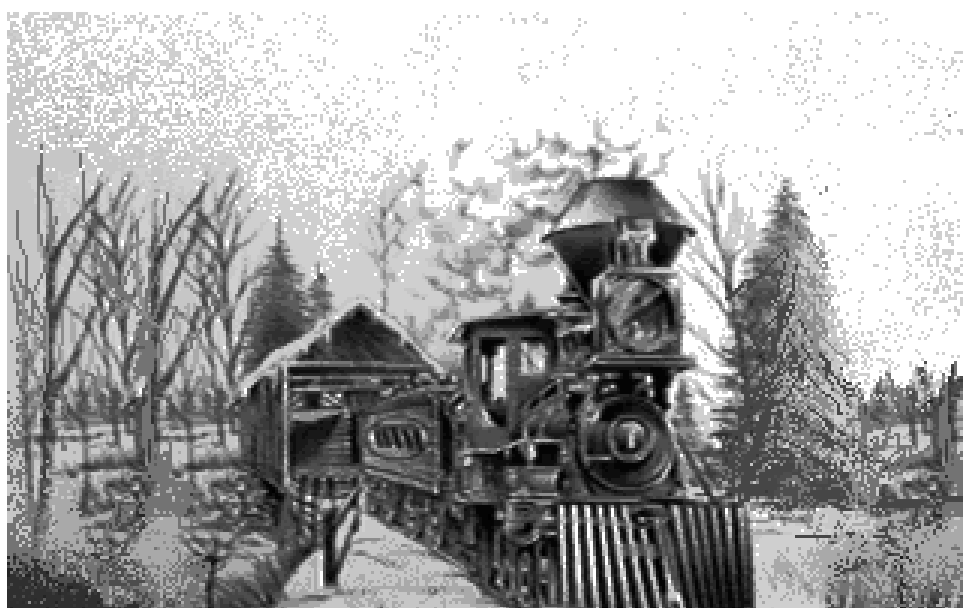


CONTINENTAL RAILS II



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1.0 INTRODUCTION

1.1 Game Overview

"What do I care about the law? Hain't I got the power?" - Cornelius Vanderbilt

Continental Rails simulates the great railroad expansion in America during the 19th Century. This is a game of fierce economic competition in which you are one of 15 railroad tycoons seeking fame and fortune. There can be up to 6 winners in each game, so you can select which goals you wish to pursue. The game begins in 1841 after the first railroads were established. Each game turn represents 1-2 years of time. The game has 2 phases, an eastern rail building phase during the first 10 turns, followed by a western rail building phase after turn 11. Each game will last over twenty turns, which provides plenty of time to recover from setbacks. If you don't do well in the first phase, then look ahead to the next phase.

The competition will come from your 14 rivals. You will know who the other players are. You can conspire with them or not; diplomacy is not necessary to play successfully. If they are doing too well or are obstructing your plans, you can always try to drive them to financial ruin, but they may be trying to ruin you. In addition to your rivals, you must contend with the vicissitudes of the stock market, boom times and panics, bank failures, and loan recalls.

To do well you must plan carefully and play boldly. Perseverance is also important. Don't be discouraged by a slow start, financial reverses, or even bankruptcy. You cannot be eliminated from the game, and even bankruptcy is only a temporary setback. It is quite possible for lower players to catch up with or surpass higher players in a few turns with shrewd investments.

If you are new to play by mail games, make sure you read Appendix C for suggestions on play and Appendix D on PBM Procedures.

In these rules, any comments enclosed in brackets are not rules, but are either historical notes, suggestions, or explanations:

[Any fractions are rounded down, except that the Bank rounds up when charging interest on loans, or where stated otherwise.]

[To simplify the numbers in use for money and shares of stock, each \$1 of cash represents \$100 and every 1 share of stock represents 100 actual shares.]

1.2 Victory Points (VP)

"Let everyone carry out his own corpse!" - Jim Fisk

There are 6 Victory Point categories. Each turn you will receive VP in five categories based upon your status at the end of the turn or for actions during the turn. Points in these categories are cumulative.

The sixth VP category is Rail Baron. This category is simply the total of your percentage of the highest points in the other five categories. This is recalculated each turn, and is never cumulative.

At the end of the game the player with the most VP in each category wins that category.

Robber Baron: Awarded for net worth at the end of each turn:

+5 VPs to the player with the highest net worth

+2 to +4 VPs for the 4th through 2nd net worth's

+1 VP to all other non-bankrupt tycoons.

Bonus: 5 VPs to the first player(s) to have a net worth over \$1,000,000

Rail Mogul: Awarded to Directors and Presidents of Railroads at start of turn:

+1 VP to each Director (including the President) The President receives the square root of the dividends paid by each railroad he controls. Fractional points are accumulated until they exceed 1, at which time 1 VP is added. For example, a President who controls railroads paying \$4 in dividends and another paying \$2 gets 2 VP for the

first, 1 VP for the second, and has .41 points saved for another VP.

No Mogul points are awarded if the railroad owes any debt to the President at the end of the turn.

A President loses -5 VP if the railroad goes bankrupt or is reorganized during the turn.

Rail Builder: VPs are awarded to railroad Presidents for extending their railroad(s) to regions they did not connect to at the start of the turn. These VPs are awarded whether accomplished by building a Right-of-Way, or by merger of a Private Company.

When 2 railroads merge during a turn, the President receives VPs for each new region not connected to either Railroad at the start of the turn, along with any bonus points.

2 Points for each new region linked to the Railroad

VP are doubled if first Railroad to link to the region

Bonus Points for linking these regions:

5 VP: Atlantic to either Central or Mississippi

7 VP: Central to Gulf

10 VP: Pacific to Midwest, Mississippi, or Gulf

Bonus is doubled for first Railroad to link these regions.

You cannot receive the same bonus points twice. If you have received bonus points for linking Pacific to Gulf, you will not receive points for linking Pacific to Mississippi, even if a different Railroad is involved.

Rail Magnate: VPs are awarded to railroad Presidents for the number of regions connected to their railroad system. A railroad system consists either of one railroad or of two connected railroads controlled by the same President. In the case of 2 unconnected railroads, the one with the most Regions is evaluated.

Each turn: 1 VP for each region linked by railroad or system

Bonus Points:

+2 VP if system links Atlantic to Central or Mississippi

+2 VP if system links Central to Gulf

+3 VP if system links Pacific to Midwest, Miss., or Gulf

+5 VP if system links Atlantic to Pacific

Rail Prodigal

Prodigal VPs are awarded to tycoons for ostentatious spending for newsworthy expenses like purchasing a lavish mansion, endowing a college, funding a large library, or other impressive the like. Prodigal points are simply bought each turn, if desired, by spending at least \$1000.

There are 30 Prodigal points available each turn. 15 of these points are evenly divided among all tycoons spending at least \$1000, rounded down. Any unallocated points, plus the remaining 15 points are awarded in proportion to each Prodigal's share of total Prodigal spending, again rounded down. Any remaining unallocated points are awarded 1 per Prodigal, from most to least, until all points are allocated.

Example: Tycoon A spends \$15,000 for Prodigal, B spends \$10,000, C spends \$4,000, and D spends \$1,000; total spent on Prodigal = \$30,000.

The point allocations are: first, each of the four Prodigals gets 3 points on an even basis of the first 15 points.

The remaining 3 points, plus 15 more points (total 18 points) are awarded:

9 to A ($15000/30000 = 50\%$ of 18)

6 to B ($10000/30000 = 33\%$ of 18)

2 to C ($4000/30000 = 13.3\%$ of 18)

0 to D ($1000/30000 = 3.3\%$ of 18 rounded down)

Only 17 points were allocated proportionately, so the extra point goes to A as highest Prodigal. Final total points: A gets 13 VP, B gets 9 VP, C gets 5 VP, and D gets 3 VP.

Rail Baron (modified)

Rail Baron VPs are calculated as the sum of each player's percentage of the highest VP score in each of the other 5 VP categories; i.e., the player with the highest total in a category gets 100 Baron points and each other player receives Baron points equal to his score divided by the highest score times 100. The maximum possible Baron points would be 500, meaning the player was in first place in all 5 VP categories.

1.3 End of the Game

The game will end on a random basis starting after turn 20. There is a 25 % chance the game will end on Turn 21 and on each turn after Turn 21.

When the game ends, the winner in each category is the player with the greatest number of VP in that category.

2.0 THE GAME MAP

2.1 General map features

The 11" x 17" map depicts all the major railroad trunk routes in the US. Each route connects two cities or towns on the map. The length of each route is stated in the Appendix on the back of the map. Additional copies of the map can be purchased from Graaf Simulations at modest cost. You may also photocopy the map for your own personal use.

During the game, you will receive a smaller 8x11 laser printed map showing the current lines in each railroad and all active PCs.

2.2 Routes

Routes are the connections between cities. There are over 400 routes in the game. Each route has an abbreviation of up to 4 letters and numbers. A route is either a Right-of-Way (RoW) or a Private Company (PC). It is very important to distinguish between these two types of routes since only PCs can become active Railroads and only players can purchase PCs. Rights-of-Way can only be acquired by Railroads for subsequent track building.

Some routes are shown with a double line, meaning that there are 2 routes available between the towns. No one Railroad can own both routes of a double route connection. Double routes can be two PCs, two RoWs, or a RoW and a PC, as denoted by the route abbreviations given on the map.

A list of all RoWs and Private Companies is provided on the back of the general map.

2.3 Rights-of-Way (RoW)

A. There are over 300 RoWs on the map. A RoW is denoted by a two-letter state abbreviation (one letter for Canada and Mexico) followed by a number. Thus NY1, OH3, CA2, are all RoWs.

B. RoWs may only be acquired by active railroads (not by PCs) using their political influence. A railroad can own only one unbuilt RoW.

2.4 Private Companies (PCs)

A. There are 100 PCs shown on the map by tracked route symbol. A PC can be considered a small, partially built, privately owned railway. The PC owns the route it occupies. A PC can become an active railroad at the option of the player owning it.

B. PCs are named on the map by the abbreviation of the name of a private company. They can be distinguished from RoWs by the fact that a Private Company name never has a number in it. Thus NYNH, S&G, MRLE, and RF&P are all PCs.

C. Not all Private Companies are available at the start of the game. The railroads arose first in the east, then in the Midwest, and after the Civil War came the race to the west coast. You will be informed each turn of the PCs available for that turn. Each turn a group of PCs becomes eligible to appear in the game. Which PCs within that group actually do become available is random. If a PC does not appear on the first turn it is eligible, it's chance to appear on the following turns is increased. The random appearance of PCs makes it impossible for experienced players to predict which PCs may appear on the next turn.

D. New PCs are offered for sale by the Bank at \$5 per mile.

E. PCs are sold to the player bidding the highest price.

F. A player owning a PC may offer to sell it, change the price of a PC offered for sale, merge it into a railroad, OR incorporate it. If the owner does not offer it for sale, he may hold it indefinitely.

[The names and locations of the Private Companies are generally historically accurate. Some PCs are not in their actual original locations (like the Sea Coast Line and Grand Trunk Western), some names are the better-known names adopted after mergers of small lines, like the New York Central and the Chesapeake & Ohio, and a few are fictitious.]

2.5 Lines

A Line is defined as a built route which is part of a railroad. A Line may originally have been either a PC or RoW. A railroad must have at least one Line (its original PC route). All Lines in a railroad must connect to at least one other Line in the railroad.

2.6 Towns

Cities and towns are represented by either a star or a circle containing a number value. Circles with no number have a value of 1. Each town has a size of 1 to 5, smallest to largest. The actual value of the town is the square of the size for most game purposes (a 5 city is valued at 25). Starred towns are towns used to determine Region connections.

[The size of the town reflects the economic importance of the town and nearby area in addition to the actual population of the town itself, and reflects the values after the railroads reached them.]

2.7 Regions

A. The map is divided into 13 regions:

<u>Region</u>	<u>Main Cities in region</u>
ATLANTIC:	Boston, New York, Philadelphia, Baltimore, Washington, Norfolk, Wilmington, Charleston, Savannah
OHIO:	Pittsburgh, Cincinnati, Louisville
GREAT LAKES:	Buffalo, Cleveland, Detroit
DEEP SOUTH:	Atlanta, Birmingham
CENTRAL:	Chicago
MISSISSIPPI:	St. Louis, Memphis, Vicksburg
GULF:	Mobile, New Orleans
MIDWEST:	Duluth, St. Paul, Omaha, Kansas City
SOUTHWEST:	Ft. Worth, Houston
MOUNTAIN:	Spokane, Butte, Salt Lake City, Denver, Santa Fe, Phoenix
PACIFIC:	Seattle, Portland, Sacramento, San Francisco, and Los Angeles
CANADA:	Quebec, Montreal, London, Sault Ste. Marie, Winnipeg, Calgary, Vancouver
MEXICO:	Monterey, Juarez, Mexicali

B. To be connected to a Region, a Railroad must have an active (built) Line to one of the named towns in the Region. There is no extra economic benefit to connecting to more than one town in a Region.

C. A Railroad which connects two or more Regions receives a +10% freight bonus in gross revenue for each Region in excess of 1.

3.0 PLAYERS

"I have the utmost respect for you gentlemen individually, but as railroad presidents, I wouldn't trust you with my watch out of sight."

-A. B. Stickney, speaking to a group of fellow railroad presidents

3.1 Player Positions

There are 15 player positions in a game. Any player position not played by a human player will be played by the computer until a human player is assigned to that position. Computer-played positions can take any action a human player can, except negotiate with other players, of course. New players may be assigned to non-played positions during the course of the game.

Unless the game is an anonymous game, you will be told who the other players are, their address, and their phone number at the start of the game. After the first turn, you can find out a player's address and phone number by spying on the player. You may choose not to have your address and/or phone number given to other players if you wish.

Every player position has a number from 1 to 15 assigned at the start of the game. These player numbers cannot

be changed, and are used for most game purposes to distinguish between players. Thus, if you want to spy on another player, you must give his player number, not his character name.

3.2 Characters

Every player has a character name. You may choose your own character name, or a random historical character name will be assigned. You may pick a name before the game begins, on the first turn, or after going bankrupt. Two players cannot have the same character name. If two players want the same name, one will get that name and the other will get a random historical name.

3.3 Starting Assets

Each player starts the game with some stock in each of the initial railroads and some cash. All players begin the game with identical cash and assets. Players taking over computer positions later in the game may begin with a different amount of cash and/or assets.

3.4 Player Revenues & Expenses

Each turn a player receives revenues and pays expenses. Revenues come from stock dividends, Private Company income, interest on bank deposits (i.e. cash), plus whatever other income he receives from dealing with Railroads. The only automatic expense is paying interest on any loan the player has made from the bank.

3.5 Credit, Loan recalls, and Bankruptcy

A. Credit. The Bank will permit you to borrow money based upon your net worth and the economic climate. At the end of every turn, the Bank will examine your net worth.

Your **Net Worth** is:

cash plus stock value plus PC value minus debt

Stock is valued at the end of turn price per share. PCs are valued at what you paid for them, but the bank will not appraise them at any figure higher than \$20/ mile.

Your maximum **Credit limit** is calculated as:

$Credit\ limit = Net\ Worth \times econ.\ level\ \%$

The economic level modifier is 60 to 80 per cent, as shown on the economic climate chart.

$Available\ Credit = Credit\ Limit - Loan/2$

If your current loan amount is less than your available credit, you can borrow additional money from the Bank up to your available credit limit. If your loan exceeds your available credit limit, the Bank will Recall a portion of the loan.

B. Bankruptcy If your debt exceeds your assets at the end of any turn, you are bankrupt. The Bank will seize all assets you own, but you will be absolved of all debt. You will be given a new starting amount of cash. You retain all Victory Points you have earned in prior turns and which you received this turn (other than for net worth, which is based on your end of turn assets).

C. Loan Recalls If are not bankrupt but your loan exceeds your available credit limit at the end of a turn, the Bank will require you to repay enough of your loan so that available credit is equal to or greater than 0. You may or may not have enough cash on hand to pay the loan recall. Any portion of the loan recall which you repay at the start of the turn in the "Repay Loan" action is deducted from your loan, and you will not pay interest on the portion you repay.

If you cannot or choose not to pay the loan recall in the "Repay Loan" action, the Bank will compel payment of the loan recall before it calculates your credit limit for the next turn. This occurs after you have received all your revenues and after you have paid interest on the current loan. If you do not have sufficient cash on hand at this point to repay the recall, the Bank will randomly seize and sell your assets until the loan recall is paid. Repayment is made first from cash, then random stock sales at end of turn prices, and lastly by selling PCs.

[Borrowing is a two-edged sword. The extra money will enable you to spend for more things on a given turn, and

can generate a lot more profit, particularly in good economic climates. On the other hand, your credit limit is subject to the vicissitudes of the values of your assets and of the economic climate. A seemingly safe loan can suddenly become excessive if your assets depreciate, resulting in loan recalls or even bankruptcy. You can never go bankrupt if you have no loan outstanding; but you will have less leverage than the other players who are borrowing money. The trick is to borrow a safe amount and beware of a sudden economic downturn.]

4.0 RAILROADS

"The public be damned! I am working for my stockholders."

- William Vanderbilt

4.1 Definition

A Railroad is defined for this game as a company which has issued stock to the general public and consists of at least one Line of track. A Railroad is created when a player incorporates a Private Company. All Lines of track in a Railroad must connect to at least one other line in that Railroad.

4.2 Stock

Stock represents a share in the ownership of a Railroad.

Definition of terms:

Shareholders are those who own issued stock

Treasury Stock is unowned stock held by the Railroad

Unissued Stock is the same as Treasury Stock

Issued stock is stock owned by players and by the Public.

Authorized Stock is the total of issued plus treasury stock.

Stock can only be bought and sold via the Stock Market, except for new stock issues or treasury stock sales by a Railroad to its president.

Active railroads at the start of the game will generally have some unissued stock in their treasury.

4.3 Issuing New Stock

"If this printing press don't break down, I'll be damned if I don't give the old hog [Vanderbilt] all [the stock] he wants of Erie."

- Jim Fisk during the Erie war

A) Alas, you can't use Erie's printing press to issue new stock (it was illegal even back then). A Railroad authorizes 5 shares of stock per mile for each Line of track built. New stock is authorized and issued in these situations:

1) PC Incorporation The new stock is issued:

20% to the PC owner for his investment.

10% is retained as Treasury Stock.

70% is brokered to the Public for starting cash.

The initial stock price is \$10 to \$18 per share.

2) Building a RoW

10% of the stock is retained as Treasury Stock.

10% bonus to each Director of the Railroad (up to 50% total)

Remainder is brokered to the Public.

3) Merger of a PC into the Railroad:

The railroad builds the PC line of track, and authorizes 5 shares of stock per mile of the PC.

10% is retained as Treasury stock.

20% to the PC owner for his investment.

10% to each Director (up to 50% total).

Remainder is brokered to the Public.

4) Railroad Mergers

The surviving railroad issues 1 new share of stock for each share of stock in the merging railroad. Shares of the merging railroad are simply traded for shares in the surviving railroad on a 1:1 basis. Treasury shares of the merging Railroad are added to any Treasury shares of the surviving Railroad.

B) Director Bonus When issuing new stock in situations 2 and 3 above, the railroad issues a stock bonus to every Director of that road at the start of the turn. Each Director receives 10% of the new stock, unless there are more than 5 directors. The total stock bonus cannot exceed 50% of the new stock, so if there are more than 5 Directors, each Director receives 50% of new stock divided by the number of Directors.

Directors must pay for this stock at a price of one-half the start of turn price per share. This stock is paid for by an automatic loan from the Bank for the full amount required so you don't have to worry about having sufficient cash to purchase a Director bonus.

[The purpose of this bonus is both to serve as a reward for being Director and to prevent, or at least reduce, the dilution of the Directors' percentage of stock in the railroad. The Directors would never authorize new stock if they risked losing their jobs as a result of issuing new stock. If there are more than 5 Directors in a railroad, there is a risk that new stock could reduce their holding below 10% of the issued stock.]

C) Brokered sales to Public

New stock brokered to the Public is not sold through the stock market so as not to depress the market price. Instead, the stock is sold to the Public through a broker at 10% less than the starting stock price.

4.4 Loans to/from President

A) A President may loan his Railroad as much money as he has after borrowing from the Bank or after repaying on his bank loan. Since loans from the President take place before any other railroad actions, the money is available for all subsequent railroad actions.

B) The President can order the Railroad to repay any part of any debt it owes him, up to the amount of cash it begins the turn with.

C) The debt to the President increases by 10% each turn as interest owed on the loan.

D) The debt to the President is cancelled if the railroad is reorganized or if there is any change in Presidents at the end of the turn. It is up to the President to make sure the debt is not lost. If the debt is cancelled, the Railroad's cash may be reduced up to the amount of the cancelled debt as other (non-player) tycoons loot the treasury.

E) The loan to the Railroad is not included in calculating the President's net worth. The Bank considers this unsecured loan far too risky to extend credit on it.

F) The debt to President is preserved when 2 railroads merge since both railroads must be controlled by the same President. Therefore, the debt is simply added to any president debt owed by the surviving road. If there is a change of Presidents in the surviving railroad at the end of the turn, however, the debt is cancelled as normal.

4.5 Efficiency and Capital Improvements

A) A Railroad's operating efficiency is measured on a scale of 1 to 99. The efficiency determines the operating costs of the Railroad. An efficient Railroad will have lower operating expenses (hence more profit) than a less efficient Railroad. A new Railroad will generally have good efficiency since it begins with modern equipment and methods. Each turn, however, efficiency will decrease due to deterioration of equipment and the invention of new machines and techniques.

B) A railroad can spend on Capital Improvements to offset this decrease or even increase its efficiency. Spending on Capital Improvements represents the purchase of new modern engines, improving track, building stations, training employees, etc. A Railroad cannot spend more than \$100 per mile on efficiency. Each \$1 spent on capital improvements (per mile) has a 50% chance of increasing efficiency by one point. Capital depreciation will average about 5 points per turn, so a Railroad would normally need to spend about \$10 per mile to maintain its efficiency, and more than \$10 per mile to increase its efficiency.

Efficiency is reported as a general level:

Excellent	-	90 - 99
Good	-	80 - 89
Average	-	70 - 79
Below average	-	60 - 69
Poor	-	50 - 59

Efficiency under 50 is very unprofitable.

C) Any Railroad with more than 3,000 miles of track has its maximum efficiency reduced by 1% for every 50 miles of track over 3000 miles. For example, a Railroad with a length of 3521 miles would have a maximum efficiency level of 88%.

[There were physical limits to how much track a single company could effectively manage in those days. Remember that even the telegraph didn't exist in 1840.]

4.6 Building a Right-of-Way

A) A non-bankrupt Railroad may always build the RoW which it owns at the start of the turn.

B) The minimum cost to lay track ranges from \$200 to \$400 per mile, depending on the economic climate at the start of the turn.

C) The President may order the Railroad to overspend on building by setting a building cost higher than the minimum cost per mile. The Railroad may overspend up to double the minimum cost. All amounts over the actual cost per mile are pocketed by the board of Directors. The excess is divided by the number of Directors plus 1. Thus, if a railroad with 2 directors overspends by \$90 per mile, each Director receives \$30 per mile.

[This rule simulates the common robber baron practice of setting up a separate construction company owned by the Directors, then hiring the construction company at inflated rates, pocketing the profits.]

D) In addition to the cost of building track, the railroad must pay to build into the Towns on the route. The cost to build into a Town is \$300 times the value of the Town.

E) The railroad pays building costs by borrowing. At least one half of the cost is paid for by issuing bonds, the remainder of the cost is paid either out of cash or by short term loans, depending upon the economic climate and the amount of cash the railroad has available. This financing is automatic, and you do not need to worry about how it will be done.

[The cost of laying track ranged from \$20,000 to \$40,000 per mile during this era. The Union Pacific was embarrassed in a scandal when Credit Mobilier, the construction company hired by (and owned by) the Board of Directors, charged \$50,000 per mile, but the chief engineer of the railroad could only explain \$30,000 per mile in actual costs. The UP suffered constant financial trouble due to the excessive debts this created, but the Credit Mobilier paid 100% dividends to its shareholders the first year from its profits.

The cost of engines and rolling stock was minor in comparison to the cost of laying track. The early locomotives cost about \$4000, and the B&O needed only 7 locomotives in 1840 to service its 180 miles of track. The cost of building into towns includes the cost of engines, rolling stock, major stations, repair facilities, and other terminal facilities.]

5) Instead of building, the Railroad may elect to abandon its RoW. If a RoW is abandoned, any land grant for that RoW is lost.

4.7 Acquiring a Right-of-Way

A. A Railroad may only own one unbuilt RoW at any time.

B. A Railroad may bid for a RoW if it does not own any RoW at the start of the turn or if it builds or abandons a

RoW which it does own.

C. The Railroad may only bid for a RoW which is connected to one of its existing lines, or which is connected to the RoW it is building.

D. A Railroad may not bid for a prohibited route as defined in 4.8.

E. The turnsheet will list all valid RoWs available to the RR.

F. To minimize the chance of not having a RoW available, a Railroad may bid for one alternative RoW in the event it fails to obtain its first choice.

G. A RoW is awarded to the Railroad with the highest political influence if two or more Railroads seek the same RoW. In the event of a political tie, it is awarded to one of them on a random basis.

H. A new RoW may gain the Railroad land grants.

I. A bankrupt Railroad may not bid for a RoW.

4.8 Prohibited Routes

Certain routes are prohibited from being part of a Railroad. Prohibited routes cannot be acquired by the railroad in any fashion. Thus, a Railroad cannot bid for a prohibited RoW, a PC cannot merge into a Railroad if it would be a prohibited route, nor may two Railroads merge together if it would result in prohibited routes.

1. No Railroad may own both routes in a double route connection.

2. No Railroad may have more than ONE route linking to Chicago, St. Louis, Memphis, Vicksburg, or New Orleans.

Rule 2 means that no railroad can "run through" the listed cities, so Eastern railroads cannot extend into the western half of the map and vice-versa.

4.9 Political Influence

"If you have to pay money to have the right thing done, it is only just and fair to do it." - Collis Huntington on bribing politicians

A) Non-bankrupt Railroads may spend to gain political influence. The amount of political influence is determined by the amount the Railroad spends per mile of track (start of turn mileage).

B) A railroad must spend at least \$1 per mile to gain any political influence. It may spend as much as it can afford out of its cash available. The Bank will not loan any money for this action. If the Railroad cannot afford as much as the President specifies, it will spend what it can afford out of its cash.

C) A Railroad will try to preserve sufficient cash for spending on political influence. Thus it will borrow additional money for capital improvements and RoW building rather than spend cash allocated for political influence.

C) Political influence determines which Railroad obtains a RoW if more than one railroad bids for a particular RoW.

D) When a RoW is acquired, the amount of land grants awarded is affected by the amount of political influence.

E) Political influence does not carry over from turn to turn. A railroad has no political influence other than what it spends for on the current turn.

[Political influence was a prime concern to all the early railroads to obtain favorable legislation, to obtain new rights of way, to get government contracts, and sometimes to avoid criminal prosecution. This expenditure represents various lobbying activities, free train passes, favors and bribes engaged in by the Railroads to keep the politicians happy. Political influence does not carry over from turn to turn since politicians had short memories and deep pockets. The cost is PER MILE because longer railroads had more local, state, and federal officials to donate to.]

4.10 Railroad Operations, Revenues and Expenses

A) During each turn a Railroad will operate its lines, generating revenue from passenger and freight traffic. The base revenue is roughly \$60 per mile of track, plus \$300 times the value of Towns. The base revenue is increased by 10% for Region over 1 that it connects to.

The gross revenue is also modified by the economic climate, ranging from -20% during panic to +20% during boom, and by a random factor.

B) After the adjusted revenue is calculated, the Railroad's operating expenses are calculated based on the Railroad's efficiency level and deducted from the revenue. An Excellent efficiency could have expenses approximately 60-70% of its revenues; efficiency levels of 50 or less will mean that costs equal or exceed

revenues.

C) The Profit level is the amount of revenue minus operating expenses. A negative profit amount means the Railroad lost money that turn.

4.11 Railroad Insolvency and Reorganization

"It's good fishing in troubled waters." - Dan Drew

A) **Insolvency.** A railroad which begins any turn with a negative cash balance is insolvent. A Railroad will become solvent during a turn if its cash balance is not negative either after stock market sales or after revenues and expenses are calculated. It is possible for a Railroad to start a turn insolvent, become solvent, and end up insolvent again. The determination of solvency and insolvency occurs automatically, and the President may run the Railroad as he or she sees fit; however, a President might wish to help the Railroad by loaning it money or by selling treasury stock.

B) **Bankruptcy.** If an insolvent Railroad does not become solvent during the current turn, it is considered bankrupt. The president of a bankrupt Railroad has one more turn to try to return the Railroad to solvency. A bankrupt railroad cannot build track, spend for capital improvements, spend for political influence, nor pay any dividends during a turn it is bankrupt. In addition, no other Railroad may merge into a bankrupt Railroad, although a bankrupt Railroad may merge into any non-bankrupt Railroad.

C) **Reorganization.** If a bankrupt railroad cannot become solvent during the turn, the railroad is reorganized by the creditors. Unlike an individual, however, the Railroad's assets such as land, track, stations, etc. are not sold off piecemeal. Instead, the creditors seize the entire Railroad. All existing stock in the Railroad is cancelled (all player-owned stock is wiped out). The debts of the Railroad are restructured to enable the railroad to operate profitably. A new bond debt is calculated and all loan debt is extinguished. The reorganized railroad then issues new stock at 5 shares per mile of track to the creditors, which simply becomes publicly owned stock.

4.12 Dividends: A Railroad may pay dividends to its stockholders each turn, if it has sufficient cash available. Dividends are paid during the RR operation phase, which occurs before stock splits. If two Railroads merge, their operations are combined and the dividend rate of the surviving railroad is used for paying dividends to the combined shareholders.

Dividends may not exceed \$99 per share on any turn. The President sets the proposed dividend rate. A Railroad without a player President will set a reasonable dividend rate.

[In theory dividends should only be paid out of net profits of a corporation. In this era the Directors were not actually restrained from paying dividends out of whatever cash was available, and Railroads would at times keep paying dividends despite lack of profits or losses in order to maintain the stock price.]

4.13 Merger of Railroads

A) A President of two Railroads may merge one of them into the other, if these conditions are met:

- 1) The Railroads must be connected at the start of the turn.
- 2) The railroad merged into cannot be bankrupt.
- 3) The merger cannot occur if it would cause prohibited routes (see Rule 4.8), unless the merger would be prohibited due to parallel routes only. In a parallel route situation, the merger is allowed, but one of the parallel routes is deleted from the railroad's lines: first priority is to delete a RoW, if possible, or if not, then a PC line. The RoW would then be available for other railroads to acquire, or a PC would return to availability.

B) Railroad mergers occur after bidding for Rights-of-Way but before railroad operations. All of the merging railroad's Lines, cash, Bank debts, president debt, land, and treasury stock are transferred to the surviving railroad.

C) The surviving railroad issues one share of stock for every share of the merging railroad. The new stock price is averaged based on the number of each issued.

D) Since a railroad may only have 1 RoW, if the surviving road already has a RoW, then any RoW owned by the merging road is abandoned and any land grants are lost. If the surviving road does not have a RoW, then it gets any RoW and land grants owned by the merging road.

(E) If the merging railroads have different engine or technology levels, the surviving railroad will have the higher level of both, but must pay the normal costs to upgrade all lines lacking the engines or technology. Bonds will be issued to finance this cost. If either railroad had a Grand Station, the surviving railroad will also have a Grand Station.

4.14 Election of Directors, President, and Chairman

In real corporations, the stockholders elect the Board of Directors, and the Board of Directors in turn elect the President and other corporate officers. In corporations with a large number of stock shares issued, the voting process can be effectively controlled by stockholders with a relatively low percentage of the stock.

In this game, the election of officers is simplified and occurs automatically so as not to slow the game. Elections take place at the end of each turn for next turn's officers. Voting is based upon the number of shares owned by each player at the end of the turn. Players may specify which railroads they wish to control as President on the following turn.

A. Directors: Any shareholder with 10% or more of the issued stock is automatically elected a Director of the Railroad. Being the Director of a Railroad earns victory points, gives confidential data concerning the Railroads finances, obtains a share of any new stock issued by the Railroad at a cheap price, and shares in construction cost overruns.

B. Chairman (of the Board): The Director with the most stock in the Railroad is the Chairman. The Chairman can appoint himself as President, but does not confer any other benefit.

C. President: The President is the person who actually manages the day-to-day operations of a Railroad. The President must be a Director. The Director with the highest number of shares who wants to be President is elected President. Thus, the Chairman of the Board has first option to become President, after which each other Director has the option to become President in order of the number of shares held. If no Director wants the job, then an anonymous president runs the road. The President is the only person who can issue orders for the railroad's actions on that turn. The President has the additional benefits of purchasing Treasury Stock cheaply, setting dividend rates (and getting VPs for dividends paid), and has an automatic spy on the number of shares held by other players in the railroad.

4.15 Double Tracked Lines

A railroad may "double-track" any line it owns. This means laying another set of tracks along its right-of-way, which reduces congestion and speeds up shipping. The busier the route, the more cost effective this is. A double tracked route increases revenue by $(\text{City1 value} + \text{City2 value}) \%$; for example, double tracking between a value 4 city and a value 5 city increases revenues by 41%.

The cost to double track is 25% the cost of the cost of normal laying track per mile: city size does not affect this building. The cost to double track must be paid out of cash (no bonds or loans issued to finance this expenditure).

4.16 Rate Wars

A railroad may declare a rate war with any other railroad which has one or more parallel routes by setting a percentage amount to reduce revenues along any parallel lines. The other railroad must automatically match the rate reduction to stay competitive. For example, the Penn railroad could declare a 25% rate war with the READ railroad, meaning both railroads would only receive 75% of normal gross revenues. Operating costs, however, remain the same, so an efficient railroad with lower costs will do better in a rate war.

4.17 Locomotives

During the game period, locomotives evolved into large, powerful machines. In 1841, only the Lion engine is available, but new locomotives will become available during the course of the game, particularly after the Civil War.

When a railroad incorporates, it begins with the best locomotive available. As new locomotives become available, a railroad's maximum possible efficiency will decrease if it does not purchase the new locomotives. Heavier and faster locomotives are expensive because rails and bridges must be strengthened, curves must be gentler, and other substantial roadbed improvements must be made to use the better engines.

The cost to purchase a better locomotive is \$10 time the difference in locomotives per mile of track. For example,

if a railroad has type 1 Lion engines and wants to buy #4 Mogul engines, it must pay \$30 per mile of track. Engine cost must be paid from cash; no loans or bonds will be issued for this cost.

A railroad may upgrade to one new locomotive per turn. A railroad does not need to purchase every locomotive, and it may immediately upgrade to the best locomotive if several are available.

Engines:

1. Lion 0-4-0 (game start)
2. Norris 4-2-0
3. American 4-4-0
4. Mogul 2-6-0
5. Atlantic 4-4-2
6. Prairie 2-6-2
7. Chesapeake 4-6-0
8. Consolidation 2-8-0
9. Pacific 4-6-2

4.18 Technologies

At the start of the game in 1841, the only technology available is Grand Stations. New technologies will become available during the game, slowly before the Civil War, more rapidly after the Civil War. Technologies always come available in the sequence specified below.

When a railroad first incorporates, it begins with all technologies currently available except Grand Station.

A railroad president may only buy ONE new technology per turn from the list of technologies available for that railroad. The cost to purchase a new technology is \$10 per mile, except for Grand Stations which cost a flat \$10,000. The purchase cost for a tech must be paid out of RR cash; no loans or bonds will finance this.

A Grand Station may only be built if the railroad connects to a size 4 or size 5 town at the start of the turn. A railroad may only have one Grand Station.

Different technologies have different effects:

<u>Technology</u>	<u>Effect</u>
A. Grand Station	increase revenue
B. Switch Yards	decrease costs
C. Steel Rails	decrease costs
D. Coal-burning engine	decrease costs
E. Block signal system	prevent disasters
F. Automatic couplers	improve safety
G. Pullman sleepers	increase revenue
H. Automatic brakes	prevent disasters
I. Refrigerated cars	increase revenue
J. Steel Bridges	prevent disasters

5.0 ECONOMIC CLIMATE

"The man who has money during a panic is a wise and valuable citizen." - Andrew Carnegie

The economic climate is a random game element over which the players have no control. The climate may change from turn to turn, generally getting better until a peak is reached, often followed by a severe downturn called a Panic in the 19th century. You will be informed of the current economic climate at the start of each turn. The climate changes during the stock market phase, but revenues, interest rates, and building costs are all calculated based upon the starting economic climate. Remember that a Panic can occur immediately following any turn in which the climate is at Good or higher.

The economic climate affects the stock market and determines loan interest rates and credit margins. The economic climates are:

Climate	Stock Market Effect	Loan Int rate	Credit Margin %
Boom	wild bull	8%	80
Great	strong bull	9%	77.5
Good	bull	10%	75
Improved	mild bull	11%	72.5
Normal	mixed	12%	70
Recession	mild bear	13%	67.5
Mild Depression	bear	14%	65
Depression	strong bear	15%	62.5
Panic	panic bear	16%	60

Players receive interest on their unspent cash at a rate of one-half of the loan interest rate.

Railroads pay interest on their bonds at a constant 6% rate.

Bank failures can occur during any economic climate below Normal. A bank failure causes a fraction of a player's cash deposits to be lost. It is assumed that these wily tycoons spread their cash deposits among many banks to minimize the effect of any one bank failing, so the major part of a player's cash is safe.

6.0 THE STOCK MARKET

"Daniel says up, Erie goes up.

Daniel says down, Erie goes down.

Daniel says wiggle-waggle, it bobs both ways"

- Wall Street saying about Dan Drew's control of Erie stock

6.1 Buying and Selling Stock

A) All stock purchases and sales, other than sales by a Railroad to its President, must be made through the Stock Market.

Each tycoon may make 6 stock market transactions per turn. Each transaction may be either to buy or sell stock in one particular railroad (you cannot both buy and sell stock in the same railroad). You may make up to 6 sales of stock. Stock bids are limited, based on the number of active railroads:

less than 15 railroads: 3 bids maximum

16 - 30 railroads: 4 bids maximum

31+ railroads: 5 bids maximum

The maximum bid for stock is 20% of the stock you don't already own in the railroad. No one can ever bid for more than 51% of the stock, so a player who owns 41% of the stock may only bid for 10% of the stock, and at 51% ownership cannot bid at all.

The maximum possible bid is always reported in your stock market report. If you bid more than the maximum, your bid will automatically be lowered to the maximum.

B) You may offer to sell as many shares of stock as you own. If you own less than 10% of the stock in a railroad, you may sell short in that stock after selling the number of shares you actually own, up to 10% of the stock.

You may bid for up to 20% of available stock in any railroad active at the start of the turn. The number of available shares is defined as the number of issued shares minus the number of shares owned by all directors minus the shares you own. The maximum number of shares you can bid for will be printed in the Stock Market Summary section of your turn report in the "Max. Bid" column. The Public owns all issued shares of stock not owned by players. The Public will both buy and sell stock in each railroad each turn. The Public takes into account the price of the stock, the dividends paid, the reported profit per share, the economic climate, and other factors, plus a large random factor, to determine the number they will bid for and sell. The Public will tend to want to buy stock more stock in good times and to sell more stock in bad times.

The Railroad itself may offer to sell any treasury shares it has in the stock market. Any shares sold to the stock market are added to the supply of shares available in the price equation. The railroad receives the normal trade price for all treasury shares sold to the market.

C) At the start of the stock market phase, the computer will examine your stock trade orders. To the amount of

cash you have available at the start of the phase, the Bank will give you credit equal to one-half of all stock sales you are making at the start of turn stock prices. This is the minimum amount you could possibly receive during stock trading, so the Bank is not being generous. No credit is extended for short sales of stock (see below). Short sale amounts are deducted from the cash considered available.

The computer also examines each stock purchase order in the sequence you designate on your turnsheet. For each purchase, the computer deducts the amount that purchase would cost you at start of turn prices. This is the maximum you might spend for each purchase. If your

cash and credit are insufficient to purchase that number of shares, the computer will limit your purchase order to the number of shares you can afford to bid for, regardless of your subsequent transactions.

The calculation of limits on your stock market transactions is done in the sequence you specify on your turnsheet. We recommend that you do all sales of stock first, ahead of any short sales or purchases, and that you put the short sales and purchases in the order of priority you want them done (#1 highest priority to #6 lowest priority). If you do not write the sequence in the boxes provided, we will assume that you don't care what order they are in and we will enter them in the computer in an arbitrary fashion.

Note that this all occurs before any trading actually occurs, so your actual income from stock sales may be much larger or the costs of buying stock may actually be smaller than calculated.

Example: If you begin the turn with \$1500, borrow \$1000, spend \$500 purchasing a PC, and spend \$200 buying treasury stock from a Railroad, you would have \$1800 available at the start of the stock market order checking phase.

If you make the following sequence of stock market orders (starting prices shown), your actions would be resolved in this fashion:

1st Sell 20 NYC @ \$20/share -> +Credit of \$200 = \$2000

2nd Buy 100 B&O @ \$10/share -> -Debit of \$1000 = \$1000

3rd Short 50 N&W @ \$20/share -> -Debit of \$ 500 = \$ 500

4th Buy 100 SCL @ \$10/share

At this point you lack the \$1000 in cash and credit necessary to bid for 100

SCL. With \$500 available, the computer will limit this to what you can afford, and change the order to:

4th Buy 50 SCL @ \$10/share -> -Debit of \$500 = \$ 0

All further buy orders would be aborted unless you sold more stock for additional credit.

Note that this order checking occurs BEFORE any stock market transactions actually occur. You will usually make more money selling stock and spend less purchasing stock than the minimum amounts calculated here. These calculations are based on minimum income and maximum expense to make sure that you can afford to purchase all shares you bid for no matter how badly stock prices fall. The stock market results shown in your personal report are your true income/expense during the actual stock market trading, after your orders were limited in the order checking phase. You will usually have a cash surplus after actual stock market trading.

6.2 Short Sales of Stock

"He who sells what isn't his'n

Must buy it back or go to pris'n."

- Dan Drew's saying on selling short

A) You may always sell 10% of the stock in a Railroad, even if you own less than 10%, as one of your 6 stock market transactions. You must sell whatever stock you do own first, then any additional sale of stock you don't own is treated as a short sale. A short sale simply means selling stock you don't own. Any stock sold short is sold at the normal trade price, but you must buy any stock you sell short at the end of turn price. In addition to the 10% limit, you must have sufficient cash available to pay one half of the cost of buying that stock at the start of turn price (this is not what you will actually pay, but simply the maximum credit the Bank will provide).

B) The repurchase of stock sold short occurs automatically, and you are simply told the net profit or loss from the transaction. If you lose money on the transaction in excess of your cash, the Bank will loan you enough to make good on the short sale.

C) Example: If a RR has 1000 shares issued, and you own 40 shares, you may sell 100 shares (10% of issued stock). The first 40 shares sold are the ones you own at the start of the turn, the other 60 shares are sold short. If you owned no shares, all 100 shares you sold would be short sales. In other words, you cannot sell short if you are a Director in the railroad since by definition you own more than 10% of the stock.

[The idea behind selling short is that you expect the stock price to fall, so you sell stock today, and make good on the sale by buying enough stock to cover the short sale later at the (hopefully) lower price. If you are wrong and the stock price goes up, then you must pay more for the stock and you lose money on the transaction. The short sale tactic is very effective during a panic or depression, particularly when a stock price is abnormally high. Selling short was also a popular method of raiding, i.e. trying to drive a competitor to ruin.]

6.3 How the Stock Market Works (in this game)

All stock market trading occurs simultaneously after the stock order checking phase is completed. The sequence of player stock bids and sales has no bearing on the actual market trading. A player's sequence of stock actions is used only to determine the sequence of cash allocations for his or her own stock orders during the order checking phase.

A) For each railroad, the computer calculates the number of shares offered and bid for by the Public. Both values are determined by an algorithm using the current economic climate and the stock price in relation to the dividends paid and to profit per share last turn, and a random effect. The Public will seldom offer to sell more than one-half the stock it owns. The Public will bid for a number of shares ranging from 10% to 300% of the shares it offers for sale.

B) The Supply of stock is the number offered by the Public plus the number offered by the Railroad plus the number offered by players plus one-half of any short sales.

C) The Demand for stock is the number bid for by the Public plus the number bid for by the players.

D) The formula for a stock's end market price is:

Start Price * (Demand/Supply) ^{.7}

Furthermore, the Demand/Supply ratio cannot exceed 20/1 nor can it be less than 1/20. The final end price cannot exceed \$200 per share.

Thus, if the supply of stock equals the demand, the market is even and the stock price is unchanged. If the supply of stock is greater than the demand, the stock price will decrease. If the demand is greater than the supply, the stock price will increase.

E) The number of shares traded is the number of shares sold.

F) The trade price is the median value between the start price and end price (rounded up). All shares traded are bought and sold at the trade price.

[It is assumed that both buyers and sellers trade stock in small lots throughout the trading period so that the net price paid or received is the average of all transactions.]

G) Actual stock sales and purchases. All stock offered for sale by players is sold at the trade price regardless of Demand.

The number of shares purchased depends on the number of shares offered for sale. If the Demand for stock is the same as or less than the Supply of stock, each player can buy all the shares he bid for. If Demand is greater than Supply, each player can only purchase a number of shares equal to his bid times the Supply divided by the Demand.

H) Example: Railroad X has issued 1000 shares of stock, starting stock price of \$20 per share. The Railroad has 50 shares of Treasury stock. Player 1 has 200 shares, player 2 has 150 shares, Player 3 has 50 shares. The Public owns the other 550 shares.

Assume that the Railroad offers its 50 shares, Player 3 offers his 50 shares, and the public offers 100 shares.

Player 1 bids for 50 shares, Player 2 bids for 200 shares, and the Public bids for 150 shares.

The market result is: 200 shares offered and 400 shares bid for. End stock price will be \$40 per share, trading price is \$30 per share for this turn. The 200 shares are all sold. The bidders can only purchase 50% of the stock they bid for, so Player 1 receives 25 shares, Player 2 receives 100 shares, and the Public buys the other 75 shares.

If the offers and bids were reversed, then 200 shares would be bid for, and 400 shares offered. The end stock price is \$10 per share. All 400 shares are sold at the trading price of \$15 per share. Players each receive all stock bid for, and the Public buys the remainder at the trading price.

6.4 Cornered Stocks

If Directors own more than 50% of the issued stock, that stock is considered cornered. An announcement will appear in the news reports for all cornered stocks.

A cornered stock has no effect on the stock price or trading; it is simply to advise players that no player can buy 10% of the stock of that railroad in one turn (to gain a directorship) under the bidding limits of rule 6.1(B) above.

6.5 Stock Splits

If the price of a stock should exceed \$100 at the end of a turn, the stock will split. A stock can split 2 for 1, 3 for 1, or some higher integer ratio. All stock owned is multiplied by the split ratio, and the end stock price is divided by the split ratio (rounded down). Note that a stock split will diminish the amount of dividends a Railroad can pay per share.

7.0 LAND GRANTS

"A railroad company approaches a small town as a highwayman approaches his victim." - Henry George

A) To induce railroads to take certain routes, both the state and federal governments offered railroads various incentives. The railroads themselves often extorted local benefits by threatening to bypass towns that failed to offer enough. This was especially true after the Civil War in the less populated western regions, where the economic benefit to the railroad in building some routes was not very large. These incentives have been combined into the most prevalent form, that of the land grant, in which the railroad was offered a section of land (1 square mile) for each mile of track laid. The railroads could then sell this land to defray the cost of laying the track.

B) Land grants are only available for Rights-of-Way acquired, and are awarded on the basis of the level of political influence and on the value of the two towns at the ends of the route. Thus, there is no chance that a route connecting 2 five-point towns will get a land grant, and it is almost certain that land grants will be awarded for a route connecting two one-point towns.

C) When a railroad obtains a land grant for acquiring a route, it does not get the land itself until it actually builds the route. When the route is built, the land grant is added to any other unsold land the railroad owns.

D) Unsold land from land grants is automatically offered for sale each turn. The demand for land and the price paid for land varies according to the current economic climate.

8.0 THE CIVIL WAR

The American Civil War started in 1861 and lasted until 1865. The railroads had just started to expand across the Mississippi when the war started. The war suspended westward expansion as both the North and South required that the railroads concentrate on the war effort. The armies soon learned how vital the rail lines were, and a main strategy became tearing up each other's rail lines, which Sherman did so well in his march through Georgia. To historically simulate the Civil War would be too drastic for a balanced game, particularly for the Southern railroads, which were in shambles by the end of the war and had been paid for their services in Confederate money.

The Civil War occurs on Turns 11 and 12. The effects are:

- 1) No railroad may build a RoW during the Civil War turns. Railroads may still bid for a RoW, and PCs may be incorporated or merged into railroads.
- 2) The economic climate cannot be less than normal during the war due to the wartime economic conditions.

The Civil War effectively divides the game into an Eastern phase during the first 10 turns, with the Western phase coming after the war.

9.0 THE TURN REPORT

Each turn, you will receive a computer-generated report of the main actions which occurred on the prior turn and a summary of the current game situation. The Turn Report is divided into the following sections:

9.1 Headlines

The first section will contain news headlines of important events which occurred during the last turn, along with any messages or announcements from other players in the game, or from us. The historical messages under World & National News are strictly for historical flavor; these headlines have no effect on the game.

9.2 Player Summary

This section lists all the player positions in the game. The players are listed in order of their net worth, highest to lowest. For each player is shown the Railroads controlled, the PCs owned, their stock in Railroads you control or which you spied on, the player's real name (if not an anonymous game), and the player's phone number (optional for each player).

9.3 Railroad Summary

All active Railroads are listed in this section. The columns of data are:

Track: The total mileage length of Lines in this Railroad.

Revenues: The adjusted gross operating revenue.

Op. Expense: The operating expenses based on efficiency.

Bond Debt: Total end of turn bond debt.

Loan Debt: Total end of turn short term loan debt.

Pft/sh: Operating profit (minus debt interest) divided by the number of shares issued.

Div/sh: The actual dividend rate paid per share that turn.

Land: The land owned by the railroad available to sell.

Grant: Potential land grant if railroad builds the RoW it owns.

Pres: President

Chr: Chairman (director with most shares)

Other Directors: All other Directors in addition to Pres and Chr

Below the data columns are listed all of the Lines in each Railroad.

9.4 Stock Report

The stock market activity, stock data, and your stock activity for each Railroad are shown in this section. The stock market activity for merged Railroads is not shown.

The 5 left hand columns show the stock market activity. The end price is the stock price after stock splits and railroad mergers, so it does not necessarily show the price after market transactions.

The center two columns are the number of shares issued and treasury stock for each railroad.

The right-hand columns contain the data on your stock activities, and the number of shares you own at the end of the turn. The last column of this section advises you of the maximum number of shares you can bid for (20% of the issued shares you don't own).

The last column shows the number of shares owned by the player you spied upon.

9.5 Private Companies Available

This section lists all PCs available and offered for sale by players, along with the current asking price. All PCs shown may be bid for on the current turn, but remember that a player can increase his asking price by 20%.

9.6 Private Report

This section summarizes your cash flow for last turn's actions. The end cash amount is the amount of cash you start the next turn with. If you go bankrupt, the end cash will not be the net left after your actions. At the end appears a summary of your assets,

debt, and credit limit at the end of the turn.

In the right-hand columns are displayed the cash flows of all railroads of which you are a Director and any you spied on.

10.0 THE TURNSHEET

Attached to each turn, except the final turn, will be a Turnsheets for you to fill out all actions you wish to take for the current turn. You can always do Personal Actions for your character. If you are President of any Railroads, you will be able to give actions for those RRs.

The Turnsheets will usually indicate the maximum and minimum amounts for any action. Since the computer cannot predict your actions, you may actually be able to spend a different amount.

To the left of some boxes are railroad numbers. These numbers are only for our use in entering your orders, and you may ignore them. You may use these numbers instead of the railroad's abbreviation elsewhere if you want to.

10.1 Player personal actions

Each turn, your character can perform the following actions:

A) Borrow or Repay Bank Loans

- 1) You cannot borrow more than your available credit limit.
- 2) You cannot repay more than the amount of cash you have.

B) Private Company orders:

For any PC you own you may take ONE of these actions:

1) SELL the PC by setting a minimum asking price.

- a) The minimum asking price must be at least \$1 per mile.
- b) The minimum price cannot be more than 20% more you paid for it, but you can always set a price of \$10 per mile even if you paid less than that.
- c) If you set a minimum price of less than \$10 per mile, the Public will purchase it if no player purchases it.
- d) Once you offer it for sale, you cannot withdraw it from sale, but you may change the asking price to any lower amount or up to 20% higher instead of taking either other action below.

2) MERGE it into a Railroad

- a) It may merge into ANY Railroad it connects to at the start of the turn, but cannot merge if it would result in prohibited routes.
- c) The Turnsheets will list all RRs you may merge the PC into.
- d) The Railroad will give you stock equal to the length of the PC.
- e) Since PC purchases occur before PC mergers, if you offer it for sale and another player buys it, this action will be aborted.

3) INCORPORATE it, making the PC a new operating Railroad

- a) The PC becomes an active Railroad and builds its Line of track.
- b) It authorizes and issues new stock [see Rule 4.3 (1)(A)].
- c) You will receive 1 share of stock per mile.
- d) You can be first President by asking to control this new RR.
- e) If offered for sale and purchased by another player, this action will be aborted.
- f) On the turn of incorporation, the new RR is assumed to have a non-player president since elections for officers occurs at the end of the turn. Therefore, you cannot take any actions such as bidding for a RoW until the following turn (assuming you ask to be president).

If you do not own two Private Companies, you may BID FOR a PC.

- 1) If you own no PCs, you may bid for 2 PCs. If you own one PC, you can bid for one more PC.
- 2) All PCs available for sale at the start of the turn (including those offered for sale by players on prior turns) will be listed on the Turnsheets. You may only bid for a PC which is listed as available at the start of the turn. PCs may not be purchased on the same turn that another player offers it for sale: i.e., no private deals without allowing

all players to bid for the PC.

To bid for a PC, write the amount of your bid in the box next to the one you wish to purchase. If you can bid for 2 PCs, write a 1 or 2 in the sequence box.

3) You must bid at least \$1 per mile.

4) You cannot bid more than the amount of cash you have left after prior actions. All bids are simultaneous, so if you bid for two PCs you must have enough cash to pay for both of them. If you try to bid more than the cash you have available, your bids will be reduced to what you can afford to pay in reverse sequence of bids.

5) A PC is sold to the highest bidder at or over the asking price.

C) Buy or Sell Stock in the Stock Market

1) The Turnsheets will list all active Railroads, with a box to sell stock and a box to buy stock in each railroad.

2) You can buy OR sell stock in up to 6 Railroads per turn.

3) You can sell up to the number of shares you own in a Railroad.

4) You can always sell up to 10% of any stock in a short sale, except in a cornered stock, even if you own less than 10%, as one of your six transactions.

5) You can bid for up to 20% of any stock you don't own. The maximum number is shown in the Personal Stock report. Bids for stock are limited to the amount of cash you have available at the start of the phase.

6) Be sure to specify the sequence that you want your stock trades done, otherwise they will be done in an arbitrary sequence.

D) Control Railroads

1) You may seek to be elected President of TWO Railroads for the following turn. You have two RR slots, RR1 and RR2, for controlling railroads. These slots are shown in the Player Summary section. Designate the railroad's you wish to attempt to control next turn by writing the slot number beside the RR abbreviation in this section.

2) If you incorporate a PC, you can circle that PC for one of your two choices.

3) To be elected President, you must be a Director (own 10% of the stock) by the end of the current turn. You must also have more stock than any other player seeking to be President of that RR.

4) If you change a RR in one slot and fail, the computer will only attempt to return you to the presidency of the original RR in that slot. This allows you to pick which starting RR you wish to try to return to if your attempt to control a new RR fails.

You may resign as president by so indicating. This is an absolute resignation, effective at the end of the current turn. If you do not specify that you are resigning, and leave the control boxes blank, we assume you intend to continue controlling the same railroad(s). If you substitute another railroad for control, if the substituted control attempt fails, you will try to keep control of the original railroad in that spot.

E) Merge Railroads

The turnsheet will indicate whether you may merge railroads.

1) You must be President of both Railroads at the start of the turn.

2) A Railroad may NOT merge into a bankrupt railroad, although a bankrupt railroad may merge into a solvent Railroad.

F) SPY. You may employ Pinkertons (detectives) who will try to ferret out the sensitive financial data that other robber barons wish to keep secret. You may spy on one player and on one RR. You automatically spy on Railroads you are president of at the end of the turn, so don't waste your spy on a Railroad you safely control.

G) MESSAGE. You may write a one-line (80 character) message that will be published to all other players. If you exceed 80 characters including spaces and punctuation, your message will be arbitrarily shortened. We will not publish obscene or offensive messages, and we reserve the right to modify or omit any messages we deem inappropriate for the game.

10.2 Railroad actions

The President of a Railroad can take issue any of the following actions for the Railroad:

A) Borrow or Repay President Loan.

1) The railroad can borrow as much money as the President has after borrowing from the Bank.

2) It can repay the President as much as it has at the start of the turn, up to the amount of the President's loan.

B) Repay Debt to the Bank.

This action repays a portion of the principal of its bank loans. It can only be paid out of starting cash, plus or minus any president loan sums. Debt repayment is applied first to short term loans, if any, and the excess is applied to bond indebtedness.

3) A railroad may incur short term debts during a turn when it lacks cash to pay for some expense. This borrowing occurs automatically during a turn, so you never need to order a railroad to borrow money.

4) A Railroad must pay interest on its outstanding loans at the interest rate determined by the economic conditions.

C) Sell Treasury Stock to President or to Market.

1) Treasury stock is unissued stock held by the Railroad. See Rule 4.3 on how Treasury stock is generated.

2) The Railroad may sell any treasury stock it has at the start of the turn to its President. The President purchases the stock at 50% of the market price. The number of shares sold is limited by available shares and by the amount of cash the President has. The cash for this sale is that available immediately after loans to or repayments from the railroad.

[This simulates the robber baron technique of 'watering stock', in which the President would give assets with an inflated value to the company in exchange for stock.]

3) Any treasury stock not sold to the President may be sold on the stock market to generate cash for the Railroad. Treasury stock sold at the stock market is sold for the normal trading price, and adds normally to the supply of stock.

D) Capital Improvement Spending

1) The Railroad can spend on capital improvements to reduce or offset deterioration, or even to increase its efficiency. The amount spent is entered as a cost per mile of track. A railroad may spend from \$1 to \$50 per mile of track to increase efficiency. About \$10 per mile should be spent to maintain a railroad's current efficiency. Each \$1 spent has a 50% chance to increase efficiency, if below maximum efficiency. Normally \$10 per mile will maintain the current level of efficiency.

2) Write the amount you wish to spend per mile in the box provided on the turnsheet. This action is automatically financed by bonds, loans, and from cash available, so you do not need to worry about whether the Railroad can afford this action.

E) Build Right-of-way it owns at the start of the turn.

1) The turnsheet will display the minimum cost per mile to build the RoW on that turn. Also shown will be the maximum amount per mile if you wish to overspend on building.

2) To build the RoW, write the amount you wish to spend per mile in the box provided. RoW building is automatically financed by bonds and loans.

3) To abandon a RoW, do not enter any amount in the Build cost box; instead, put a check mark in the Abandon box.

F) Political Influence Spending

1) A non-bankrupt railroad may spend money to acquire political influence for the turn. It cannot spend more money than it has available (no loans made for this action).

2) A railroad must spend at least \$1 per mile to gain any political influence. This minimum will be stated on the turnsheet. Each multiple of this minimum will increase the political influence by 1.

3) To spend for political influence, write the TOTAL amount you wish to spend in the box.

G) Bid for Right-of-Way

1) A Railroad can bid for any RoW which is not owned by another Railroad, and for an alternate RoW in case it fails to obtain its first choice.

2) The turnsheet will display all valid, available RoWs. Write a number 1 in the box beside your first choice and a 2 for your alternate choice. The RoWs shown are only those as of the start of the turn; other RoWs may become valid during a turn.

3) A Railroad may bid for a RoW which another Railroad abandons on the same turn, or for a RoW adjacent to a PC which merges into the railroad during the turn. Since these will not be shown as available on the turnsheet,

you must write in the RoW as one of the 2 bids. If the RoW bid for does not become available, the bid fails.

H) Set Dividend Rate

- 1) Write the \$ amount you wish the Railroad to pay in dividends per share, up to a maximum of \$99 per share. The Railroad will pay up to this amount in dividends, up to the amount of cash it has available.
- 2) If you leave this blank, the dividend rate will be unchanged.

11.0 Miscellaneous

11.1 Bank Failures (explained)

In any turn in which the economic level is below Normal, a bank failure may occur causing a tycoon to lose a random amount of cash from the funds on deposit after stock market transactions. It is assumed that no wily tycoon would ever deposit all his money in any one bank, so losses can never exceed 33% of cash.

11.2 Random events (new)

Random events are extraordinary costs a railroad may incur during a turn. The following random events may occur:

1. Accidents due to low efficiency levels
2. Political/social troubles due to low political spending
3. Disasters due to antiquated technology

Note that all adverse events can be prevented with good efficiency, generous political donations, and up-to-date technology.

11.3 Game Records (new)

The player attaining the highest VP over all prior games in any category will be recorded and reported at the end of the game. A score of 500 for Robber Baron will replace the record of any prior record holder.

Appendix A: Sequence of play (revised)

1. Tycoons borrow/repay Bank loans
2. Railroads borrow/repay loans from their Presidents
3. Railroads repay Bank loan and bond debt
4. Railroads sell treasury stock to their Presidents
5. Tycoons purchase Private Companies, offer PCs for sale
6. Stock Market phase
 1. Stock market transactions checked
 2. All stock market transactions done
7. Tycoon financial phase
 1. Stock market purchases deducted; sales added
 2. Pay for Prodigal Victory Points
 3. Receive interest on cash balance
8. Railroad Capital Expenses:
 1. Repairs (\$0 to \$50 per mile)
 2. Upgrade locomotives
 3. Buy a new technology
9. Railroad Construction
 1. Private Companies incorporatePrivate Companies merge into RRs
Build new line for RoW or abandon RoW
(Directors pay for new stock issued with loan)
(Directors receive \$ for RR build overspending)
2. Double track existing line
10. Railroads spend for Political Influence

11. Railroads seek new RoWs, acquire new land grants
12. Railroad mergers occur
13. Railroad Operations
 1. Revenues adjusted and collected
 2. Operating expenses paid
 3. Bond and loan interest paid
 4. Random event costs paid
 5. Dividends computed and paid to shareholders
14. Tycoon final financial phase
 1. Pay loan interest
 2. Emergency loans made
 3. Determine tycoon solvency/bankruptcy
 4. Calculate new credit and borrowing limits
15. Elect railroad Directors and Presidents for next turn
(stock splits occur prior to elections)
16. Calculate all Victory Points, check for end of game.

Appendix B: Historical Background

In this age of airplanes and automobiles, it is hard to visualize what the invention of railroads meant in the nineteenth century. In 1800, there were very few forms of inland transportation. Horse-drawn wagons were the primary means of overland transport. Where geography permitted, goods could be more efficiently transported along rivers or other water routes, and early towns arose near waterways. There were two problems with water transport: first, you went where the river went; and second, the northern waterways froze up during the winter. You could always dig a canal, in effect making your own river going where you wanted, and in the 1820's and 1830's canal building became very popular. Unfortunately, canals were extremely expensive and often impractical, and still subject to winter freezing.

In the United States, the need for a good transportation system was essential to link the eastern seaboard with the huge interior region to the west of the Appalachian Mountains. When the first small railroads were begun in Britain, American entrepreneurs saw that this was exactly the reliable bulk transportation system America needed, and the first American railways, the B&O, the C&H, and others, were started in the early 1830's. Rapid improvements in railway technology quickly made canals and wagons obsolete for long distance transport.

After the railroads crossed the Appalachian Mountain barrier in the 1840s, the hard part was done. The rolling hills and plains west of the Appalachians were ideal for railroads, and so the race was on to the cattle and grain areas of the Midwest. The natural goals were Chicago and St. Louis, which were reached during the 1850s. The broad Mississippi River, however, was a formidable obstacle to the eastern railroads. Bridges were only feasible above St. Louis. In addition, Chicago and St. Louis did not permit railroads to pass through their cities in order to preserve their status as connection terminals.

As new railroads began to reach west out of Chicago and St. Louis, the Civil War in 1861 halted major rail expansion. The resources of the railroads were devoted to the war effort. The American Civil War was the first major war which used railroads extensively for supplying the large armies and for massive troop movements. When the war ended, the railroads were poised to expand westward to tap the rich resources of the west. The gold fields in California were the main attraction. A new race began across the vast western plains and the Rocky Mountains to the Pacific Ocean. The first 'transcontinental' link was completed in 1869 when the Union Pacific line met the Central Pacific in Utah.

It was not accidental that the nineteenth century was also the age of industrialization. The efficiencies of centralized mass production could only be realized when it became cheaper to produce and transport goods to a distant market than they could be produced locally. The extensive railway system made possible the integration and centralization of industry into monopolies during this era.

There were thousands of railroads begun by ambitious men during the period. Some prospered and became great Railroads, but many failed and most were absorbed into larger railroads. It was an era of unrestrained free enterprise, without any government regulation or interference. Railroading attracted all sorts, men of genuine vision and ability to unscrupulous robber barons seeking only personal profit.

By 1890 the basic rail network was complete and the federal and state governments began to seriously regulate railroad operations, which signaled the end of the era of the robber barons.

RECOMMENDED READING: The Robber Barons by Matthew Josephson, 1934, 1962.

Appendix C: Suggestions for Playing the Game

Here are some very general suggestions on how to play the game based upon actual experience with the game. These suggestions are intended only as a guide. No set of guidelines can cover every situation, and there will be times when it would be best not to take the advice given.

The first turns. At the start of the game there will be about 6 active railroads and about 20 Private Companies available. Your first decision will be whether to try to purchase a PC and/or to buy enough stock to become president of one of the Railroads. You will probably want to borrow as much as you can for your initial actions. Buying a PC is always a good investment, especially if you can buy one cheaply. If you get outbid for PC's on the first turn, keep trying on the next turn since fewer rival bids can be made.

If you want to control one of the starting railroads, you will want to purchase stock in the railroad. Concentrate on buying shares in one railroad, bid for the maximum number of shares, and ask to control that railroad. Sell stock in the other railroads if necessary, to raise enough money for your stock bids. If the demand for stock is too great, no one will be able to buy enough to become president. Either sell out your stock and try elsewhere, or keep buying until your rivals give up on the railroad. If you own a PC connected to the Railroad, you will be in a powerful position to take control by merging the PC into it along with buying more stock.

Spy on the Railroad you are interested in so that you can see who else owns stock in that Railroad. Know who your direct rivals are.

Borrowing Money. You can never go bankrupt if you don't owe any money to the Bank. Having no loan is very safe and very conservative, but players who do borrow cash will be able to bid more for PCs and bid for more stock, giving them more assets which can appreciate in value. While the economy is enjoying above normal times, borrowing is relatively safe. In bad times, however, depreciating assets can result in loan recalls or bankruptcy. Never borrow more than you need, and be cautious about borrowing to your credit limit. A player who is near his credit limit can be ruined if the other players force his stock prices down.

PCs. Owning a PC gives you a lot of options. Usually, you will want to either incorporate it and become president of the new railroad, or you will want to merge it into a railroad. Incorporating a PC is a safe way to become president of a railroad because you will own 20% of the stock; on the other hand, some PCs have very little chance of expansion as a railroad (e.g., the B&H). Merging a PC into a railroad gives you a good stock bonus and may give you a directorship or even presidency, and enables you to bid for a new PC on the next turn.

Controlling a Railroad. What's a railroad robber baron without a railroad to manipulate? Presidents have more ways to earn victory points, and more things to do each turn. If you want to remain president, watch out for rivals who want to take it from you. A short railroad is vulnerable to PC mergers which can alter the percentage of shares dramatically. You can protect your position by merging your own PC into the railroad, or by purchasing treasury shares from the railroad, or by buying more stock on the market.

If you own two railroads, try to connect them. This will give you the option of merging them, and will give you a larger railroad system for victory points.

Running a Railroad. Bid for a westward right-of-way, then start building to westward regions. The goal is to connect to new regions, particularly to the Central and Mississippi regions. The routes into these regions are limited, so waste no time. Spend for political influence if another railroad connects to the RoW you want. How you run the railroad depends on what victory points you want to earn. You can loot the railroad for short term profit, or build the railroad as a long-term investment. If you want the railroad to do well in the long run, be sure to raise its efficiency to the excellent range.

Playing the Stock Market. The rule is simple: buy low and sell high. Unfortunately, this is easier said than done. A stock's price can go up or down depending largely on what the public and the other players do in the stock. Fortunes can be made or lost quite easily. Stock prices in new railroads will usually rise rapidly, but the number of shares you can buy will be relatively small.

Don't buy high priced stock during panics or depressions. This will cost you more in the long run than you can gain in the short term, and probably will lead to bankruptcy.

When you bid for stock, it is usually better to bid the maximum number possible. First, if all else is equal, your bidding pressure will raise the stock price, making the shares you buy more valuable. Second, you always want to become a director of the railroad, if possible. Buying a few shares of many stocks is generally a waste of time.

Never purchase more than 50% of a railroad's stock. If the stock gets cornered, the stock price will fall, and the biggest loser will be the person holding the most shares.

Selling stock short can be an effective tactic, but can also be quite dangerous to your financial health. If a stock price is too high, particularly in bad economic climates, selling short can be very profitable. This is best done as a group action for maximum effort to depress a stock's price.

Appendix D: RR list

N#	Code	Length	Name
1	B&M	145	Boston & Maine
2	GT	73	Grand Trunk
3	B&A	201	Boston & Albany
4	B&H	110	Boston & Hartford
5	NYC	148	New York Central
6	HRL	142	Hudson River Line
7	NYNH	110	New York & New Haven
8	ERIE	287	Erie Lackawanna
9	CNJ	134	Central New Jersey
10	C&A	92	Camden & Amboy
11	LV	130	Lehigh Valley
12	PENN	104	Pennsylvania
13	READ	104	Reading
14	B&O	160	Baltimore & Ohio
15	C&O	94	Chesapeake & Ohio
16	RF&P	117	Richmond, Fred. & Potomac
17	R&D	76	Richmond & Danville
18	N&W	82	Norfolk & Western
19	N&S	243	Norfolk & Southern
20	W&W	120	Wilmington & Weldon
21	W&M	133	Wilmington & Manchester
22	NER	185	Northeastern Line
23	C&H	129	Charleston & Hamburg
24	S&A	138	Savannah & Augusta
25	SCL	139	Sea Coast Line
26	S&G	157	Savannah & Gulf
27	COG	86	Central of Georgia
28	LS	182	Lake Shore
29	P&LE	131	Pittsburgh & Lake Erie
30	MRLE	138	Mad River & Lake Erie
31	P&FW	191	Pittsburgh & Ft Wayne
32	G&C	94	Greenville & Columbia
33	GTW	107	Grand Trunk Western
34	M&C	193	Marietta & Cincinnati
35	VC	293	Virginia Central
36	A&WP	152	Atlanta & West Point
37	BRL	185	Blue Ridge Line
38	A&GW	116	Atlantic & Great Western
39	TP&W	140	Toledo, Peoria & Warsaw
40	WBSH	114	Wabash Line
41	MC	152	Michigan Central
42	A&C	137	Atlanta & Chattanooga
43	A&T	143	Alabama & Tennessee
44	GM&O	135	Gulf, Mobile & Ohio
45	N&C	151	Nashville & Chattanooga
46	NO&J	183	New Orleans & Jackson
47	SM	44	Southern Mississippi
48	MN	102	Michigan Northern
49	MS	204	Michigan Southern
50	O&M	165	Ohio & Mississippi

51	MON	184	Monon Line
52	FW&C	114	Ft. Wayne & Chicago
53	C&C	202	Cincinnati & Chicago
54	C&EI	184	Chicago & Eastern Illinois
55	L&N	186	Louisville & Nashville
56	IC	185	Illinois Central
57	C&NW	120	Chicago & Northwestern
58	CRIP	150	Chicago, Rock Is. & Pacific
59	CB&Q	190	Chicago, Burlington & Quincy
60	CASL	185	Chicago, Alton & St. Louis
61	FEC	299	Florida East Coast
62	CNS	85	Chicago North Shore
63	M&SP	326	Milwaukee & St. Paul
64	MP	283	Missouri Pacific
65	M&LR	132	Memphis & Little Rock
66	V&T	173	Vicksburg & Texas
67	L&A	90	Louisiana & Arkansas
68	CP	154	Central Pacific
69	WP	142	Western Pacific
70	UP	105	Union Pacific
71	SL&A	99	St Louis & Alton
72	MKT	326	Missouri, Kansas & Texas
73	SLSF	239	St Louis & San Francisco
74	SLSW	155	St Louis & Southwestern
75	GW	140	Great Western
76	SP	90	Southern Pacific
77	GN	295	Great Northern
78	NP	281	Northern Pacific
79	SP&P	286	St Paul & Pacific
80	KC&D	66	Kansas City & Denver
81	KP	178	Kansas Pacific
82	ATSF	183	Atchison, Topeka & Santa Fe
83	KCS	98	Kansas City Southern
84	KCN	223	Kansas City Northern
85	SV	150	Sacramento Valley
86	SP&D	150	St Paul & Duluth
87	SL	150	Soo Line
88	T&P	224	Texas & Pacific
89	CT	169	Central Texas
90	TR	84	Texas Road
91	LP&W	200	Levenworth, Pawnee & Western
92	LR&S	210	Little Rock & Shreveport
93	H&S	232	Houston & Shreveport
94	FW&D	195	Ft Worth & Denver
95	SA&H	219	San Antonio & Houston
96	C&S	116	Colorado & Southern
97	CW	167	Colorado Western
98	DRGW	116	Denver & Rio Grande Western
99	DP	106	Denver Pacific
100	A&P	116	Atlantic & Pacific
101	M&W	197	Missouri & Western

Appendix E: RoW list

N#	Code	Length
102	ME1	136
103	NY1	210
104	NY2	203
105	NY3	149
106	PA1	95
107	PA2	95
108	PA3	89
109	PA4	89
110	PA5	135
111	PA6	110
112	PA7	150
113	PA8	75
114	PA9	154
115	PA10	160
116	PA11	182
117	MD1	45
118	MD2	152
119	VA1	160
120	VA2	260
121	VA3	76
122	VA4	130
123	VA5	277
124	VA6	151
125	VA7	94
126	NC1	100
127	NC2	155
128	SC1	142
129	SC2	110
130	SC3	109
131	SC4	83
132	SC5	75
133	GA1	171
134	GA2	172
135	GA3	152
136	GA4	139
137	GA5	110
138	GA6	125
139	GA7	129
140	GA8	157
141	FL1	67
142	FL2	200
143	FL3	210
144	FL4	165
145	FL5	204
146	FL6	44
147	WV1	205
148	WV2	161
149	WV3	121
150	WV4	58
151	OH1	80
152	OH2	135
153	OH3	107

154	OH4	137
155	OH5	120
156	OH6	100
157	OH7	102
158	OH8	102
159	MI1	58
160	MI2	58
161	MI3	200
162	MI4	226
163	MI5	184
164	MI6	110
165	IN1	202
166	IN2	70
167	IN3	70
168	IN4	125
169	IN5	125
170	IN6	112
171	IN7	101
172	IN8	101
173	IN9	148
174	IN10	122
175	IL1	185
176	IL2	109
177	IL3	109
178	IL4	120
179	IL5	120
180	IL6	165
181	IL7	165
182	IL8	230
183	IL9	230
184	IL10	120
185	IL11	85
186	IL12	190
187	IL13	72
188	IL14	150
189	IL15	70
190	KY1	146
191	KY2	125
192	KY3	101
193	KY4	92
194	KY5	110
195	KY6	110
196	KY7	180
197	KY8	140
198	KY9	130
199	KY10	75
200	KY11	85
201	KY12	160
202	KY13	160
203	KY14	155
204	TN1	131
205	TN2	199
206	TN3	100

207	TN4	111
208	TN5	128
209	TN6	154
210	TN7	100
211	TN8	144
212	TN9	160
213	TN10	94
214	TN11	94
215	TN12	88
216	TN13	88
217	TN14	110
218	TN15	110
219	AL1	97
220	AL2	100
221	AL3	162
222	AL4	152
223	AL5	133
224	AL6	119
225	AL7	60
226	AL8	118
227	MS1	139
228	MS2	202
229	MS3	190
230	MS4	96
231	MS5	44
232	MS6	280
233	MS7	211
234	WI1	85
235	WI2	90
236	WI3	236
237	WI4	280
238	WI5	112
239	WI6	271
240	WI7	286
241	WI8	250
242	WI9	145
243	MN1	150
244	MN2	320
245	MN3	139
246	MN4	150
247	MN5	266
248	MN6	250
249	MN7	120
250	IA1	130
251	IA2	130
252	IA3	142
253	IA4	170
254	IA5	135
255	IA6	135
256	IA7	208
257	IA8	201
258	IA9	208
259	IA10	139

260	IA11	101
261	MO1	169
262	MO2	197
263	MO3	283
264	MO4	326
265	MO5	103
266	MO6	98
267	MO7	223
268	MO8	135
269	MO9	135
270	AR1	150
271	AR2	113
272	AR3	190
273	AR4	164
274	AR5	138
275	AR6	185
276	AR7	220
277	AR8	270
278	LA1	138
279	LA2	188
280	LA3	90
281	LA4	225
282	LA5	146
283	LA6	213
284	ND1	250
285	ND2	385
286	ND3	194
287	ND4	446
288	ND5	206
289	SD1	554
290	SD2	456
291	NE1	258
292	NE2	255
293	NE3	483
294	KS1	156
295	KS2	323
296	KS3	305
297	KS4	483
298	OK1	281
299	OK2	235
300	OK3	190
301	OK4	165
302	OK5	317
303	OK6	255
304	OK7	245
305	OK8	393
306	TX1	84
307	TX2	232
308	TX3	372
309	TX4	124
310	TX5	227
311	TX6	110
312	TX7	125
313	TX8	519
314	TX9	91

315	TX10	91
316	TX11	321
317	TX12	218
318	TX13	151
319	TX14	310
320	TX15	226
321	TX16	170
322	MT1	430
323	MT2	130
324	MT3	280
325	MT4	235
326	MT5	119
327	MT6	247
328	MT7	120
329	MT8	72
330	MT9	221
331	MT10	189
332	WY1	484
333	WY2	221
334	WY3	332
335	CO1	82
336	CO2	64
337	CO3	94
338	CO4	98
339	CO5	90
340	CO6	197
341	CO7	144
342	CO8	106
343	CO9	223
344	CO10	167
345	NM1	253
346	NM2	217
347	NM3	332
348	NM4	114
349	NM5	114
350	NM6	249
351	NM7	319
352	NM8	224
353	AZ1	313
354	AZ2	121
355	AZ3	239
356	AZ4	209
357	AZ5	31
358	AZ6	368
359	UT1	404
360	UT2	36
361	UT3	36
362	UT4	134
363	UT5	176
364	UT6	211
365	UT7	185
366	UT8	185
367	UT9	450
368	ID1	263
369	ID2	235

370	ID3	68
371	ID4	68
372	ID5	238
373	NV1	251
374	NV2	174
375	NV3	184
376	CA1	244
377	CA2	126
378	CA3	251
379	CA4	423
380	CA5	316
381	CA6	192
382	CA7	90
383	CA8	121
384	CA9	119
385	CA10	141
386	CA11	171
387	CA12	141
388	OR1	97
389	OR2	97
390	OR3	394
391	OR4	222
392	OR5	73
393	OR6	120
394	OR7	124
395	OR8	302
396	OR9	85
397	WA1	309
398	WA2	309
399	WA3	146
400	WA4	254
401	WA5	130
402	WA6	190
403	C1	232
404	C2	256
405	C3	241
406	C4	140
407	C5	111
408	C6	265
409	C7	175
410	C8	175
411	C9	286
412	C10	153
413	M1	216
414	M2	320
415	M3	10
416	M4	31

