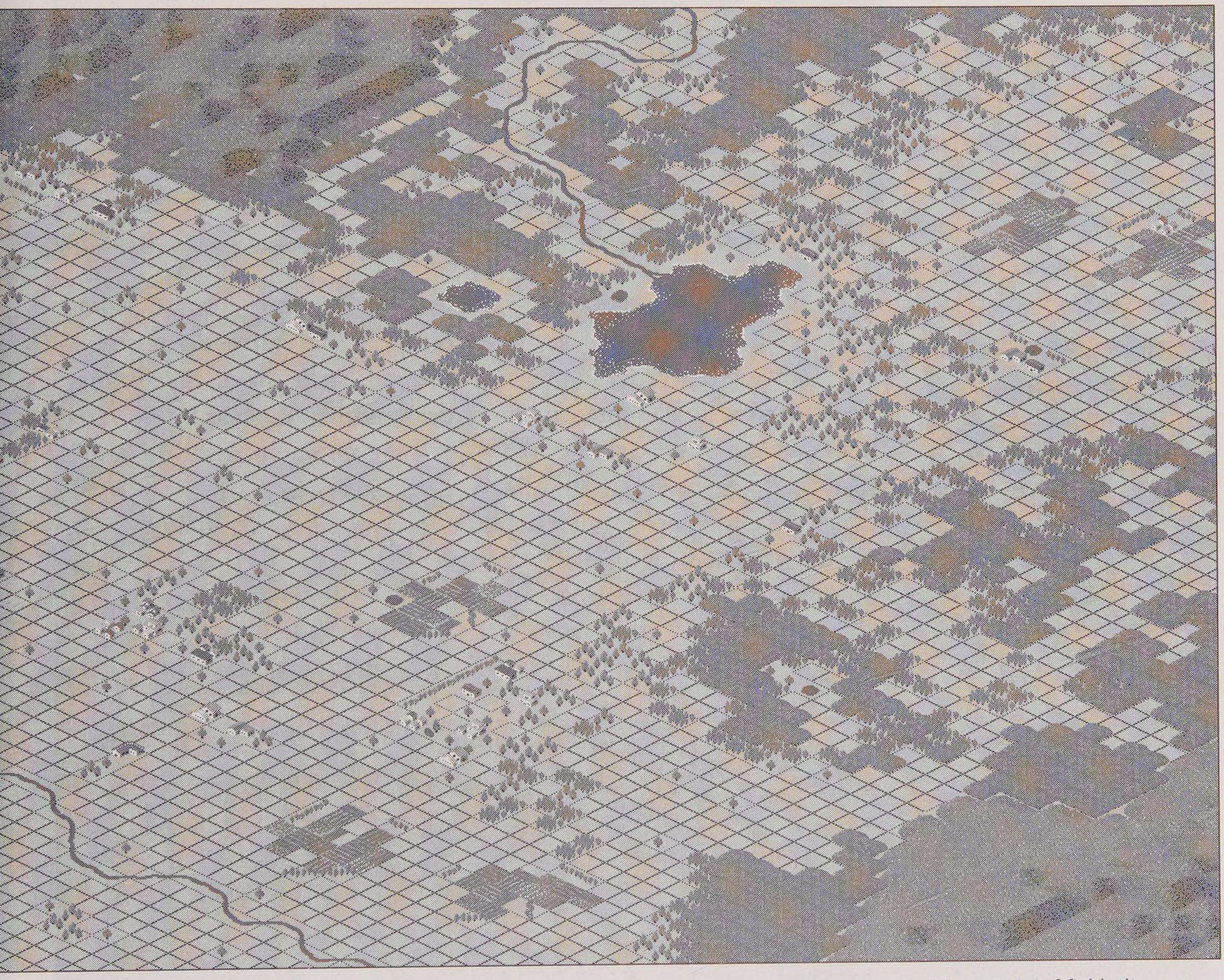


Figure 4.1 Multi-city connection

Table Map 4.2: City Statistics	
Size	Small town
Type	Underpopulated
Budget	$876,240
Population	8,589
Labor demand (# of workers needed)	3,000

Table Map 4.3: Railroad Company Statistics	
Cash	$800,000
Credit limit	$144,000
Blocks of land owned	27
Number of trains	0
Number of stations	1
Number of switches	2
Track segments	118

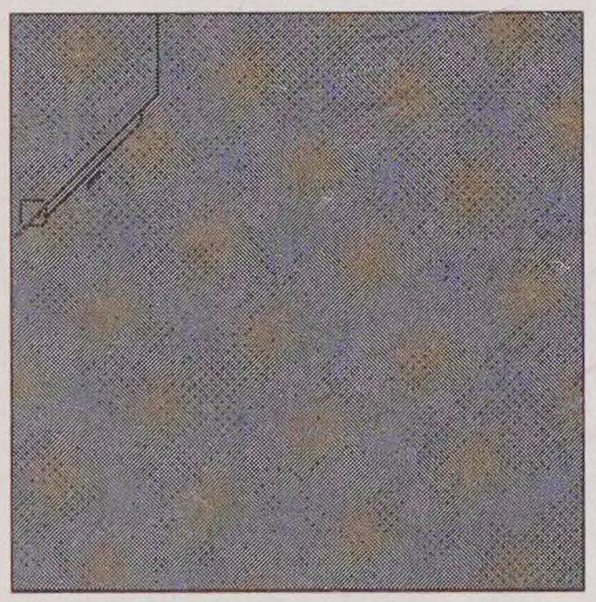


Figure Map 4.2 Railroad Map

Multi-City Connection starts out as a small country town, but don't be deceived by its pastoral setting. This city, which outwardly resembles New Town Map One, is the most difficult scenario of the six map scenarios to win. The internal rate of development is extremely slow, the labor demand is at rock bottom levels, and the amount of cash you have is insufficient to finance city expansion. Furthermore, your borrowing limit for a bank loan is a picayune $144,000, and you cannot expect the outside economy to help in any way. It might be wiser to skip this scenario altogether until you have mastered the other five scenarios.

GOALS

Your goal in Multi-City Connection is to turn around the failing economy, and build a healthy, vibrant metropolis. You should start small by connecting small scattered cities and villages by rail, then when conditions improve, start expanding. As the cities grow, invest more in subsidiary businesses.

STRATEGY

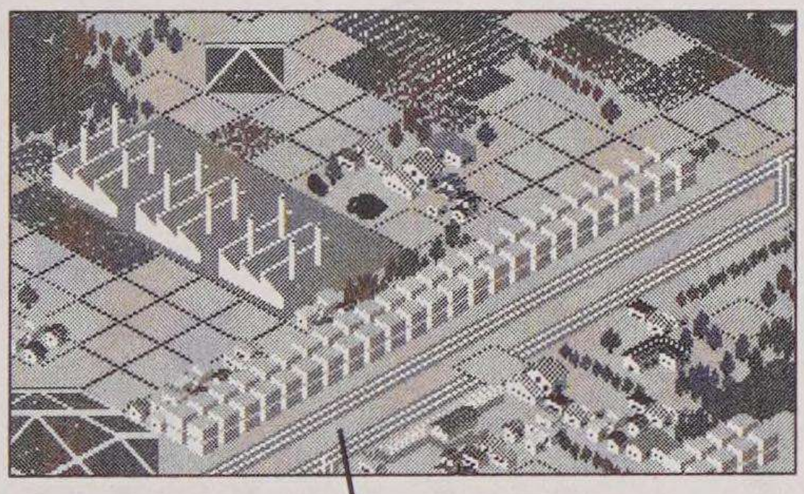
Because of the severe lack of money, you must take out a bank loan to bolster your shaky financial position. Without this loan, it will be almost impossible to win the game.

The basic problem with this scenario is the stagnant economy. There are not enough jobs to go around, and so merely adding subsidiaries is not enough. You need to create industries that are highly labor intensive to jump-start the economy. But before you can do this, you need to create a positive cash flow for your company's railroad business. Start by constructing a single rail line southeast served by an AR-III and a freight

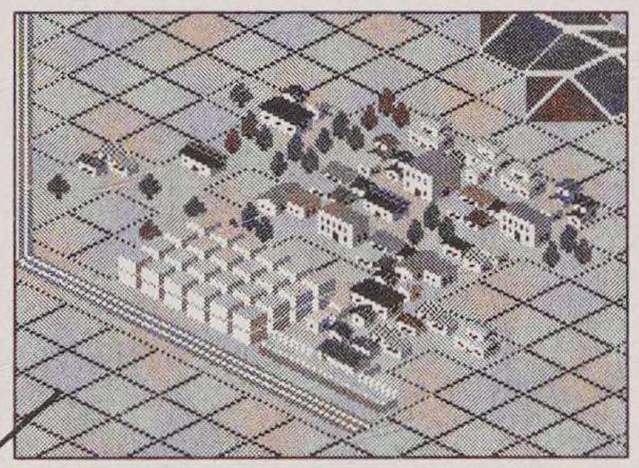
train (at least 20 blocks long between stations). Also don't stop the AR-III at the stations; keep the schedule set for one hour stops in order to keep as many people as possible moving through the stations. The freight train can be removed when conditions warrant, such as when there are no materials to be shipped. Be patient with this one line, and wait until you see the passenger traffic increasing before extending it further.

Next, you need to increase employment by building factories and lease/office buildings. You don't need hotels or commercial buildings yet, so hold off on these and other high-priced subsidiaries. But you should slowly increase the available housing. Once you start to see the population increase, you can heave a sigh of relief, and then get on with expanding your train empire.

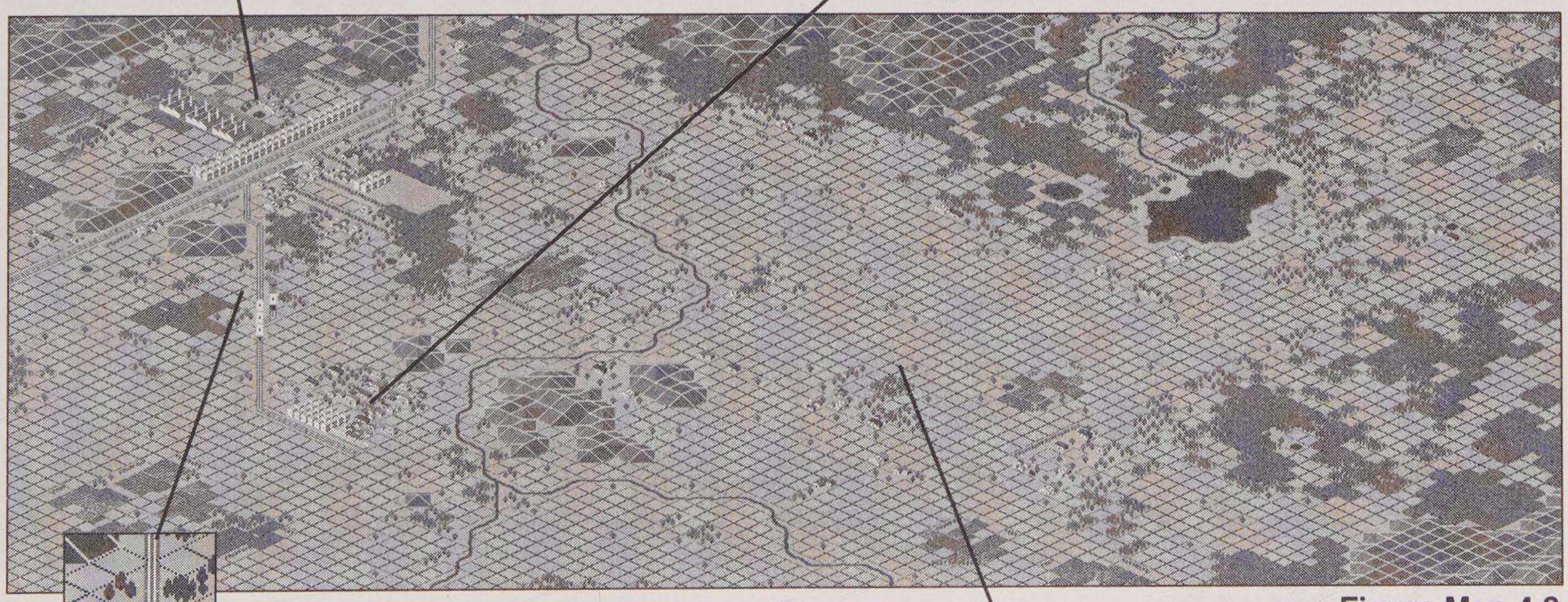
This scenario is the toughest to win of all. It may take you many years to pull the economy out of the doldrums. Plan on your city developing over 10 to 20 years.

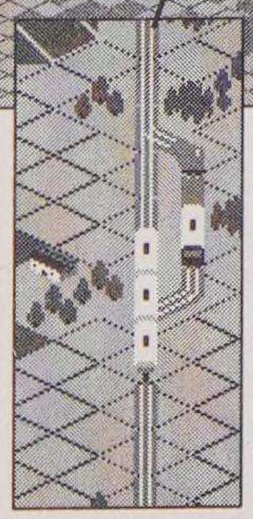


Build factories that are aligned as shown in the illustration. You don't need to build them all at once; build one factory at a time, as resources and cash permit.

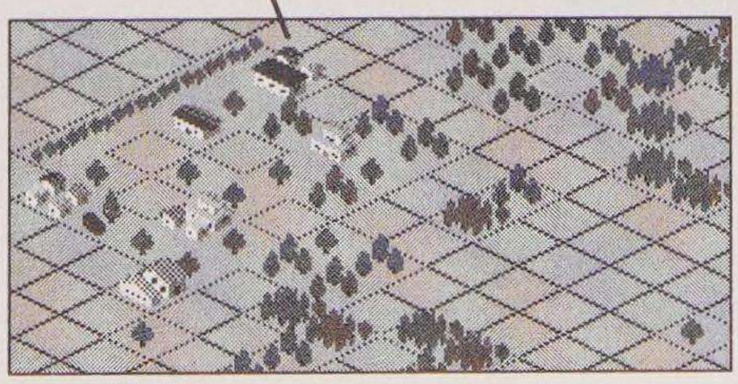


Build your first rail line to this little hamlet. Make sure that the rail line is at least 20 blocks long between stations in order to maximize ticket revenues.





Place your AR-III and GP-40 trains on a sidetrack that is equidistant between the two stations (pointing in opposite directions to avoid collisions). Set departure time for the trains for a 1 hour stop.



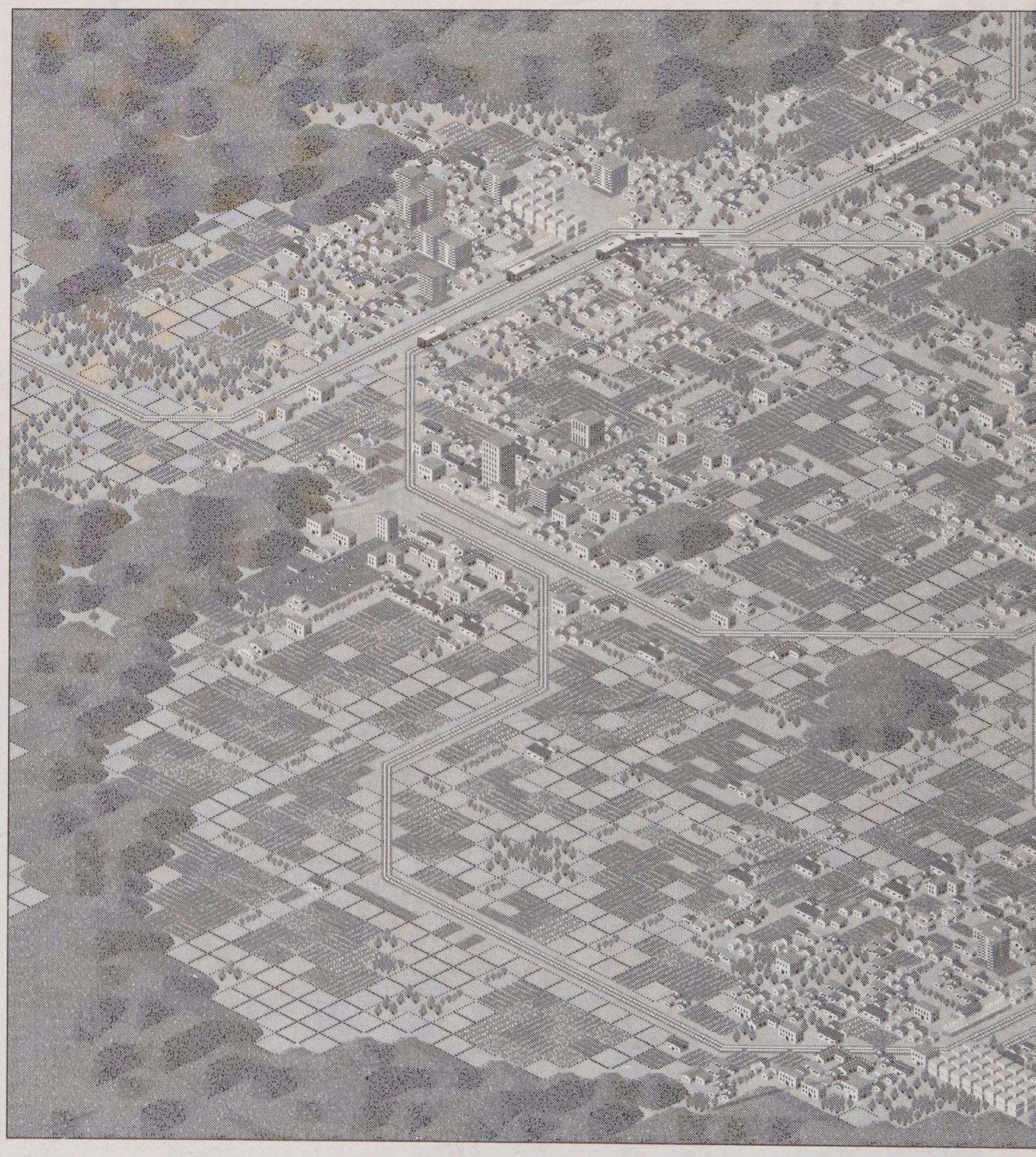
You can establish a third outpost for your fledgling city here.

Figure Map 4.3

5

MAP

Reconstruction



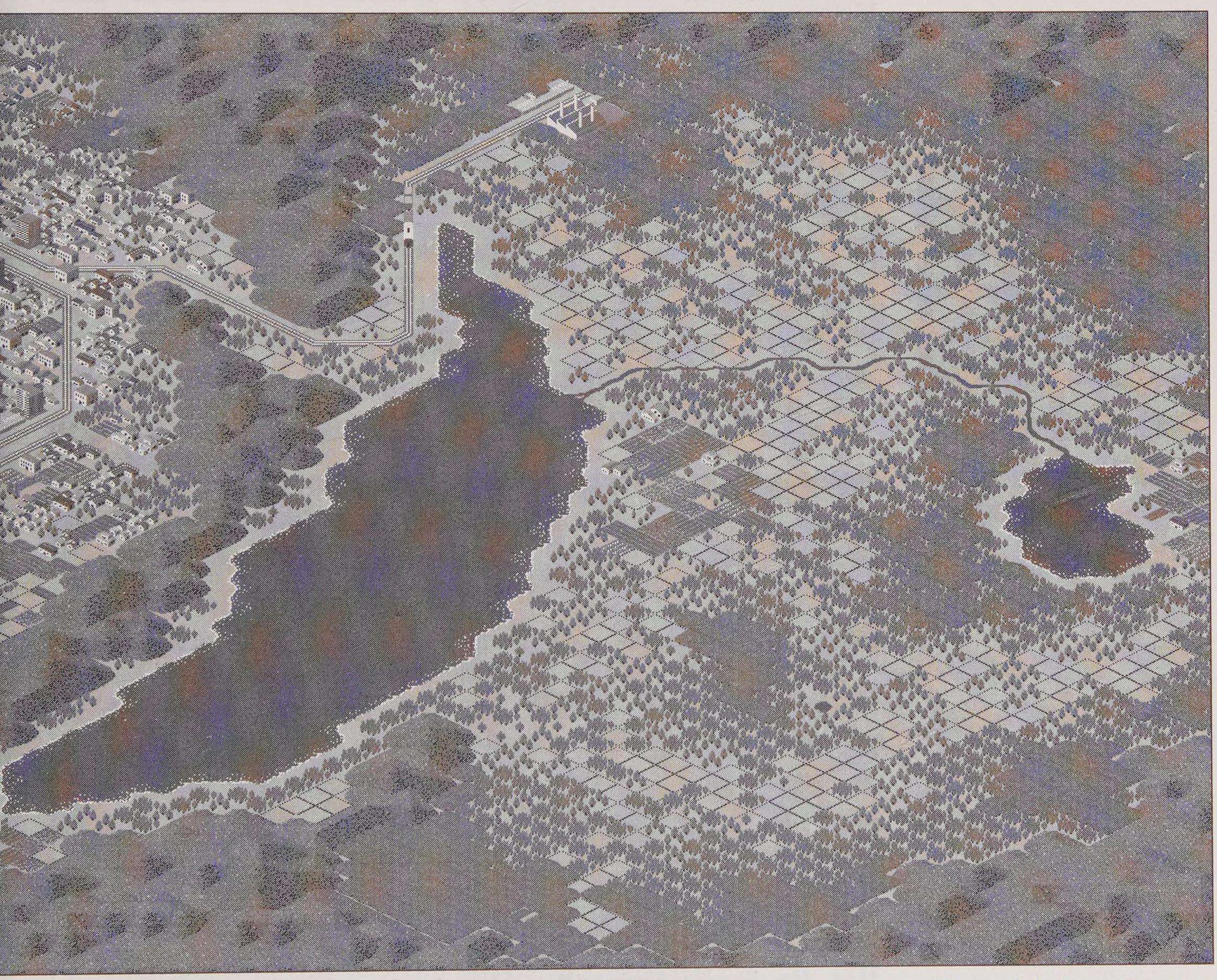


Figure 5.1 Reconstruction

Table Map 5.1: Game Parameters	
Difficulty	Moderately difficult
City planning flexibility	Limited, must rebuild city—expansion limited by terrain
Growth rate of city	Low
Goal	Redevelop decaying city
Complications	Low growth rate, low labor demand, lack of money

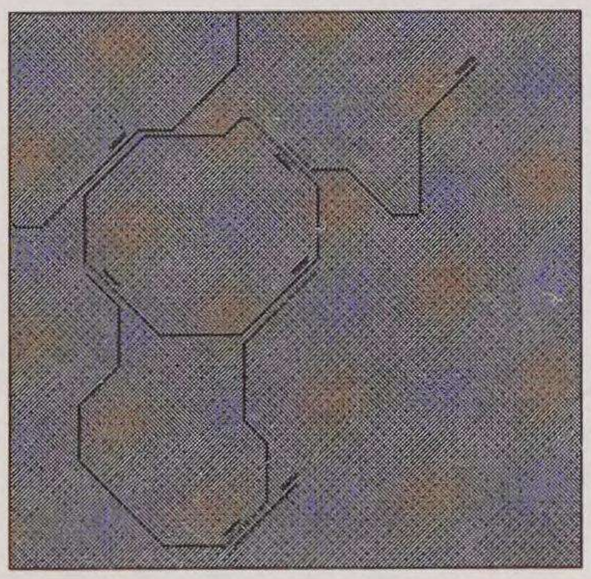


Figure Map 5.2 Railroad Map

Table Map 5.2: City Statistics	
Size	Small city
Type	Agricultural
Budget	$2,839,820
Population	50,672
Labor demand (# of workers needed)	6,000

Table Map 5.3: Railroad Company Statistics	
Cash	$400,000
Credit limit	$816,000
Blocks of land owned	34
Number of trains	6 Total 1 DD-51 freight train 2 EF-62 freight trains 2 113 passenger trains 1 211 passenger train
Number of stations	7
Number of switches	0
Track segments	498

The Map Five Reconstruction scenario contains a small city with a population of about 50,000 people. The city has some design problems which include road obstructions, poorly placed stations, and land use restrictions caused by mountains and lakes. There are six trains, consisting of three freight trains and three passenger trains, that travel on an extensive railroad network of 498 track segments. Unfortunately, the city's economy is stagnating due to low labor demand, and so development will be slow. Also, your railroad company is not making a profit, with expenses outstripping income by an approximate factor of two to one (i.e., for every dollar you earn, your expenses are $2). Compounding these problems, your ability to effect change is severely hampered by a lack of money. Although not as difficult as Multi-City Connection, this scenario is tricky and you shouldn't expect to win quickly.

GOALS

Near the center of this map, there is a large lake which, together with a mountain range, divides the map into two parts. On the east side of the lake, there is empty land that you will want to develop. However, you will have difficulty joining the eastern map region with the western map region because of the limited rail access around the lake. Upon further examination you will see that there are only two access points; one above the river, and one below, each of which can only handle one rail line.

To the left of the lake is your city, which has one major belt line and three lesser tributary lines shooting off from it. Notice that inside the belt line there are some major design flaws. One glaring problem is that the top two stations' roads are blocked by apartment buildings. Another problem is that there should be a fourth large rail station located on the west edge of the belt line to complement the three existing stations. Notice, too, that the stations are not opposite each other, and therefore the roads will not meet in the center to form a crossroads.

Your goals in this scenario are to redevelop the existing city, correct the city planning deficiencies, restore your railroad company to profitability, and develop the eastern part of the map. If you can

achieve all these results, then your city will prosper and you will become rich.

STRATEGY

Your first course of action is to address the operating deficit of the railroad company. Replace the unprofitable 213 passenger train with a 381. Remove all freight trains, and then set the passenger train schedules for an 8:00 AM departure time at each station (you should notice a $500 to $700 profit per day after these tasks have been performed). When you observe that your company has been restored to profitability, you can then focus on developing the city proper. After you have some surplus cash stashed away, you should replace all passenger trains with AR-III's.

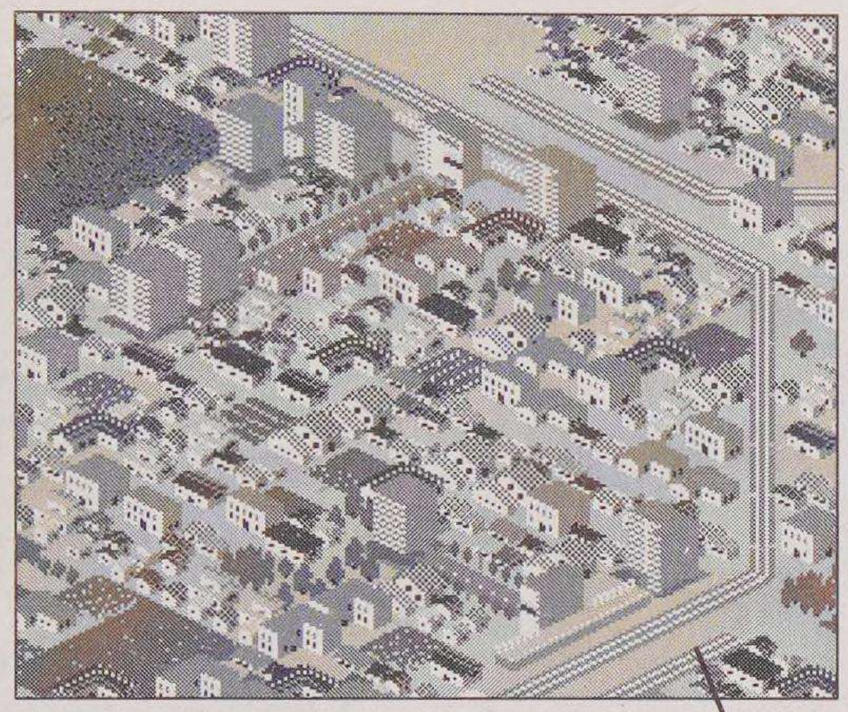
Next, either move your large stations on the belt line so that they are opposite each other, or remove the apartment buildings that are blocking the roads. Ideally, you would like to create a crossroads at the center of the beltline. But in any case, try to separate the stations as much as possible (by a distance of greater than 13 blocks) in order to maximize ticket revenues.

If you temporarily run short of cash, you can always apply for a loan at the bank. You can borrow up to $816,000—but be forewarned, it's not easy to repay large sums of money.

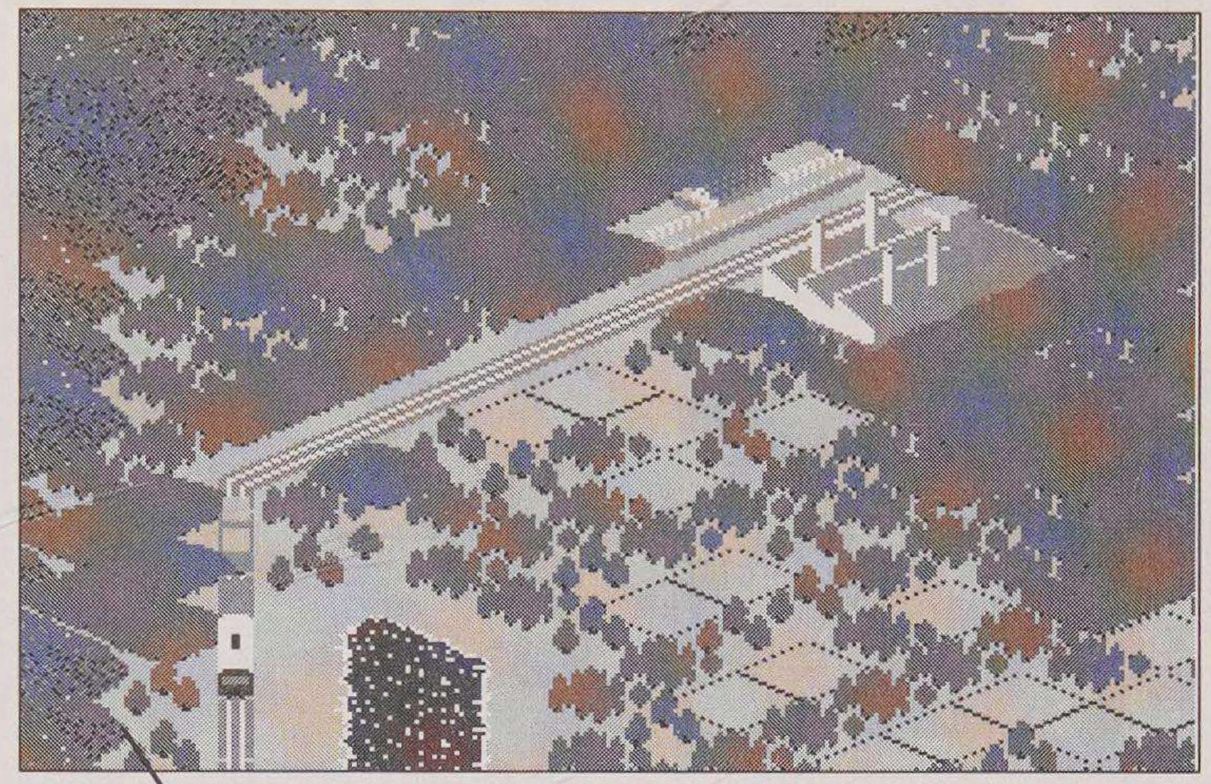
Replace the lowermost station (at the center of the map near the lake) with a large station. This will encourage growth in this region of the map. Then, build another factory just below the one above the lake to facilitate future materials production for the eastern part of the city.

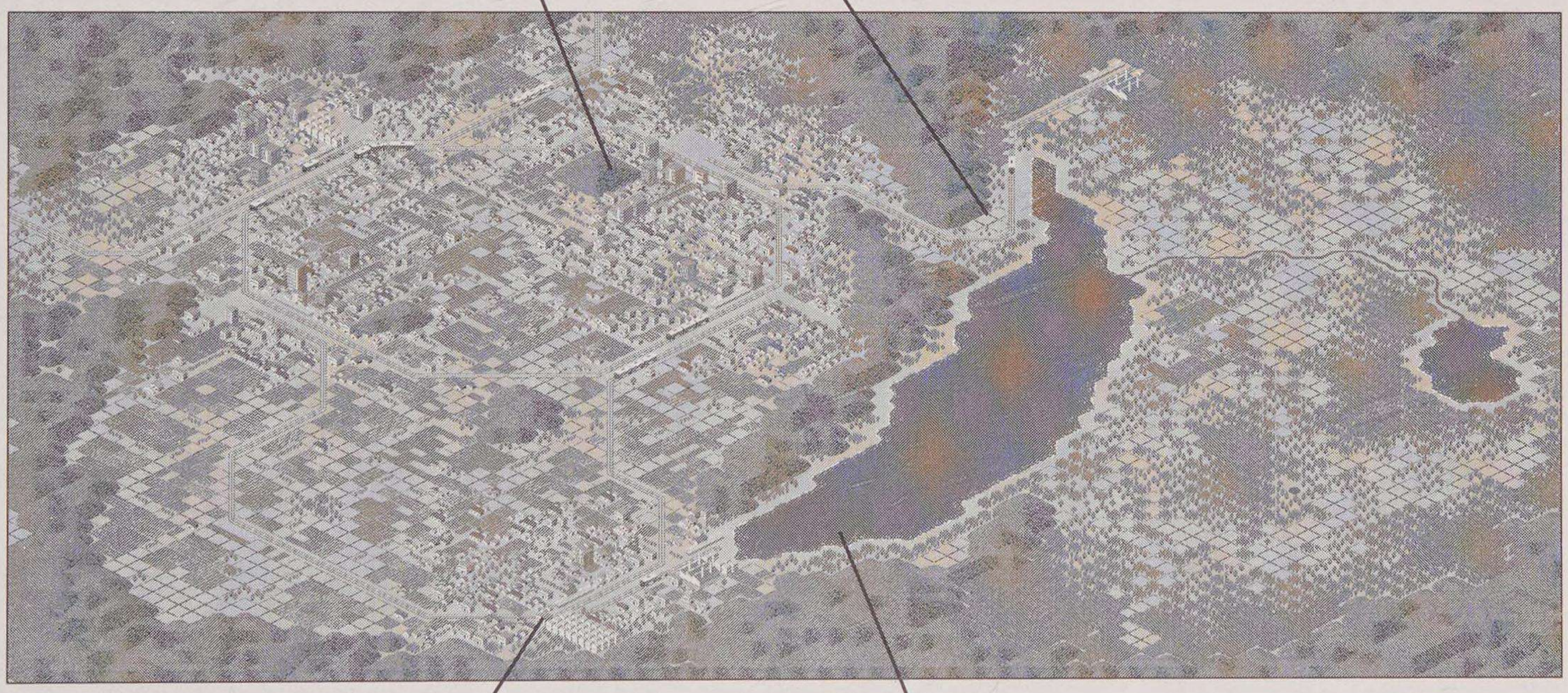
As soon your company can afford it, start expanding into the eastern region of the city. Build a second rail line along the lower east bank of the lake, and extend a third line from the factories at the top of the lake into the city's interior.

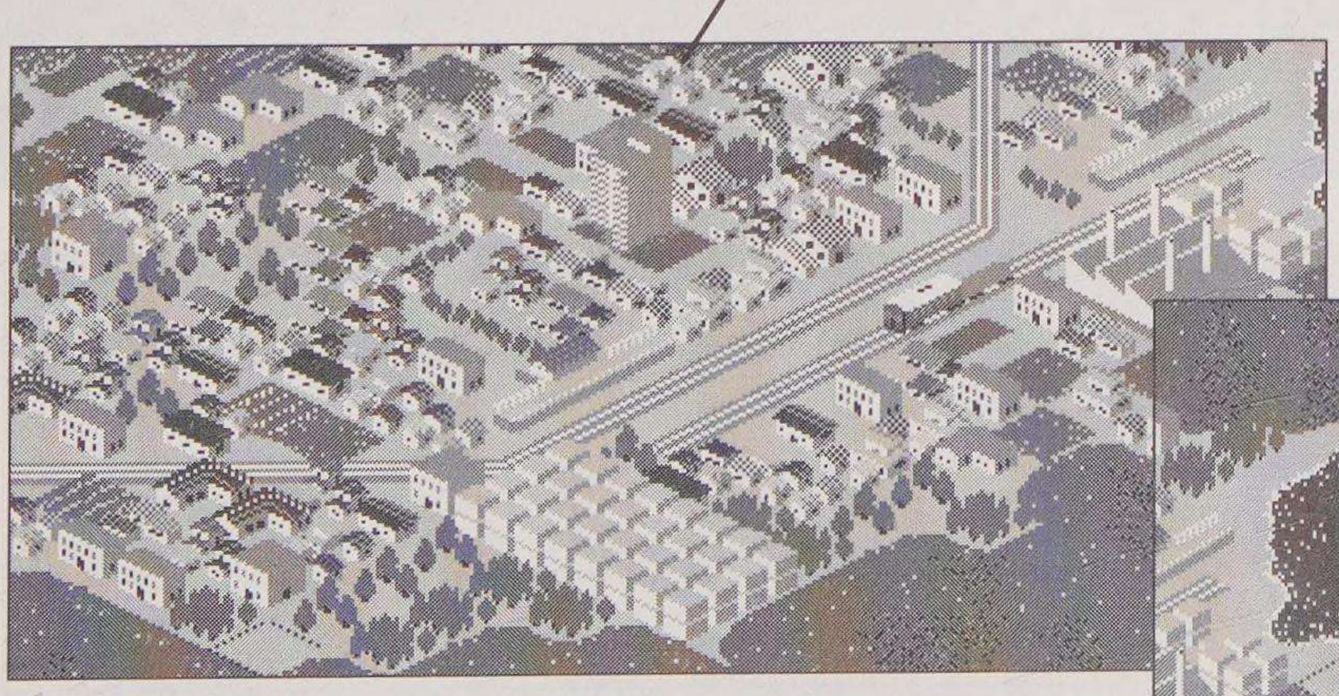
Roads are obstructed by apartment buildings. Also, stations are not in the right location to form crossroads. Move stations or remove apartment buildings.



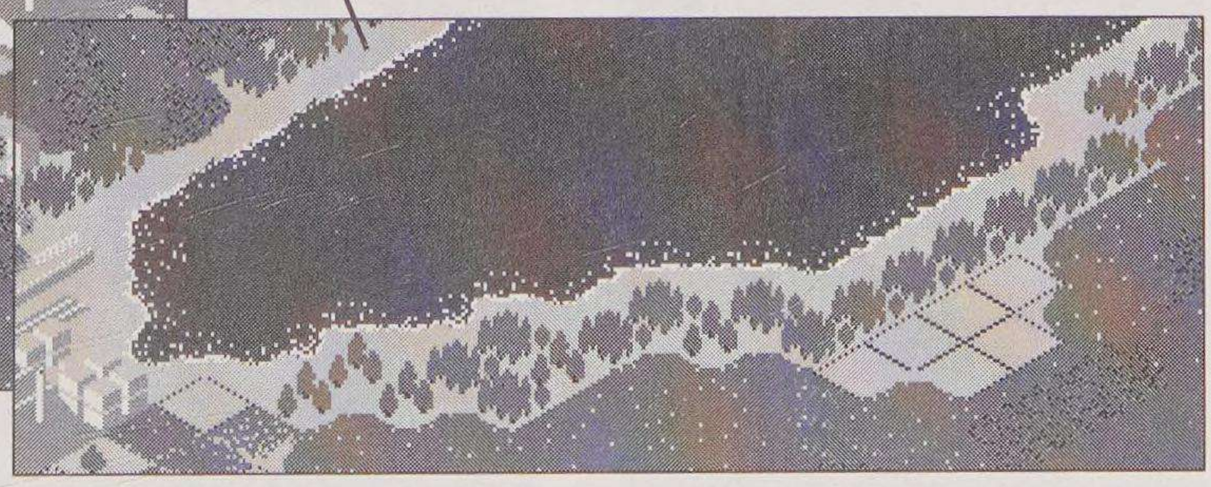
To help develop the east side of the city, save up enough materials to build additional factories.







Replace small railroad station next to the materials storage yard with a large station.



You can build a railroad line to the east side of the map along the lower lake shore.

6 MAP

Downtown Development

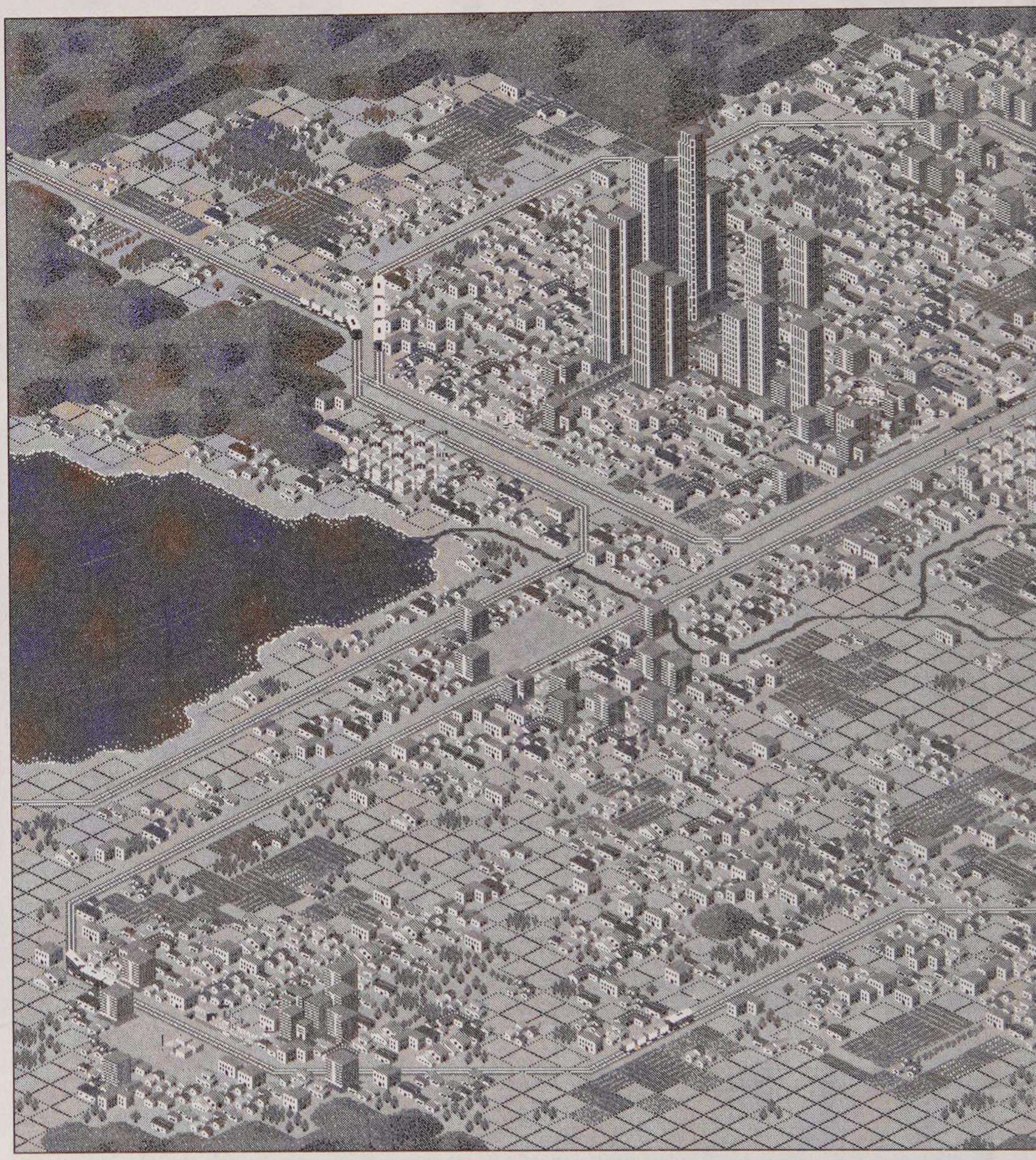


Table Map 6.1: Game Parameters	
Difficulty	Medium
City planning flexibility	Virtually none—already developed and changes are limited by local geography
Growth rate of city	Low
Goal	Streamline railroad operations; enhance profits
Complications	Lack of money

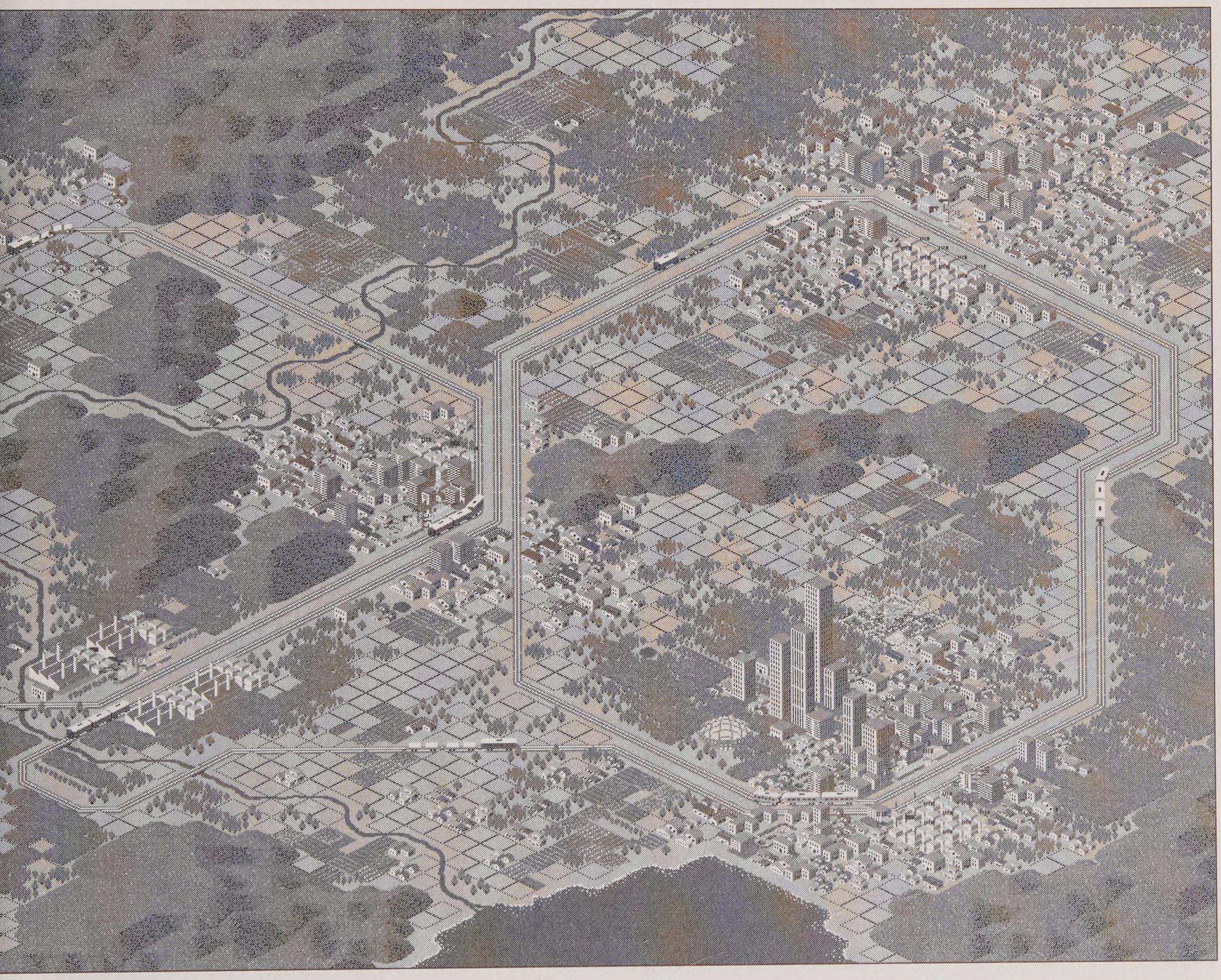


Figure 6.1 Downtown development

Table Map 6.2: City Statistics	
Size	Big city
Type	Residential
Budget	$6,847,730
Population	107,373
Labor demand (# of workers needed)	6,000

Table Map 1.3: Railroad Company Statistics	
Cash	$300,000
Credit limit	$1,740,000
Blocks of land owned	67
Number of trains	12 Total 5 GP-40 freight trains 1 211 passenger train 3 EF-65-24 passenger trains 3 AR-III passenger trains
Number of stations	10
Number of switches	2
Track segments	897

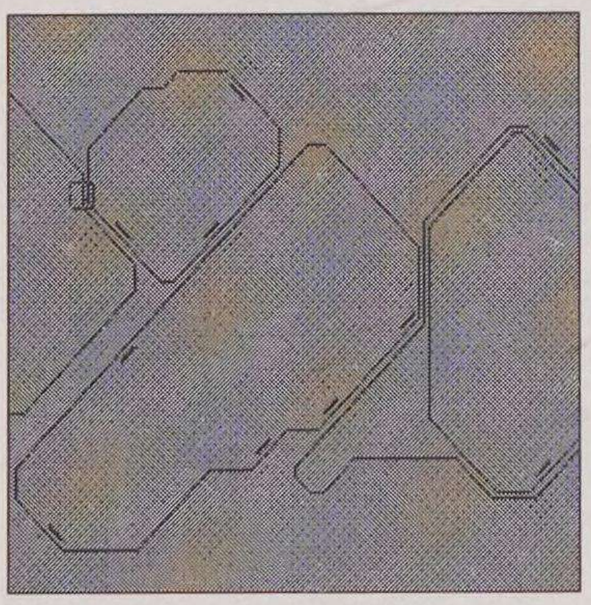


Figure Map 6.2 Railroad Map

The Downtown Development scenario contains a highly developed city with a population of 107,373 people, 12 trains, 10 stations and 897 blocks of track. This city shows you what the New Town Map One scenario could be like, if you were successful in managing city growth. It demonstrates a city that is nearing the metropolis class, with highly profitable belt lines, towering skyscrapers, roads, and many trains running. Problems are few, but passenger traffic is on the increase and city growth rates have slightly leveled off. Also, industry is shifting from one part of the city to another. According to the map designer, this is supposed to model the change that occurred in Tokyo, when the city's center moved from Ginza to Shinjuku.

GOALS

Mostly, you will be concerned with expanding train service, and rerouting traffic when bottlenecks occur. This means that you should consider changing the layout of the tracks, and trying to make trains more efficient. Industry will start growing in other parts of the city, so you must be able to respond by moving transportation resources to serve the needs of fast growing sections of the city.

STRATEGY

First of all, get rid of the unprofitable 211 passenger train and replace it with a 381. Next, because you have very little money, take out a bank loan to augment your cash. Then start replacing small railroad stations

with large stations on a case-by-case basis. The highest priority stations are those which serve multiple belt lines, so replace these first.

Since you are netting approximately $2,200 per day from your train company operations alone, you can start building new subsidiaries inside the middle belt line at the center of the map. This vast territory could use a little infusion of cash and materials, so try to direct more attention to promoting its development.

Remove the unprofitable 211 passenger train. Replace with a 381. You can also add more passenger trains to this belt line.

Replace the small railroad station with a large station. This belt line still has quite a bit of room to grow

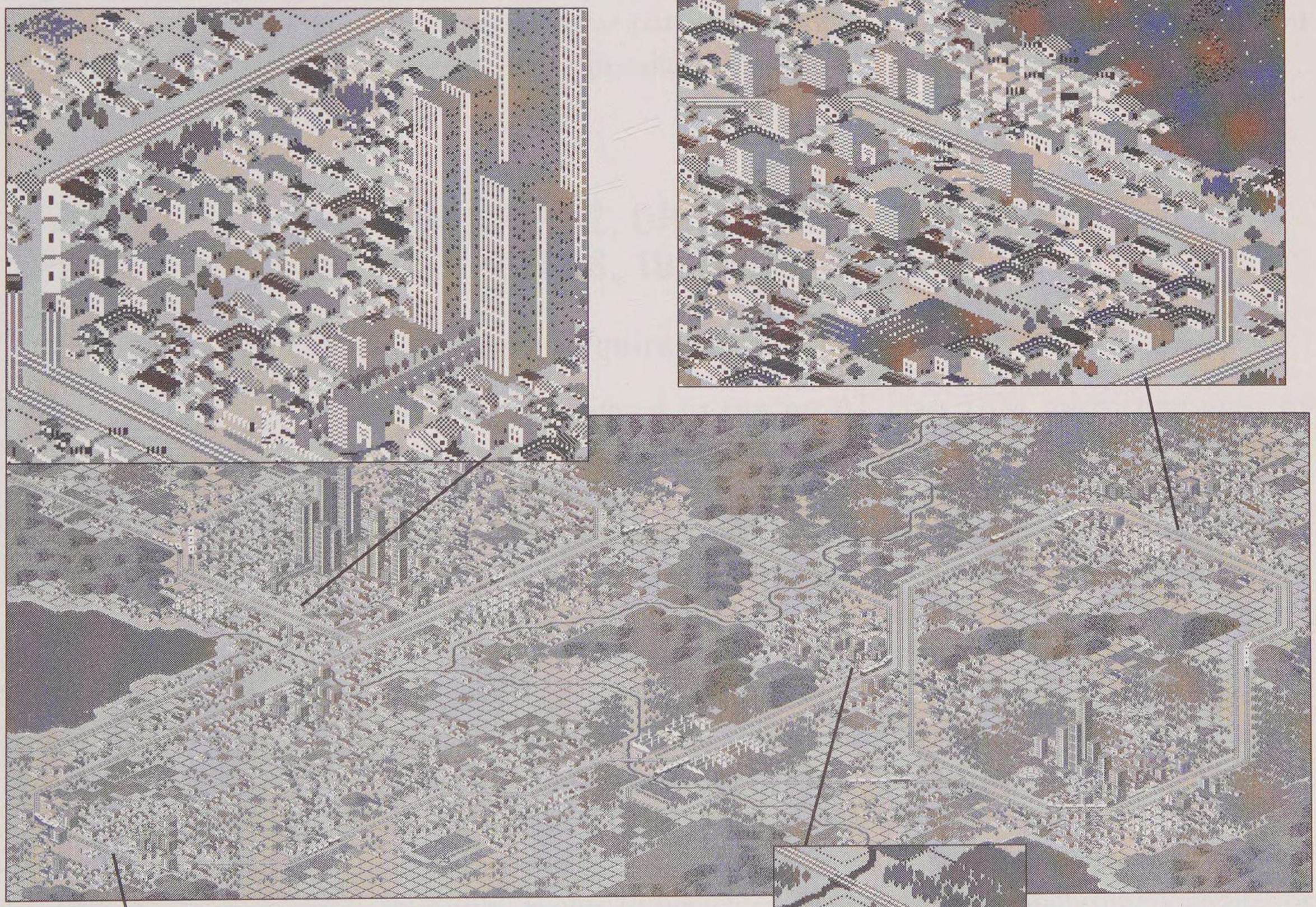


Figure Map 6.3

To speed up development of the middle belt line, replace small railroad stations with large stations.

Add more passenger trains to the middle belt line.

APPENDIX

Installing A-Train

Before you can play A-Train, you must install and configure the program to your particular computer. This appendix instructs you on the proper installation for both the PC and Macintosh.

IBM AT, PS/2, OR 100 PERCENT COMPATIBLE COMPUTERS, 10 MHZ OR FASTER

Hardware Requirements

A-Train is designed to run on AT class IBM microcomputers or compatibles. This means that any computer based on the Intel 80286, 80386, or 80486 CPU (Microprocessor Central Processing Unit) will run A-Train. Because of the program's complexity, the faster your machine is, the better the game will run. On slower machines, such as the 80286, game speed may crawl even at the highest speed setting.

You will need at least 520 Kilobytes of RAM (Random Access Memory) to run EGA or VGA color graphics (550K needed for Hercules graphics mode). You can run A-Train with most standard graphics cards and monitors. including VGA, EGA, EGA monochrome, VGA/MCGA, and Hercules cards. Of course, A-Train looks best when run in 16-color 640x480 VGA mode, but you will certainly be able to play even if you have a monochrome Hercules or EGA/VGA setup. With the monochrome version of A-Train, you won't be able to see the color coding of trains and their numbers in the calendar chart under the Train Registry. Also, the landscape features will be harder to discern. For those using Hercules graphics

cards, do not attempt to run A-Train in 350 monochrome mode. Make sure you use standard Hercules mode for proper execution of the program.

The program will only run from a hard disk, on which there should be at least 1.6 Mb of free space for the installation. Note that you cannot simply copy the game files from your master disks and expect to play. The original A-Train disks can *only* be used to install A-Train to your hard disk using a special installation program called INSTALL.EXE.

A mouse is highly recommended, since most of your activities in the game involve precisely positioning graphic objects on the screen. It is possible to play A-Train using just the keyboard, but it is much easier with the mouse. Users of Logitech mice with driver versions 3.2 or earlier must upgrade to a more recent driver version to avoid difficulties with the program.

A-Train also comes with sound capabilities. You can use the built-in PC speaker for clickity-clacking sounds of a train traveling on railroad tracks, or if you have a sound card, you can play music in addition to the train sound effects. Sound cards supported include Tandy, Adlib, Sound Blaster, Covox SoundMaster, and the Roland MPU-401.

If you are running DOS 4 or DOS 5, make sure that the shell is switched off before running A-Train. Be sure *all* memory resident software, such as Norton Commander, PC Tools, or any TSR (Terminate but Stay Resident) programs are not loaded into memory. These programs take RAM space away from the memory needed to run A-Train.

For printing maps of your cities, A-Train has a PCX graphic file generator which creates PCX disk files for printing with other paint programs. Although you can't send the map to the printer directly from inside A-Train, once you have exited the game, you can easily use programs such as Deluxe Paint II for DOS from Electronic Arts, or Windows Paintbrush to print out the city. For optimum results you will need a laser printer with at least 2 Mb of RAM, and your computer will need at least 2 Mb of Extended or Expanded memory. You can achieve very good results with other graphics-capable printers, however.

The following is a brief summary of the hardware and system requirements for IBM AT, PS/2, or 100 percent Compatible microcomputers, 10MHz or faster, running A-Train.

HARDWARE AND SYSTEM REQUIREMENTS

- IBM AT, PS/2, or 100 percent compatible microcomputer, 10 MHz or faster
- Minimum 520K of RAM for color or monochrome modes (550K free for Hercules graphics mode)
- Hard disk with at least 1.6 Mb free
- 1 floppy drive
- Hercules, EGA, EGA/MCGA monochrome, or VGA graphics card and monitor
- MS-DOS 3.1 or greater

The following additional peripherals, though optional, are recommended for their usefulness:

- Mouse
- Graphics-capable printer
- Tandy, Adlib, Covox Sound Master, Creative Labs Sound Blaster, or Roland MPU-401 sound cards

Installation

To properly install and configure A-Train for your computer, follow these steps:

1. Insert your 5 1/4" or 3 1/2" A-Train Installation Disk #1 in either the A or B drive.
2. At the DOS prompt, type A: or B: depending on which floppy drive you placed the A-Train Installation disk in.
3. Type INSTALL, then wait until you see the screen as pictured in Figure A.1.

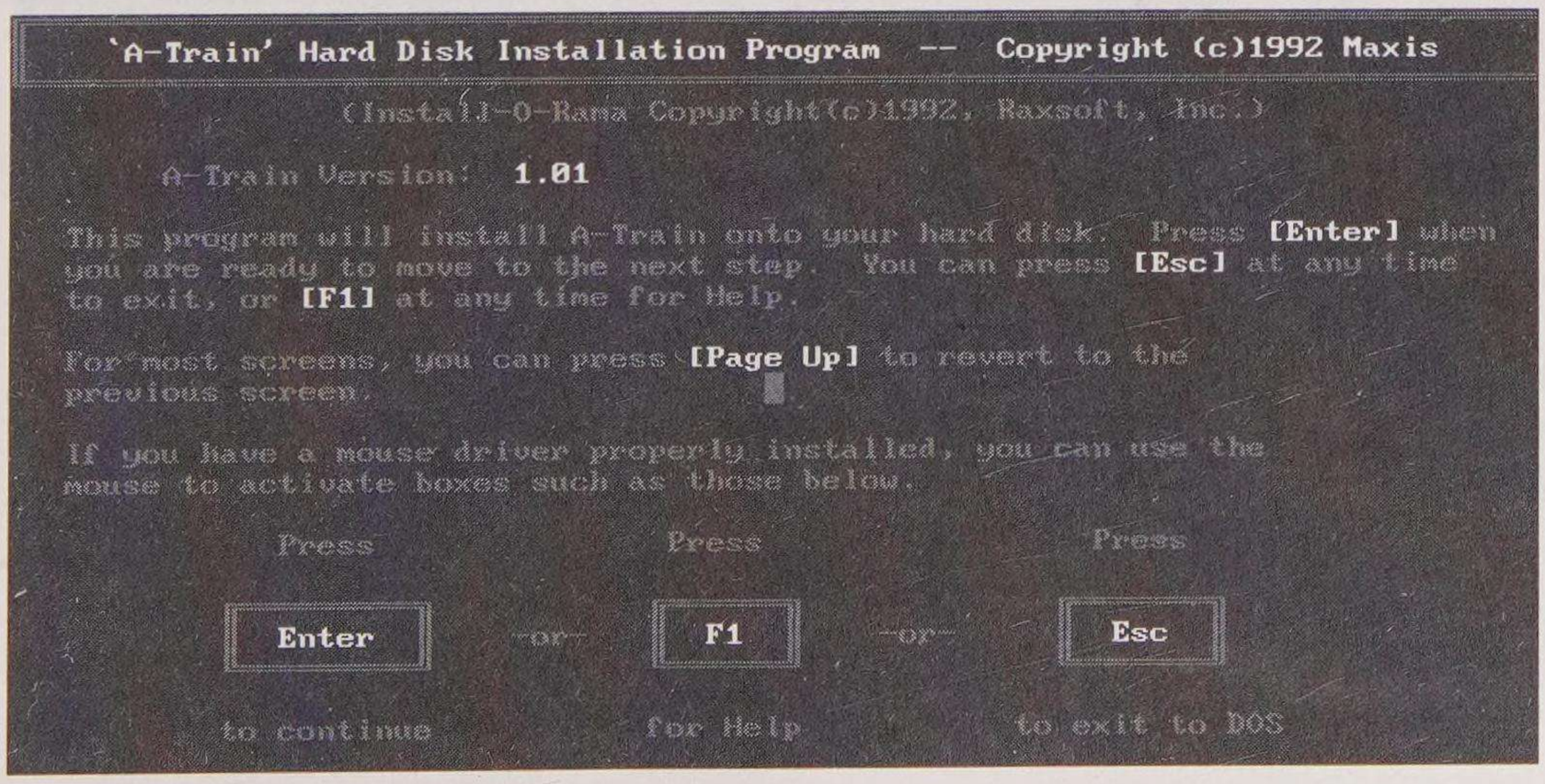


Figure A.1 Opening installation screen for A-Train

4. After reading the instructions on the opening installation screen, click on the Enter button (or press the Enter key).
5. On the next screen that appears, type your name in the text box labeled "Enter your name here:." Figure A.2 illustrates this.

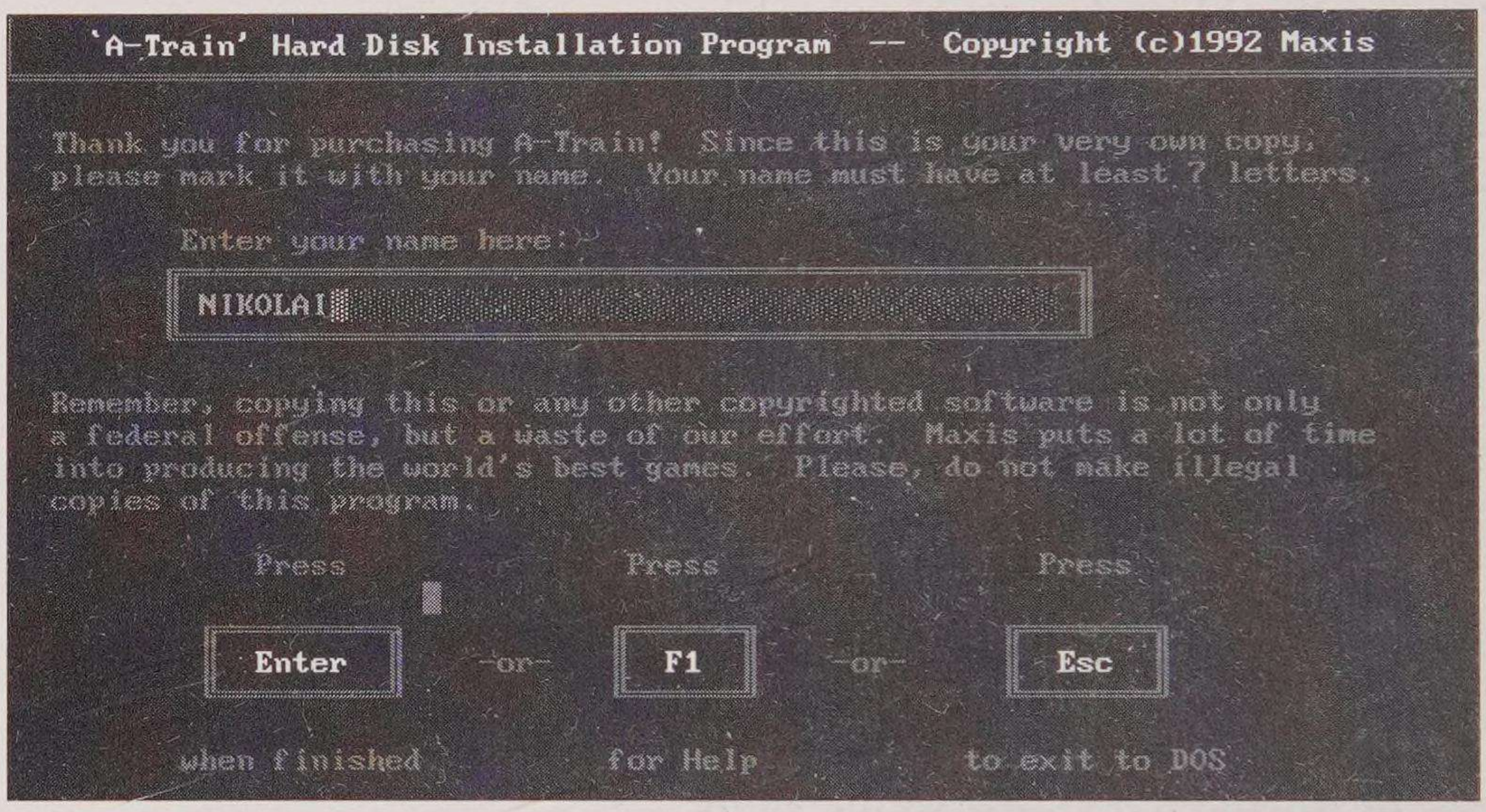


Figure A.2 Enter your name

6. Let's try using the onscreen installation help to see how it works. Click the F1 button (or press the F1 key). You will see some helpful information about the particular installation feature you are wondering about. In this example, the help screen tells you that the name you just typed will be permanently recorded in the About window of the game.

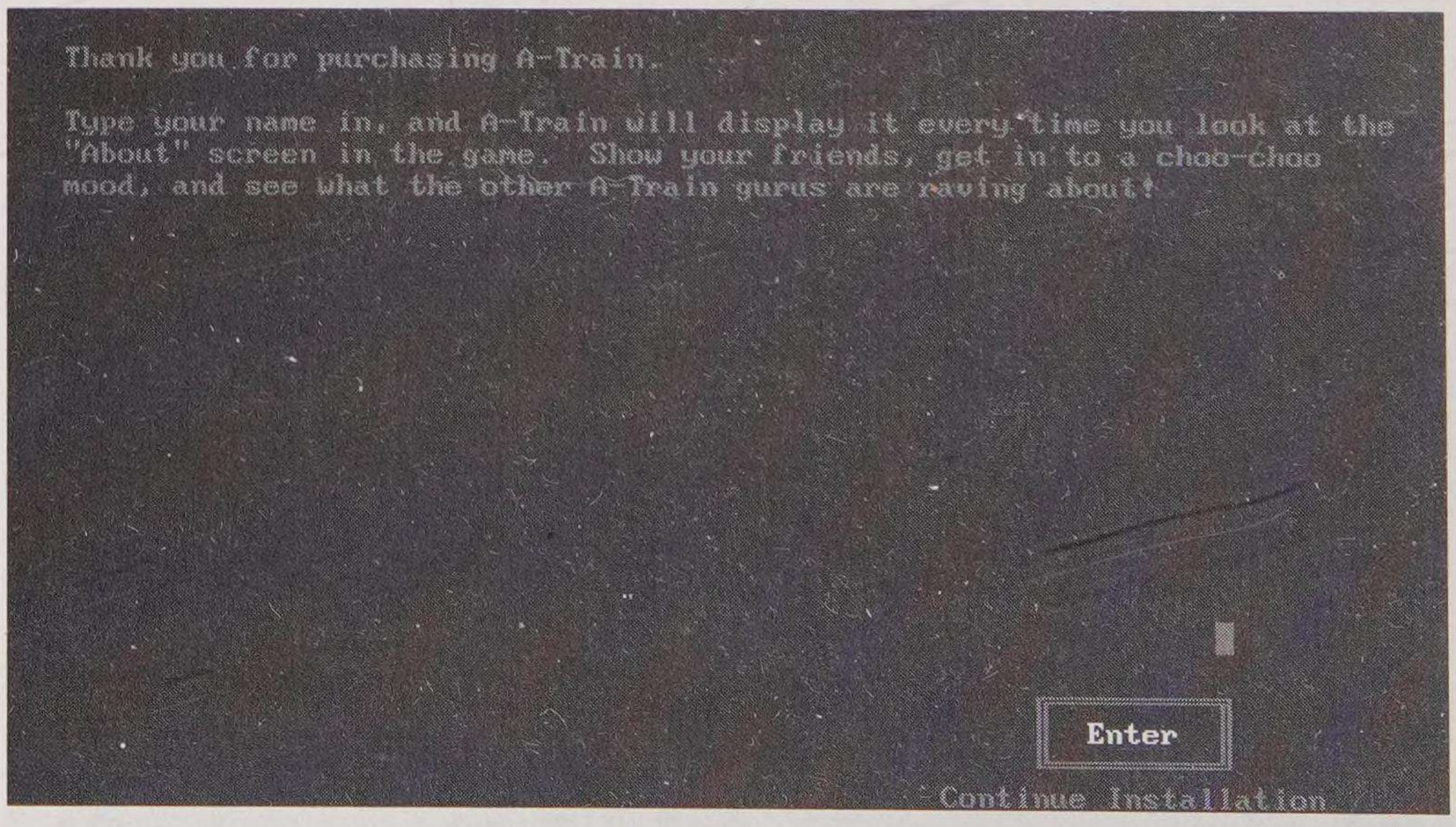


Figure A.3 Help screen

7. Click the Enter button to proceed to the next screen.

8. On the next screen you must specify the hard drive and path to which you wish A-Train to be installed. In the example you see here, I have used the C:\MAXIS\ATRAIN\ default path. You can easily modify this by pressing the Backspace key to erase the entry and then retyping the new path you wish to use.

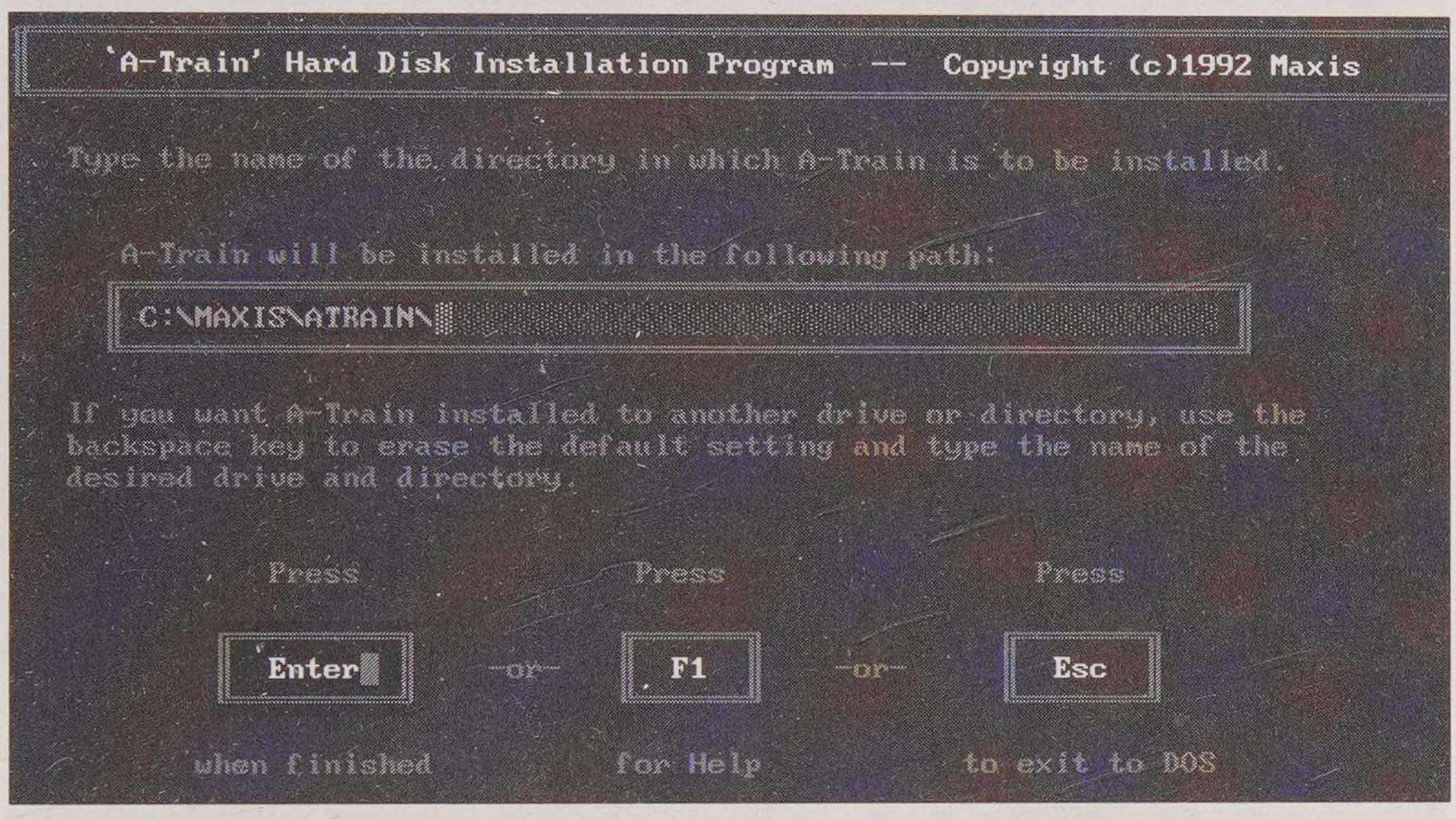


Figure A.4 Type the name of the directory in which A-Train Is to be installed

9. To proceed to the next screen, click the Enter button.
10. You must now specify the video mode you want to use. For this step, you must know what kind of video adapter you have installed in your computer. If you have a monochrome monitor, you must choose one of the first three options; if you have a color monitor, you should pick option number four or five. In my case, since I have a color VGA monitor and a VGA card, I chose

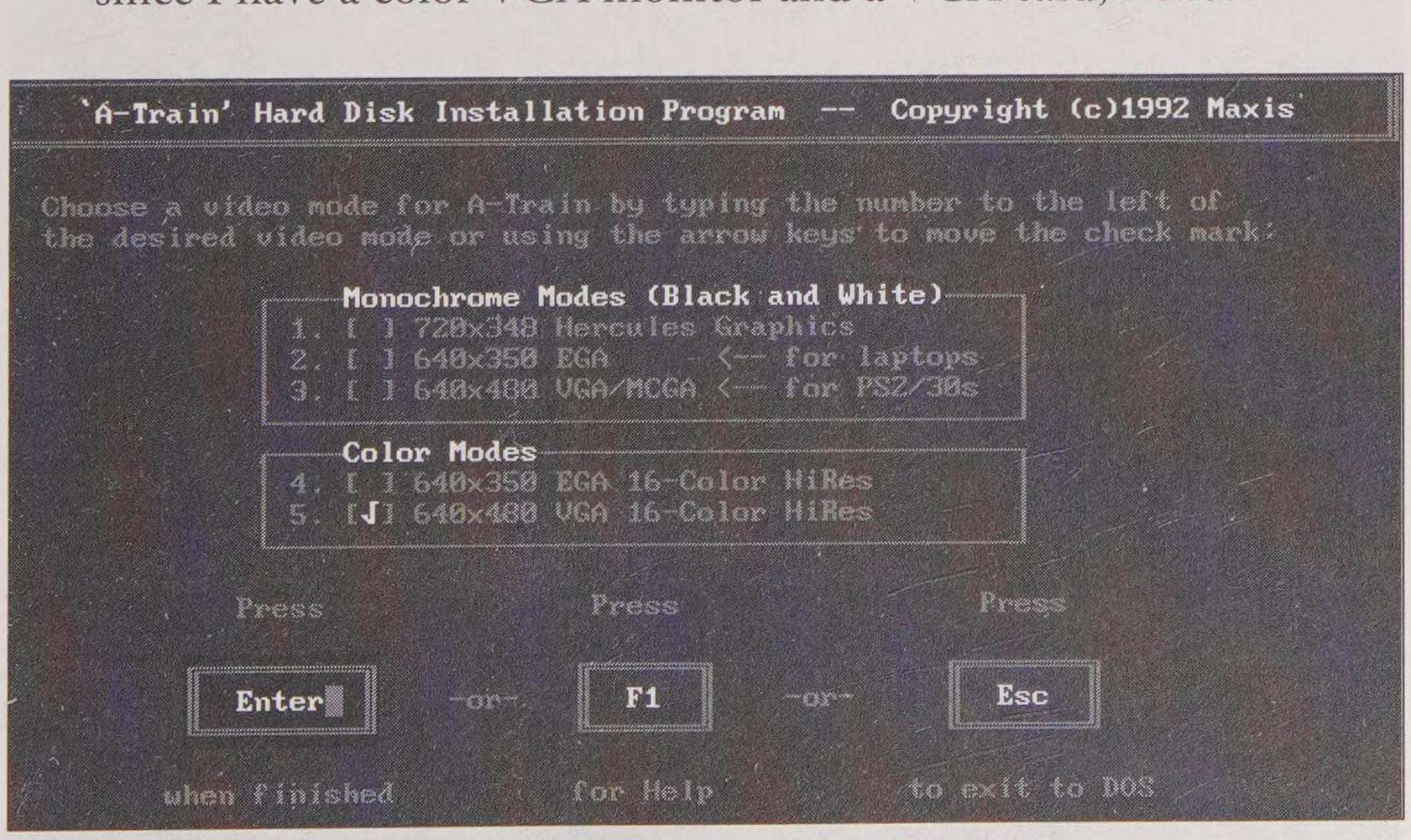


Figure A.5 Choose your video mode

option five, 640x480 VGA 16-Color HiRes. When selecting one of the video options you can type the option number from the keyboard, or you can select it with the mouse pointer.

11. Click the Enter button to proceed to the next screen.
12. On the Sound Mode Installation screen, you need to select which sound card, if any, your computer is equipped with. If you have none, you can select the IBM PC Internal Speaker option for sound effects without music, or you can choose to have no sound whatsoever by selecting No Sound Support.

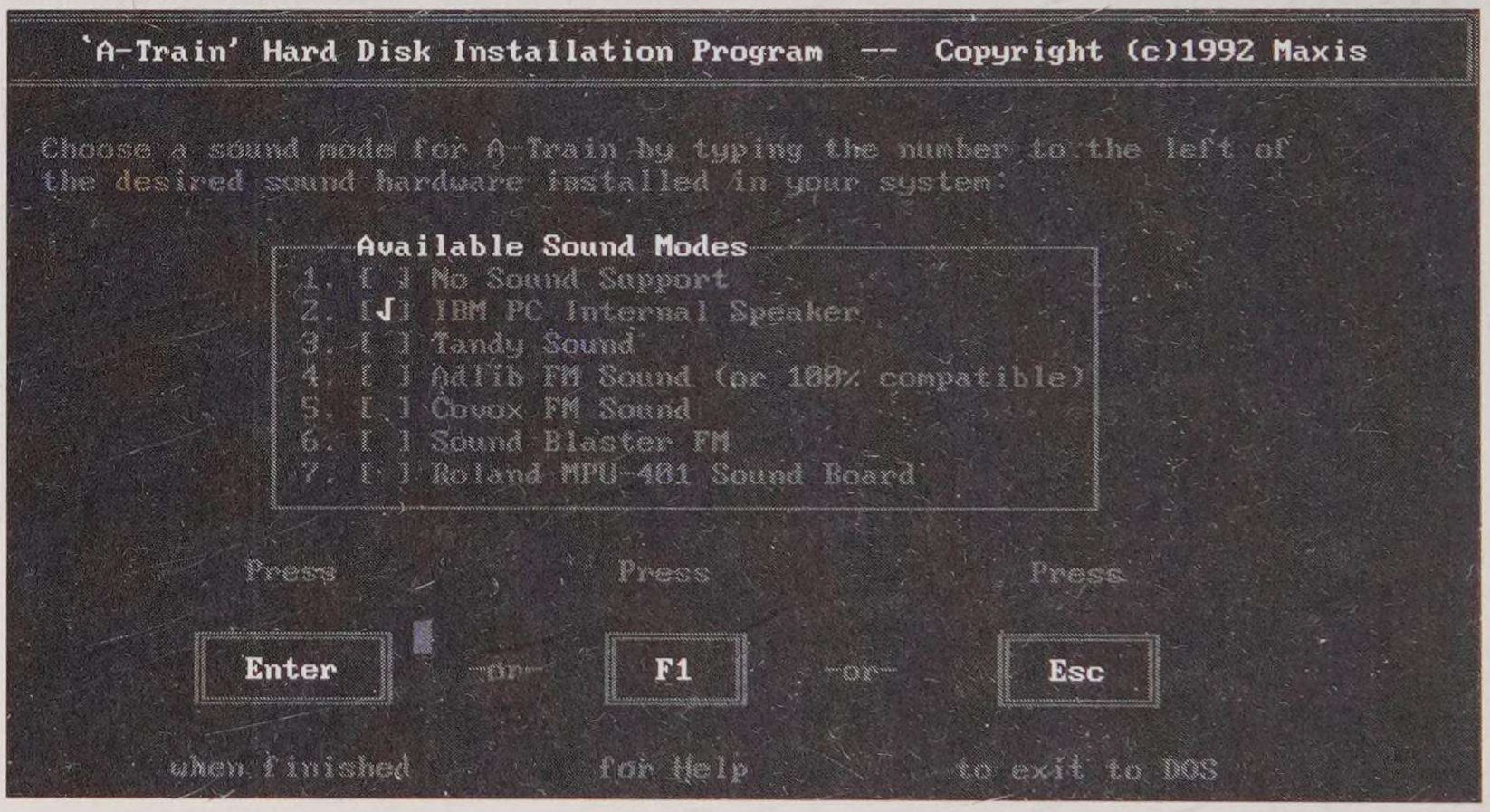


Figure A.6 Choose your sound setup

13. After selecting your sound mode, click the Enter button to begin the actual installation of the disk files. You will see a status report showing you the number of bytes remaining to install from each disk, the number of bytes installed so far, and the percentage of the disk you have actually installed.

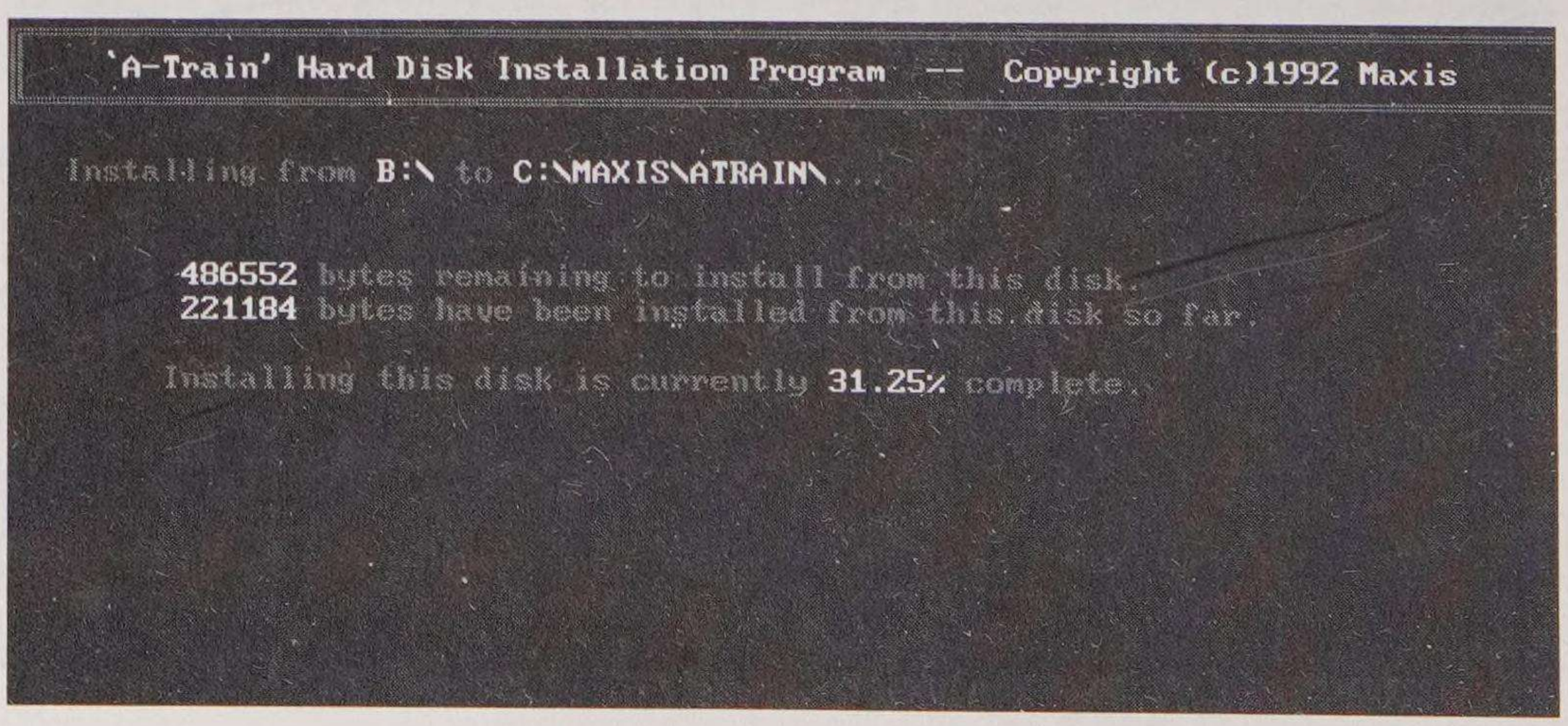


Figure A.7 Installation progress report

14. When the installation program finishes with the first disk, you will see an onscreen prompt informing you to insert disk #2. Remove disk #1 and insert disk #2, then click the Enter button.



Figure A.8 Insert Disk #2

15. A status report for the installation of disk #2 will appear, looking just like Figure A.7. When the installation program finishes with disk #2, it will prompt you to insert disk #3.

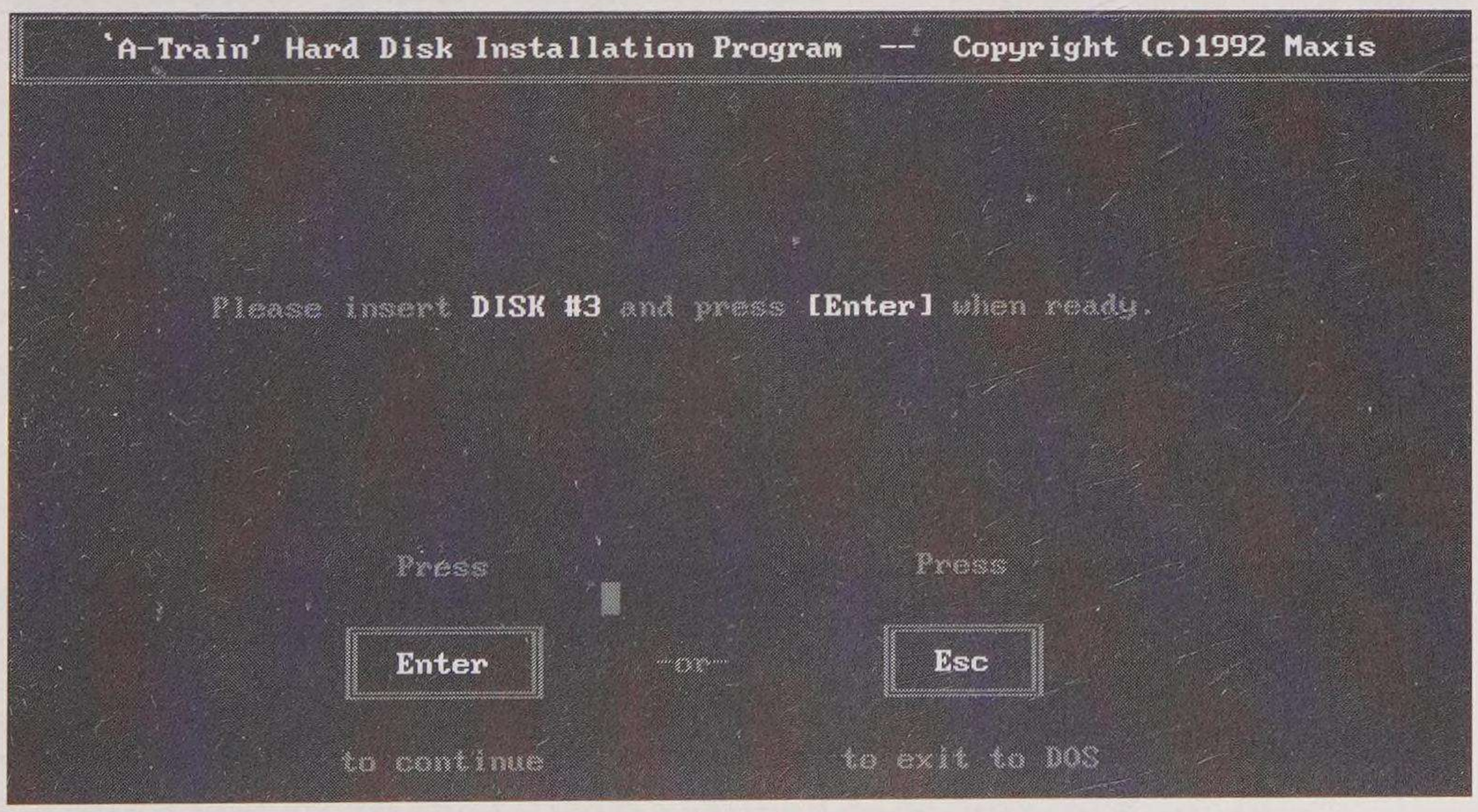


Figure A.9 Insert Disk #3

16. If you are using the 5¼" disks, continue to follow the install program's prompts to install and remove the remaining installation disks. When the program is finished installing A-Train, you will see the Readme text screen as shown in Figure A.10.

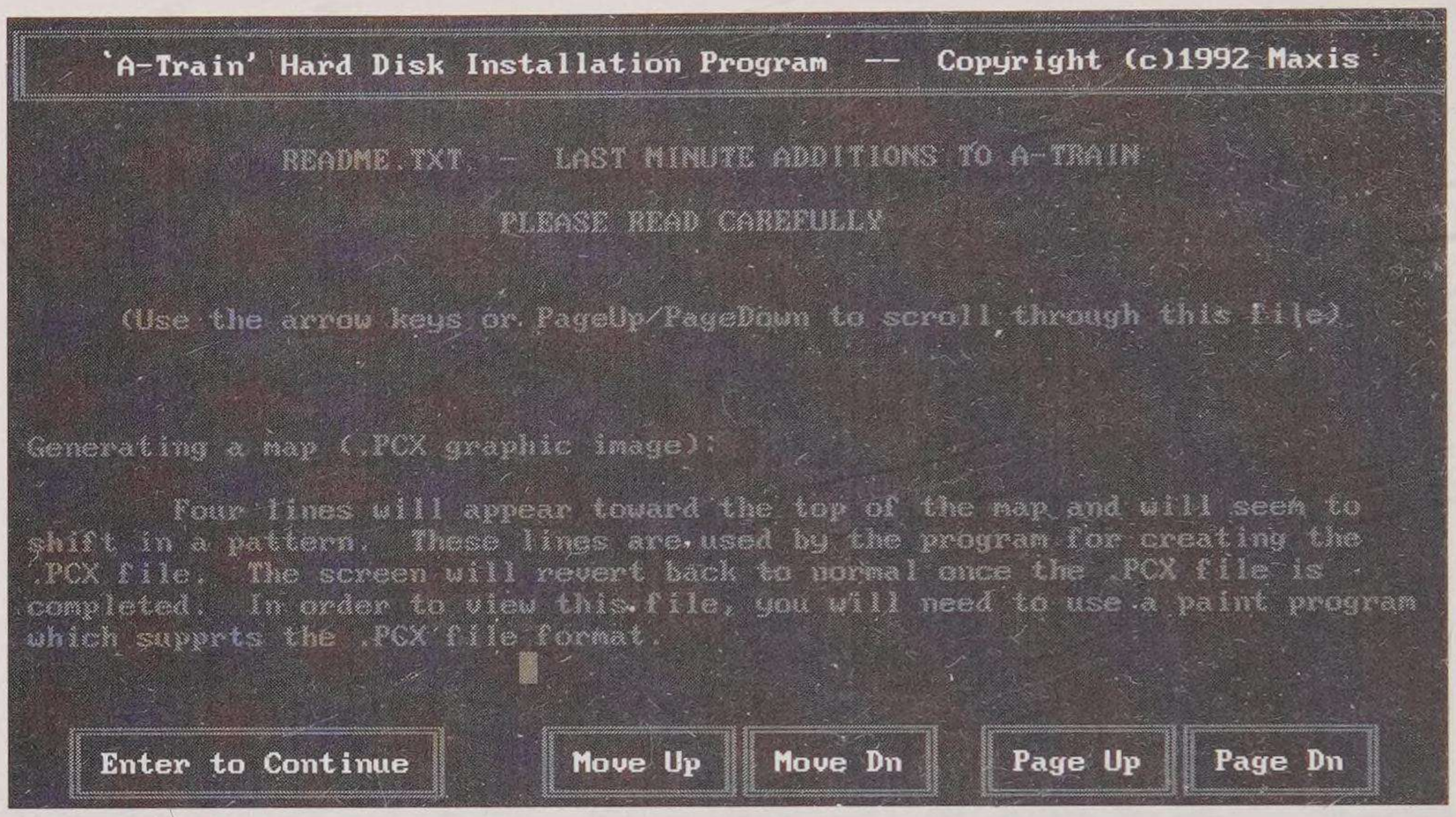


Figure A.10 Readme text; last minute additions to A-Train

17. When you have finished reading the Readme text, click the Enter to Continue button.
18. If all goes well, you should see the final Congratulations screen, as shown in Figure A.11.

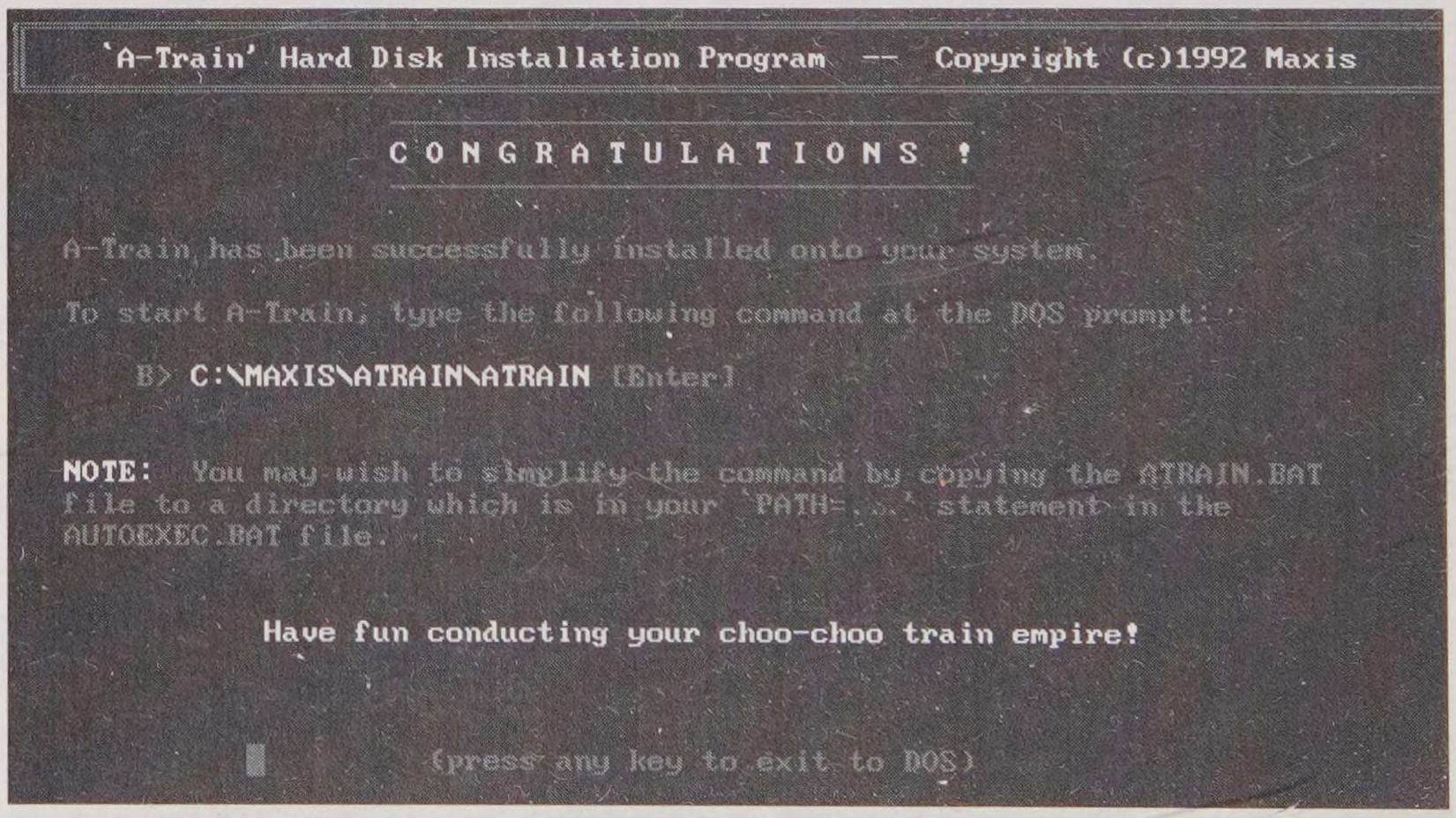


Figure A.11 Final installation screen

To start playing A-Train, all you need to do is enter the C:\MAXIS\ATRAIN directory (or the path where you have installed A-Train) and type ATRAIN.

DOS 5 and Windows 3.1 Compatibility

A-Train works seamlessly with DOS 5. Just make sure that the Files and Buffers settings are set to 20 in your config.sys file.

A-Train is a DOS-based program. It does not have a Windows interface, nor is it guaranteed to work as a DOS program under Windows 3.1. Although A-Train will run under Windows 3.1, there are a few glitches that you should be aware of. If you have only 2 Mb of RAM, Windows will use your video card's onboard VRAM memory in an attempt to save RAM memory space on your motherboard. Because of this, when you switch back and forth between A-Train and Windows, the color palette registers become scrambled as your computer shifts from A-Train's VGA emulation mode to whatever graphics mode you are using under Windows. This results in garbage appearing on the A-Train screen, and it can make it impossible to continue the game. If this happens, don't play A-Train under Windows until you increase the amount of motherboard RAM. With 4 Mb of RAM the problem will most likely disappear, but this will depend on how Windows interacts with your particular hardware.

To set up A-Train to work under Windows, follow these steps:

1. In the Program Manager window, click the title bar of the group window where you wish to place the A-Train program icon. For example, if you wish to place A-Train in the Games window, pull down the Window menu and select the Games menu option.
2. Pull down the File menu and select New.
3. In the New Program Object window that pops open, click on the Program Item radio button, then click the OK button to continue.
4. In the Program Item Properties window that opens next, click the Browse button.
5. When the Browse window opens, scroll through your directories until you are in the C:\MAXIS\ATRAIN directory (or other path where you have installed A-Train).
6. Once you are in the \ATRAIN directory, select the Atrain.bat file, then click OK. After doing this, you will be returned to the Program Item Properties window.

7. Type in ATRAIN in the Description text box.
8. Type in the path for A-Train in the Working Directory text box (e.g., C:\MAXIS\ATRAIN).
9. To create an icon for A-Train, click the Change Icon button. A warning message will appear on screen; just ignore it and click OK.
10. Scroll through the list of icons and select the one you prefer. Click OK when done and you will be returned to the Program Item Properties window, where you will also see your new program icon in the lower left corner of the window.
11. Click the OK button in the Program Item Properties window.
12. In the group window, you should see your new A-Train game icon. The next time you want to play A-Train, just double click on this icon.

MACINTOSH COMPUTERS

The following section details the hardware and system requirements and installation procedure for the Macintosh version of A-Train.

Hardware and System Requirements

A-Train will run with most Macintoshes with at least 1 Mb of RAM. This includes the Mac Plus, SE, SE/30, Classic, LC, II, IIx, IIcx, IIsi, IIfx, Powerbooks, Portable, and Quadras. You can use System 7, or System 6.05 or greater.

All Macintosh printers are supported. This means you can print out eight-page poster-size maps of your cities on ImageWriters and on any QuickDraw or PostScript LaserWriter.

Installation

Installation is a simple matter. There are two program disks, one for the color version of A-Train, the other for the black-and-white version. Choose the disk that matches your monitor type. Insert the appropriate program disk and drag the two A-Train icons onto your

desktop or the folder where you wish to store A-Train on your hard disk. You must run the color version of A-Train from a hard drive, while it is possible to play the black-and-white version from a floppy if you first create a bootable system disk. In neither case can you run A-Train directly from the master program disks that came with the game.

Copy Protection

There is no copy protection for either the Macintosh or PC version of A-Train. This means that you are free to make backup disk copies for archive purposes only. Maxis is relying on the "honor" system: that is, each buyer is expected to enter into a good-faith pact with Maxis that she/he promises not to copy the program illicitly to give to others. As an embarrassment deterrent, your name is recorded in the software during the installation process, so that if you give away unauthorized copies of the game to friends and relatives (otherwise known as software piracy, which is illegal), the pirated copies can be traced back to you. Of course, there are ways to foil this identification system, but Maxis would rather appeal to people's sense of honesty and fair play, rather than trying to play hopeless cat-and-mouse games with ever more complex copy-protection schemes.

APPENDIX B

Using the A-Train Construction Set for the PC

With the A-Train Construction Set, an add-on software package from Maxis, you can sculpt landscape features to suit your tastes. Rather than being dependent on the six map scenarios that come with A-Train, you can create entirely new cities, with unlimited power to mold terrain features such as mountains, farms, ranches, rivers, lakes, seas, and islands. You can import a previously played A-Train city, or create a new one from scratch. It's all in your hands, including the power to create up to $9,900,000 in free cash and unlimited numbers of construction materials. Using this feature of the program, you don't have to hex edit a city file, or use the built-in Easter egg cheat to add money to a cash-starved city. After you have finished, you can load your newly designed city into A-Train and play again.

The A-Train Construction Set includes features that allow you to add new subsidiaries anywhere on the map without regard to the availability of building materials. You can buy up to 27 trains, lay track, construct bridges and switches, build stations, add switching and scheduling commands, place or remove trains, and add an airport or seaport to the map. What's more, in one fell swoop, you can fill in large swathes of land with residential or business districts, complete with houses, shops, and public buildings. All subsidiary acquisitions, train purchases, station construction costs, and track laying expenses are free of charge.

As of this writing, the A-Train Construction Set is only available for the PC, but Maxis plans to introduce the Macintosh version shortly.

INSTALLATION

To install the Construction Set, you must use the special install program that comes on the Construction Set diskette(s). The program is available on two 5¼" disks or one 3½" disk. A menu of choices will allow you to customize the installation for your particular hardware setup.

CONSTRUCTION SET ORIENTATION

Once you launch the program, you will notice that there are some striking resemblances to the A-Train "picture frame" interface. For example, the Trains and Subsidiaries menus are still present, and so is the main map view of your city, along with a window that looks structurally like the Satellite view window. But there are also some new menus and visual changes readily apparent. You can see the new menus on the bottom border of the screen, and see that the Satellite View window has been replaced by a new window, the Map Construction window. At the bottom of the Map Construction window, you will also see a command window, which displays various terrain editing options that are available for the particular menu you have selected from the bottom of the screen.

SYSTEM MENU

The System menu appears much like the System menu in A-Train. You load city files using the Load command, and save city files by using the Save command. The Quick menu toggles the Trains and Subsidiaries menus into an icon menu selection on the left edge of the picture frame. The Options menu allows you to create a PCX graphic file of your city for later printing and adjust other environmental variables such as sound. When you want to try out your city's rail lines to make sure that your trains are running the way you intend them to, you click on the Train On/Off toggle to start the train animation. If you want the trains to stop moving, you would again click the Train On/Off command to toggle off animation. Adjusting the speed of the simulation is accomplished through the Speed menu. To exit the Map Construction Set, click on Quit, and the program will end.

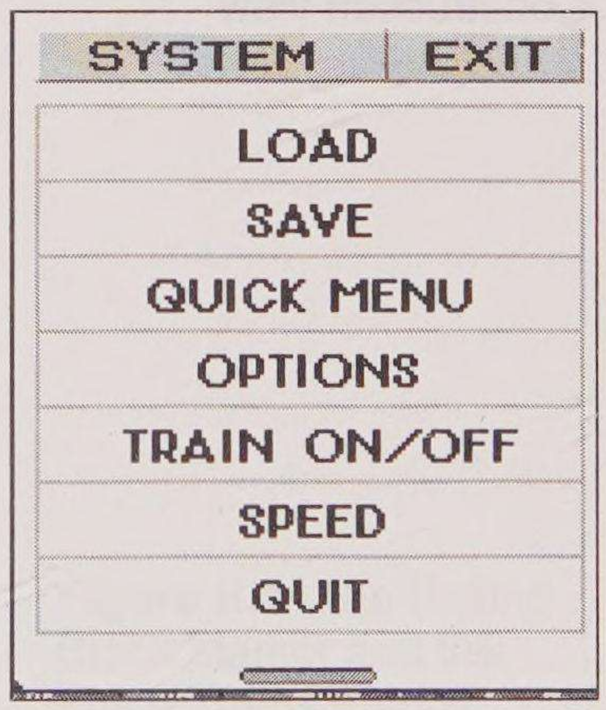


Figure B.1 The System menu

MAP CONSTRUCTION VIEW

In A-Train, the Satellite view window allowed you to pan your screen across the map. The Map Construction view window allows you to do the same thing in the Construction Set. Simply click on the scroll buttons on screen, or drag the selection rectangle across the mini map view of your city. Your main view of the city will be updated instantly to reflect the new map location you wish to view.

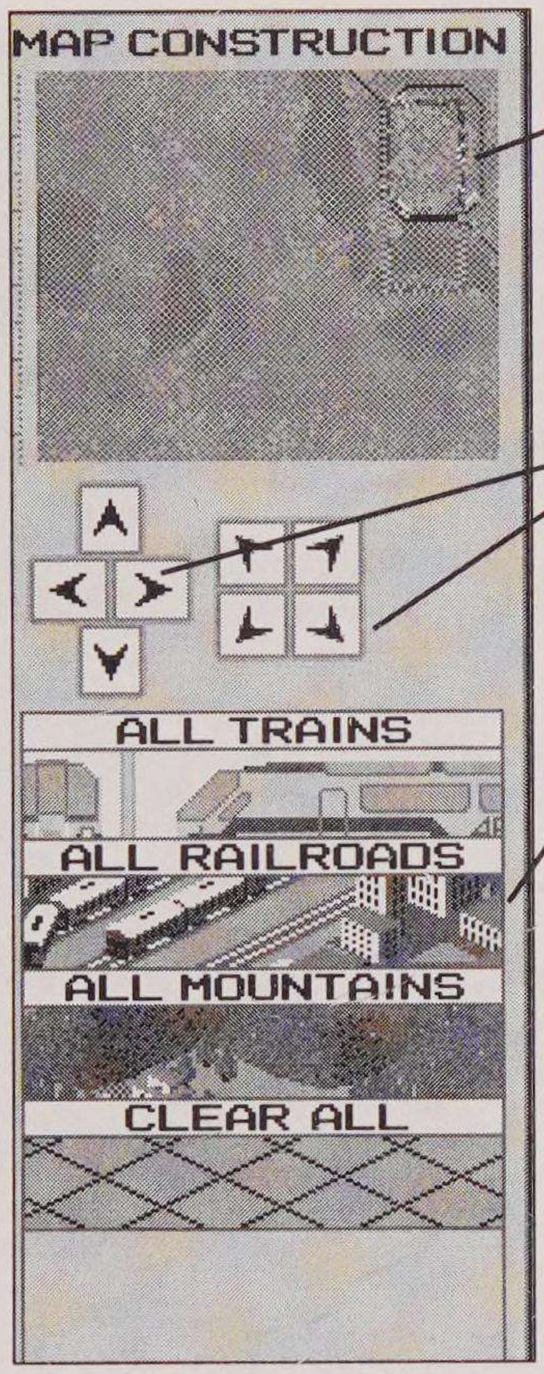


Figure B.2 The Map Construction view

At the bottom of the Map Construction window, you will see the Command window, which ordinarily displays the menu options available for each of the menus you select at the bottom of the Main view window.

TRAINS AND SUBSIDIARIES MENU

Through the Trains and Subsidiaries menus seen in Figure B.3, you can modify your railroad infrastructure and add or remove subsidiaries.

Using the Trains menu, you can lay tracks, purchase and place trains, build stations, set schedules, and adjust switches for each train. All train purchases are free. To set your trains in motion, you must click the Train On/Off toggle from the System menu. While the trains move, though, you cannot terrain edit the map in any way.

When you purchase trains in the Rolling Stock Market, as seen in Figure 3.4, you may notice that you have two additional trains in the Train Registry. The Construction Set allows you to modify the two trains that travel on the trunk line to the outside world, which ordinarily you are not allowed to manipulate. These two trains are labeled #26 and #27 in the Train Registry's "calendar chart" found in the Rolling Stock Market window and the Place Trains window. To have these trains communicate with the outside world, you must place them on tracks that enter from one edge of the map and exit off another edge. Once you begin playing this map in A-Train, the two trains, #26 and #27 cannot be purchased, sold, placed, or removed. Nor can these two trains' schedules be modified in any way.

The mechanics of using the subsidiary menus is the same as in A-

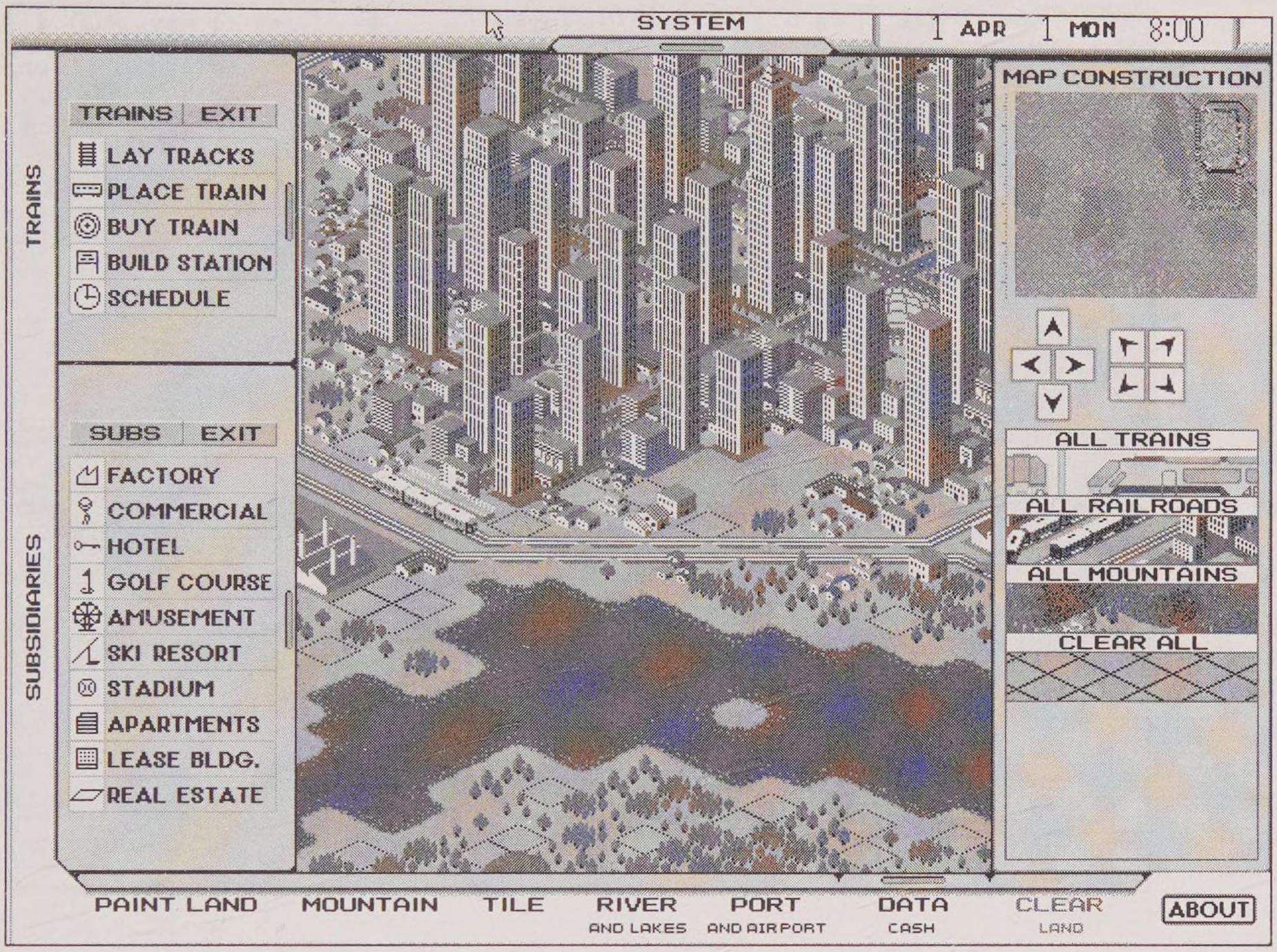


Figure B.3 The Trains and Subsidiaries menus

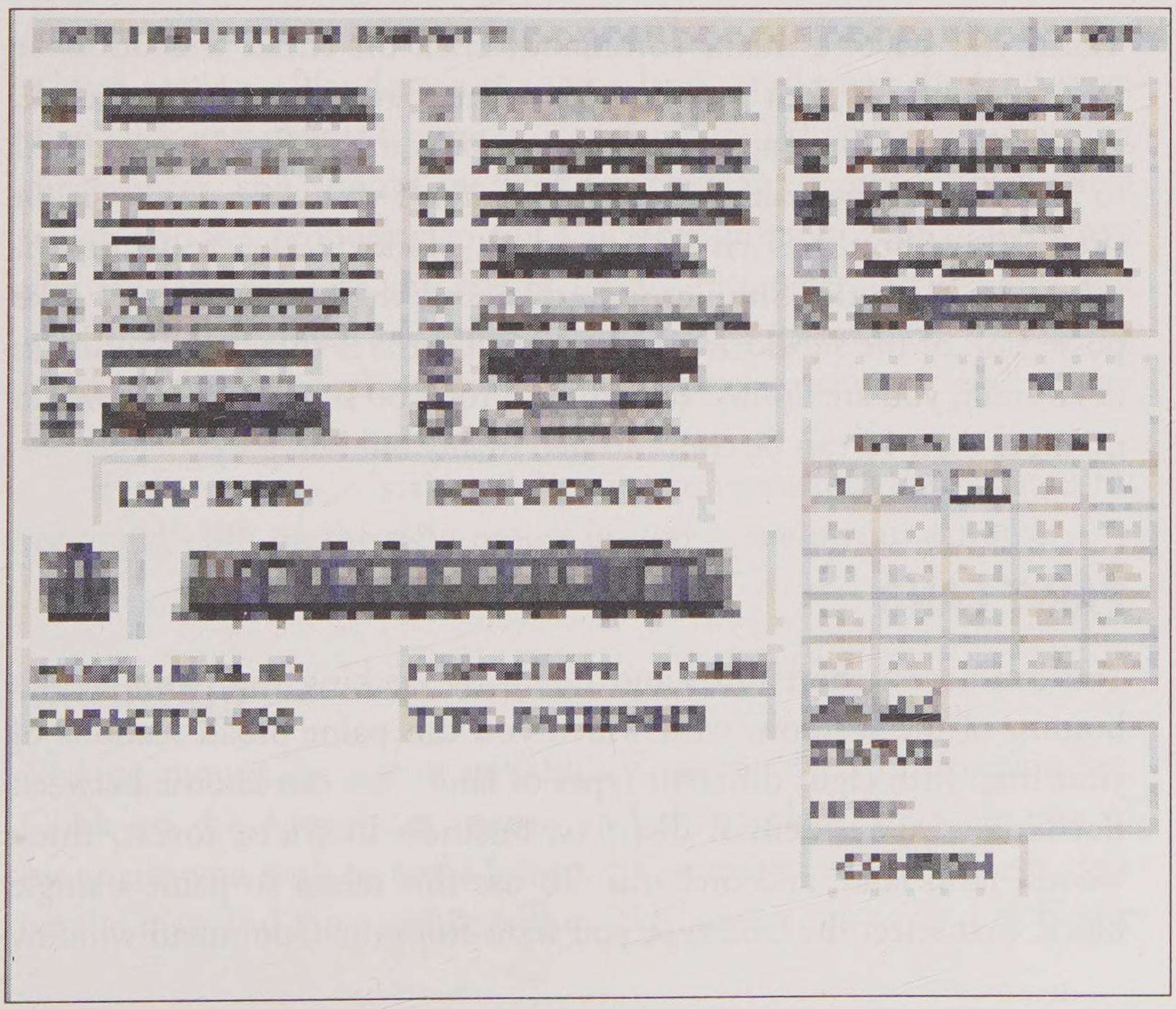


Figure B.4 The Rolling Stock Market and the Place Trains menus. Notice that you have two additional train numbers in the Train Registry: Train # 26 and Train #27. These two trains appear on the trunk line to the "outside." You have no control over the scheduling or switches for these two trains, but you determine what kind of train is used and on what rail line it will appear.

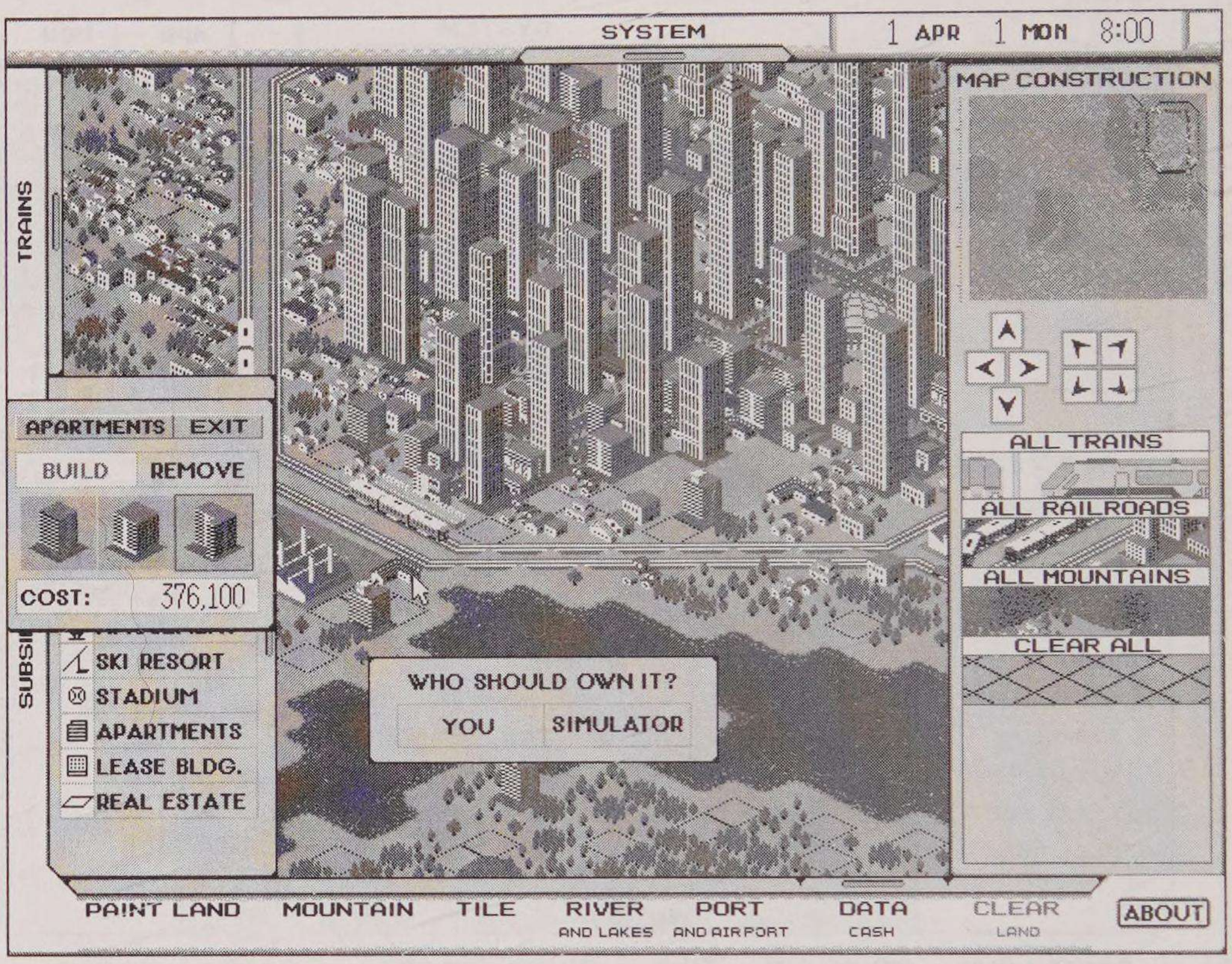


Figure B.5 Adding subsidiaries to the map. You must decide whether you or the simulator will own the subsidiary. Note that you are still limited to owning 18 subsidiaries of any single type, and 60 subsidiaries overall.

Train; you select a menu command, click on either the Build or Remove buttons, then position the pointer over the map and click. Before the subsidiary appears on the map, you will first be prompted to identify the ownership of the subsidiary. If you want to own it, in the "Who Should Own It?" window, click on the You button, otherwise click the Simulator button and the simulator will take possession of the subsidiary. Figure B.5 illustrates this process. Just as in A-Train, you are limited to owning a total 60 subsidiaries, of which no more than 18 can be concentrated in any one category.

PAINT LAND

You can access the Paint Land menu by clicking the name at the bottom of the window, with which you can paint broad sections of your map with eight different types of land. You can choose between flat land, sea, residential districts, business districts, forest, thick woods, farm land, and orchards. To use this menu to paint a single block, first select the land type you want from the Command window

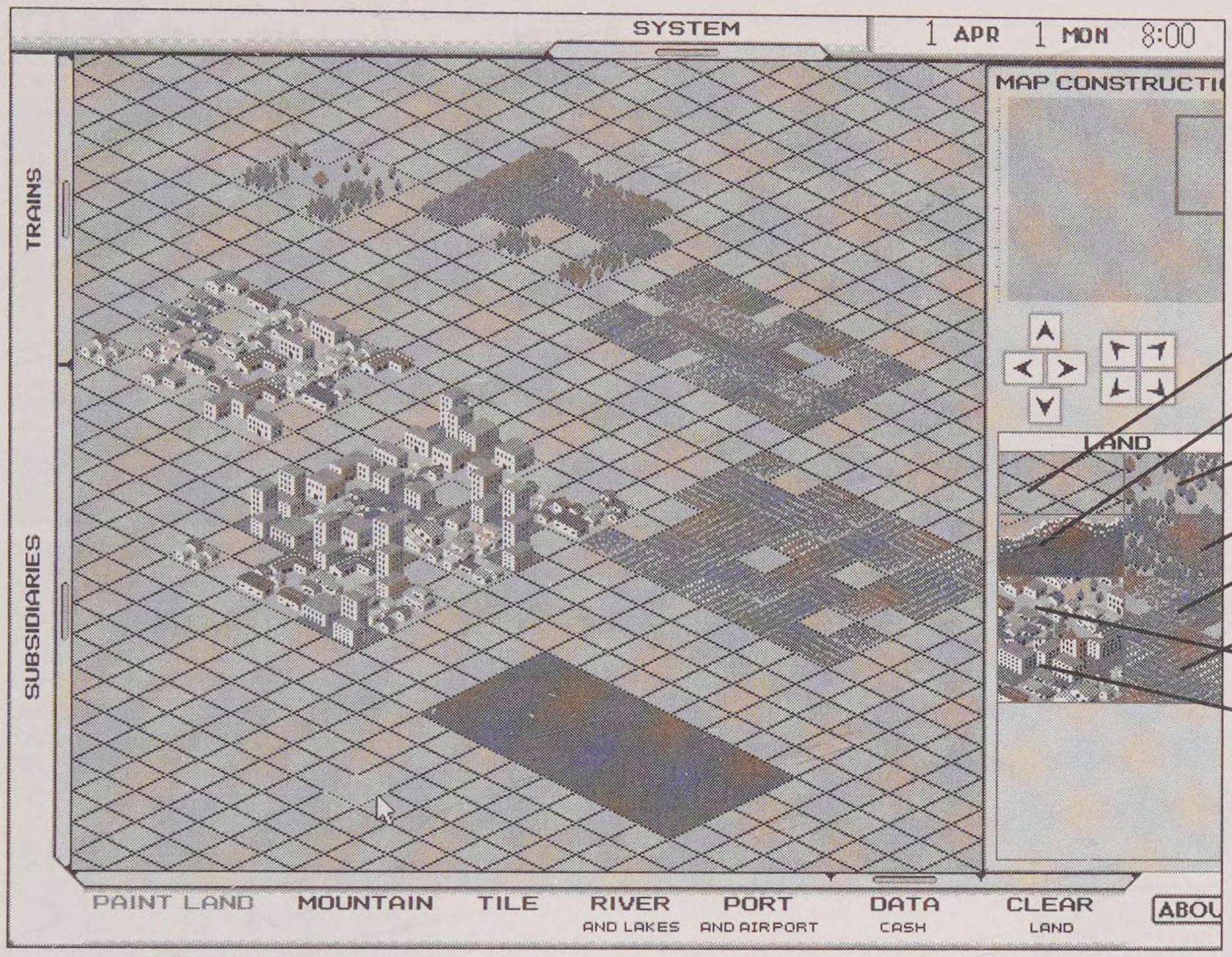


Figure B.6 Painting your map using eight different landscape "brushes."

then double click on the map to sculpt the land. If you want to fill in a large section of land with the same land type, select the land type, then click and drag the pointer over the map. While you are dragging the pointer, you should see a ghosted rectangle outlining the area which you are proposing to fill. Click the pointer once more, when you are satisfied with the size of the fill rectangle, and the area you have outlined should fill up with your selected land type. This is the quickest and most efficient way to edit large patches of land. Figure B.6 illustrates this in greater detail.

If you make a mistake while you are extending the ghosted fill rectangle, click on the right mouse button to undo your actions.

MOUNTAIN

Making mountains out of molehills is easy in the Construction Set. Click on the Mountain menu, and then select the scale size of mountain you wish to build from the Command window. Next, click on the map and a mountain will quickly sprout up, as seen in Figure

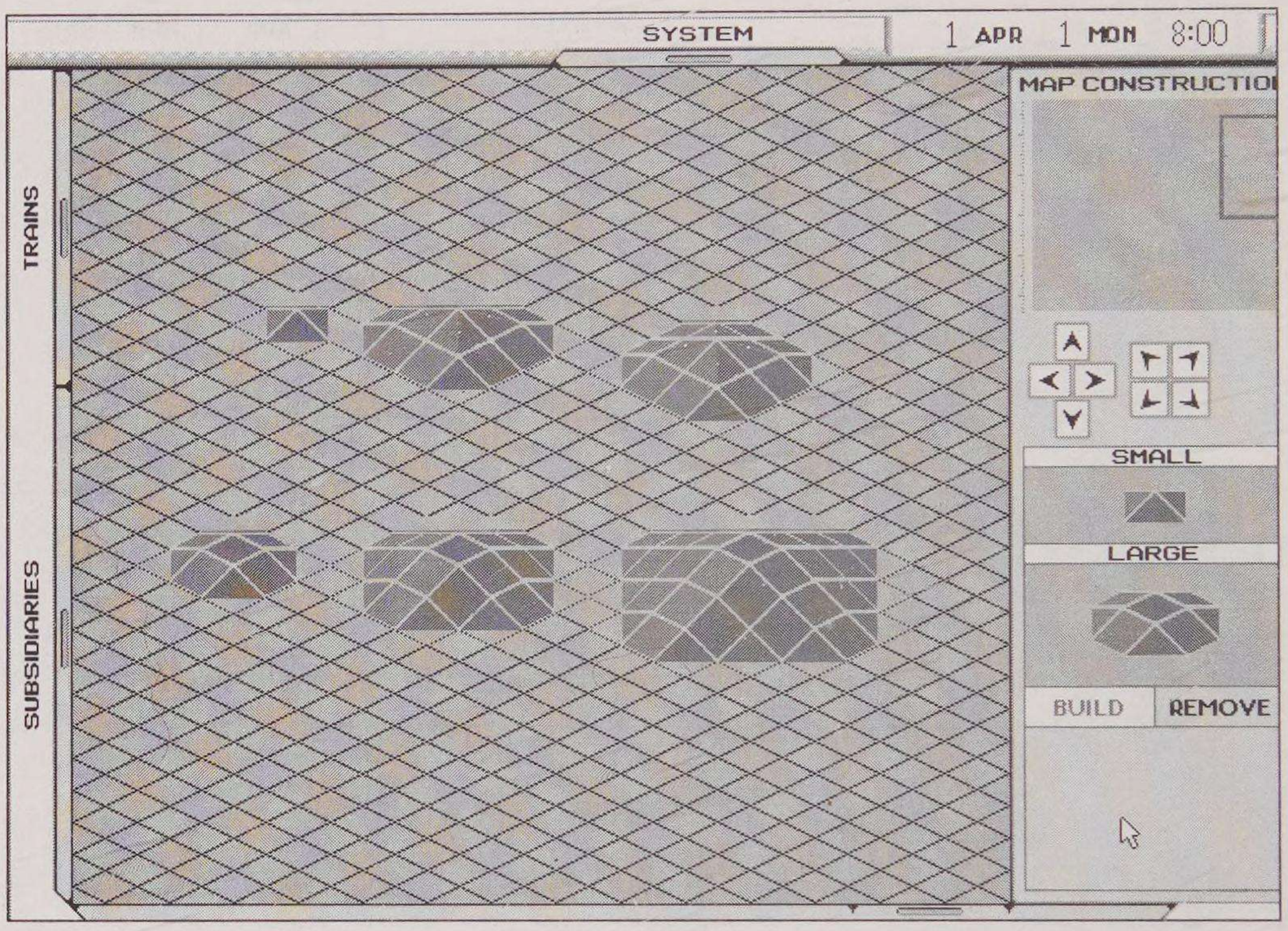


Figure B.7 And God created the earth with small and large mountains.

B.7. You have two mountain options: small and large. The mountain will be sized according to the number of clicks you make on the map. The more you click the mouse or spacebar, the higher and larger the mountain. Table B.1 summarizes this. The size differences between small mountains and large mountains are according to the number of mouse clicks you perform.

Clicking on Remove in the Command window will allow you to lower or remove entirely any mountain on the map. You can accomplish the same end by clicking on the right mouse button when you are in Build mode.

Table B.1: Mountain Size by Number of Clicks

Mouse or spacebar clicks	Small mountain	Large mountain
1	2 x 2	3 x 3
2	4 x 4	5 x 5
3	6 x 6	7 x 7

TILES

Under the Tiles menu, you have 64 options for tiling individual blocks. There are 4 pages of 16 tiled objects in the Command window. To scroll the pages, click the arrow cursor buttons at the top of the Command window.*

Among the options available are: orchards, farmland, ranches, roads, construction materials, empty land and public buildings, residences, light forests, densely thicketed woods, ponds, and parks. To place any of these tiles on your map, simply select the land form tile from the menu and click your pointer on the map.

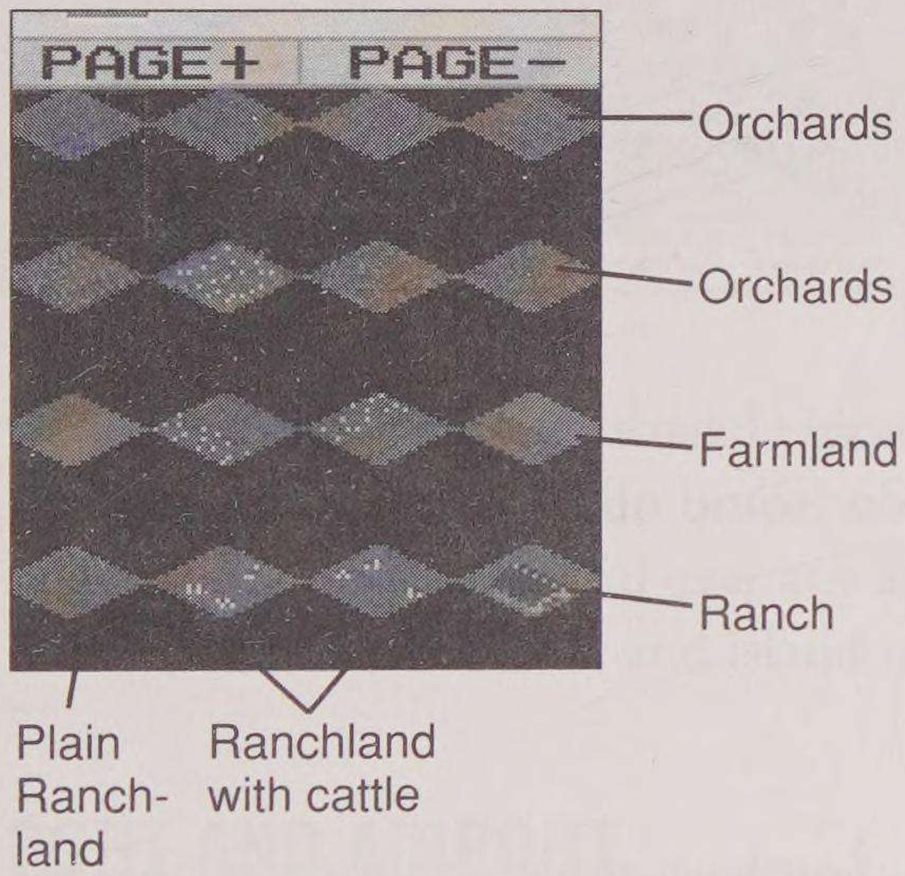


Figure B.8 First page of tile selection options from the Tiles menu.

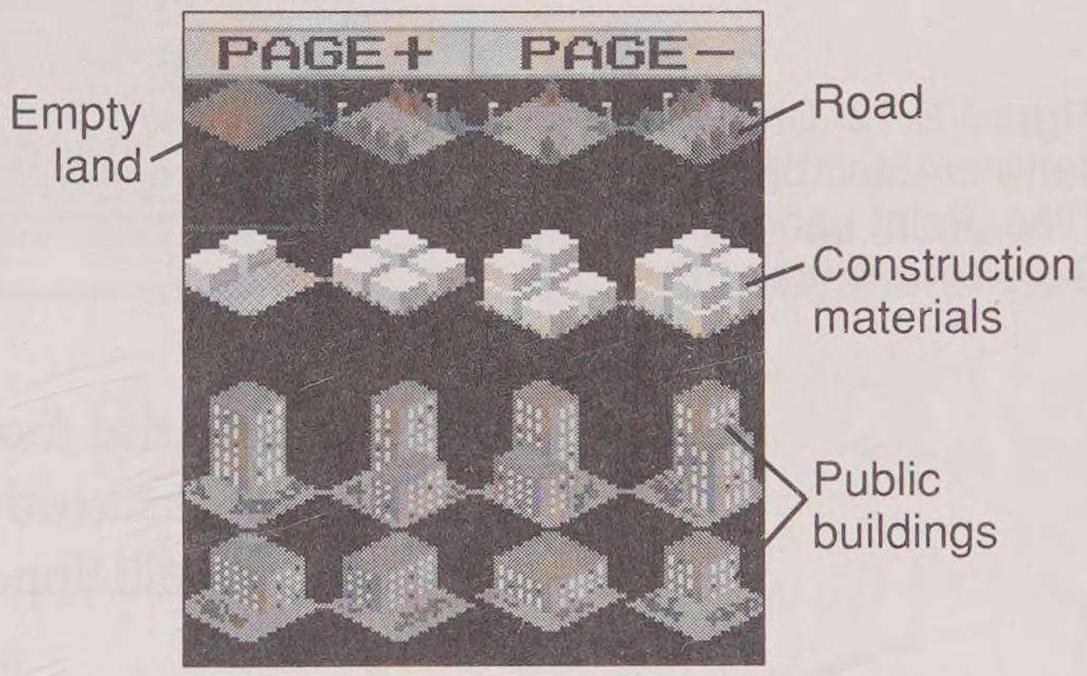


Figure B.9 Second page of tile selection options from the Tiles menu.

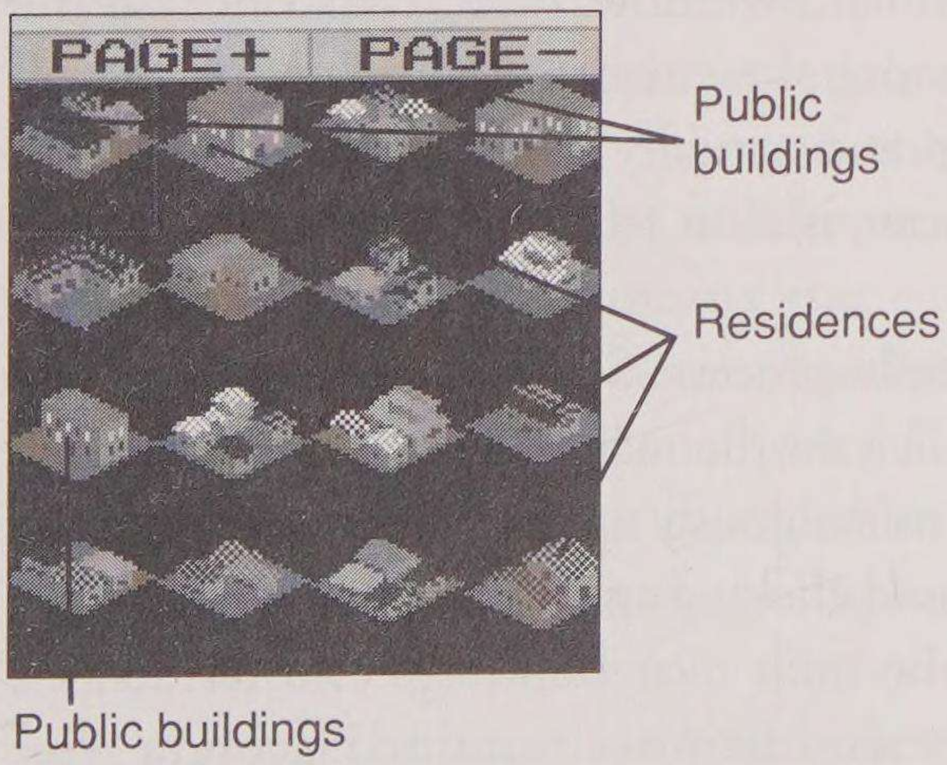


Figure B.10 Third page of tile selection options from the Tiles menu.

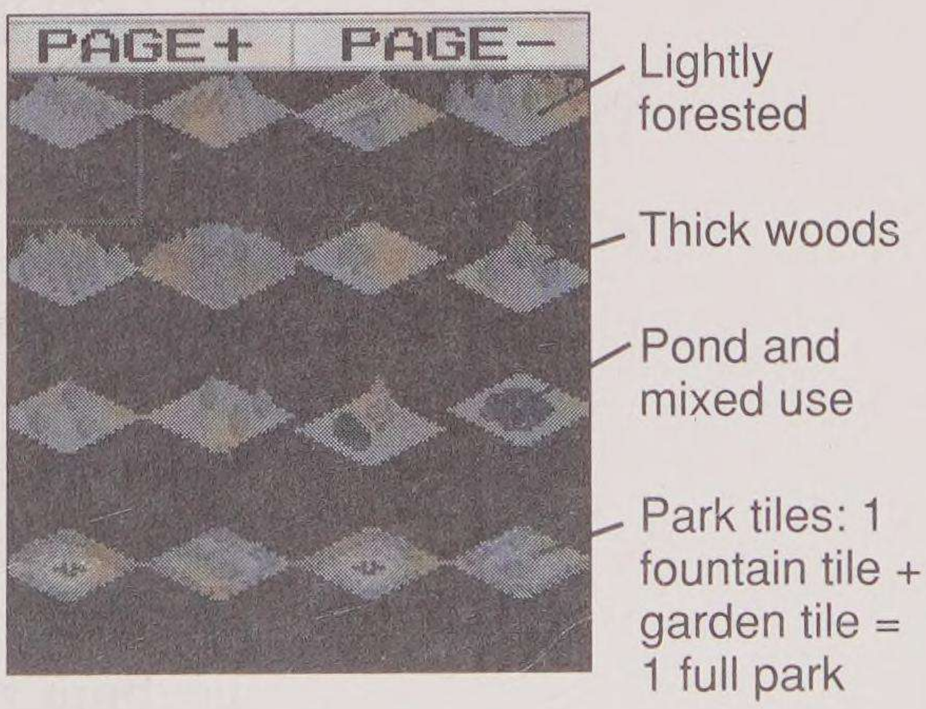


Figure B.11 Fourth page of tile selection options from the Tiles menu.

*As this book was going to press, Maxis decided to change the page + and page- buttons that you see in figures B.8 through B.11 to page up and page down buttons.

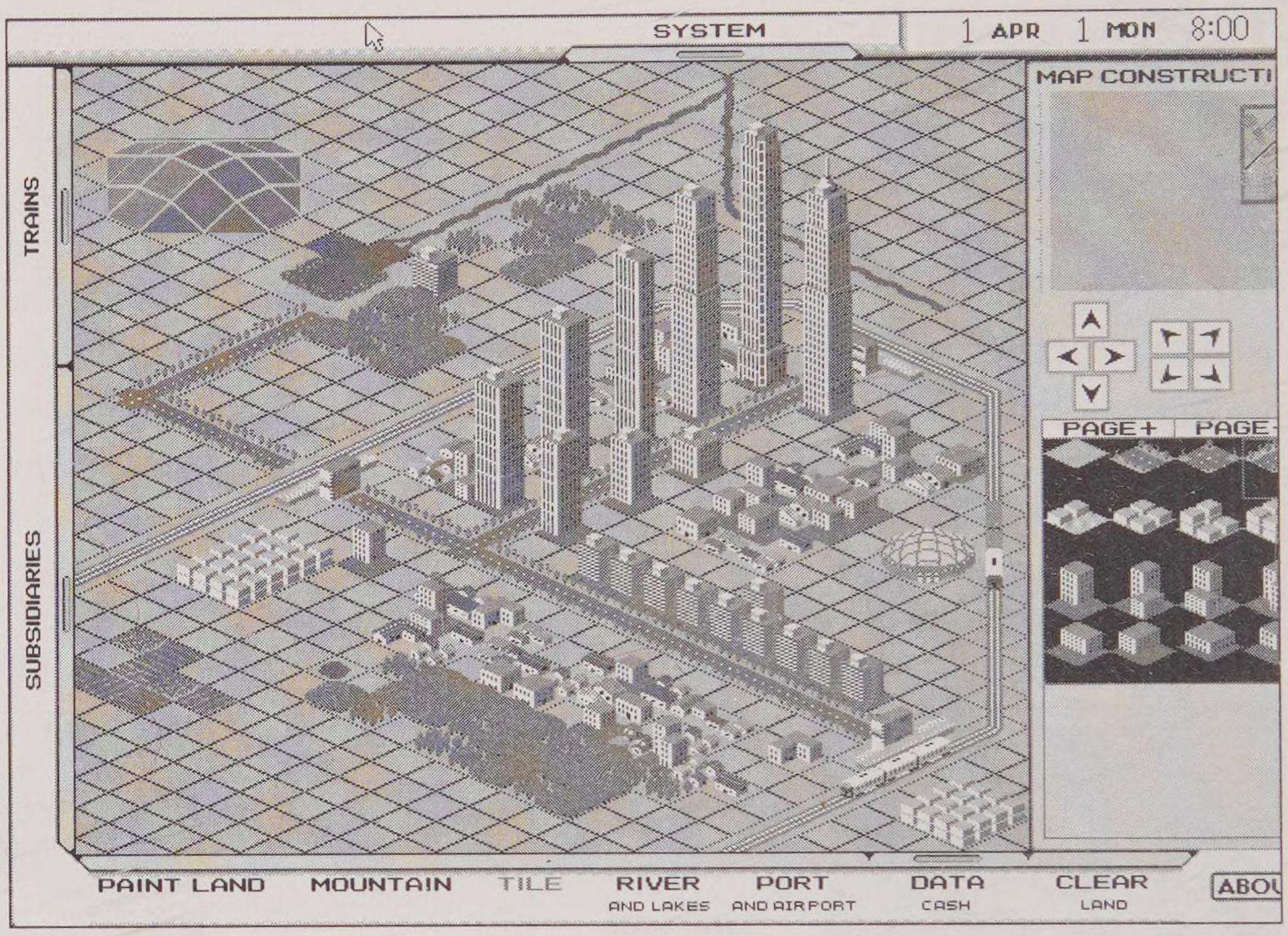


Figure B.12 Cruddy City, deftly created by using the Tiles, Paint Land, and Subsidiaries menus.

Using the tools just introduced, I have created Cruddy City in Figure B.12 to demonstrate how some of the tiles in the various menus would appear on the map.

RIVER AND LAKE

With the River and Lake menu, you have three options available for terraforming. You can build rivers, islands, and lakes by activating the option in the Command window. For example, to build a river, first select the river icon in the command window. Next, click once on the map to begin the river, then move the cursor to where the river will terminate. Finally, to finish up and actually draw the river onscreen, click one more time. This process is akin to laying tracks, which you learned in earlier chapters.

Creating lakes is also a simple process. Select the lake icon in the Command window, and then click on the map where you wish the lake placed. A 3 x 3-block lake will miraculously appear. You can expand the lake by moving the cursor over and clicking again and again.

Both rivers and lakes can be built over buildings and residences, but both cannot be placed in mountainous terrain. Placing a river over a railroad track at right angles will cause the simulator to automatically place a bridge.

Islands are also easy to create. Select the island icon, then click

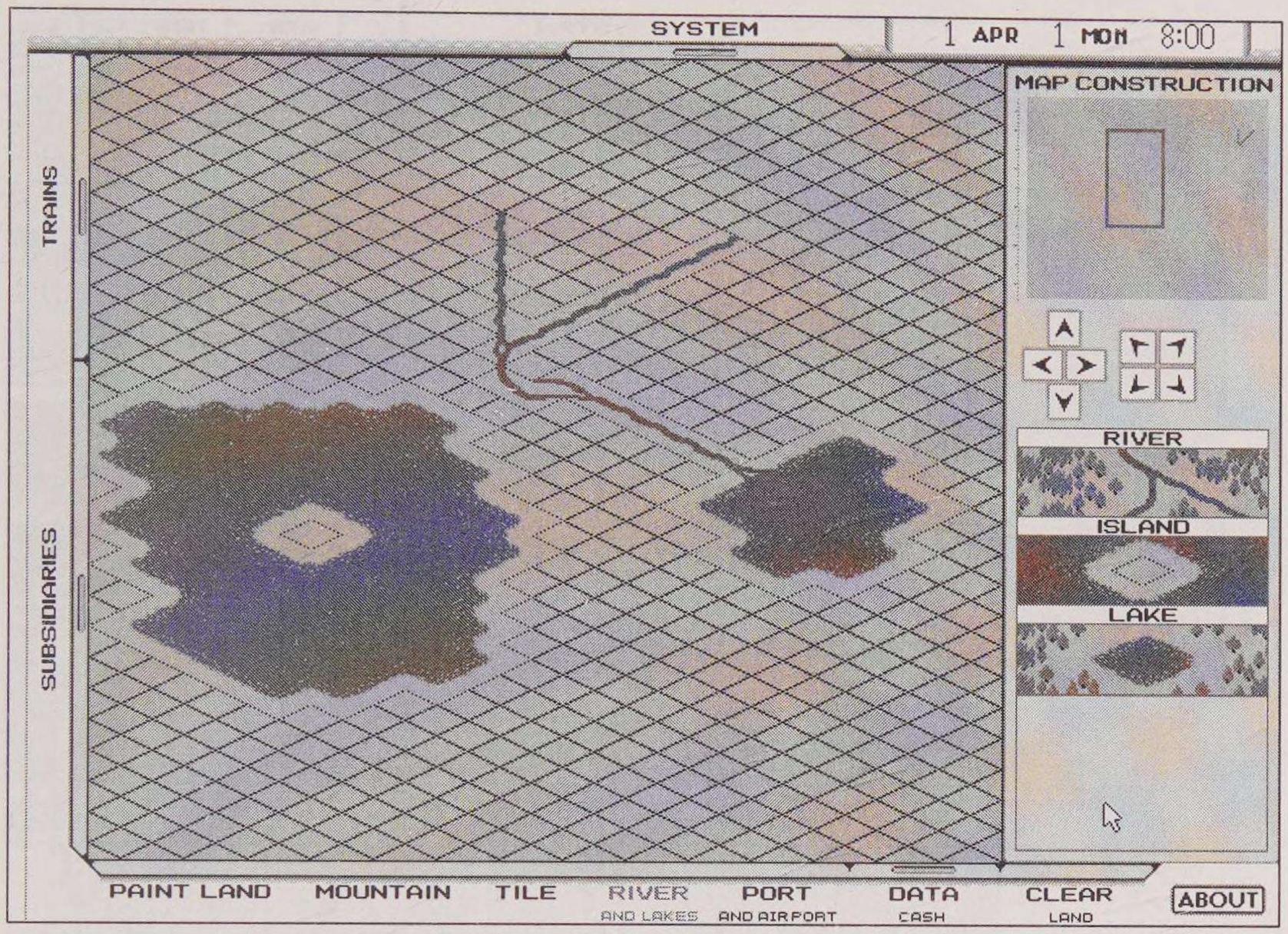


Figure B.13 And on the seventh day, he created rivers, islands, and lakes.

the pointer over a body of water that is at least 3 x 3 blocks in size. You can't build an island on bodies of water that are smaller than this, nor can you place an island over any land mass. Figure B.13 illustrates how to build a river, lake, and island using this menu.

PORT AND AIRPORT

By clicking on one of the two icon images in this menu, you can place a single airport or seaport on your map. You are not allowed to place a seaport or airport on mountains, subsidiaries, public buildings, or tracks. Only one airport and seaport are allowed per map.

Airports, which have only one orientation, can only be built on land. Seaports can have the warehouse portion of the port placed on dry land or water. This means you cannot place the seaport helter skelter anywhere there is some coastline or bayfront land. Since the warehouse buildings face the left side of the port, you can only establish your port on coastline that is angled to the water in a single diagonal direction. As you can see in the example of Figure B.14, the seaport will only fit on one edge of the four sides of the large lake. Any seaport you build must also be placed on land with a similar coastline orientation.

When you remove the seaport, any parts of the dock area that were over water become filled in with land. Also, if you want a ship to visit the port laden with construction materials, you must have a direct

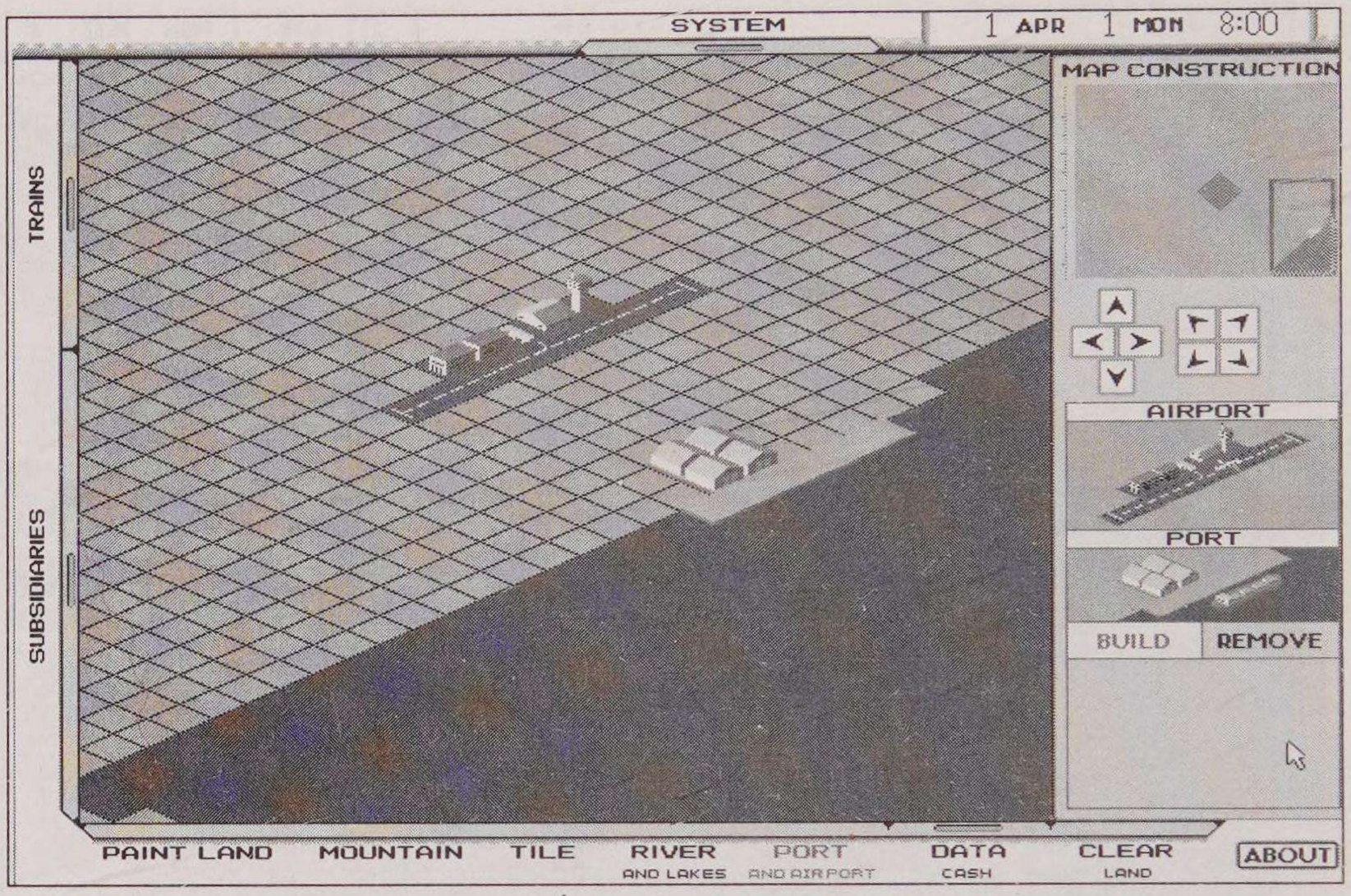


Figure B.14 You can only build one seaport and one airport per map.

unblocked waterway path from the bottom edge of the map to the right edge of the map. Otherwise the freighter's path will be blocked and it will be prevented from transiting your harbor. The ship's path must be unimpeded by any waterway curves, or other terrain obstacles.

CASH

In this menu, as illustrated in Figure B.15, you can manipulate your cash in positive or negative increments of $100,000 or $1,000,000. The maximum amount of money you can endow your city with is $9,900,000. If you import a city that already has more than this amount, you can only subtract money, not add it.

To create some funny money, first select the x 1,000,000 button or the x 100,000 button to determine the amount of money you wish to add or subtract. Next, click on the + or - button (onscreen) to complete the transaction. You can repeat this process until you reach either $9,900,000 as your upper limit or $0 as your lower limit. (Don't you wish you could do this to your bank account?)

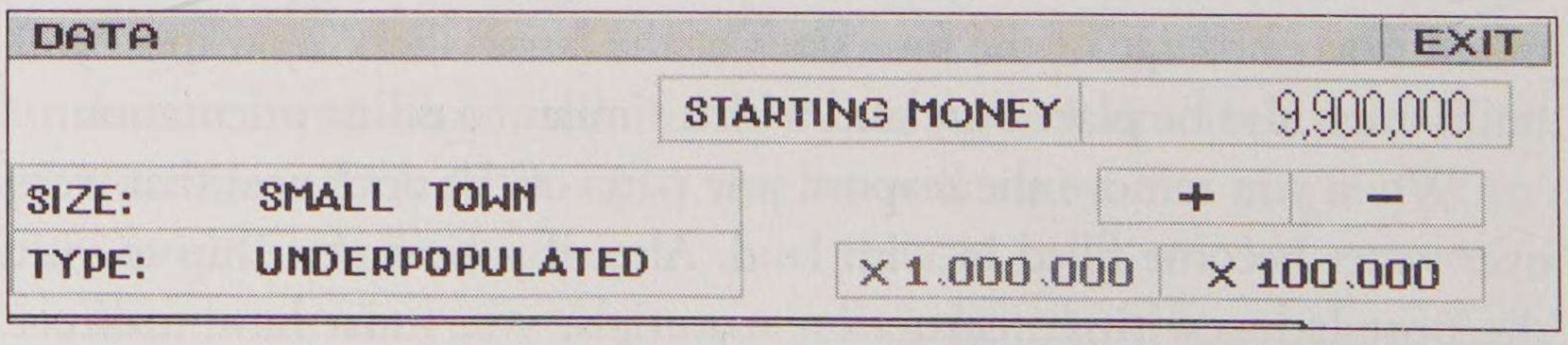


Figure B.15 You can endow your city with a maximum of $9,900,000 in cash.

CLEAR

With the Clear menu you have an eraser to instantly wipe away portions of your city's landscape. Using the All Trains option, you can selectively eliminate just the trains from your map. Figure B.16 illustrates your city before executing the Clear All Trains option and Figure B.17 shows the results afterwards.

Going one step further, by using the clear All Railways option, you can eliminate all your railroad lines and trains in one operation, leaving the rest of your city intact. Figure B.18 shows the aftermath of decimating your railroad infrastructure.

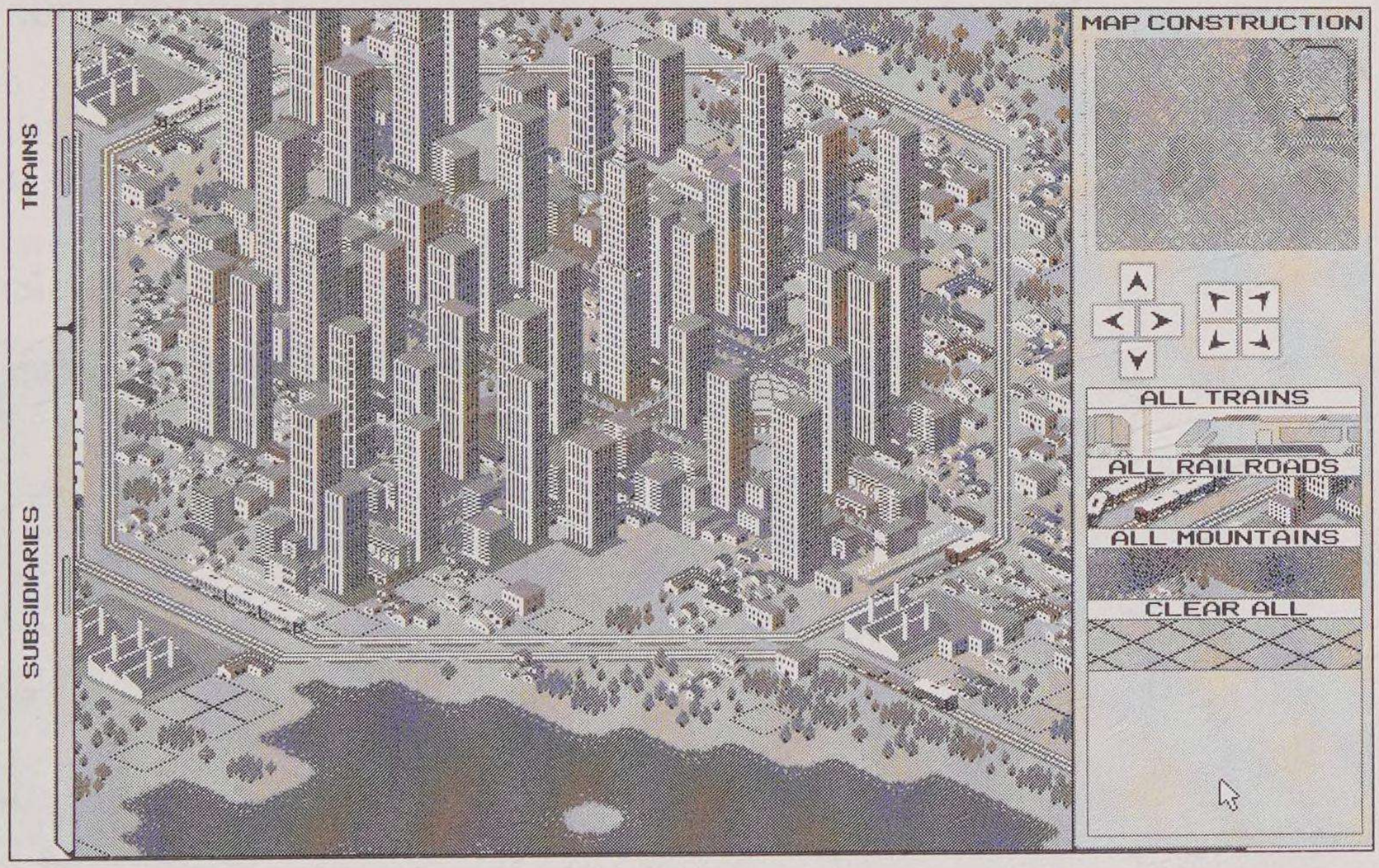
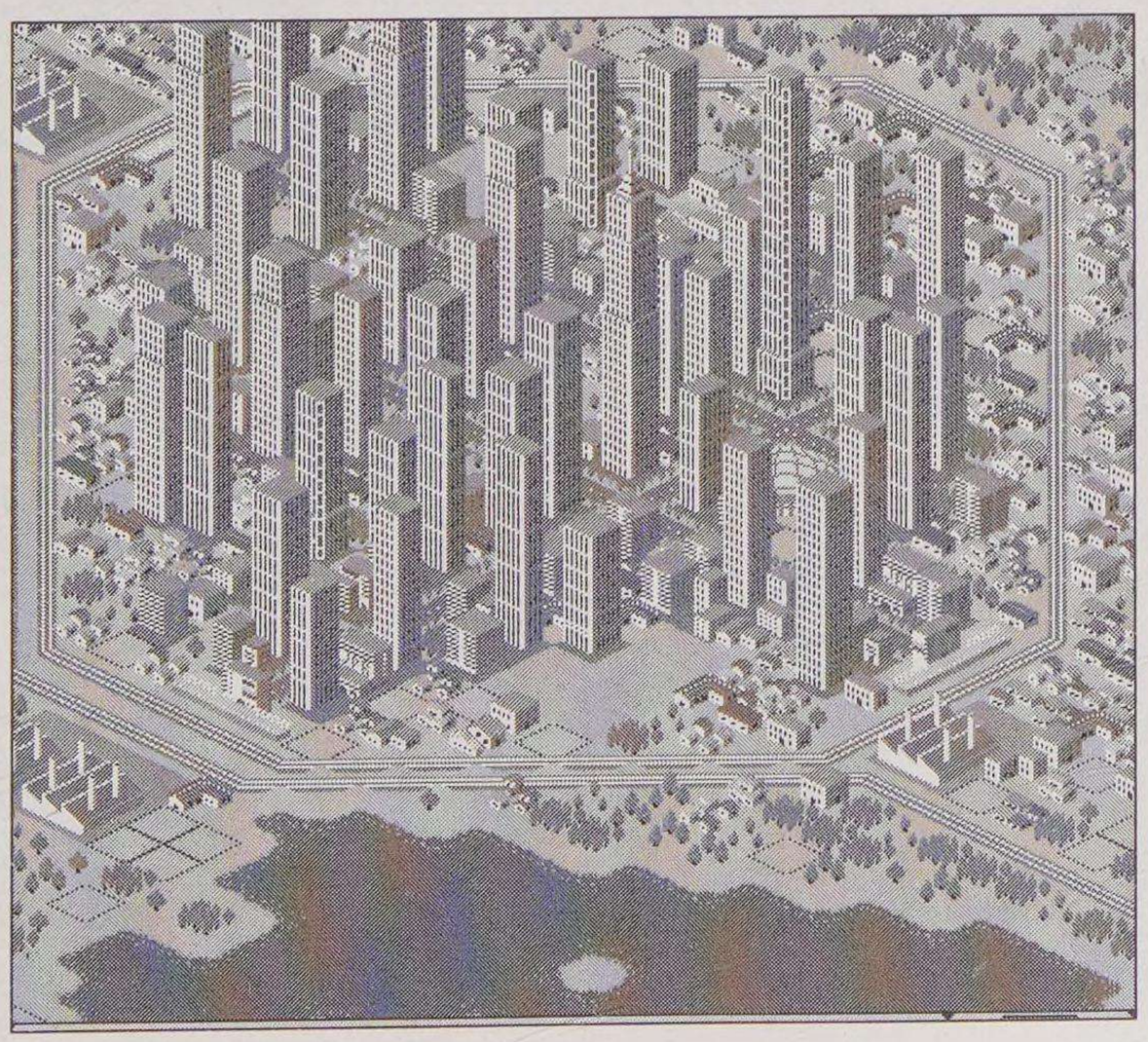
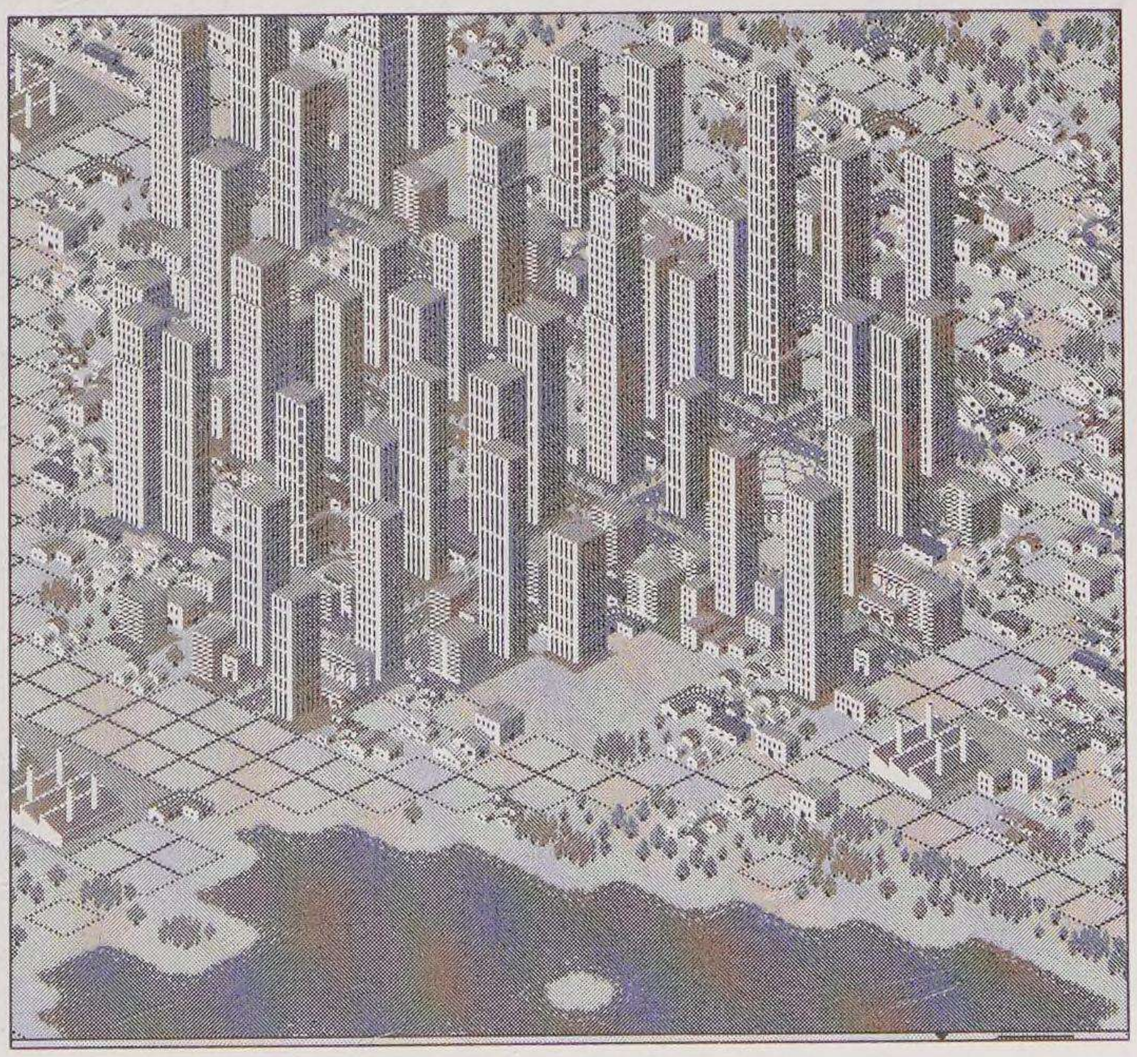


Figure B.16 (*top*) Just before using the Clear All Trains

Figure B.17 (*bottom left*) After clearing all trains but leaving everything else intact.

Figure B.18 (*bottom right*) All railways have been wiped off the face of the earth.





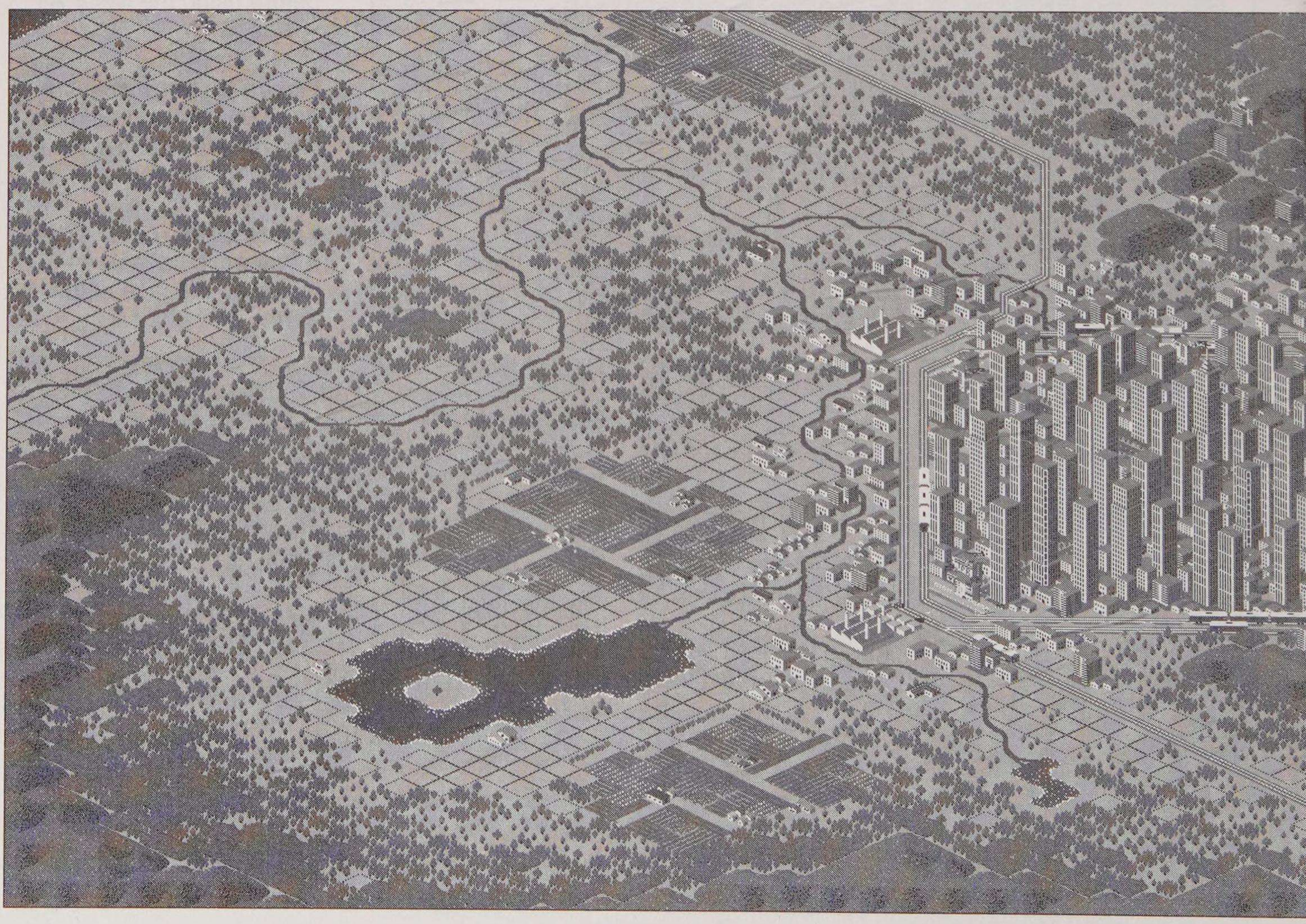
If you want to rid yourself of those unsightly mountain ranges, select Clear All Mountains, and presto, all your mountains will vanish. Should you be inclined to completely obliterate your city, and start over with a clean slate, select the Clear All option, and all your city's terrain features will disappear and be replaced by flat land.

TRY THE EXAMPLE CITIES

There are six example cities that are provided with the Map Construction Set. You can load them into A-Train to play, or you can edit them further in the Construction Set. These cities give you some interesting design possibilities that you can exploit in constructing your own cities. The next section describes the six cities in greater detail.

Example City 1: Overcrowded City

This city, dubbed the Overcrowded City, is a city of 30,000 people



crammed into a small area that is enclosed by a double belt line. There is no room for expansion inside the city, so you must develop a new town in the suburban areas outside the city limits. In the center of the map, there is a loop line which connects the trunk line to the outside. Note that the trunk line does not exit the right side of the map. You might want to fix this oversight in the Construction Editor.

On each station of the loop line, there are factories. This arrangement is an efficient way for transporting factory materials in the city so that they can be used by the simulation.

Also, the mountainous terrain on the right side of the city makes it difficult to create new rail lines, and develop the western portion of the map.

City Statistics	
Size	Small city
Type	Well-balanced
Budget	$6,494,040
Population	30,350
Cash	$700,000
Credit limit	$1,029,000
Subsidiaries owned by you	1 hotel
Number of trains	8
Number of stations	6
Number of switches	4

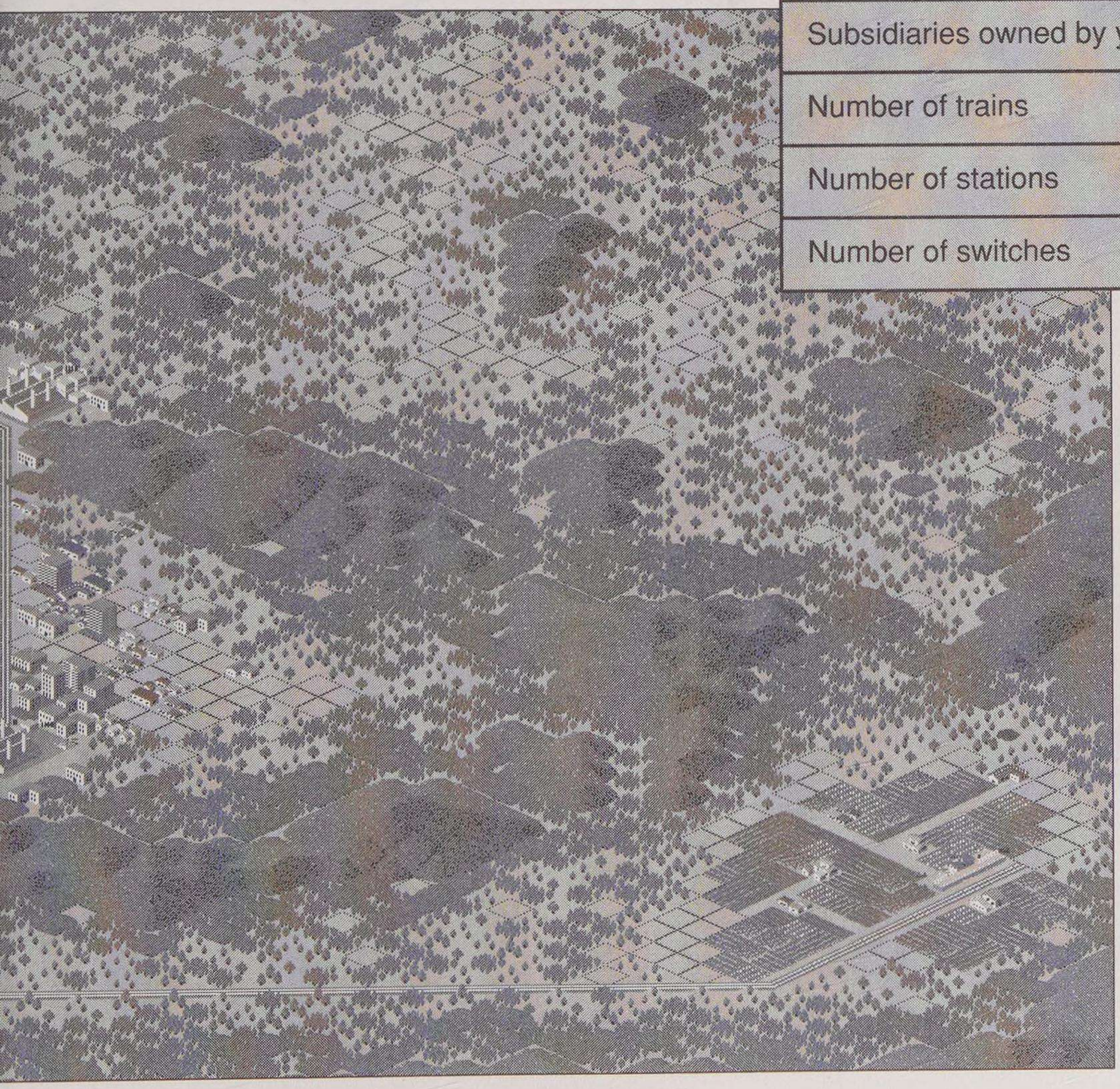
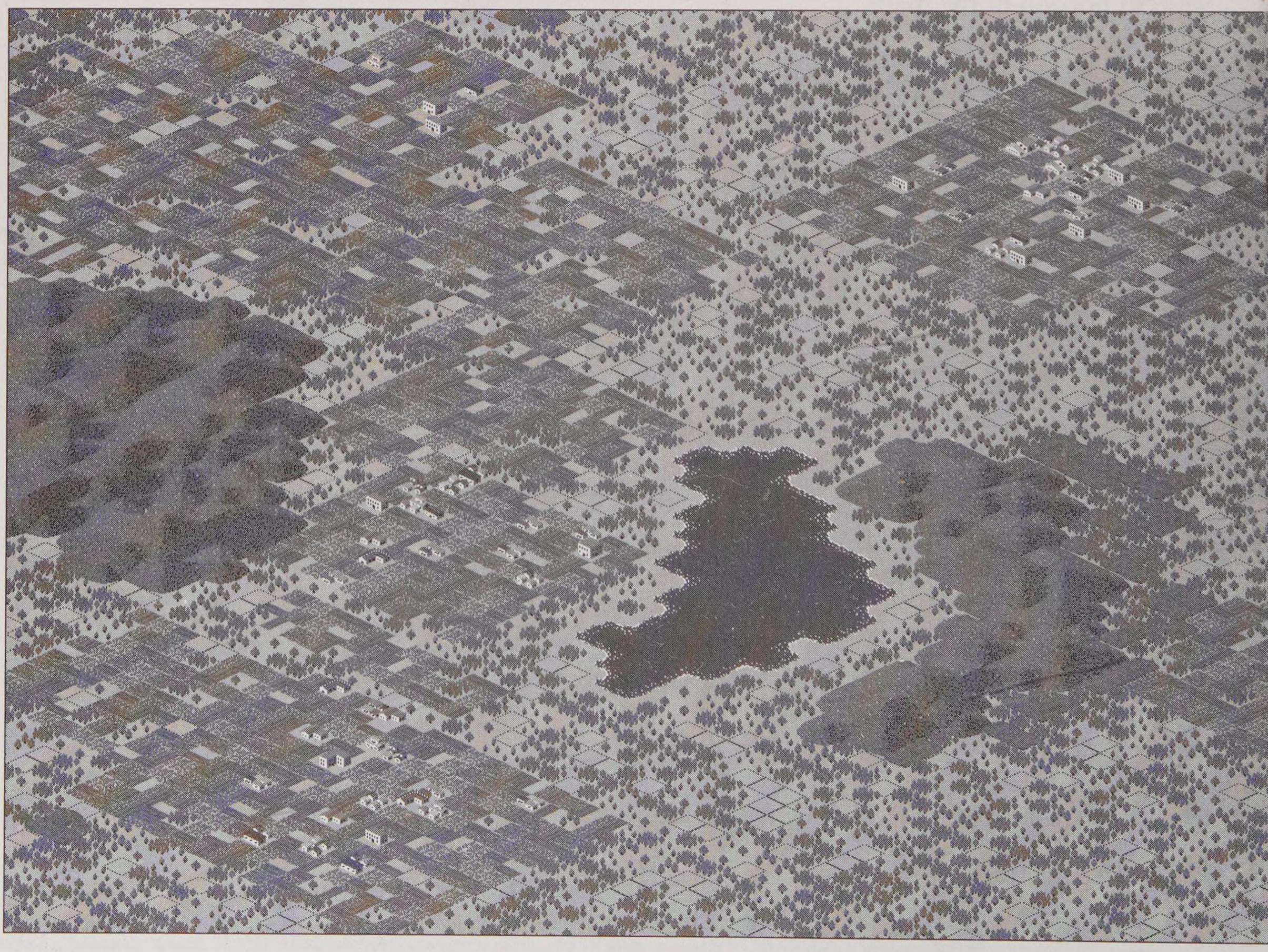


Figure B.19 Example city 1: Overcrowded City

Example City 2: Prosperity Is Just Around the Corner

This city looks almost exactly like the previous example city, in that there is a large overcrowded city of 30,000 people jammed into a tight space. Again, the object of this map is to diversify the centralized metropolitan center to the outlying suburban areas. However, the city is on an island separated by a moat, and access is severely restricted. In fact, there is only one block which can be used as a passageway for train lines. This means that only a single line can connect the city with the rest of the undeveloped land. Your challenge is to squeeze as many trains as you can through this bottleneck, in both directions, without causing massive train pileups.



City Statistics	
Size	Small city
Type	Agricultural
Budget	$5,137,320
Population	30,037
Cash	$2,000,000
Credit limit	$399,000
Subsidiaries owned by you	0
Number of trains	3
Number of stations	3
Number of switches	0

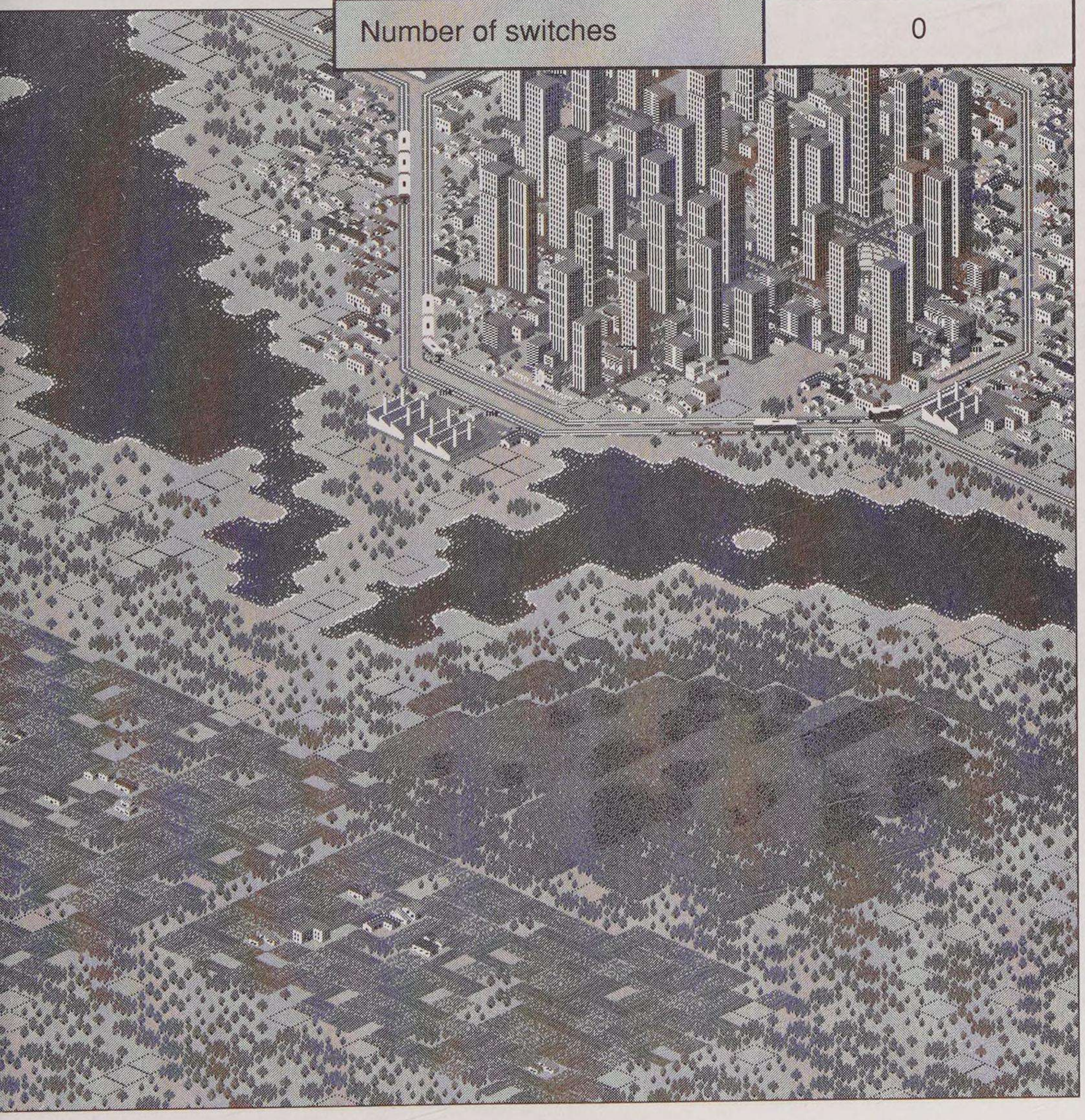
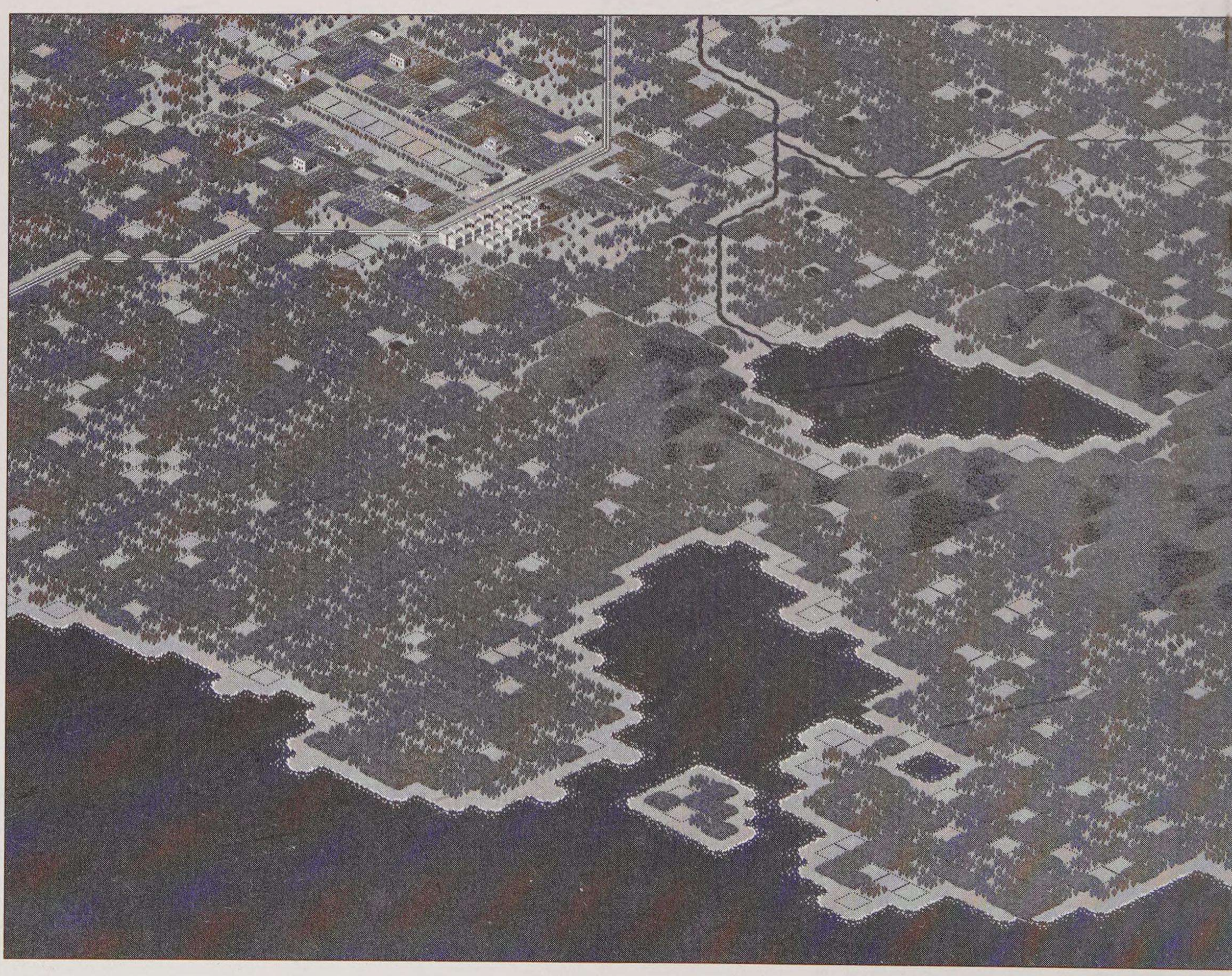


Figure B.20 Example city 2: Prosperity Is Just Around The Corner.

Example City 3: National Park

The National Park is a map which contains mountains, lakes, forests, seashore, and much undeveloped land. Though this map shares some characteristics with Map Scenario 3: Resort Development, the map itself resembles Map Scenario 4: Multi-City Connection. The population of this city is the smallest of all the Example Cities as well as of the Map Scenarios.

One goal of this map is to develop a city that is environmentally compatible with the National Park. To this end, you want to avoid despoiling the coastline, or destroying the forest. You can play out the classic dilemma of development versus the preservation of the land.



City Statistics	
Size	Small town
Type	Underpopulated
Budget	$689,980
Population	4,387
Cash	$2,500,000
Credit limit	$69,000
Subsidiaries owned by you	0
Number of trains	0
Number of stations	1
Number of switches	0

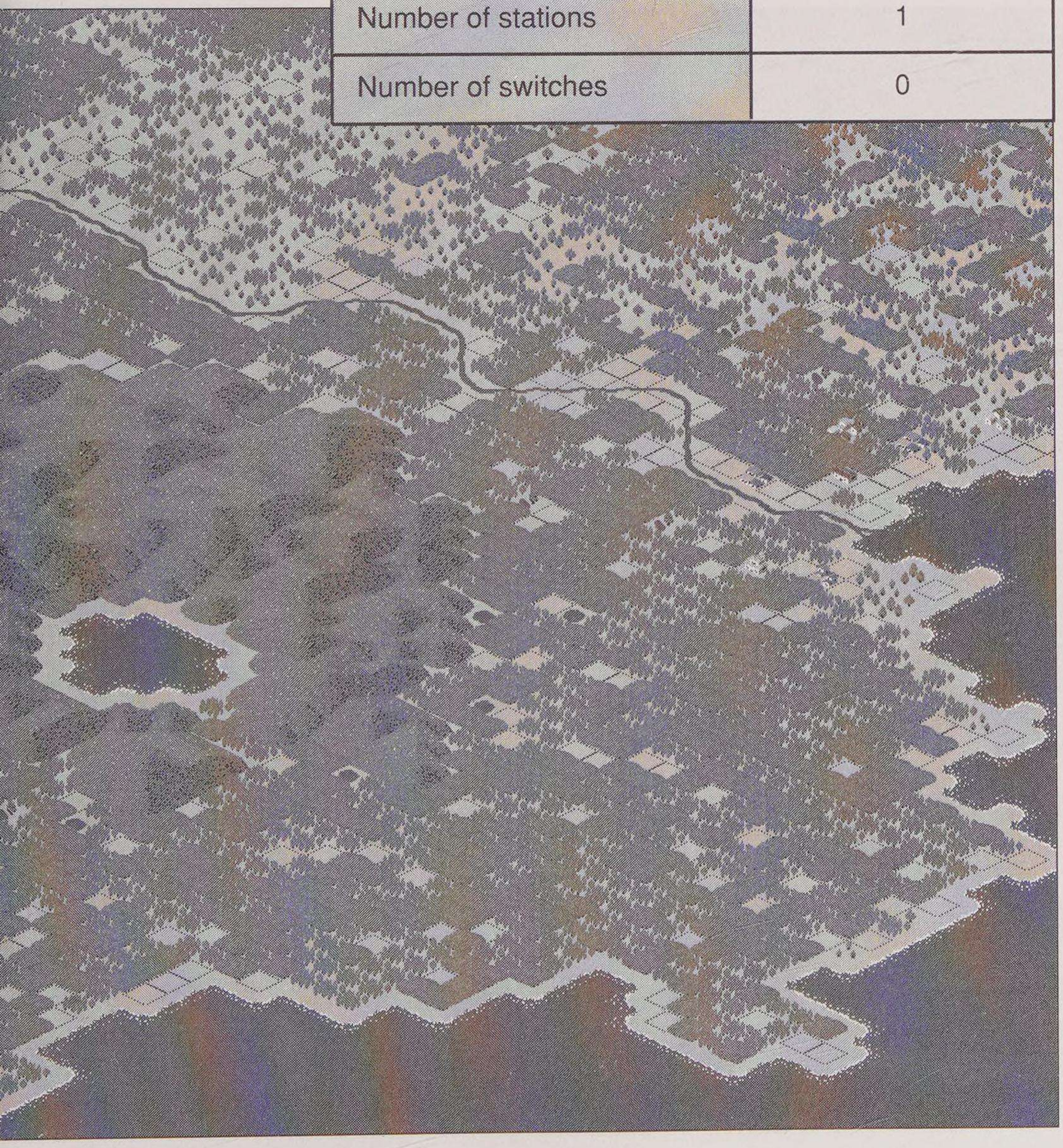
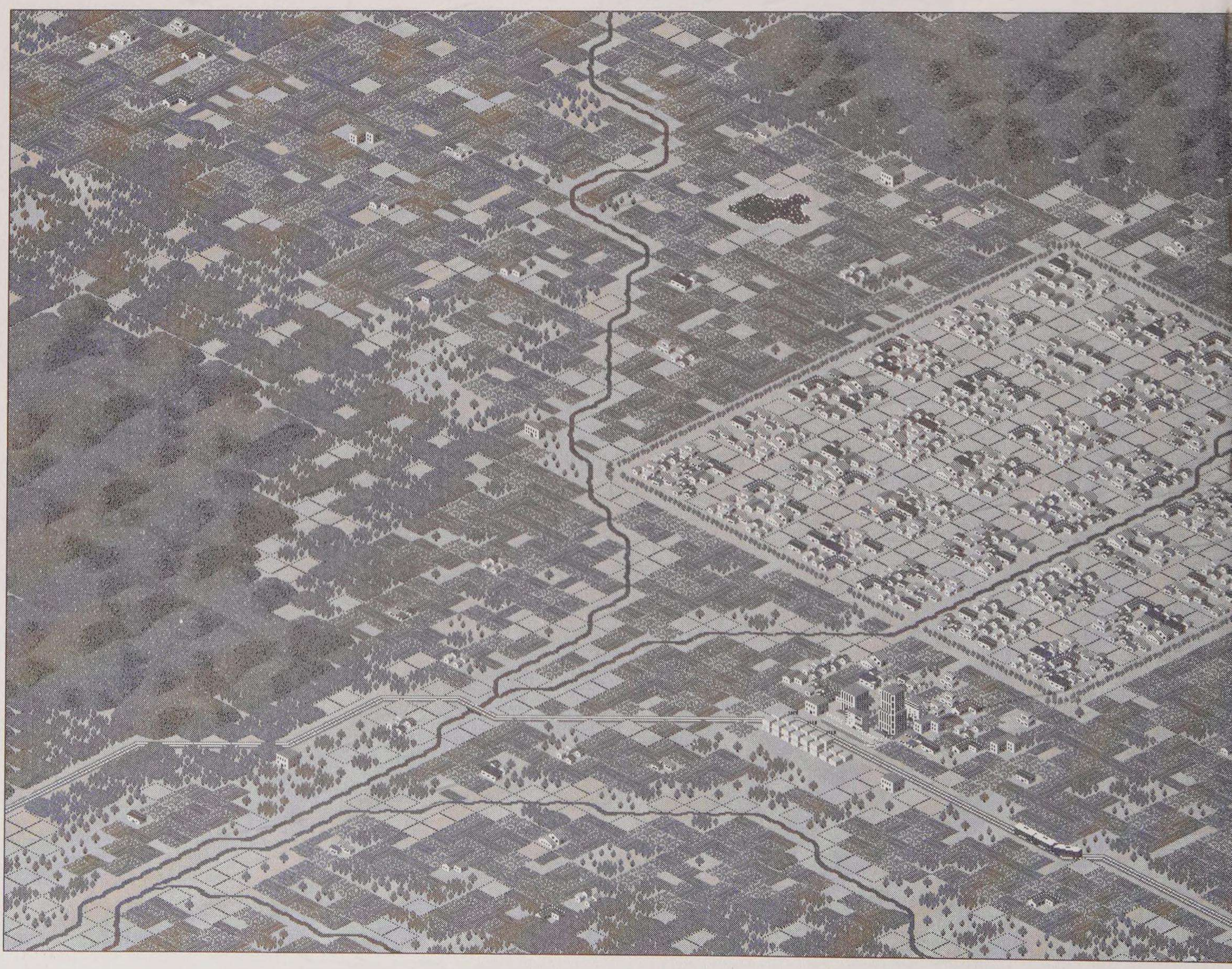


Figure B.21 Example city 3: National Park

Example City 4: Levittown

This city resembles the legendary housing development of Levittown located on New York's Long Island. The row upon row of identical, prefabricated houses, laid out in a cookie-cutter-type pattern, illustrates the structure of many housing developments today. Even if you abhor monolithic developments as monotonous eyesores, you shouldn't plow down this housing development. Instead, you should try to blend it in with the rest of your city.



City Statistics	
Size	Small city
Type	Agricultural
Budget	$1,742,210
Population	26,831
Cash	$1,800,000
Credit limit	$153,000
Subsidiaries owned by you	0
Number of trains	0
Number of stations	1
Number of switches	0

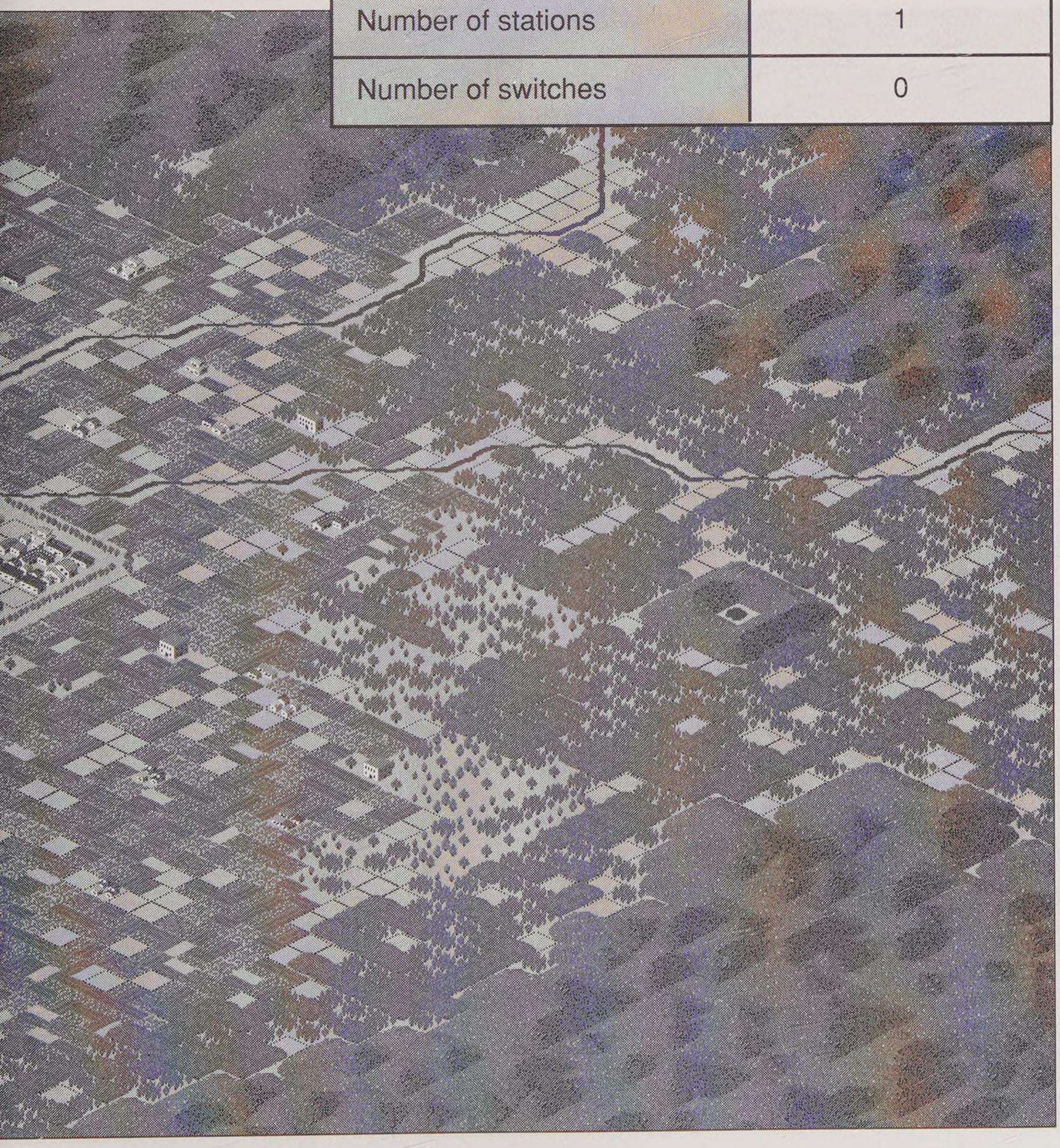
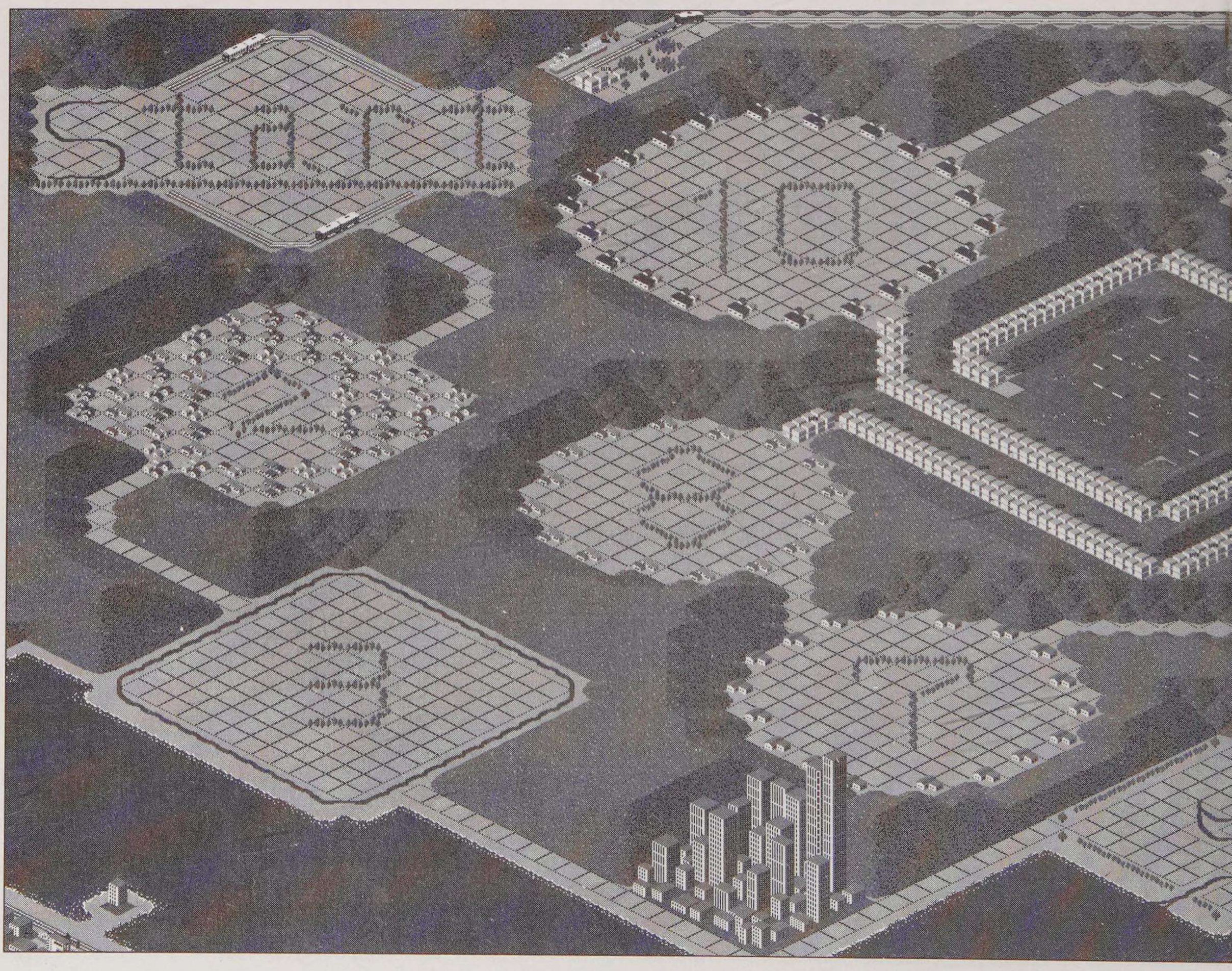


Figure B.22 Example city 4: Levittown.

Example City 5: Maze City

In this Example City, you have what looks like a giant maze. The object of this city is to thread your rail line from the beginning of the map all the way to the end, where an amusement park, two stadiums, and two golf courses await you. Along the way, you will have to remove building materials and a factory that block your path. Other than this, the map has no real function. If you really insist on a serious goal, you might try building and establishing a city in each of the squares you visit.



City Statistics	
Size	Small town
Type	Well-balanced
Budget	$2,472,650
Population	12,724
Cash	$600,000
Credit limit	$1,464,000
Subsidiaries owned by you	1 factory 1 amusement park 3 lease bldgs
Number of trains	2
Number of stations	3
Number of switches	0

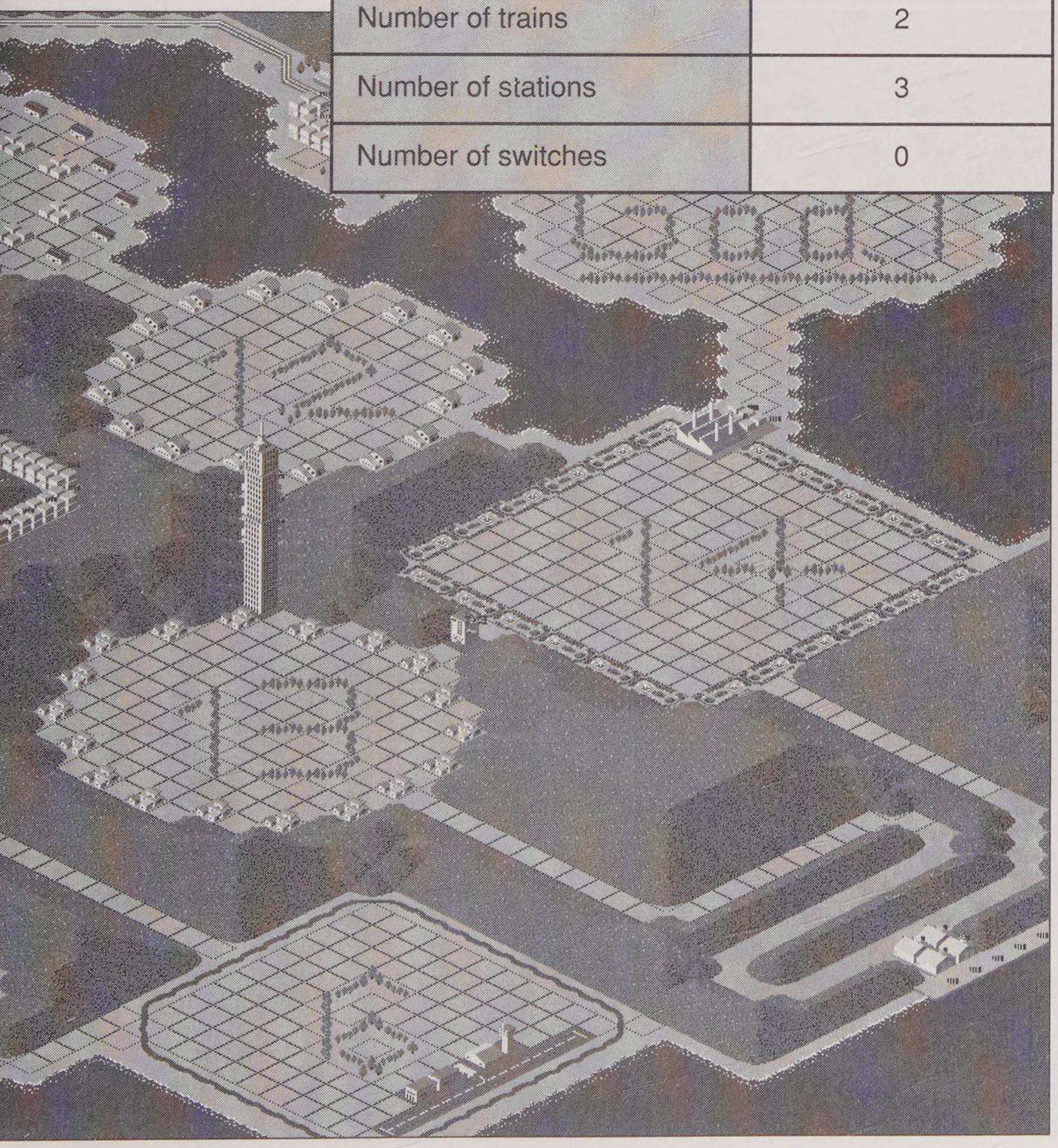
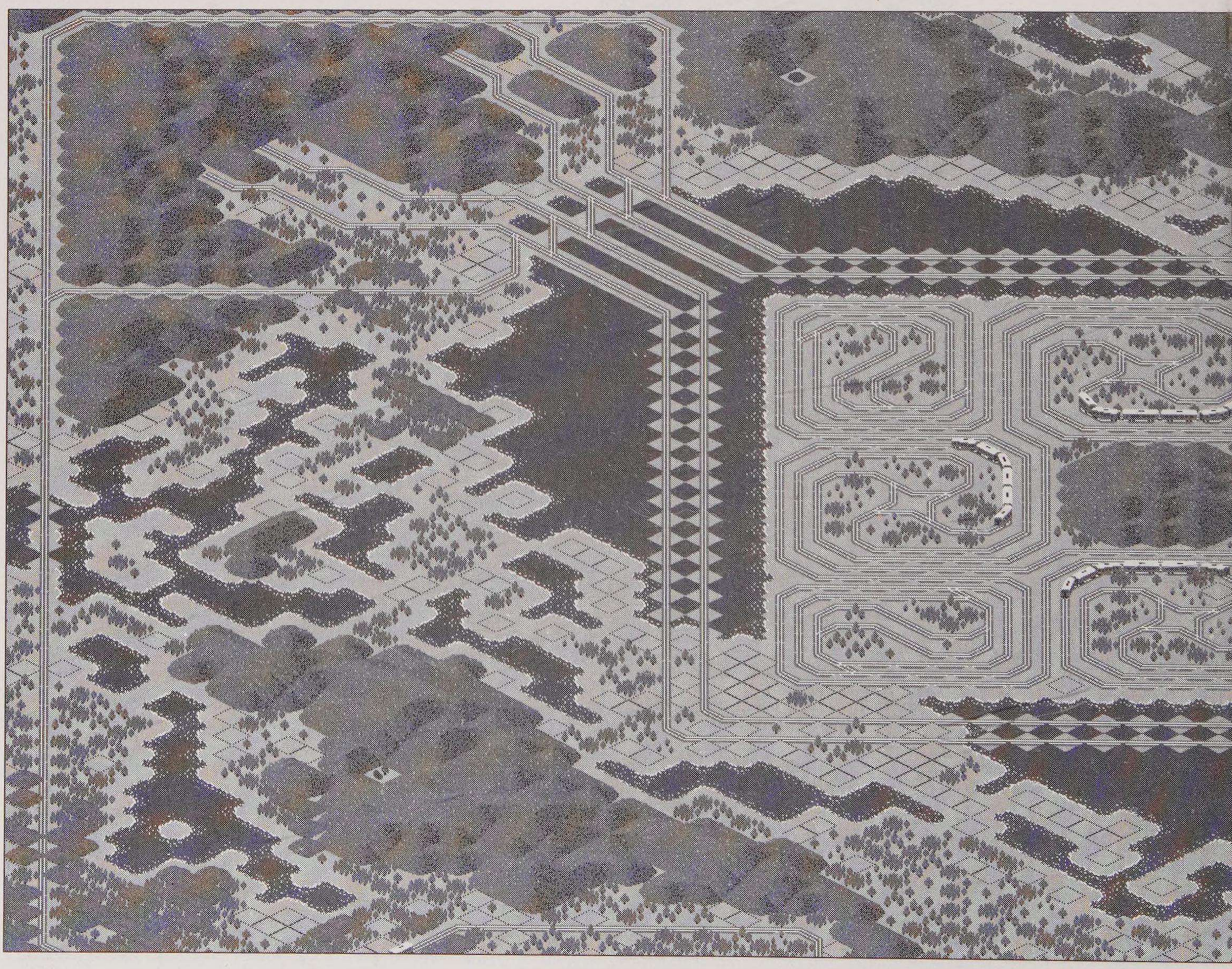


Figure B.23 Example city 5: Maze City. Try to navigate a train line from the start to the goal, following the numbered path indicated. As a reward, at the finish line an amusement park, two stadiums, and two golf courses await you.

Example City 6: Train City

Watching the trains move on this map is a real treat. It shows you how precisely you can choreograph your trains and time their schedules so that they never interfere with one another. Note that there are no building materials on the map, and that the central part of the map is on an island in the middle of a lake. There are 24 trains running in close proximity to one another. When they pass each other on the track interchange, in the lower-right-hand corner of the map, they do so with barely a whisker to spare. As with Maze City, it is pointless to use this map to construct a city, since it was designed only for show.



City Statistics	
Size	Small town
Type	Underpopulated
Budget	$628,200
Population	3,006
Cash	$9,900,000
Credit limit	$2,157,000
Subsidiaries owned by you	0
Number of trains	24
Number of stations	0
Number of switches	60

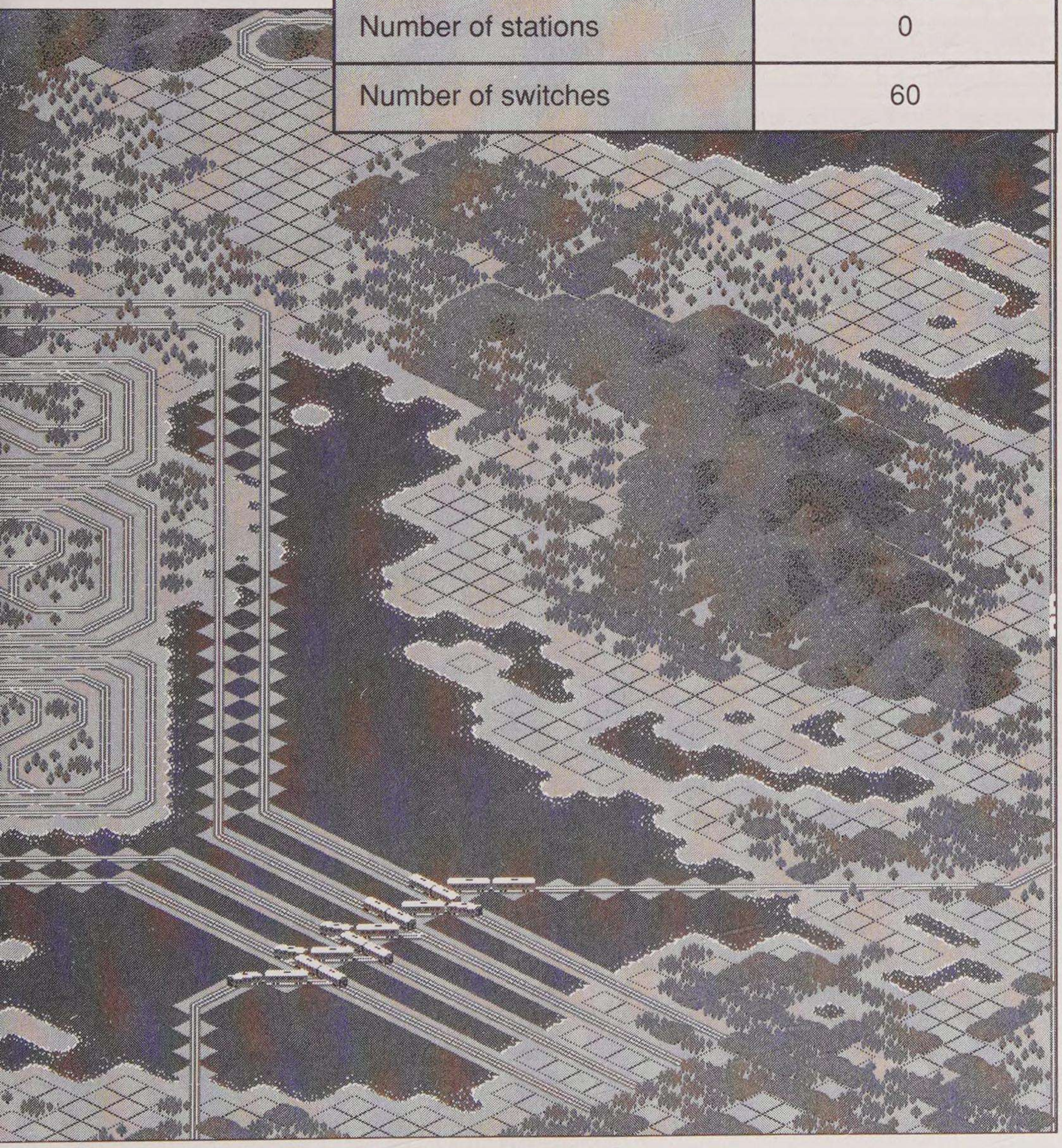


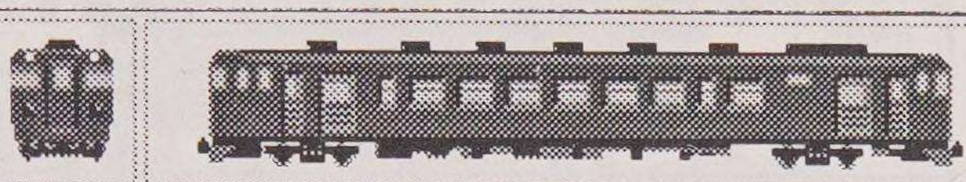
Figure B.24 Example city 6: Train City. Try to beat this for train scheduling coordination!

BULLET TRAIN

The elevated Shinkansen tracks cannot be constructed through mountainous terrain. Therefore, in order for the Bullet train to appear on your map, you must have at least one side of your city free of mountains. If your city is completely surrounded by mountains, and only one side is free, the Bullet Train tracks may appear, but the simulation will halt construction when a mountain obstructs its path. When this happens, you will need to terraform the city again, to allow an exit passage for the track.

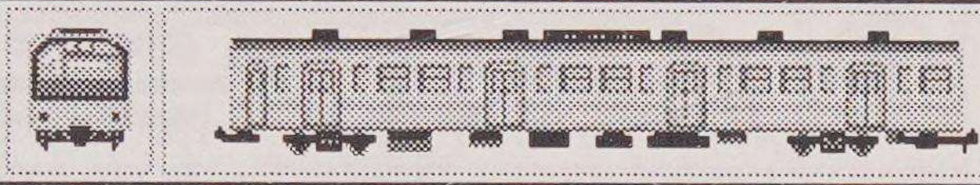
Train Catalog

KIHA-40



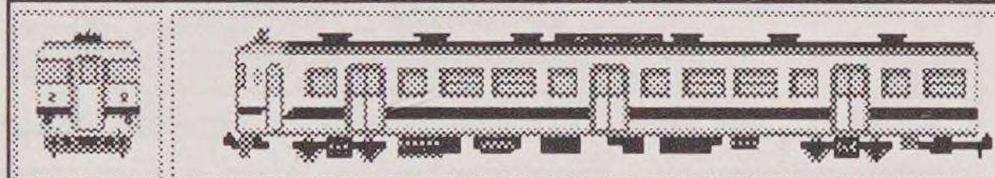
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
2	2 Blocks/Hr	400	$33,000	No	$0.18

201



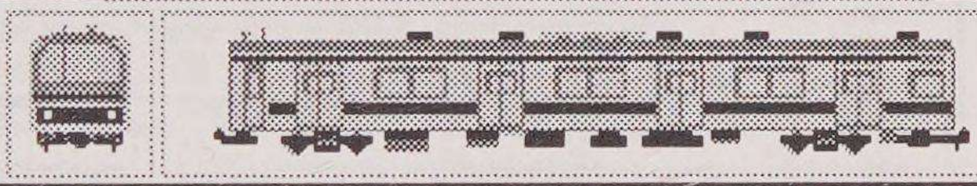
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	600	$50,000	No	$0.22

415



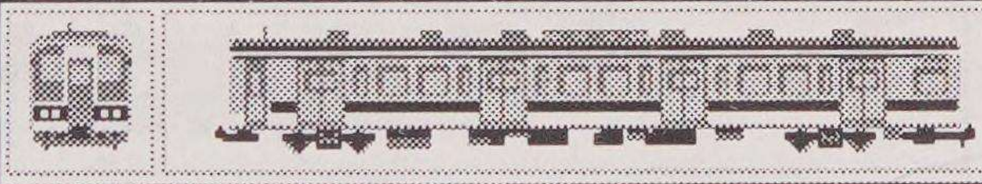
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	580	$53,000	No	$0.22

205



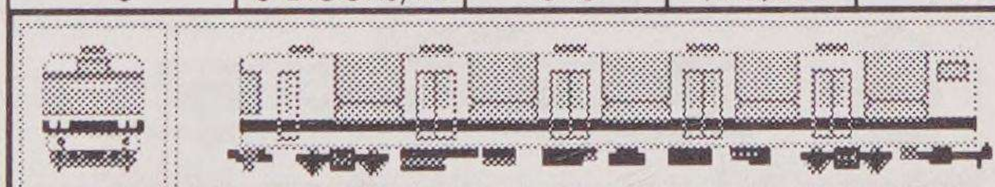
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
2	3 Blocks/Hr	440	$46,000	No	$0.30

211



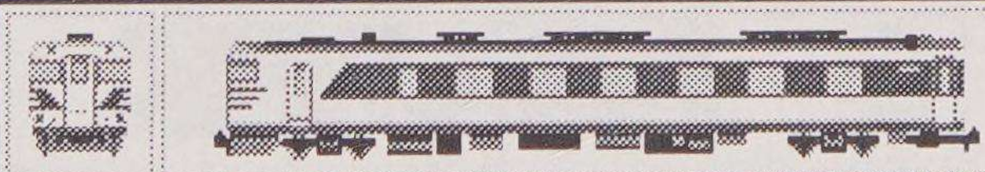
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	3 Blocks/Hr	640	$70,000	No	$0.33

AR



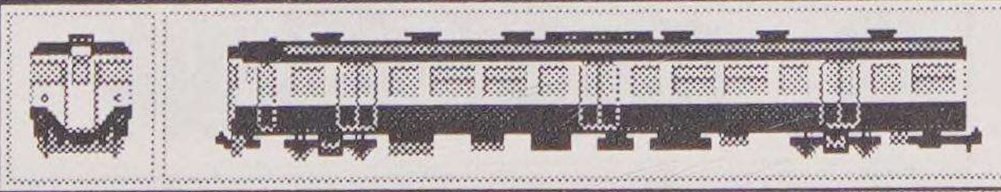
Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	3 Blocks/Hr	700	$80,000	No	$0.40

KIHA-82



Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
2	2 Blocks/Hr	420	$53,000	Yes	$0.70

113

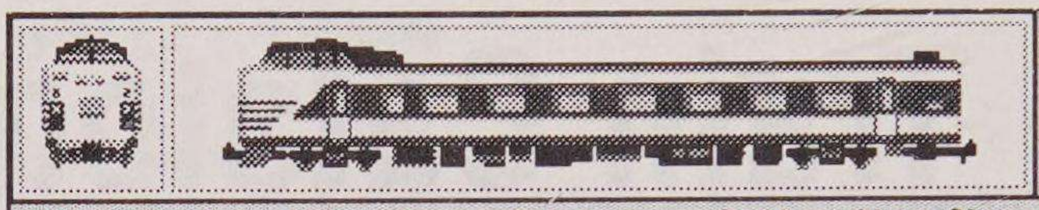


Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	640	$80,000	Yes	$0.73

FP-45

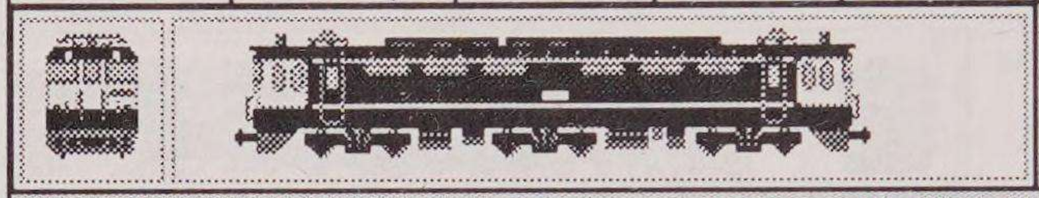


Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	580	$90,000	Yes	$0.78



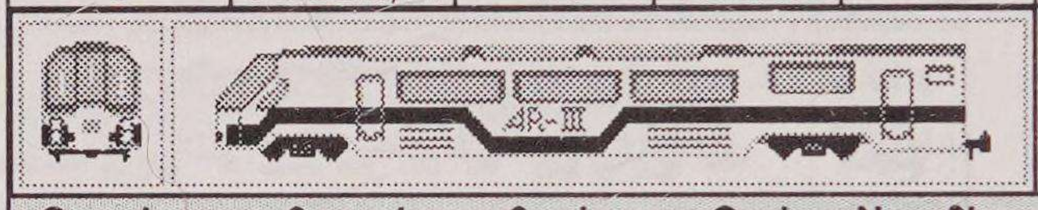
381

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
2	3 Blocks/Hr	470	$98,000	Yes	$0.90



EF-6524

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	3 Blocks/Hr	470	$180,000	Yes	$0.98



AR-III

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	3 Blocks/Hr	600	$250,000	Yes	$1.20



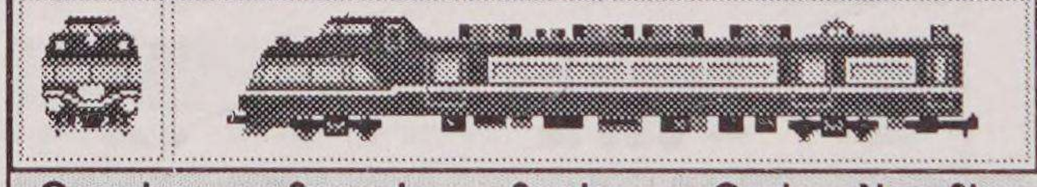
KIN-30000

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
2	2 Blocks/Hr	460	$50,000	Yes	$0.67



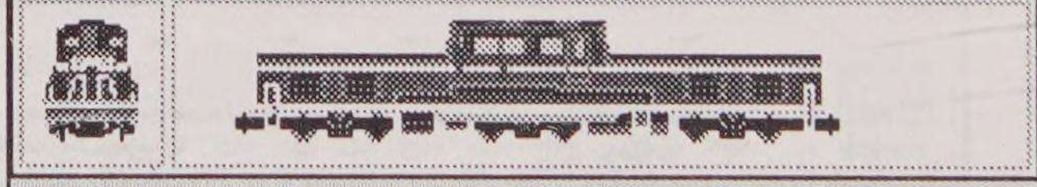
NISHI 5000

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	600	$80,000	Yes	$0.71



MEI 7000

Coaches	Speed	Seats	Cost	Non-Stop	Ticket Price
3	2 Blocks/Hr	560	$90,000	Yes	$0.82



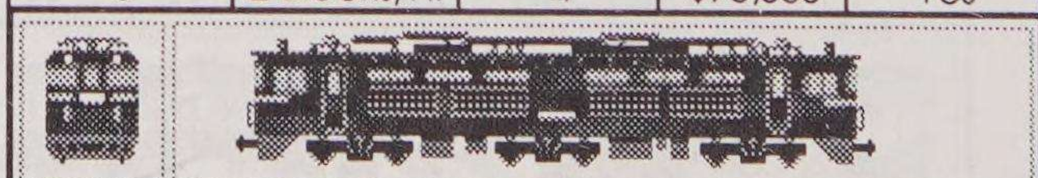
DD-51

Cars	Speed	Materials	Cost	Non-Stop	Freight Fare
2	2 Blocks/Hr	2	$46,000	Yes	$24/Material



EF-62

Cars	Speed	Materials	Cost	Non-Stop	Freight Fare
3	2 Blocks/Hr	4	$76,000	Yes	$24/Material



ED-76

Cars	Speed	Materials	Cost	Non-Stop	Freight Fare
2	3 Blocks/Hr	2	$73,000	Yes	$38/Material



GP-40

Cars	Speed	Materials	Cost	Non-Stop	Freight Fare
3	3 Blocks/Hr	4	$116,000	Yes	$38/Material

APPENDIX D

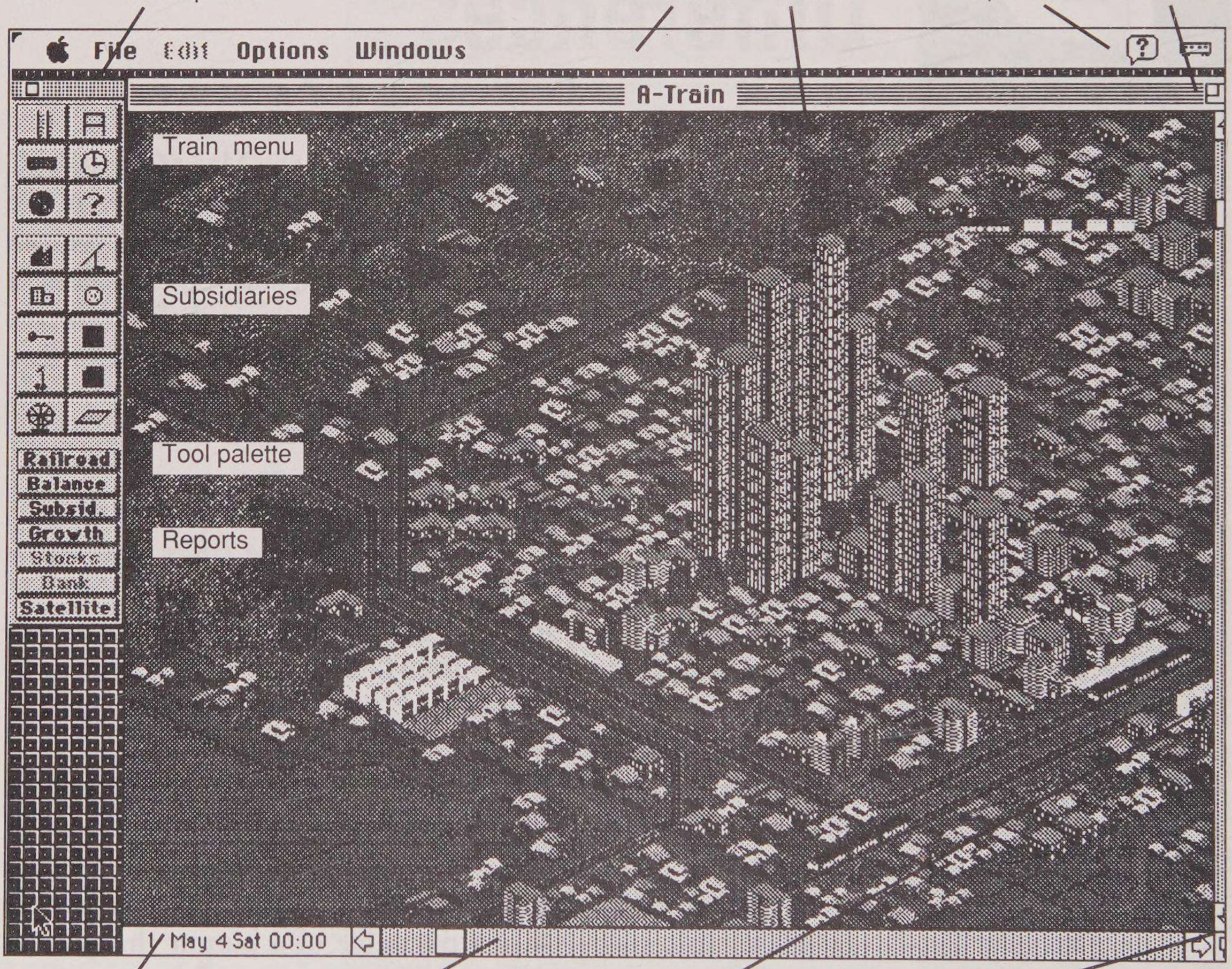
Macintosh Program Differences

There are several major differences between the Macintosh and PC versions of A-Train. Among the differences, as you will see in the figures that accompany this text, the interface is different, you can print out city maps from inside the program, and you can summon on screen help. Also, the Easter eggs that exist in A-Train for the PC are not all present in the Macintosh version. Other than this, the simulation model remains the same and a city that you build with the PC should look like a city that you build with the Macintosh, given the same development criteria.

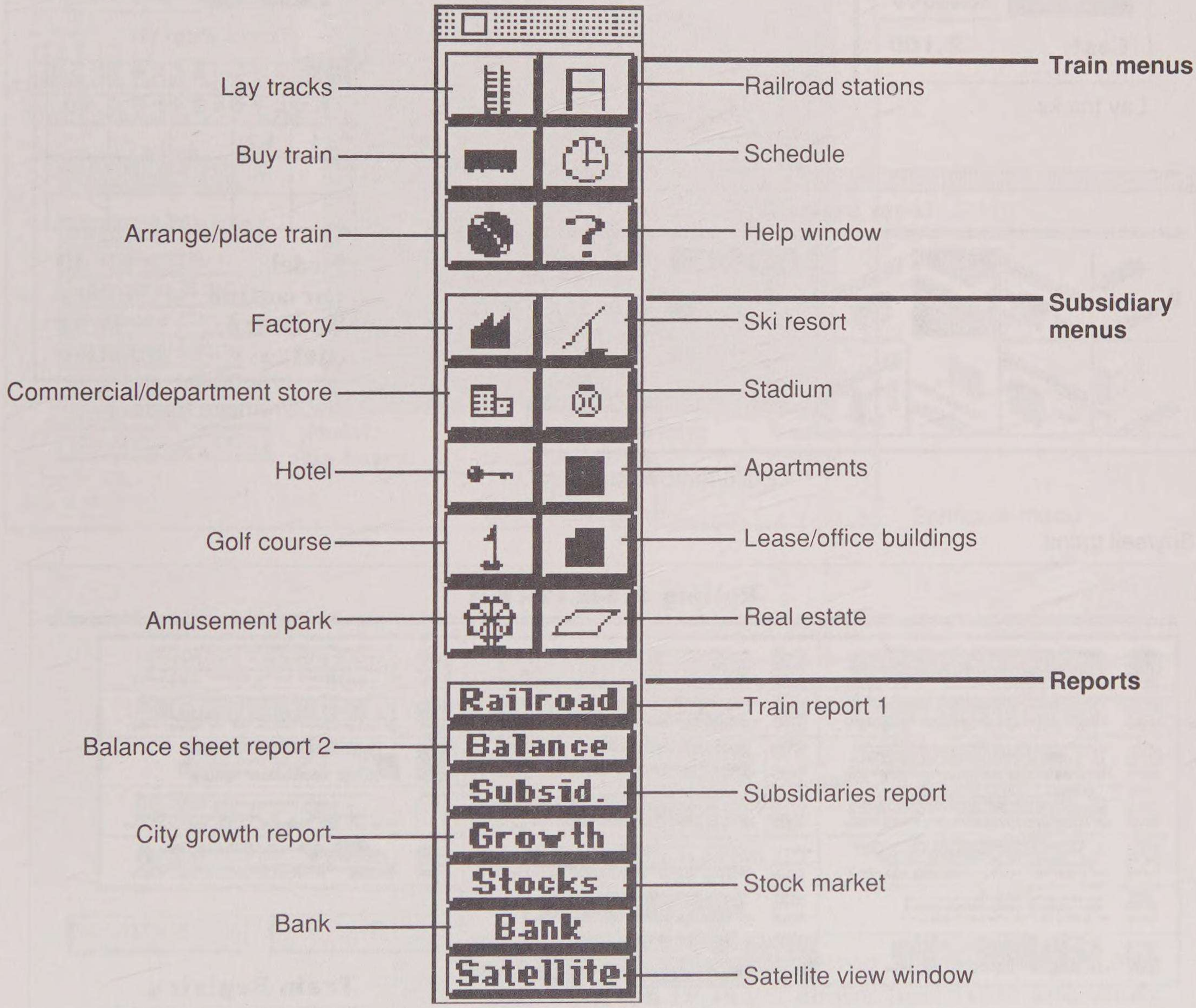
Unfortunately, city files are not interchangeable with the PC, or the Amiga. This means that you can't trade cities with others unless they have the same kind of computer you have. You can, however, edit the Macintosh city files with ResEdit, which will allow you to hex edit the resources found in the file. Chapter 10 discusses how the hex edit the $49 million into your company's cash reserves using ResEdit.

Because A-Train for the Macintosh was still in development at the time of the writing, you may notice some minor cosmetic differences in the appearance of the program from what you see here in the appendix. In most cases the changes will be perfectly obvious to you, such as when the name of a button changes but not its function.

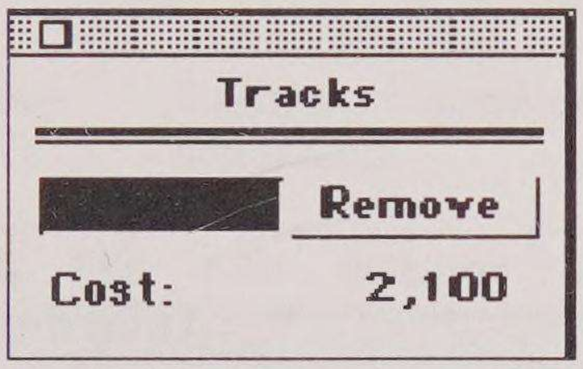
Macintosh Main View Window



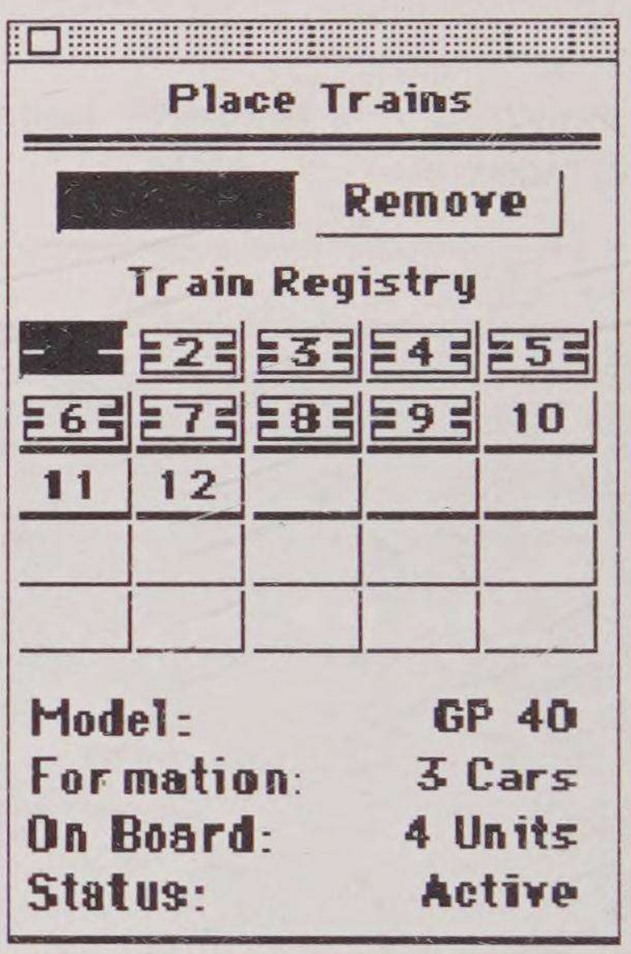
Macintosh Main Tool Palette



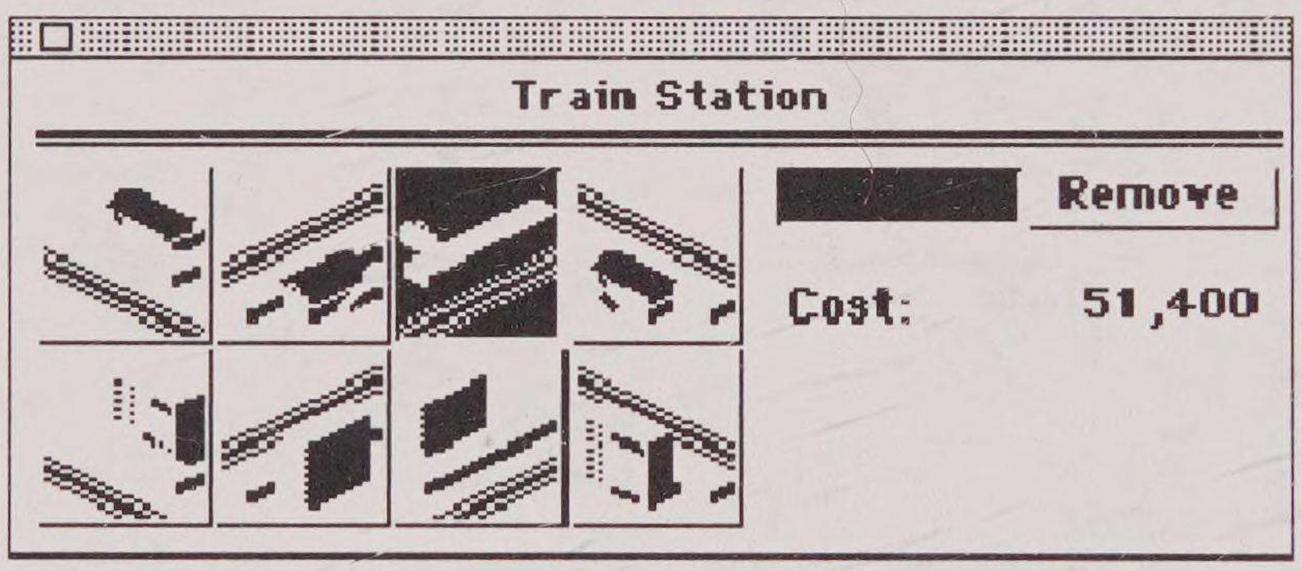
Macintosh Train Menus



Lay tracks

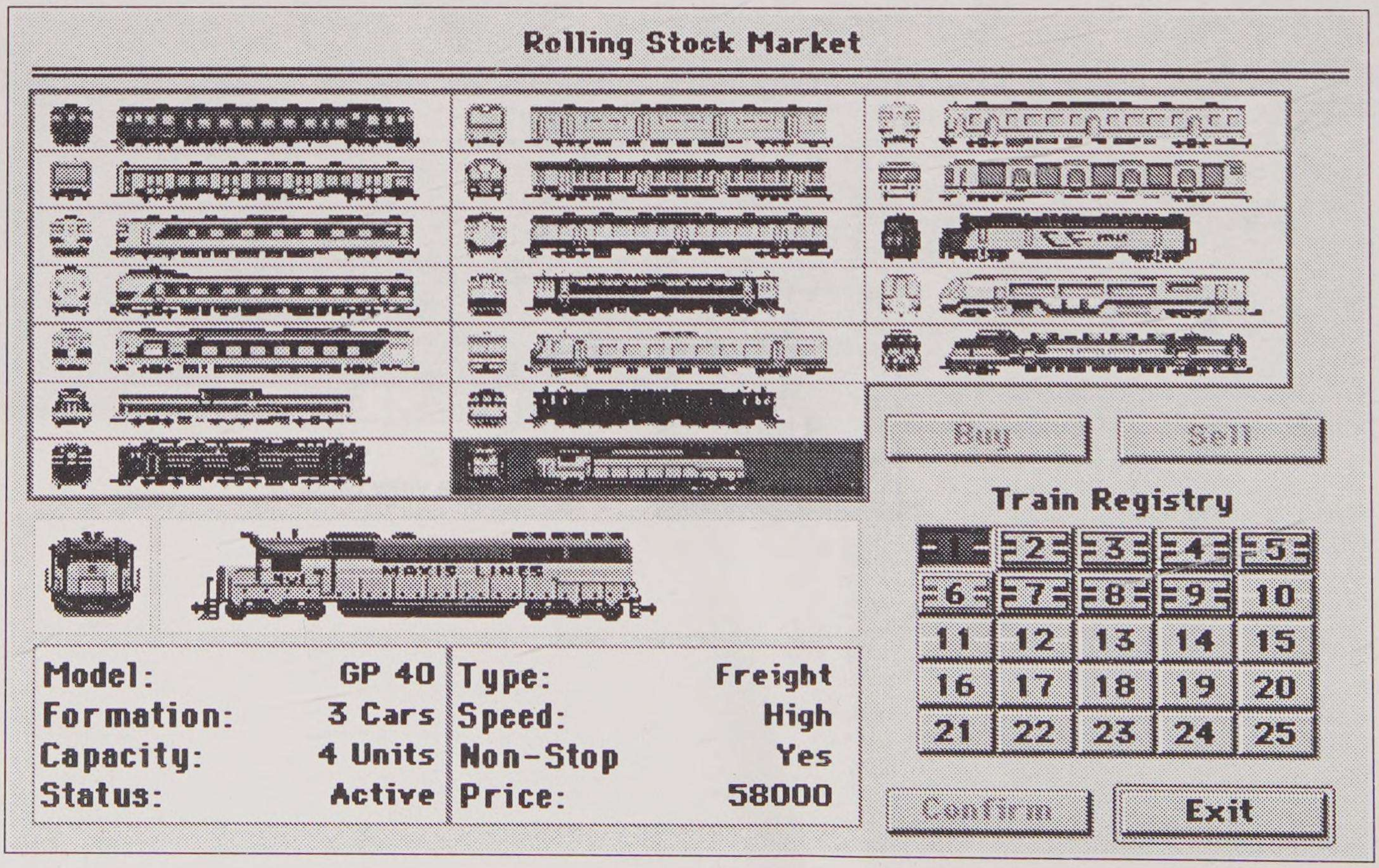


Place/remove trains

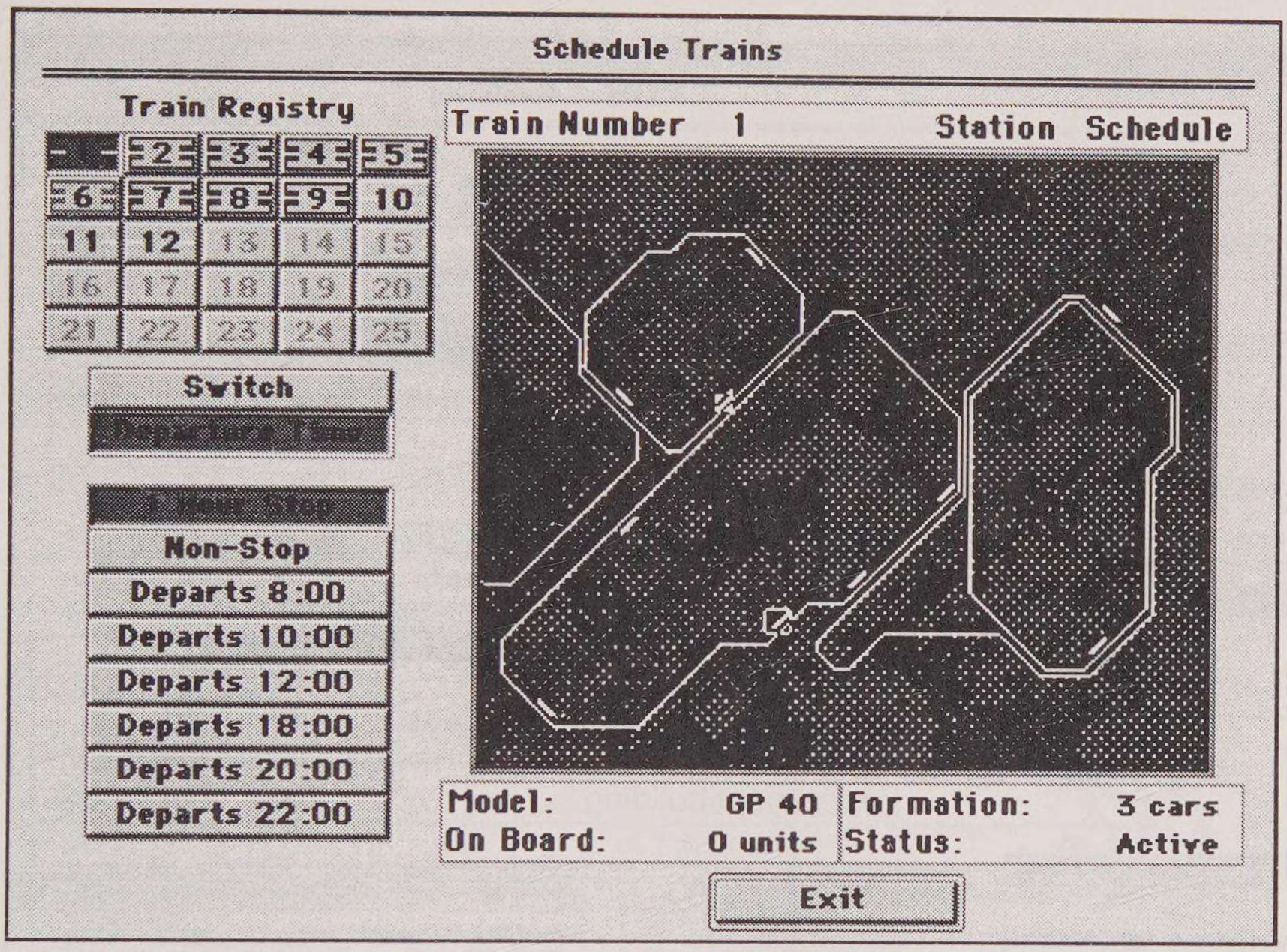


Build/remove stations

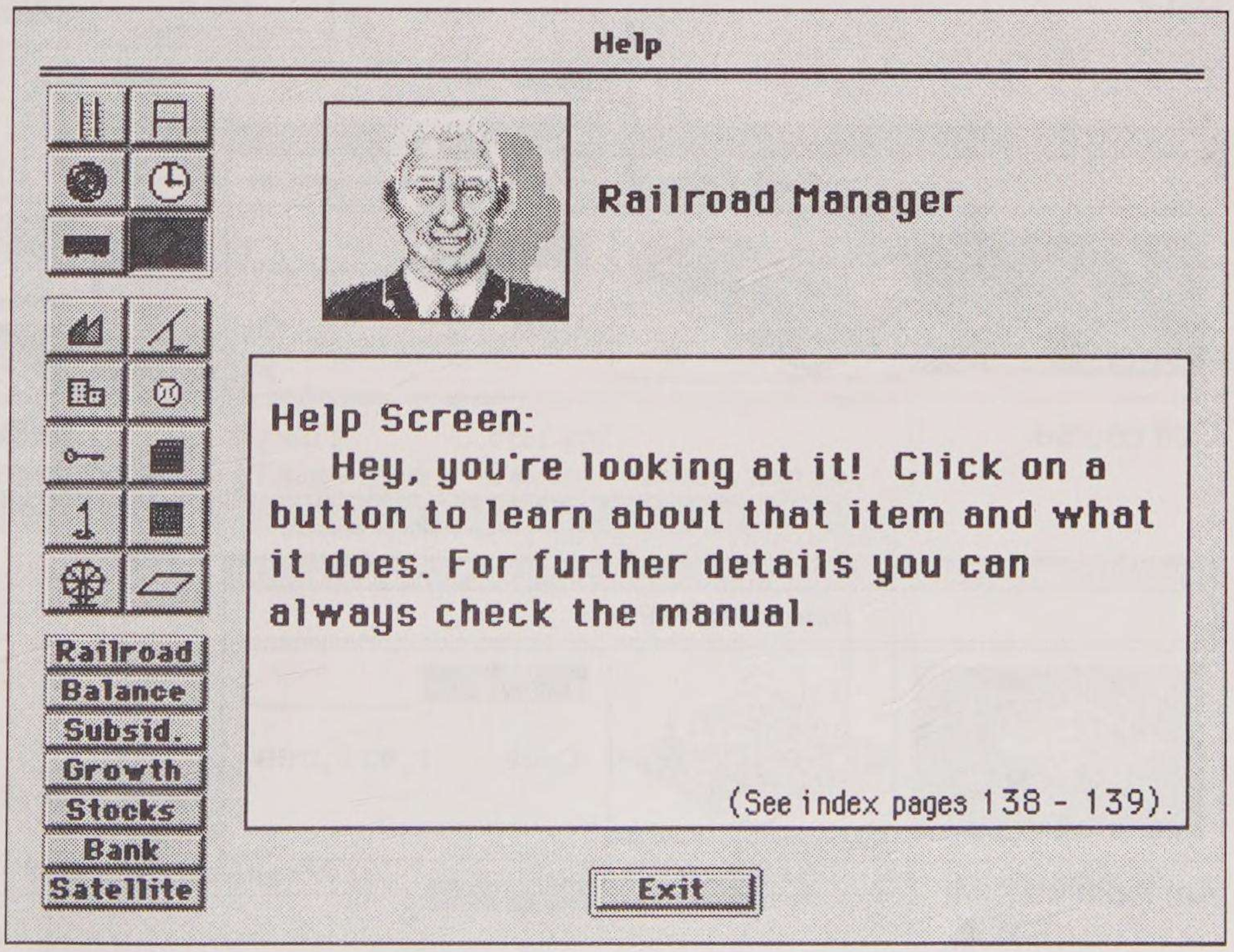
Buy/sell trains



Macintosh Train Menus

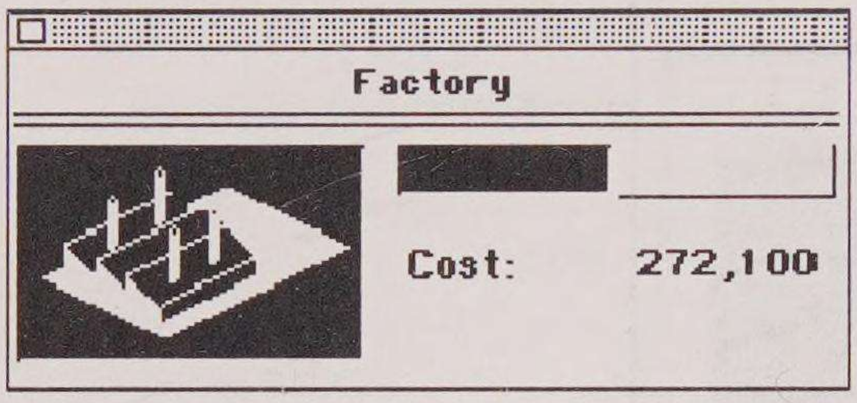


Schedule menu

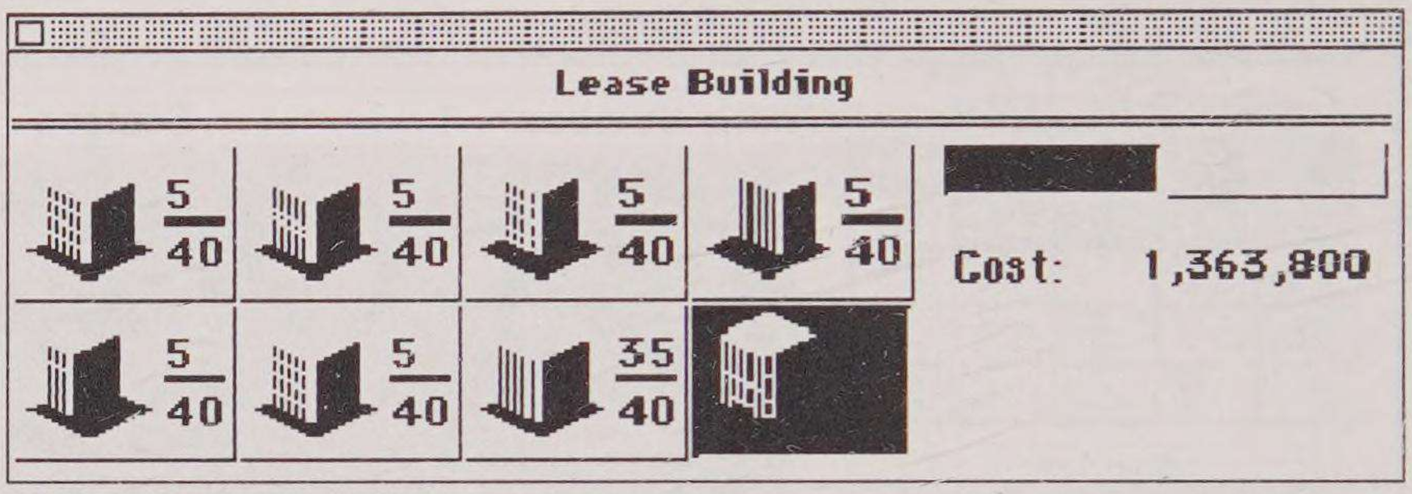


Help window

Macintosh Subsidiaries



Factory



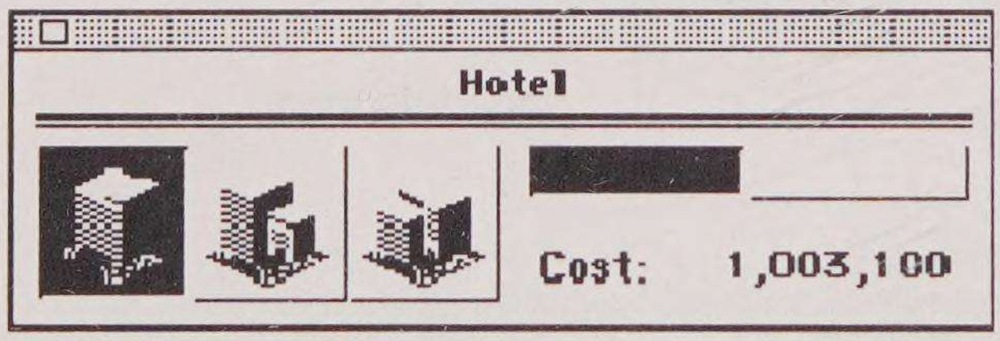
Office/lease building



Department/commercial store



Apartment building



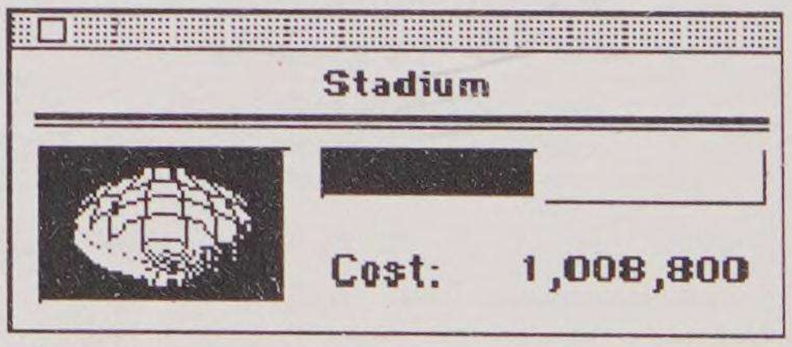
Hotel



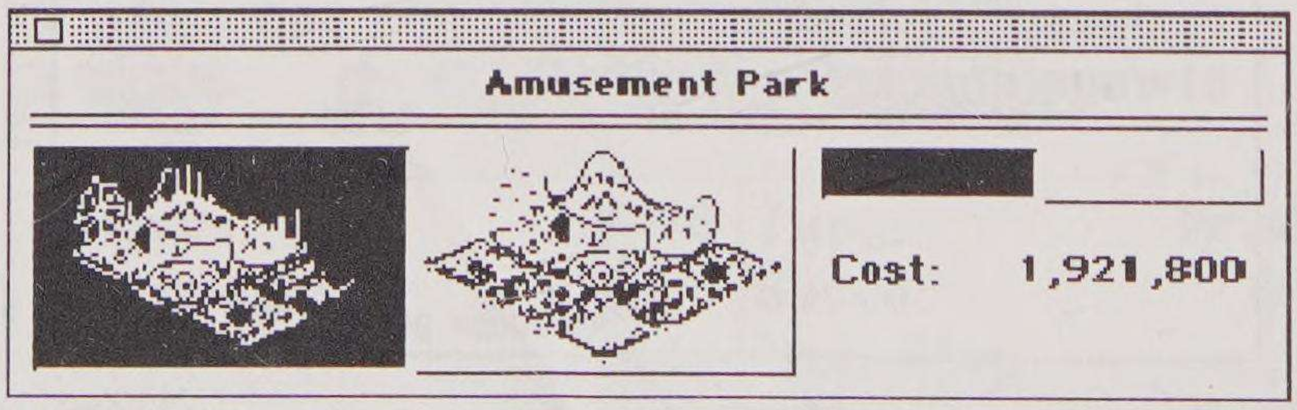
Ski resort



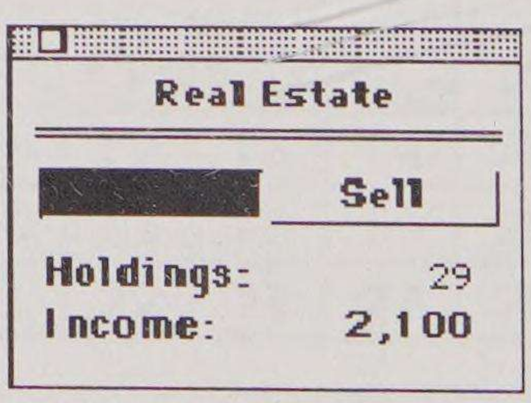
Golf course



Stadium



Amusement park



Real estate

Macintosh REPORTS

Railroad Operation

3- 2- 1-

Cash:	539,973	**Debt:**	1,674,920	**Taxes:**	0
Sales (Today)	0	**Cost:**	0	**P/L:**	0
Sales (This Month)	13,076	**Cost:**	6,076	**P/L:**	7,000
Sales (This Term)	13,076	**Cost:**	6,076	**P/L:**	7,000
Switches:	2	**Stations:**	10		
Rail Length:	897	**Cars:**	12		

Train report 1

Balance Sheet

Assets		Market Value	Property Tax
Railroad Assets:		5,610,900	280,545
Subsidiaries:	2	739,160	36,958
Stocks:	1,101	491,952	24,597
Real Estate:	67	194,000	9,700
Total:		7,036,012	351,800

Revenue	
Railroad Operation:	13,076
Subsidiaries:	464
Subsidiary Sales:	0
Stock Sales:	0
Real Estate Sales:	0
Stock Dividends:	0
Interest Income:	0
Total:	13,540
Profit/Loss:	-1,182,027
Cash:	539,973

Expenditures	
Railroad Operation:	6,076
Subsidiaries:	330
Subsidiary Purchase:	687,400
Stock Purchase:	490,651
Real Estate:	0
Commission:	11,110
Interest Paid:	0
Total:	1,195,567
Income Tax:	100
Total Tax:	351,900

Exit

Balance sheet report 2

Subsidiaries

Cash: 536,018

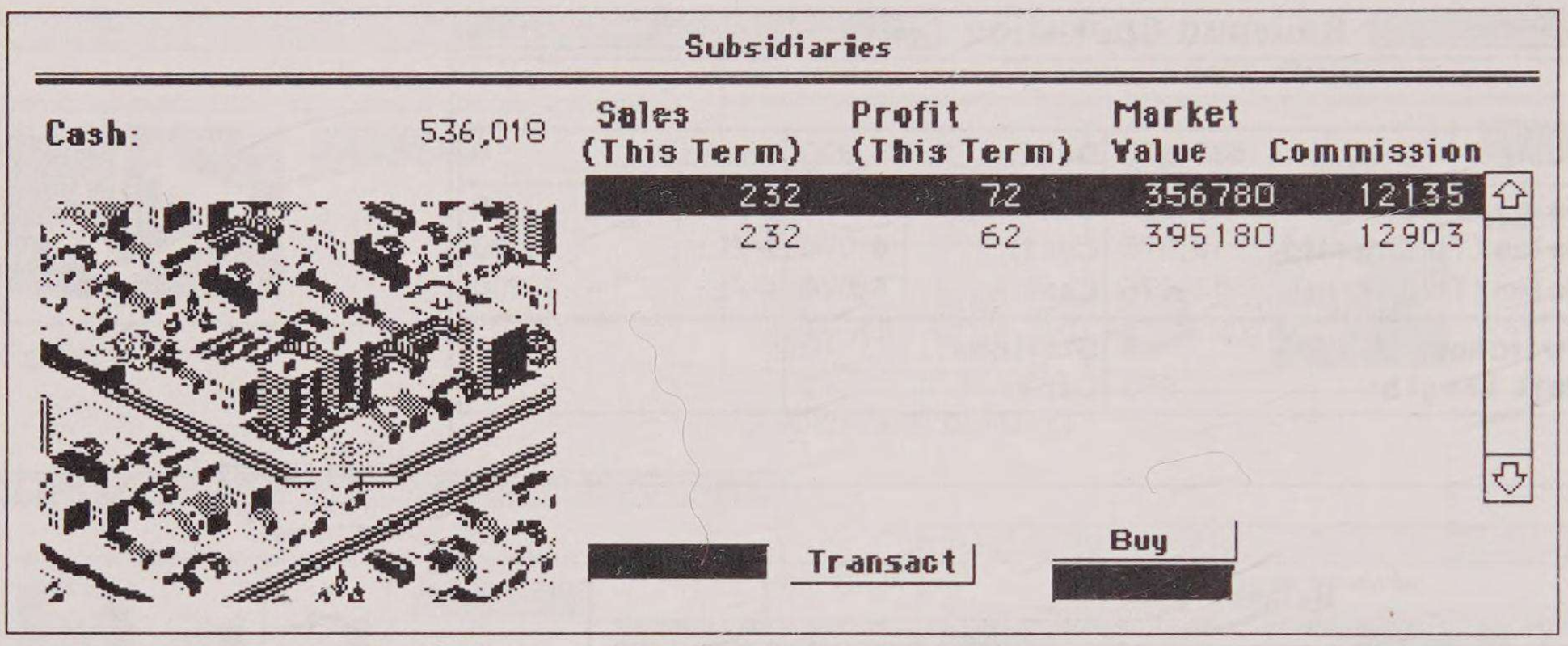
Factories:	0	of	4
Golf Courses:	0	of	0
Dept. Stores:	0	of	4
Amusmnt. Parks:	0	of	1
Lease Bldgs:	0	of	40
Hotels:	0	of	22
Stadiums:	0	of	1
Ski Resorts:	0	of	0

Sales (This Term)	Profit (This Term)	Market Value	Commission
232	72	356780	12135
232	62	395180	12903

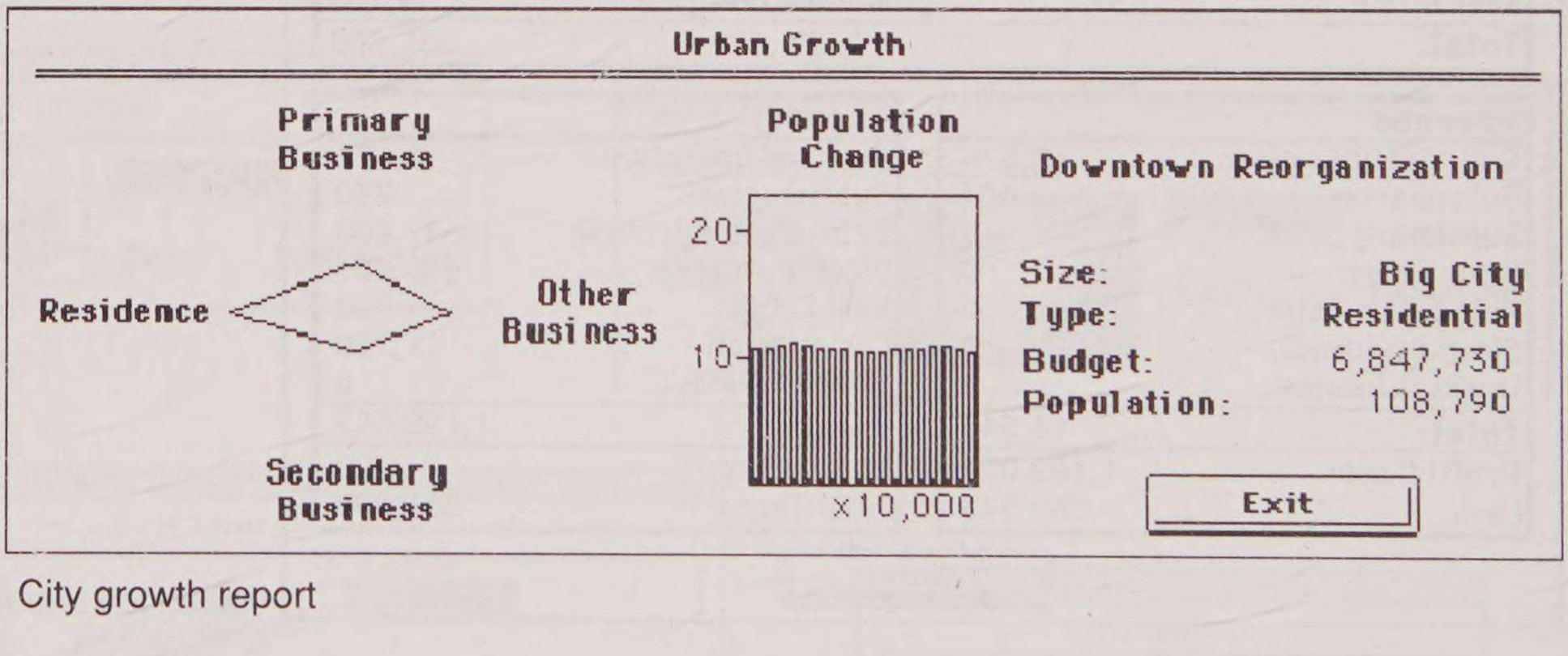
View | Transact | Buy | Exit

Subsidiaries report

Macintosh REPORTS

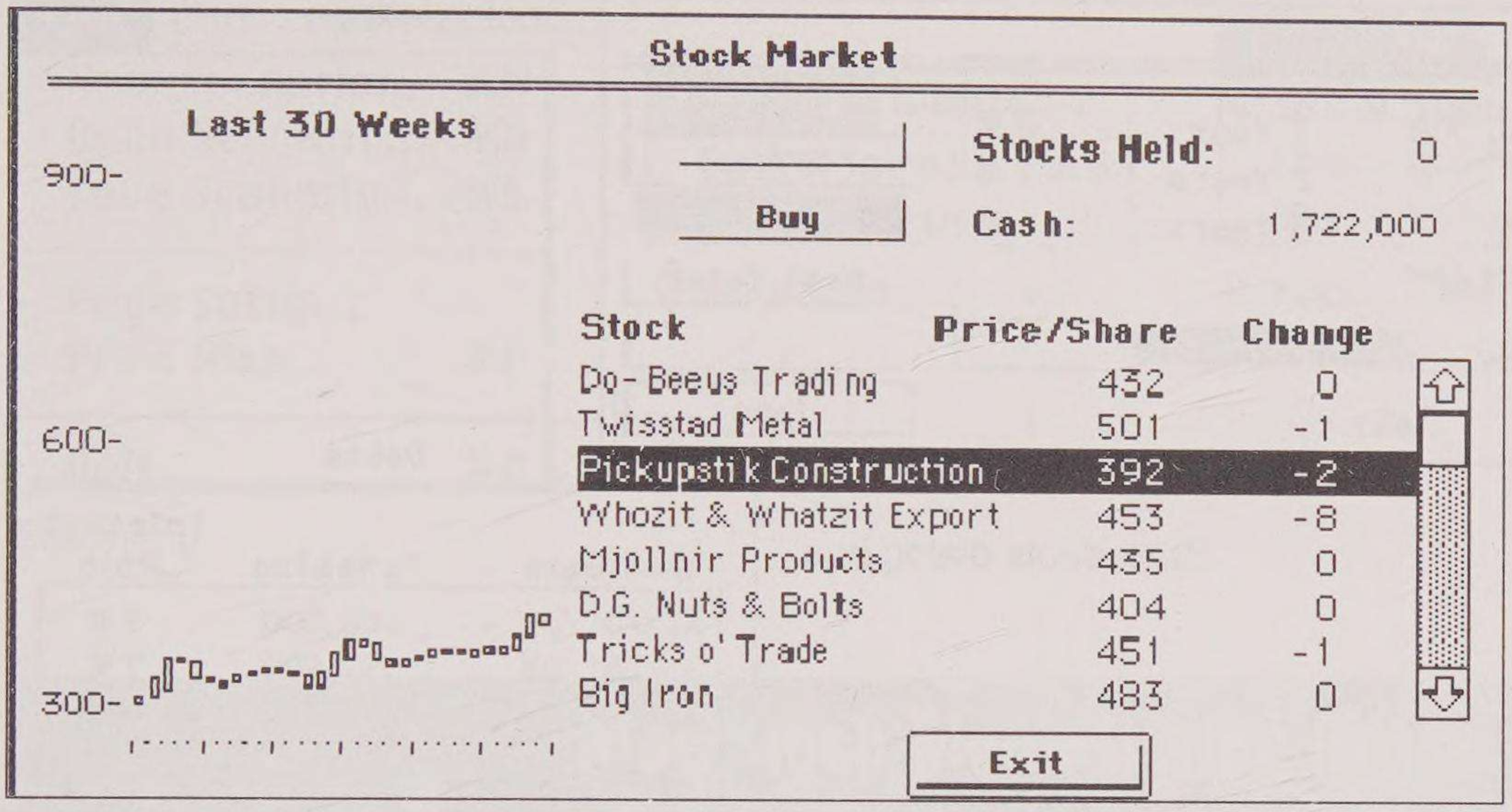


Subsidiaries report view mode

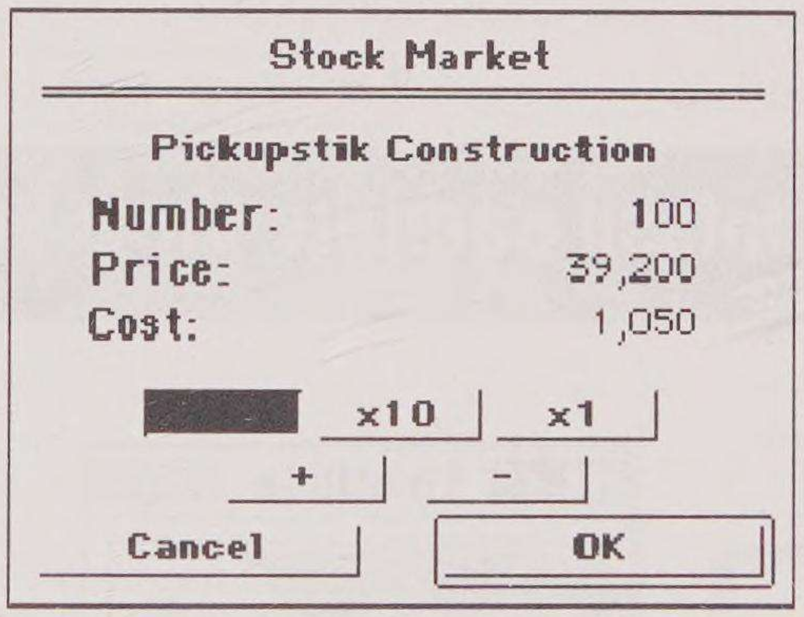


City growth report

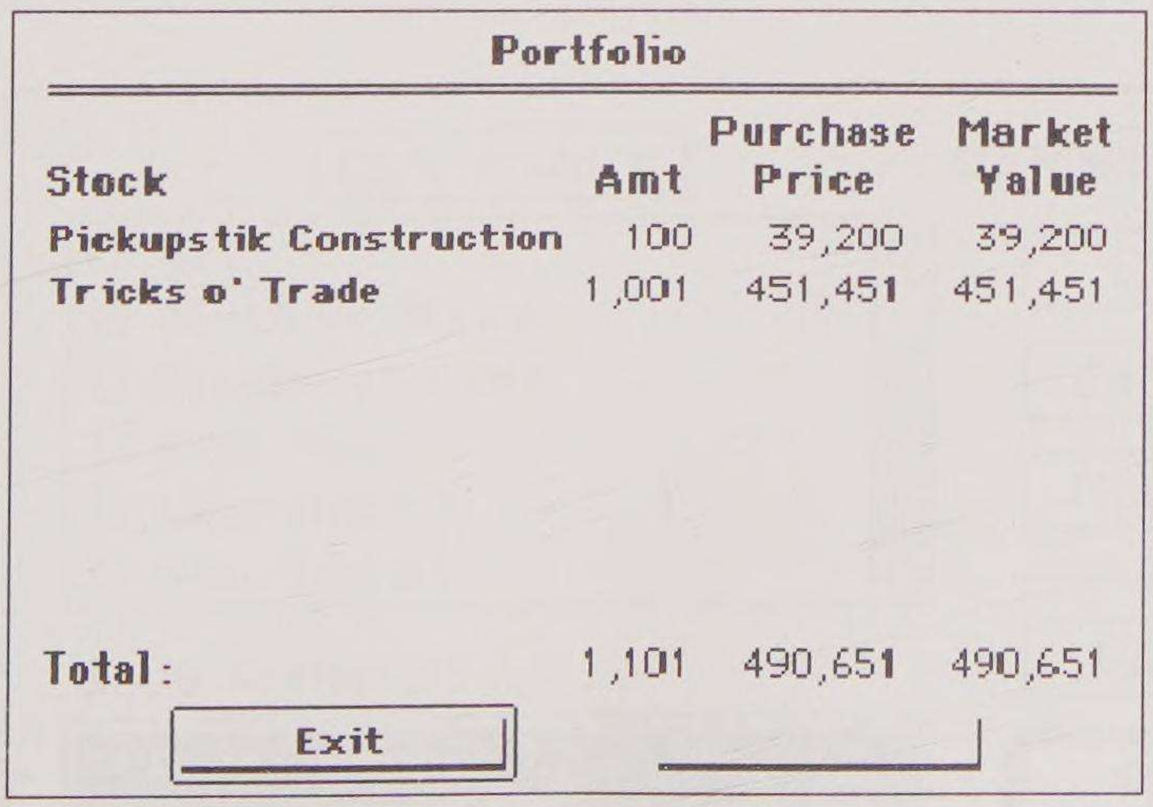
Macintosh Stock Market Window



Stock market window

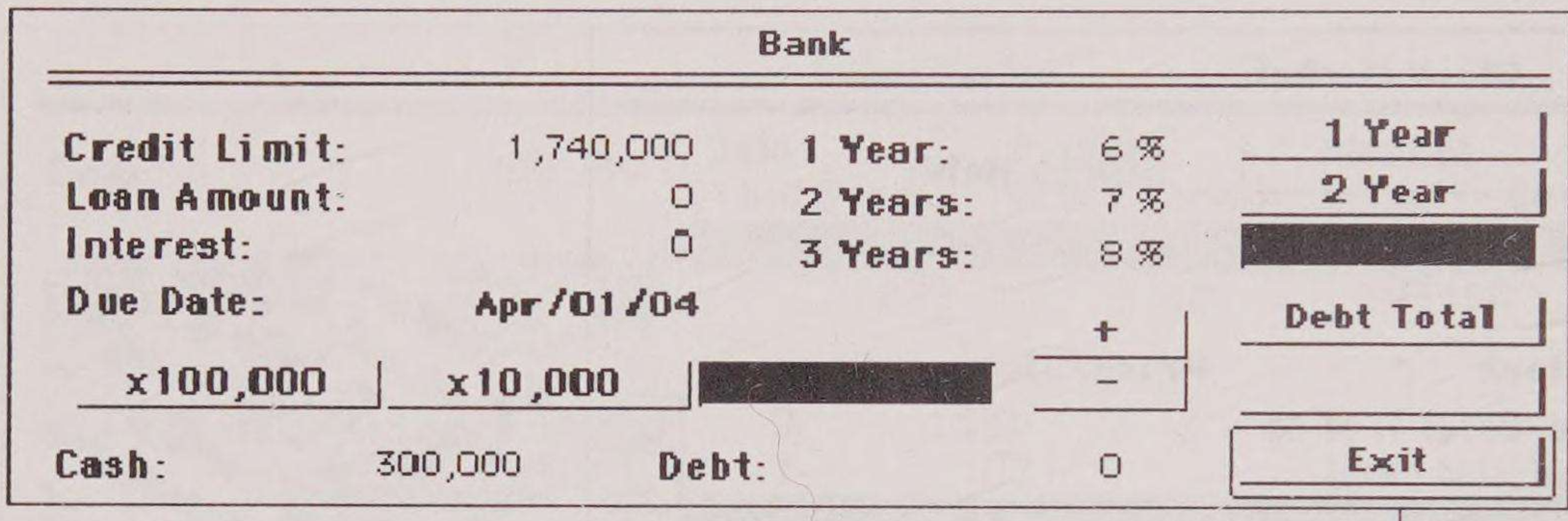


Buy stocks dialog box

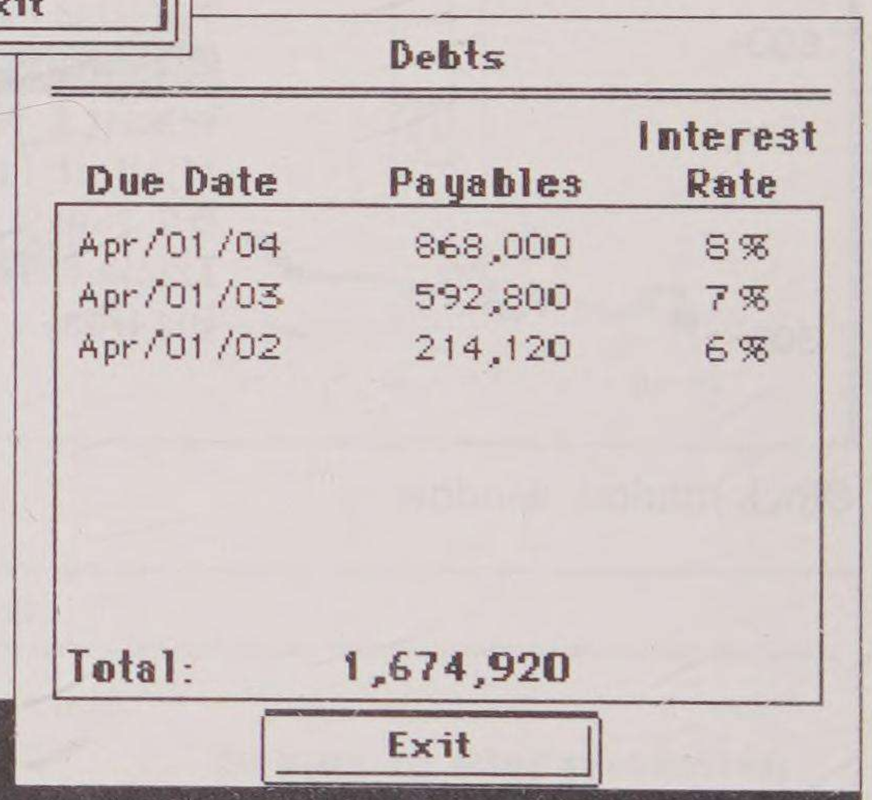


Portfolio dialog box for selling stock

Macintosh Bank Window



Bank window

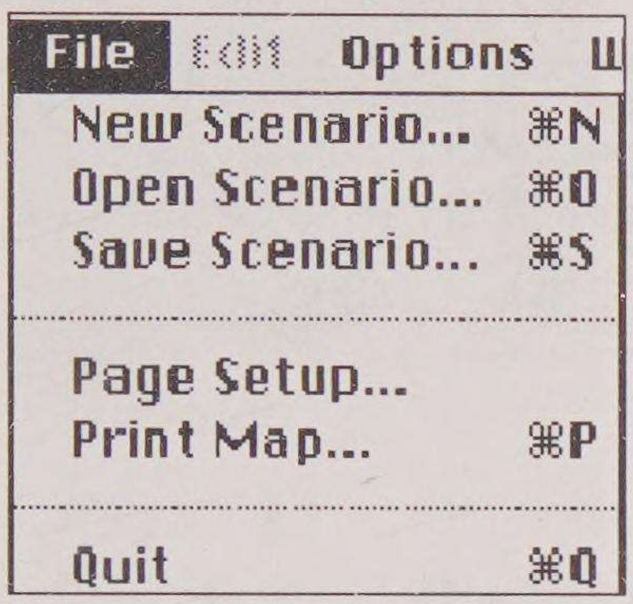


Bank debts dialog box

Macintosh Satellite View Window



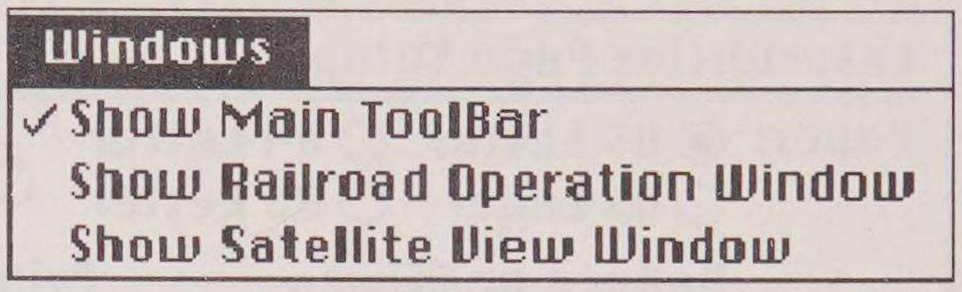
Macintosh Pull Down Menus



File menu

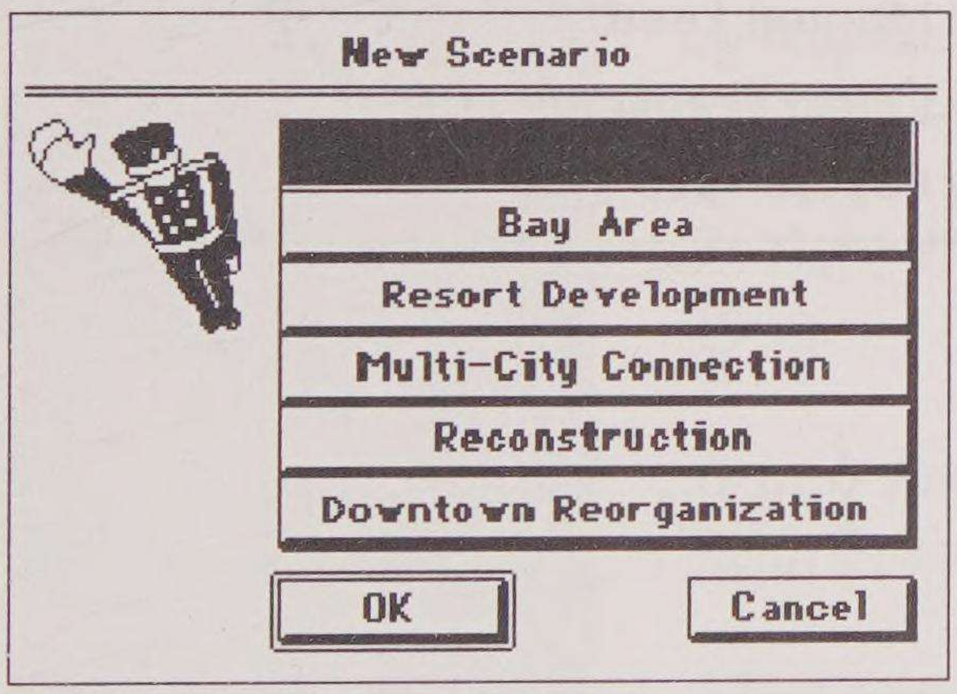


Options menu

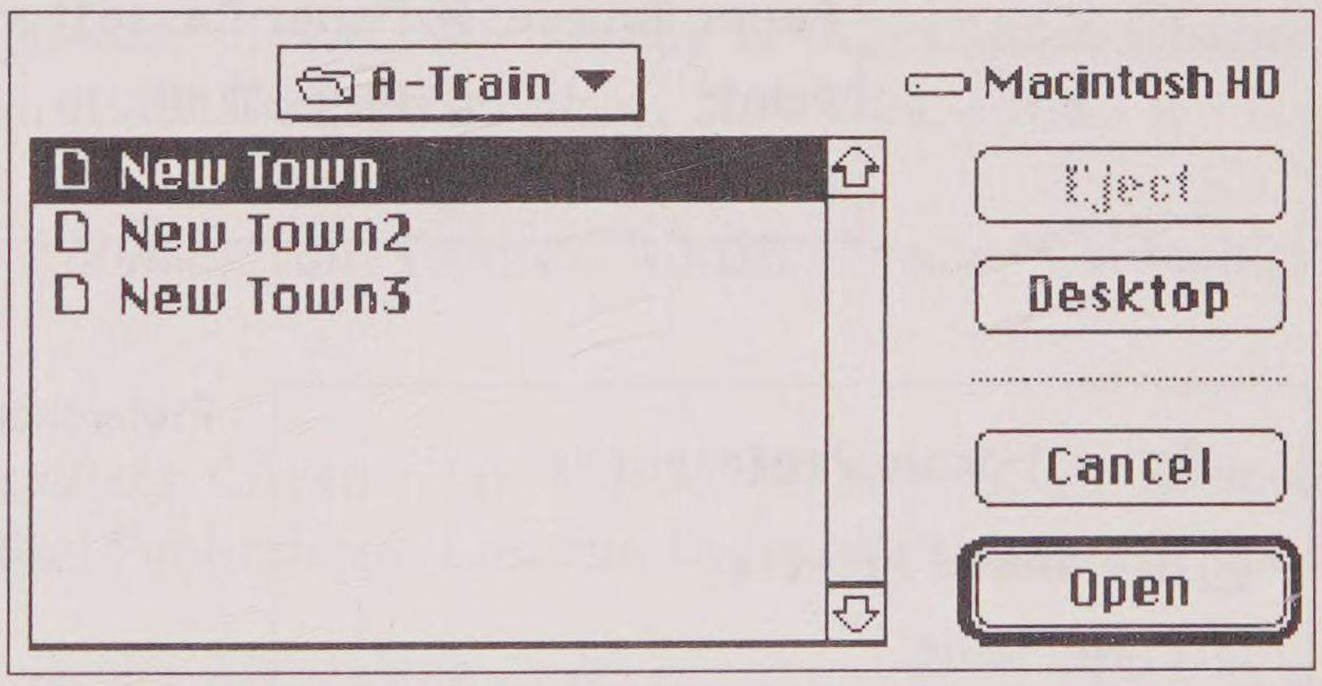


Windows menu

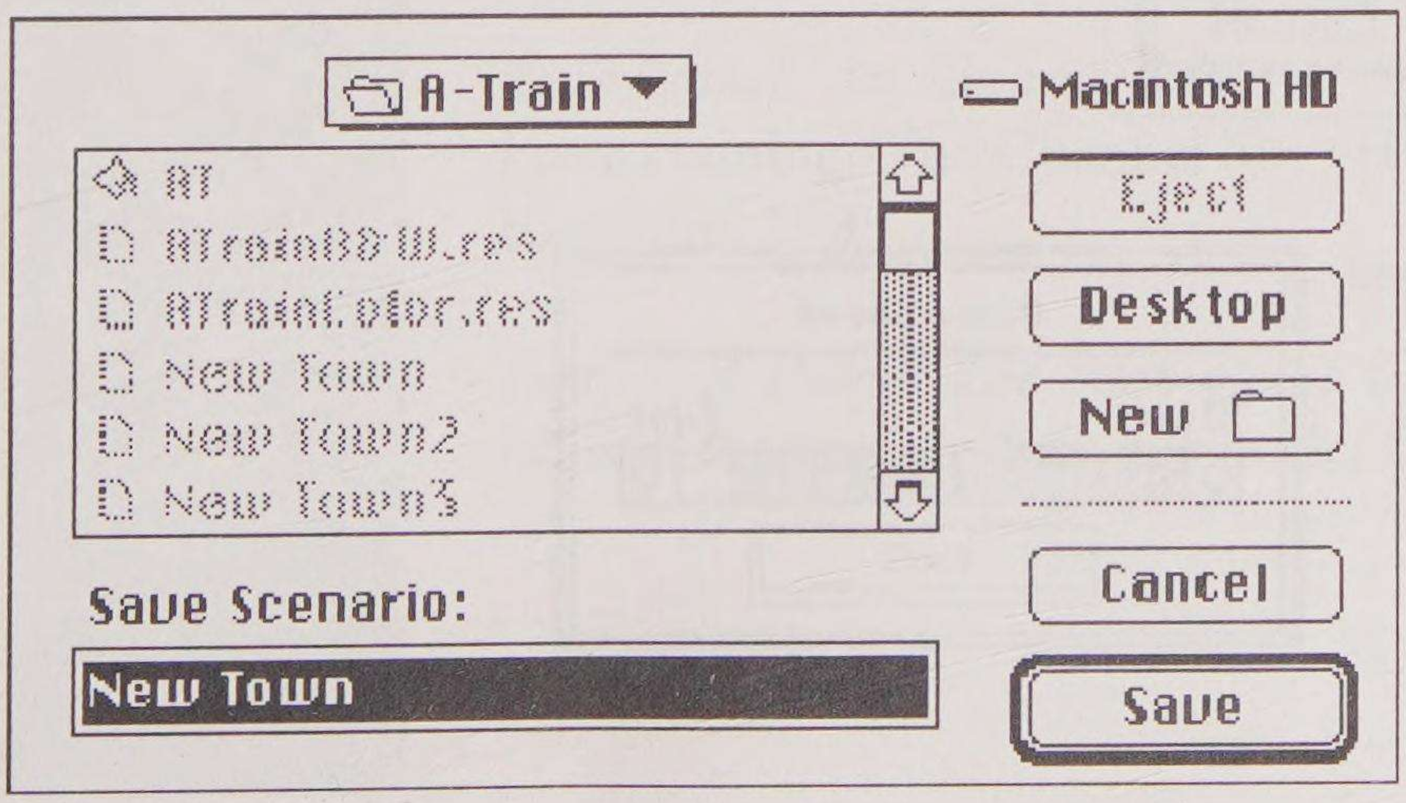
Macintosh Menu Dialog Boxes



New scenario



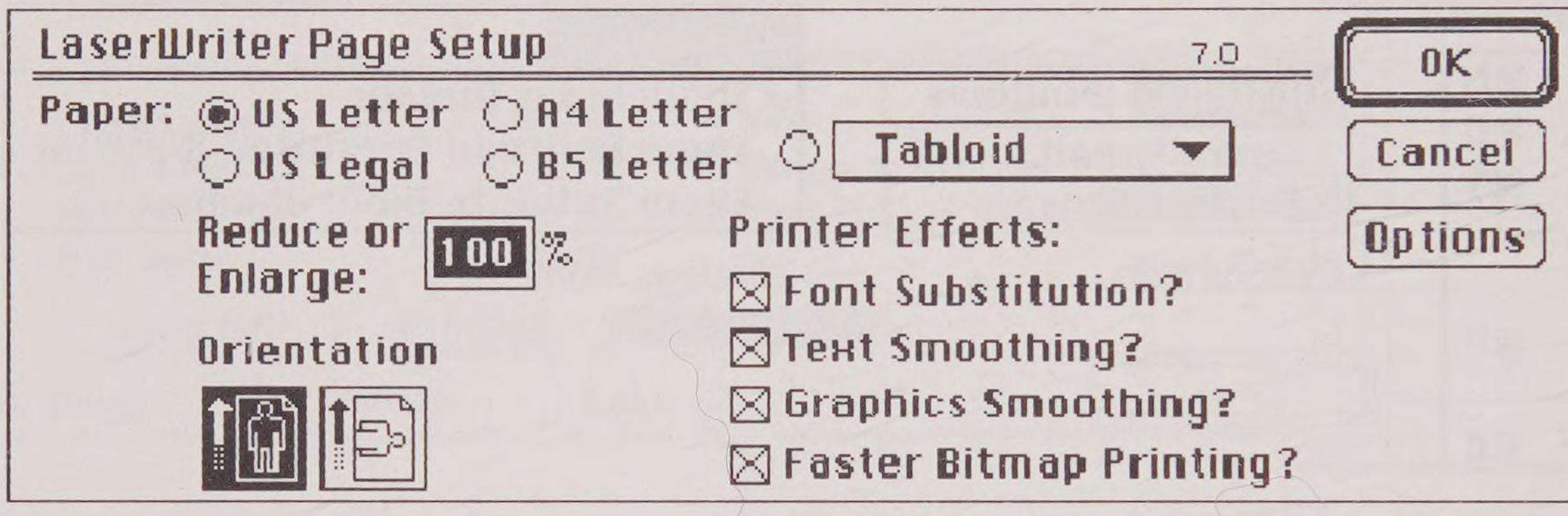
Open scenario



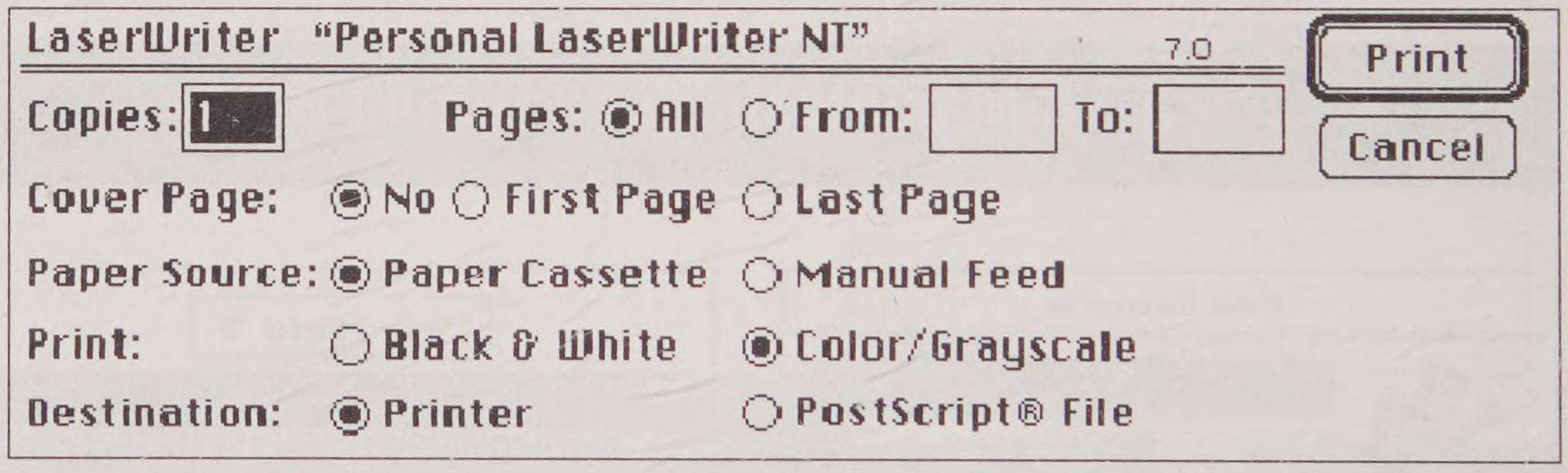
Save scenario

Macintosh Menu Dialog Boxes

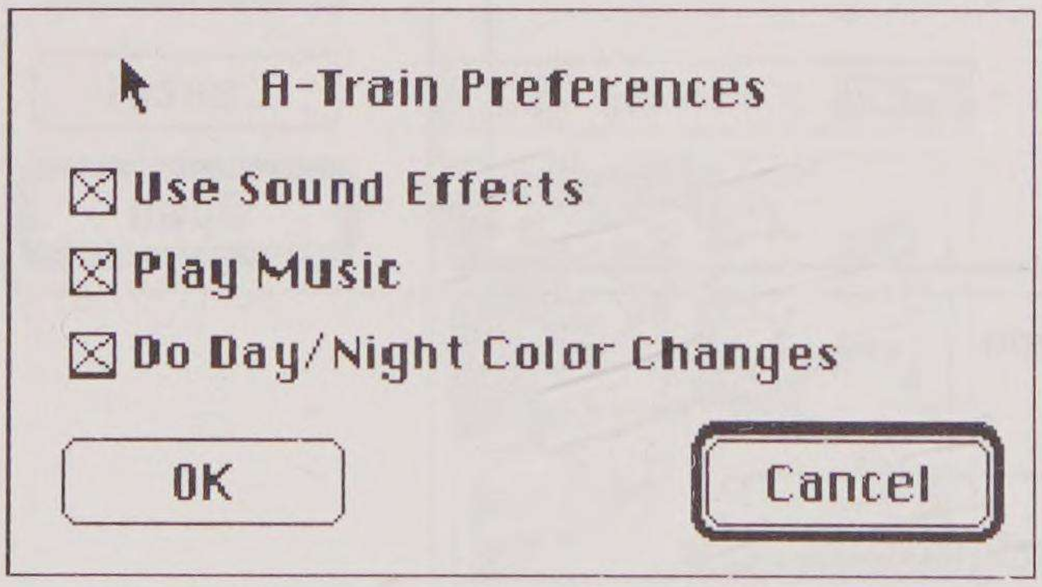
Page setup



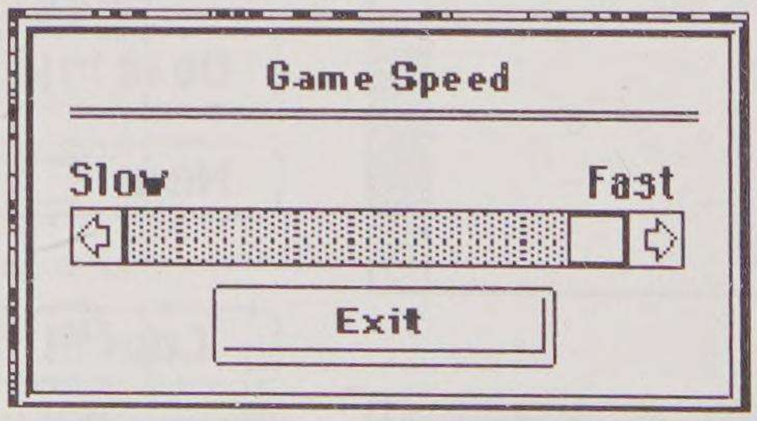
Print map



Preferences



Game speed



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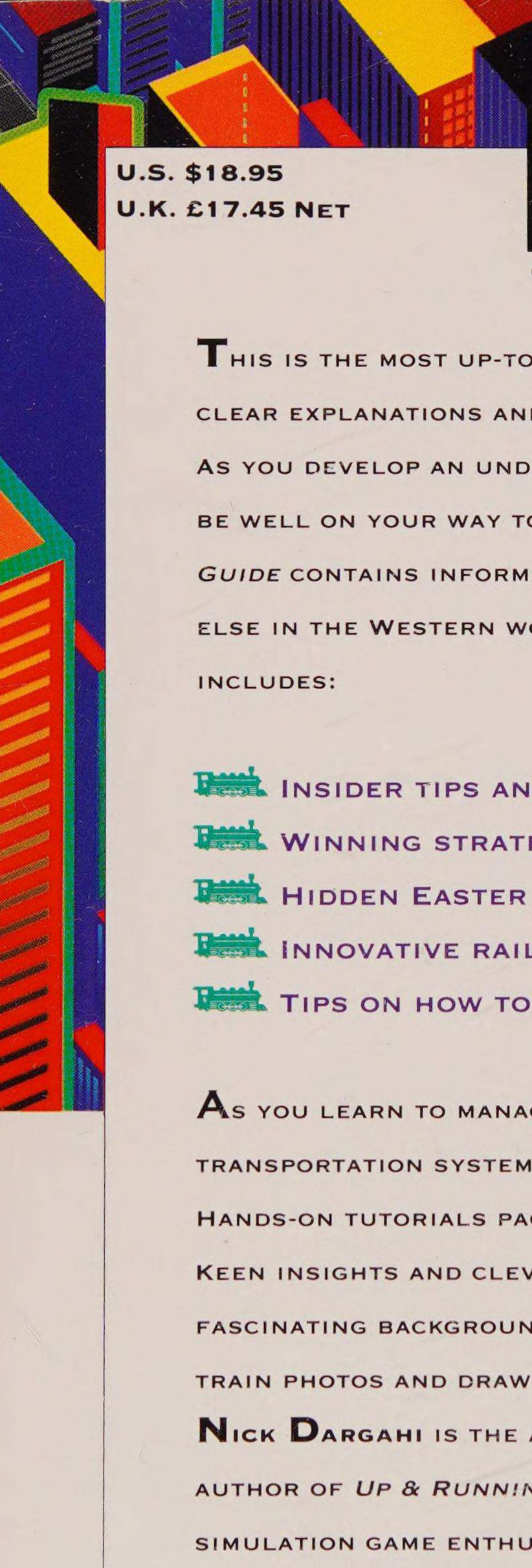
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