SIMULATION AND OPTIMIZATION AT KANSAS CITY SOUTHERN RAILWAY: EQUIPPING MANAGEMENT FOR SUCCESS

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This study addressed the need for a model of Kansas City Southern Railway (KCS) to provide insight to decision makers. A simulation model was developed to capture the key processes, the limiting resources, and the major relationships influencing the successful operation of the KCS system. The simulation model was used to evaluate alternative car management policies on the basis of timely, reliable, and affordable customer service. Optimization was proposed as a tool to enable car managers to minimize the cost of moving empty cars to meet demand. Six alternative policies were developed by incrementally increasing the portion of KCS cars managed using optimization.

This study concludes that KCS could provide more timely, reliable, and affordable customer service by managing the entire fleet of cars using optimization. KCS should equip car managers with an optimization tool for making more cost-effective car assignments. Furthermore, KCS should employ the simulation model to identify and exploit additional efficiencies that could improve profitability of the railroad.

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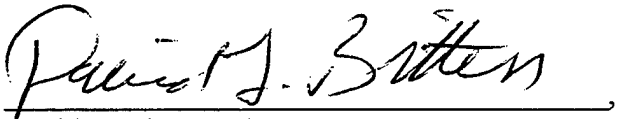
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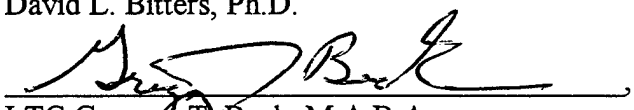
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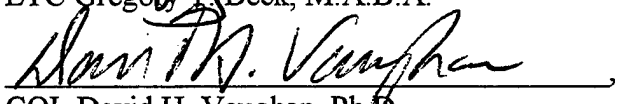
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ABSTRACT

SIMULATION AND OPTIMIZATION AT KANSAS CITY SOUTHERN RAILROAD: EQUIPPING MANAGEMENT FOR SUCCESS by Major Thomas P. White, USAF.

This study addressed the need for a model of Kansas City Southern Railway (KCS) to provide insight to decision makers. A simulation model was developed to capture the key processes, the limiting resources, and the major relationships influencing the successful operation of the KCS system. The simulation model was used to evaluate alternative car management policies on the basis of timely, reliable, and affordable customer service. Optimization was proposed as a tool to enable car managers to minimize the cost of moving empty cars to meet demand. Six alternative policies were developed by incrementally increasing the portion of KCS cars managed using optimization.

This study concludes that KCS could provide more timely, reliable, and affordable customer service by managing the entire fleet of cars using optimization. KCS should equip car managers with an optimization tool for making more cost-effective car assignments. Furthermore, KCS should employ the simulation model to identify and exploit additional efficiencies that could improve profitability of the railroad.

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CHAPTER 1

INTRODUCTION

At a time when giants of the rail industry like Union Pacific are rapidly annexing smaller railroads, Kansas City Southern Railway (KCS) is one of the select few mid-size, Class 1 railroads to remain independent. Mike Haverty, Chief Executive Officer (CEO) of Kansas City Southern Railway, has expressed the desire to stay independent and has positioned the company with this objective in mind.[1] He believes KCS can provide better service connecting six different railroads to the Midwest and Mexico than it could if hooked up to a single system. His responsibility, however, is to the shareholders. If a larger railroad offered the right price for KCS, Haverty would have a fiduciary responsibility to consider it. Two factors favor KCS remaining independent. First, recent acquisitions have created indebtedness that could serve to scare off potential buyers. Second, Haverty's aggressive managerial style is yielding impressive results that are keeping the shareholders satisfied. The extent to which Haverty can continue this success depends on his ability to understand thoroughly the strengths and weaknesses of KCS's system in order to discover and exploit efficiencies that will improve profitability of the railroad. According to Mark Davidson, Chief Industrial Engineer at KCS headquarters, KCS management needs a model of their rail network that captures the key processes, the limiting resources, and the major relationships influencing the successful operation of their system.[2]

The objective of this study is to create a prototype model of the KCS system that will provide valuable insight to KCS decision makers, and to apply the model to evaluate alternative car management policies that could make the railroad more profitable by reducing car movement costs. The basic premise of this study is that the operations research tools of simulation and optimization can be used in concert with one another to develop a model that will meet KCS's needs. Chapter 1 introduces the reader to the KCS system. It provides a brief historical background of KCS, describes the KCS system, and discusses current operating procedures that pertain to car management at KCS. Chapter 2 reviews literature exploring previous efforts to apply operational analysis to the railroad industry. It focuses on industrial applications of simulation and optimization that could be helpful in modeling the KCS system. Chapter 3 lays out the methodology used to address KCS's problem, discussing the development and application of the model. Chapter 4 describes and interprets the results obtained from the model and makes recommendations to KCS management. Finally, chapter 5 provides recommendations for future research.

Background

Arthur E. Stillwell founded Kansas City Southern Railroad in the 1890s with the original line extending from Kansas City, Missouri, through Shreveport, Louisiana, to Port Arthur, Texas.[3] KCS has been expanding and growing since that time. In 1939, KCS acquired the Louisiana-Arkansas Railroad with tracks from New Orleans, Louisiana, through Shreveport to Dallas, Texas. In 1956, KCS opened Deramus Yard in

Shreveport as their main operating hub. Deramus Yard hosts the main locomotive shop and dispatcher's office for KCS. In 1993, KCS acquired the MidSouth Railroad including track from Dallas through Meridian, Mississippi, to Birmingham, Alabama. In the last two years, KCS has continued to expand. In the South, KCS purchased a 49 percent interest in the Texas-Mexican Railway, operating from Corpus Christi, Texas, to the border town of Laredo. To complement this addition, KCS gained the concession to operate Mexico's Northeast Railway with access to Mexico City as well as to ports on both Mexican coasts. To the North and East, KCS formed an alliance with I & M Rail Link (Illinois, Iowa, Missouri, and Minnesota). Agreements between these two railroads provide KCS with indirect access to St. Paul, Minnesota, and to Chicago, Illinois. Additionally, KCS bought Gateway Western Railroad, linking Kansas City to East St. Louis, Illinois. With connections from Minnesota to Mexico, KCS bills itself as the "NAFTA" railroad.

As KCS has expanded, the nature of commerce carried by her trains has evolved. During the 1960s, KCS sought to revive her declining passenger business by operating a trendy passenger train called the Southern Belle. Recently, Mike Haverty has reintroduced the Southern Belle business train, primarily to entertain shippers, politicians, and employees while restoring some of the railroads historical image. From the onset, however, KCS's primary destiny was in cargo. About 29 percent of current business comes from the shipment of coal and bulk commodities. Primary customers for this segment of the market include Kansas Power and Light, Empire Electric, and Southwestern Electric Power Company. Another 48 percent of KCS's business is divided

evenly between chemical and forestry products. Major chemical industries are located in the vicinity of Port Arthur and Beaumont in Texas, as well as Lake Charles and Baton Rouge in Louisiana. About 14 percent of KCS business comes from moving grain, farm, and food products. A large portion of the movements in this category deliver grain from the North to serve as chicken feed for the poultry industry in the South. Finally, the bulk of the remaining 9 percent of business comes from intermodal traffic. Intermodal trains move items like scrap steel, military hardware, and automobiles. This has been the fastest growing segment of KCS business over the last two years. In 1995, these markets earned KCS $76.4 million on total revenues of $502.1 million.

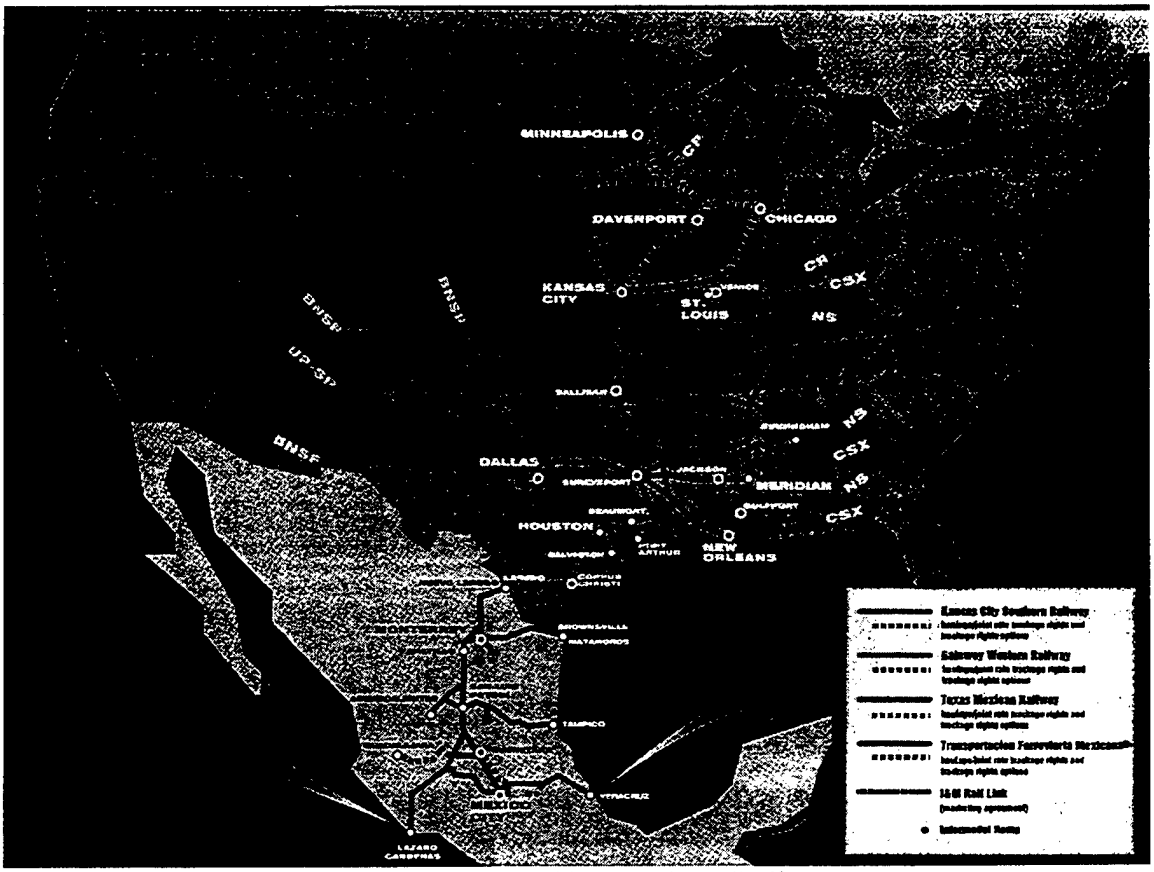

Figure 1. Kansas City Southern Railway

System Description

The KCS rail network is depicted in figure 1.[4] Across this network of tracks, KCS employs 458 diesel locomotives to move up to 120 different trains simultaneously through the system. Operating schedules for KCS trains are listed in appendix A. Generally speaking, these trains fall into one of four categories. First, general manifest trains originate at one extreme of the network and terminate at the other, making a limited number of stops at major switching stations in between to take on or set off cars. A prime example of a general manifest train is the Kansas City to Beaumont train that makes intermediate stops at Pittsburg, Kansas and Heavener, Oklahoma, as well as at Shreveport, Leesville, and DeQuincy in Louisiana. KCS operates 25 regularly scheduled general manifest trains. The second category, intermodal trains, operate in a similar manner to general manifest trains, but contain almost entirely intermodal cargo and typically have little or no capacity to take on additional cars at intermediate stops.[5] KCS operates ten regularly scheduled intermodal trains. The third category, unit trains, move large numbers of cars from a common origin to a common destination. These trains transport a single commodity, generally coal or grain, and are appropriately dubbed unit coal trains or unit grain trains. They stop only as required for servicing and crew swaps and do not normally take on additional cars as they transit the system. KCS does not operate unit trains on a regular schedule. Instead, these trains are assembled and moved when customers request them. Finally, locals, dodgers, and switches form the fourth category of trains. KCS operates a total of 138 locals, dodgers, and switches. These trains originate and terminate at the same station. They connect major stations with

smaller stations or industry spurs. They also switch cars from one track to another to form blocks of cars traveling in the same direction. The resulting blocks of cars are normally picked up by general manifest trains passing through the station.

KCS operates a fleet of over 15,000 railcars of various types.[6] Major car types include boxcars, covered and uncovered hoppers, bulkhead flatcars, intermodals, gondolas, tank cars, wood chip hoppers, and wood racks. Boxcars are used to haul bulk cargo such as paper products and synthetic rubber; while covered hoppers focus primarily on the movement of grain and plastic pellets. Uncovered hoppers are used to carry coal and rock. Bulkhead flatcars typically haul lumber and steel slabs. Intermodals transport tractor-trailers filled with a wide variety of cargo, normally in the high-value category. Gondolas are used to haul scrap metal and iron pipe. They are frequently used to move ties and fill for maintenance of way operations. Tank cars are commonly used to transport bulk petroleum products and chemicals. Finally, wood chip hoppers and wood racks carry wood chips and pulp wood slabs as raw material for the paper industry.

Railcar Management Policy

KCS manages the movement of railcars at their car distribution center in Shreveport.[7] A team of car managers uses an automated tracking system to monitor the location and status of railcars. Each car manager is responsible for assigning one or more types of railcars. For a customer who does a large volume of business with KCS, car managers may dedicate a group of cars, known as a pool, to service that particular customer. Policy letters are sent to each station identifying which cars belong to a pool

and where they should be sent. Whenever pool cars unload anywhere in the system, they are automatically routed back to the station serving their designated customer. Every four to six months, KCS management reviews the number of cars assigned to each pool. Once the size of the pools has been determined, pool cars operate without further involvement by the car managers. Railcars that are not assigned to a pool are known as freerunners and are assigned by the car managers on a case-by-case basis. In most cases, freerunners are used to meet demand at stations that are not pool locations. If necessary, however, freerunners may be used to augment pool cars to meet spikes in demand at the pool locations. Car managers use freerunners to fill orders for cars sequentially, attempting to assign the nearest available freerunner to meet each order. Colocated with the car managers are clerks who process the assignments. The clerks initiate car movement by sending car movement orders to the appropriate station. The yard marshal at the station implements the order by marking the car for movement to the appropriate destination. Figure 2 depicts the life cycle of a railcar starting when it is empty and unassigned and ending when it is released by the customer after delivering a load.

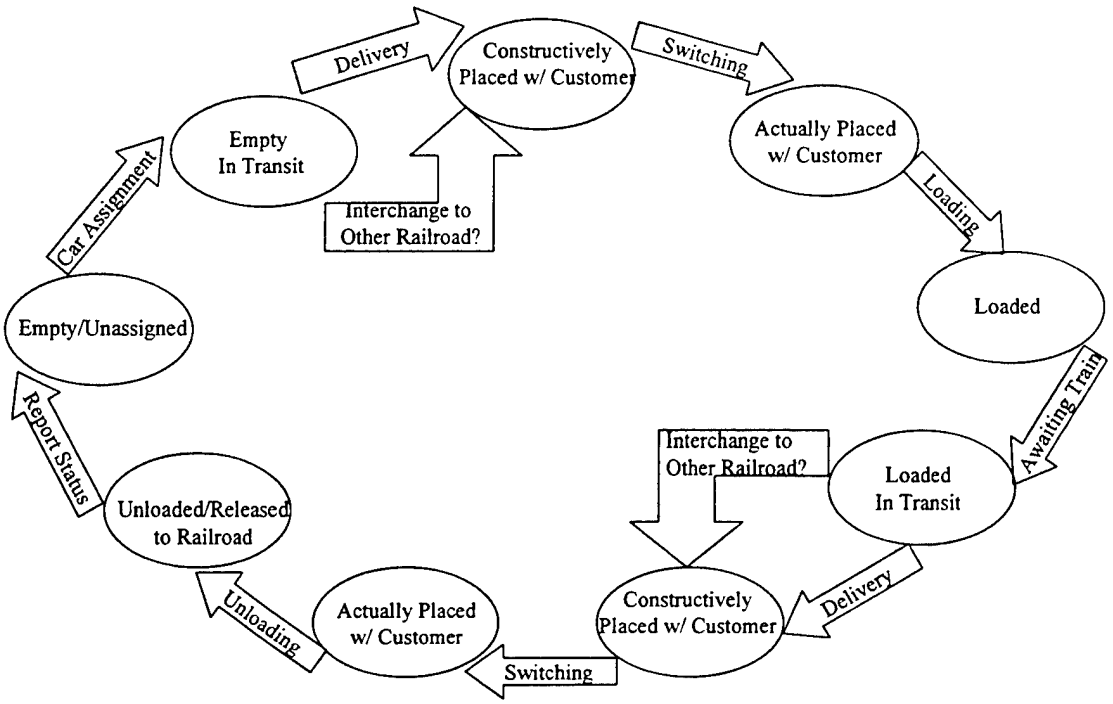

Figure 2. Life Cycle of a Railcar

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[1]Steve Glichinski, "Kansas City Southern Fights Back," Trains, June, 1997, 2.

[2]Mark Davidson, Interviews by author at KCS Headquarters, Kansas City, Missouri, September 19, 1997-April 21, 1998.

[3]Glichinski, 13.

[4]Glichinski, 11.

[5]Davidson.

[6]Jack R. King, Interviews with author at KCS Headquarters, Kansas City, Missouri, October, 1997-April, 1998.

[7]Billy Hughes, Interview with author at KCS Car Distribution Center, Shreveport, Louisiana, January 6, 1998.

CHAPTER 2

LITERATURE REVIEW

The goal of this review is to gain insight from previous research that will guide development of a model of the KCS system and shape the questions the decision maker seeks to answer. To achieve this goal, this review contains three sections. The first section examines research completed in 1996 by CGSC students and employees of KCS. It sheds light on the nature of the KCS system by considering study results and recommendations specific to KCS's system. The second section explores a generic application of operational analysis to the railroad industry completed by Sandra Strasser at Valpraiso University in 1992. The objective is to surface key business questions and issues that should be addressed by the model. The final section looks at industrial applications of simulation in concert with optimization. The goal of this section is to identify a viable approach for integrating these operations research tools to provide insight into KCS's system.

Previous Research at KCS

A 1996 CGSC study examined car movement data at KCS to determine how the railroad might reduce empty car miles.[1] CGSC students developed a Supply and Demand Decision Support System (S&D-DSS) that greatly improved KCS's visibility of empty cars and demand for cars both system wide and by station. S&D-DSS gave KCS management an indication of the number of excess cars it owns or leases. In developing

S&D-DSS, CGSC students examined the life cycle of a railcar as it transitions from being empty and unassigned through load delivery to release by the customer back to the railroad. Additionally, the students interviewed car managers at KCS's car distribution center in Shreveport, Louisiana. Three of their observations are particularly relevant to this study. First, examination of car data revealed that the primary causes of poor car utilization are issues that KCS can influence directly. KCS needs to reduce the average time a car waits before being assigned to a load. KCS also needs to reduce the number of miles an empty car travels to pick up a load. Second, current management of railcars using pools and "policy letters" results in most empty cars being routed by default with very little human involvement. To improve car utilization, KCS may need to alter current car management policies. Finally, a system that is characterized by random events where chance and probability abound can be succinctly described as a stochastic system. The students who conducted the 1996 study found the KCS rail system to be highly stochastic and extremely complex. These characteristics make it difficult to manage the KCS system without a good data collection and feedback system and a powerful model for interpreting the data to make the system more transparent to decision makers.

In their concluding recommendations, the students offered two possible approaches for reducing empty car miles. The first would be to view the problem as a network optimization with the objective of minimizing empty car miles subject to car supply and demand. In their opinion, however, such a formulation would be too large to solve at the station level and would suffer from the stochastic nature of demand. It would also require extensive analysis to determine the appropriate time interval between

assignments. The students favored a second approach that treated the car utilization problem as an inventory management problem. The goal of this approach is to maintain enough empty cars on line to meet the time-dependent and stochastic demand. While this method may help KCS more accurately size the fleet of railcars it needs, it does not contribute to improving the efficiency of the cars it operates.

Operational Analysis of Generic Railroads

In 1992, Strasser completed an operational analysis of railroad scheduling that surfaced a number of important issues and questions that should be considered in development of a model of the KCS system.[2] The purpose of her study was to explore the impact of railroad scheduling on railroad performance from the viewpoint of the shipper. The typical shipper needs reliable service, timely delivery, and competitive rates. Strasser contends that by targeting these needs, railroads will be able to compete more effectively with motor carriers. This could ultimately increase the railroad's share of the transportation market. The implication for modeling KCS's system is that meeting the customer's needs for timely, reliable, and affordable service is an important business objective for KCS managers. Consequently, a model of the KCS system must have the ability to measure the impact of decision variables on cost, timeliness and reliability of service.

Strasser developed a simulation of two connecting trains based on historical data. Her experimental design tested different combinations of scheduling decisions and recorded the resulting effects on railroad performance. Scheduling decisions involved

answering three major questions. First, how many trains should the railroad operate per day for each origin-to-destination route? Second, how much yard time should be scheduled at each stop? Finally, if the connecting train is running late, should the current train be dispatched on time or held to wait for its additional cars? According to Strasser, railroad executives and hub managers agree that decreasing train frequency will result in less carrier cost, decreasing yard time will reduce total transit time, and dispatching trains on schedule will lead to greater reliability. Since these three activities affect timely, reliable, affordable customer service, it is critical that a model of KCS's system accurately capture the interactions between scheduling, dispatching, and processing of trains at a system level. This will require identification of the key resources, processes, and relationships for each activity.

Industrial Applications of Simulation and Optimization

In their concluding recommendations, the CGSC students who authored the 1996 study with KCS expressed concern that attempts to apply optimization to KCS's problem would be challenged by the stochastic nature of demand prevalent in the KCS business environment.[3] The final section of this literature review looks at three methods for integrating simulation and optimization to overcome the challenge of optimizing in an environment of uncertainty. The first method, simulation optimization, looks for the most desirable solution by using simulation to estimate system performance at multiple points defined by altering the control parameters of the system. The second method, recursive optimization and simulation, alternates between optimization and simulation to

seek the best solution, with insights from one tool helping to improve performance of the other at each successive step. The third method, embedded optimization, looks for natural decision points within the simulated process where optimization could improve system performance.

The first method, simulation optimization, is explained in a straightforward manner by Akbay.[4] He offers three techniques for pursuing this method to an optimal conclusion. First, using a statistical design of experiment, the modeler can use simulation output to identify main effects and interaction effects among the system's control variables. Applying the techniques of response surface methodology, the modeler can fine tune control parameters to locate an apparent optimal solution. Unfortunately, this technique could necessitate a prohibitively large number of simulation runs if the number of control parameters to be managed is large.

The second technique for simulation optimization is known as evolutionary programming. Akbay credits Bowden as being the leader in this area.[5] In Bowden's words, "the idea is to evolve a population of solutions to the problem wherein each solution's survival is dependent on how well it performs in the simulated environment. The population is allowed to evolve for a number of generations at which time the search is terminated and the best (or fittest) solution in the population is selected as the answer to the problem." According to Akbay, Bowden has successfully applied this technique to optimize production control problems with over 30 decision variables. However, using this technique to solve large problems becomes a laborious and time-consuming process for the modeler.

The final technique for simulation optimization described by Akbay is to use a state of the art simulation optimization tool such as SimRunner 1.0, developed in 1995 by Decision Sciences, Inc. During optimization, this software automatically searches the multi-dimensional solution space by using the simulation model to evaluate the objective function at different values for the control parameters. The output from SimRunner 1.0 includes the optimum values of the system variables and a graphical representation of how different variables affect the objective function. Akbay describes successful applications of this technique by IBM, GPR Planners Collaborative and Sverdrup Facilities, Inc., and by Baystate Health. The key to success when using a simulation optimization tool like SimRunner 1.0 is to isolate the most important control parameters, set the correct range for each variable, and identify the right objective function for measuring performance.

The second method, recursive optimization and simulation, is thoroughly discussed by Rosenblatt, Roll, and Zyser.[6] In this work, the authors use an integer non-linear optimization model for minimizing initial investment and operating costs subject to several constraints to develope a generic Automated Storage/Retrieval System (AS/RS). The resulting solution is tested in a simulation to see how it performs in the dynamic environment of warehouse operations. The authors defined two measures of performance, average service time and average service level in the system. For each batch of simulation runs, they translated these performance measures into constraints for the next iteration of the optimization model. When the values obtained fell within prescribed acceptable bounds, the authors terminated the optimization and simulation

process and adopted the solution. Van Oudheusden and Boey have documented a similar application of recursive optimization to the design of an automated warehouse for the Thai Air Cargo Terminal of Bangkok.[7] While this method takes advantage of the strengths of optimization and simulation in a synergistic manner, the challenge becomes setting the terminating criteria in a manner that makes the process tractable without leading to a sub-optimal solution.

The third method for integrating simulation and optimization, embedded optimization, identifies decision points in the modeled process where optimization could be applied to improve the quality of decisions and result in better system performance. This method is demonstrated in research conducted for the Department of Energy (DoE) by students at the Air Force Institute of Technology.[8] DoE was evaluating alternative methods for treating radioactive and hazardous waste. One of the alternatives involved turning the waste into glass using a process called vitrification. A major goal of this effort was to accurately predict the cost of using vitrification to treat waste material. Based on a bench-scale vitrification facility at Fernald, Ohio, a simulation model was developed to characterize operation of a full-scale vitrification plant. Part of the process involved excavating batches of waste material and taking samples to estimate the chemical composition. To capture the stochastic nature of batch composition, the simulation randomly assigned the composition of each of these batches based on statistical analysis of samples taken at the site prior to excavation. For each batch, an optimization routine was applied to select the least cost additives while producing a mixture that met the compositional constraints for forming a suitable glass. Use of this

embedded optimization within the simulation led to a substantial reduction in per unit vitrification cost.

In summary, this literature review has highlighted the nature of KCS's system by analyzing the results and recommendations from a previous study of KCS. Two observations were of great importance. First, the adverse impact of empty car miles on car utilization at KCS suggests an opportunity to use optimization within the model to minimize empty car miles and improve system performance. Second, the highly stochastic and complex nature of KCS's system favors the use of simulation over mathematical programming. Furthermore, the review of Strasser's work pointed up the importance of train scheduling, dispatch procedures, and processing at the yard as key activities to be included in the model. It also revealed timeliness, reliability, and cost of service as key measures of merit for system performance to be tracked within the model. Finally, by looking at industrial applications of simulation and optimization, this review has identified three viable methods for integrating these tools. Of these methods, embedded optimization showed the most promise for working toward optimal performance of KCS's system despite the inherent uncertainty.

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[1]Greg Hosheit, Doug McAllister, and Andre Zumstein, "CGSC-Industry Partnership Program 1996." (CGSC-IPP-96)

[2]Sandra Strasser, "The Effect of Railroad Scheduling on Shipper Modal Selection," Journal of Business Logistics, May 1, 1992, 13, No. 2, 175.

[3]Hosheit

[4]Kunter S. Akbay, "Using Simulation Optimization to Find the Best Solution," IIE Solutions, May 1996, 28, No. 5, 24.

[5]Akbay

[6]Meir J. Rosenblatt, Yaakov Roll, Vered Zyser, "A Combined Optimization and Simulation Approach for Designing Automated Storage/Retrieval Systems," IIE Transactions, January 1993, 25, No. 1, 40-50.

[7]Dirk L. van Oudheusden and Peter Boey, "Design of an Automated Warehouse for Air Cargo," Journal of Business Logistics, 1994, 15, No. 1, 261.

[8]Thomas P. White, Ronald Toland, Jack A. Jackson, Jr., and Jack M. Kloeber, Jr., "Simulation and Optimization of a New Waste Remediation Process," Omega, December 1996, 24, No. 6, 705.

CHAPTER 3

METHODOLOGY

The objective of this study was to develop a prototype model of the KCS system capable of providing valuable insight to decision makers, and to apply the model to evaluate alternative car management policies that could increase profit for the railroad by reducing car movement costs. This chapter describes the model development process and the scientific problem solving approach used to apply the model. The first section describes how insight from the literature review helped to clarify the problem. The second section discusses the interview process that guided most of the modeling decisions. The third section recounts the logic that determined the boundaries and scope of the prototype model. The fourth section describes the key actors, activities, resources, and decision processes considered by KCS management as central to the nature and performance of the KCS system. The fifth section outlines the architecture of the resulting simulation model, while the sixth section describes data collection and analysis used to determine model parameters. Finally, the last section discusses the formulation of alternative car management policies and the scheme derived for evaluating those alternatives.

Literature Review

Insight gained from previous research helped set the general direction for the model development process. First, previous work described the KCS system as highly

stochastic and very complex. To model the complex interaction of random processes characterizing the KCS system, I decided to use simulation. Simulation allows the modeler to represent stochastic processes by randomly choosing from a distribution of possible outcomes based on historical data and expert judgment regarding the actual process. Second, previous work identified the need to reduce empty car miles in order to improve car utilization at KCS. I decided to use embedded optimization within the simulation to assist car managers in reducing empty car miles. Finally, based on Strasser's work,[1] I decided to use timely, reliable, affordable customer service as the key performance measure in the simulation.

Interview Process

The quintessential element of model development was the synthesis of experience and ideas achieved through the interview process. Impressions of the KCS system were shaped by the views of KCS employees at all levels of the organization, from the observations of clerks to the thoughts of the CEO. The experience level of those interviewed ranged from operators with over 30 years of railroad experience to mid-level managers possessing limited railroad experience but an abundance of fresh ideas and ambition. The context of interviews ranged from office visits at KCS corporate headquarters to a window tour of Deramus Yard in Shreveport, Louisiana. I followed up each interview with a telephone discussion or electronic mail to verify conclusions drawn. Those interviewed included KCS employees from marketing, cost analysis, industrial engineering, operations, car utilization, and car management. Their expertise

covered the full spectrum of KCS operations. I developed the prototype simulation model to reflect how KCS professionals view their system.

Scope

Determining the appropriate scope for the prototype model was a challenging but important aspect of the model development process. This section describes three factors that were considered in deciding what to include in the model. First, the scope of the prototype model had to be tempered by a realistic appraisal of the time and resources available. Second, since the overarching goal of the project was to provide insight to decision makers, the prototype model had to be sufficiently inclusive to cover a broad range of business issues with which KCS management was wrestling. Furthermore, the model needed to be constructed in a manner conducive to expansion by follow-on research and to utilization by KCS. Finally, because KCS operates as a sub-component of the overall railroad industry, it exists as a system within a system. Operational aspects of the KCS system that were under the direct control of KCS were explicitly modeled. Aspects of the railroad industry that influence the performance of the KCS system but are outside of the direct control of KCS were handled indirectly. The impacts of each factor on the ultimate scope of the prototype model are discussed in greater detail in the following paragraphs.

Because this study was limited to a period of nine months, CGSC and KCS agreed to target a prototype model capturing a slice of the KCS system.[2] This model included the network of tracks and stations depicted in figure 3. During early modeling efforts, I discovered that software dimensionality constraints limited the scope of the

prototype model to no more than 50 train stations. Experts at KCS chose the specific stations listed in table 1 based on volume of business, switching capacity, and location of crew facilities.[3] Other stations of importance to KCS were treated as peripherals of these stations. The prototype model did not include yard functions at peripheral stations. Instead, it added time to allow local, dodger, or switch engines to pick up or deliver cars to these stations. The prototype model calculated the amount of time to add based on the proximity of the peripheral station to the nearest explicitly modeled station and the frequency of scheduled train service connecting those stations. By using peripheral stations, the prototype model was able to capture a large slice of the KCS system without a damaging compromise in model fidelity.

Within the subset of the KCS system depicted in figure 3, I decided to simulate the operation of one type of railcar in the prototype model. I chose to model gondolas based on the recommendation of Mr. Bill Holmes[4], director of car utilization at KCS headquarters. Mr. Holmes listed gondolas as one of the top three car types in terms of management level of interest. The gondola fleet was the smallest of these three car types. Furthermore, after consulting with car managers at the car distribution center in Shreveport, I found that policies for managing gondolas were representative of the management of the entire KCS fleet.[5]

The second factor influencing the scope of the prototype model was the type of business issues facing KCS management. As a minimum, the model needed to provide insight regarding three issues at KCS.[6] First, KCS management was interested in reducing the cycle time for its railcars. This meant that the model would need to treat the major

processes affecting the scheduling, movement, loading, unloading, and tracking of railcars through the KCS system. Second, understanding the relationship between train scheduling and car movement was critical to a host of business decisions important to KCS management. The model would need to capture the dynamic interaction of trains and railcars. Finally, KCS management needed to understand causes and remedies for congestion at stations to ensure efficient movement of trains and railcars through the system. To facilitate this understanding, the model would need to treat yard operations at a sufficient level of detail to shed light on the causes of congestion.

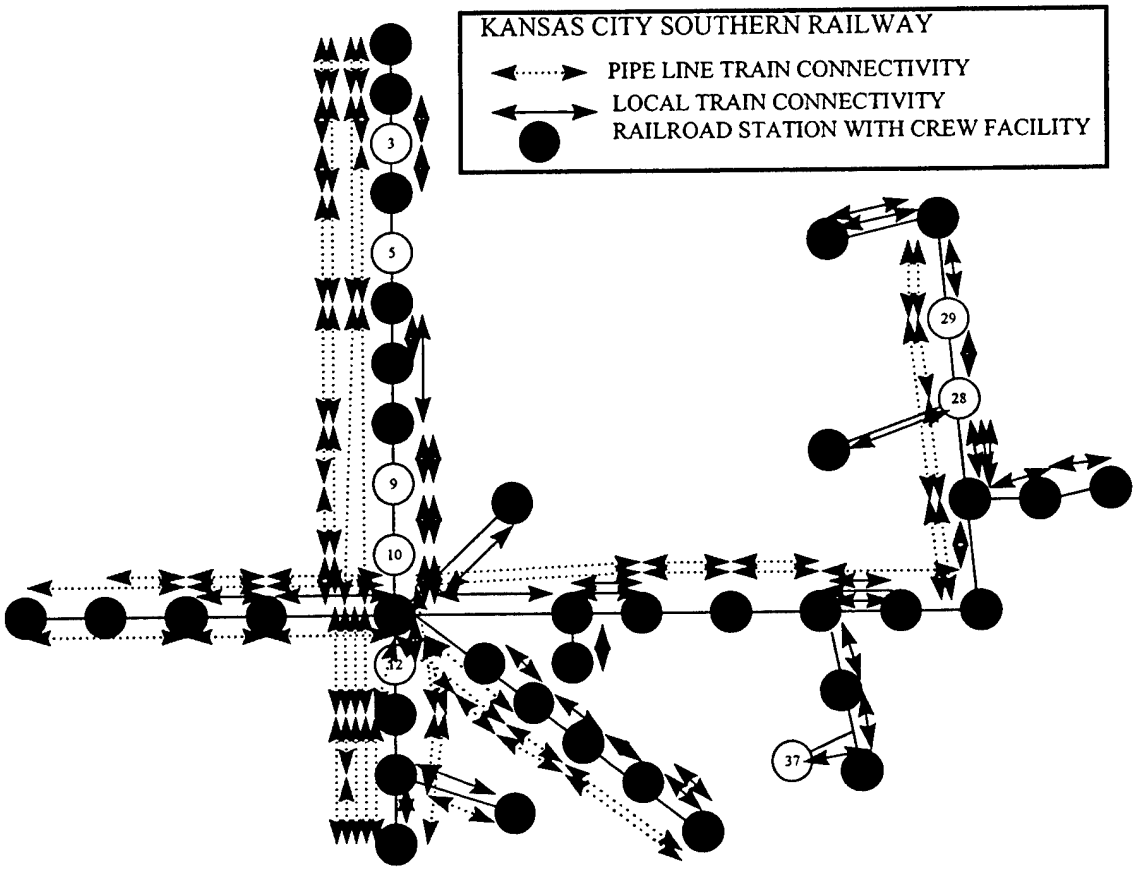

Figure 3. Modeled Network

Table 1. Modeled Stations

#	Station Name	Crew	Interchange	Comments
1	Kansas City	Yes	Multiple	Intermodal Ramp
2	Pittsburg	Yes		
3	Neosho		BNSF	Rich Mountain
4	Siloam Springs	Local		
5	Salisaw		UP	Intermodal Ramp
6	Heavener	Yes		Fort Smith & Waldron Branches
7	Mena	Local		South Hatton
8	DeQueen	Yes	DQE	
9	Ashdown		KRR	Georgia Pacific
10	Texarkana		UP	
11	Shreveport	Yes	Multiple	Bossier City, Interchange Ramp
12	Bayou Pierre			International Paper
13	Leesville	Yes		DeRidder - BNSF Interchange
14	DeQuincy	Yes	UP	
15	Beaumont	Yes	TM, UP	Includes Port Arthur
16	Mossville	Local	UP	Includes Lake Charles
17	Hughes Springs	Yes	TN	Includes Welsh
18	Greenville	Yes	DGNO	
19	Zacha Junction	Yes	UP	Dallas, Int. Ramp
20	Alliance	Yes	BNSF	Interchange with BNSF Only
21	Gibsland		LNW	
22	Monroe	Yes		
23	Vicksburg	Yes		
24	Jackson	Yes	IC	Intermodal Ramp
25	Morton	Local		Forest and Newton
26	Meridian	Yes	NS, MB	
27	Artesia	Yes		Columbus - I/C
28	West Point Junction		CAGY	
29	Tupelo		BNSF	
30	Corinth	Yes	NS	
31	New Albany	Local	BN	
32	Louisville	Local		
33	Tuscaloosa	Local	NS	Tuscaloosa Steel
34	Birmingham	Yes	CSXT	Interchange with CSXT Only
35	Hattiesburg	Yes	NS, IC	
36	Gulfport	Yes	CSXT	
37	DeLisle			DuPont
38	Hodge	Local		
39	Kraft	Yes		
40	Latanier	Yes	UP	Pineville & Alexandria
41	Baton Rouge	Yes	IC, UP	
42	Grammercy	Local		Gonzales and Norco
43	New Orleans	Yes	Multiple	Intermodal Ramp
44	Minden	Local		

The last major factor that influenced the scope of the prototype model was the interaction of the KCS system with the railroad industry as a whole. KCS sends a substantial portion of its railcars onto the tracks of other railroads to pick up or deliver cargo. When KCS cars are 'interchanged' to another railroad, they are routed to their final destination by the gaining railroad and then returned to the KCS system via reverse routing. KCS has reciprocal agreements with most other railroads to return interchanged cars promptly to the owning railroad. If the gaining railroad has a need for the car, however, they may use it for a period of time before returning it. During this period, the railroad using the car must pay a negotiated daily fee called "per diem" to the owner. The dynamics of the interchange process have a dramatic influence on KCS operations, but the time KCS cars spend with other railroads is outside of the direct control of KCS management. Within the scope of the model, KCS management needed the capability to assess the effects of interchange policies in order to negotiate per diem rates with other railroads wisely. For this reason, the boundary of the prototype model was set at the point where KCS railcars interchange to other railroads. The systems of other railroads were not explicitly modeled. Instead, when a KCS railcar interchanged to another railroad, the prototype model randomly assigned duration based on statistical analysis of historical interchange times specific to that location. A list of the interchange points and a summary of interchange statistics is provided in appendix B.

The Actors

Within a simulation, actors are the primary initiators of activities that model the key processes in the actual system. Actors possess characteristics, known as attributes, that reflect the nature of the actor, the current status of the actor, and the rules governing how the actor will be treated as it transits the system. Based on the interview process, I decided that three actors needed to be modeled explicitly to represent the KCS system. First, the railcars operated by KCS are the life's blood of the system. As they move through the system, they carry along with them the revenue-generating cargo that monetarily sustains the system. Equally important are the trains, which serve as the cardiovascular system, pumping the blood throughout the system. If the cardiovascular system is not working efficiently, the blood tends to move sluggishly and sometimes pools in the system. The third actor, KCS management, functions in a manner similar to the central nervous system. KCS managers set policies and issue directives to synchronize the operations of the other two actors, enabling KCS to respond to changes in the internal and external environment of the system.

Activities

Each of the actors identified above takes part in numerous activities affecting the performance of the KCS system. I considered three factors in determining which activities would be included in the prototype model. First, the subjective impressions of KCS management coupled with analysis of historical car movement data during previous studies at KCS revealed key activities in the life cycle of a railcar that were critical to

improving car utilization and reducing non-productive car miles. Those railcar activities were identified and included in the prototype model. Second, car managers indicated during the interview process that train scheduling and operation could be tailored to support car distribution better. The prototype model targeted those activities central to the dynamic interaction between execution of the train schedule and movement of railcars. Finally, KCS management was interested in measuring the effect of policy decisions on customer satisfaction. The prototype model focused on activities that affected the timeliness, reliability, and cost of service provided by the railroad. Table 2 lists the key activities included in the prototype model.

Table 2. Activity Descriptions

Actor	Activity	Description
Railcar	Report	Forwards car status to management when empty/available
	Order	Routes empty car to location with load
	Switch	Employs switch resource to position car for next yard activity
	Couple	Attaches car to train for movement through the system
	Decouple	Removes car from train for switching to next yard activity
	Load	Matches car with load and routes for delivery to destination
	Unload	Removes load from car and records delivery statistics
	Interchange	Car goes off-line to another railroad for a period of time
	Maintenance	Car is delayed for a period of time to perform maintenance
Train	Originate	Crew, power, and track resources seized to form a train
	Assemble	Gather designated cars at originating station
	Departure	Release track at departure station. Move to next station.
	Arrival	Seize track at arrival station and begin processing
	Crew Check	Check current crew for sufficient duty hours remaining
	Crew Swap	Release current crew and seize replacement crew
	Set Off	Removes cars that are terminating or changing trains
	Take On	Attaches additional cars to train for movement
	Yard Time	Calculates delay based on schedule and activity at station
Manager	Supply	Updates number of cars available to manager for scheduling
	Demand	Updates car orders visible to manager
	Schedule	Assigns cars to meet demand. Issues car movement orders.

Resources

Within the model, resources represent items of support that must be available before an actor can proceed with an activity. In selecting the resources to include in the prototype model, two questions were addressed. First, is the resource itself of interest to management because of its cost or scarcity? Locomotive diesel engines provide a good example of a costly and scarce resource that has the attention of KCS management. Second, is it important to track the amount of time an actor waits for the resource because of the impact it has on system performance? Railroad track fits this description because hundreds of cars may be delayed when tracks become congested. Table 3 contains a description of the resources included in the prototype model.

Table 3. Resource Descriptions

Resource Name	**Description**
Power	Locomotive diesel engines required to operate trains.
Crew	Engineer, Conductor, and Brakeman required to operate trains. Limited to 12-hour duty cycle followed by 12-hour rest cycle.
Track	Required before train can originate at a station or transit a station. Limits the number of trains able to simultaneously transit a station.
Switch	Required to reposition a car from one train to another, or from a station to an industry spur. Availability based on number of switch engines, switch crews, and track capacity at a station.
Local	Capacity released by local trains. Required before a car can couple with a local train for movement.
Pipe	Capacity released by an intermodal or general manifest train. Required before a car can couple with these trains for movement.
Order	A car assignment issued by manager. Required by a car before it can proceed to pick up a load.
Load	Signals availability of a load based on historical load data. Required by a car before it can deliver the load.

Decision Processes

Identifying and replicating key decision processes in the KCS system was one of the most difficult aspects of model development. This section describes three instances where decisions that affect performance of the KCS system are made on a recurring basis. First, car managers at the car distribution center in Shreveport make daily decisions regarding the distribution of empty cars to meet demand. Second, KCS employees at all stations continually make decisions determining how cars should be routed through the system from their present location to their intended destination. Finally, every time a train transits a station, the decision must be made whether to hold the train for cars expected to arrive on a connecting train or to dispatch the train on time. The following paragraphs describe how the prototype model represents these decision processes.

Car managers divide their fleet into two groups known as pool cars and freerunners. Pool cars are typically assigned to service specific high-volume customers. The number of cars in each pool reflects the expected volume of business and is revised every four to six months. Once the size of the pools has been established, no further involvement is required by the car managers. When pool cars unload anywhere in the system, they are automatically routed back to the station servicing their designated customer. This is accomplished by maintaining standing policy letters at each station. Policy letters identify pool cars by car number and tell yard managers where to send them. Freerunners, on the other hand, are assigned by car managers on a daily basis to meet demand at locations not serviced by pool cars. Freerunners may also be assigned to augment pool cars if the pool cars are not meeting the needs of their designated customer.

The decision to use freerunners to service a pool location is often triggered by a call from the customer notifying the car manager that he has a temporary need for more cars. When the car manager assigns freerunners to meet demand, he generally fills orders sequentially by assigning the nearest available cars to that demand point.

The prototype model replicates the car manager's decision process by employing three measures. First, only freerunners are made available to the car manager for assignment. Pool cars are automatically routed to their pool location without becoming available to the manager. Second, demand for cars at pool locations becomes visible to the manager only when five or more loads are available and no pool cars are currently at that station. This simulates the triggering event that would prompt the customer to request more cars from the car manager. Third, the model fills orders sequentially by assigning the nearest available freerunners first. Based on the location where cars are needed, the model makes an ordered search for available cars starting with the closest station and proceeding to the most distant station. Appendix C shows the order in which stations were searched.

Once car managers have determined which available cars will service each demand point, car movement orders are sent to the appropriate stations. These messages direct the yard marshal at the affected station to mark each designated car for movement to its assigned destination. Two methods are available to the yard marshal for accomplishing this task. First, the yard marshal may inscribe the placard on the side of each car with a series of station abbreviations to route the car from its present location to the desired location. Using this approach, cars are coupled with the first available train

traveling in the desired direction with capacity to pull the car. Alternatively, the yard manager may mark the placard with the identifying codes for specific trains on which the car is directed to travel to reach its destination. In this case, many different routing strategies are possible for moving cars through the system. Some routes may be preferable to others based on the relative frequency of trains, the number of intermediate stops, or the distances involved. For example, a car that needs to travel from Jackson, Mississippi, to Monroe, Louisiana, could be directed to switch from one local train to the next, traveling on three separate trains and stopping at every intermediate station before arriving in Monroe. Alternatively, the car could be directed to travel on a general manifest train to Shreveport and backtrack on a local train to Monroe. The second case involves more total miles, but fewer stops and switches.

According to Mark Davidson, KCS's Chief Industrial Engineer, the first approach most accurately characterizes the way cars are moved through the KCS system. To replicate this, I designed the prototype model to execute a flexible route for each car. When the car is originally assigned, it is given a list of station codes that serve as checkpoints to guide it along an efficient route to its destination. As the movement is executed, however, decision logic for switching cars at individual stations along the way may revise the route the car takes based on what has actually happened to it up to that point. For example, the original schedule may direct the car to proceed from Meridian, to West Point Junction, and then to the final destination at Louisville. Because some trains don't stop at West Point Junction, however, the car may end up overshooting or undershooting its checkpoint. The decision logic for switching cars at each station was

designed to make reasonable routing choices for the continued movement of each car based on its destination.

The third decision process regards dispatching rules for trains. Strasser's operational analysis of the railroad concluded that a policy of dispatching trains on schedule provided better reliability to the customer than a policy of holding trains until arrival of a late-arriving connecting train. According to Mark Davidson, the general policy of KCS is to dispatch trains on schedule. He indicated, however, that locomotive engineers have a great deal of discretion in this matter. To best represent this decision process in the prototype model, Davidson agreed to the following logic. If a train is ready to depart a station early, the model holds the train at the station until its scheduled departure time. If a train is running behind schedule, it will depart from the station as soon as it completes the required activities. The time needed for a train to complete these activities at a station depends on the number of cars the train is setting off and taking on; it depends on whether or not a crew change is required; and it depends on the availability of track.

Architecture of the Simulation Model

I chose to develop the simulation model of the KCS system using SLAM (Simulation Language for Alternative Modeling) version 4.6 by Pritsker & Associates in Purdue, Indiana. I chose SLAM because it provides a graphical network user interface that aids rapid model construction. Furthermore, I had previously used SLAM to develop other large-scale simulations. I constructed the model by building one station after

another and linking them to represent the KCS network. I used SLAM's graphical network user interface to create a flow diagram depicting the processes and resource demands of trains as they received service at a generic station. Next, I made copies of the generic station and tailored each copy to represent a specific station in the KCS network. The flow diagram for a typical station is shown in appendix G. The SLAM graphical network user interface is equipped with icons representing common modeling functions like queuing for resources, assigning values, or grouping actors. For processes that exceeded the capability of these icons, I used FORTRAN to write subroutines that were called when needed by the simulation.

Within the network of stations in the simulation model, trains and cars were treated as actors. The purpose of trains was to transport cars while the purpose of cars was to transport loads from one point to another in the system. Trains and cars were labeled with attributes that guided their travel through the network, directed the activities they would accomplish, and identified the resources they would require. Train and car attributes are described in appendix D.

Data Support

KCS data collection and analysis supported the simulation in three important ways. First, it enabled me to set appropriate starting conditions for the simulation. Second, it provided a six-month record of car demand for evaluating alternative car management policies. Third, it provided the distribution of interchange times used to simulate off-line time for gondolas. The following paragraphs explain each use of data in

greater detail.

First, determining appropriate starting conditions was critical to successfully employing the simulation model. Starting conditions include the location and status of actors and the availability of resources at the beginning of the simulation. If starting conditions do not reflect typical conditions found in the modeled process, the simulation may need to run for a long period of time before it begins to function as intended. In the prototype model of the KCS system, I needed to determine how the fleet of gondolas would be distributed across the network of stations at the beginning of the simulation. KCS provided a six-month record showing the locations where gondolas were delivered. I calculated the percentage of deliveries for each location. At the beginning of each simulation run, each gondola was randomly assigned to a starting location. The percentage of deliveries to each location was used as an estimate of the probability that a gondola would start the simulation at that location. The resulting distribution of gondolas reflected what was likely to be seen in a snapshot of the KCS system on any given day.

To compare alternative car management policies, I needed a realistic picture of car demand. KCS provided a record of car demand covering the six-month period from February through July of 1997. This included the time of request and the number of cars needed at each location. It stated when each load would be available and where it was to go. Additionally, the record included the amount of revenue generated by each load and indicated whether or not the load would interchange to another railroad. This record was tailored for use by the simulation in two ways. First, for each destination that was not explicitly modeled, I marked the corresponding loads for delivery to the nearest modeled

stations. I calculated additional delivery time based on frequency of local train service and distance from the modeled station to the peripheral station. Second, I amended the car demand record to include a nominal required delivery date for each load so timeliness of delivery could be tracked as a performance measure. The amended record of car demand is contained in appendix E. The simulation model used the amended record to increment car demand at each location at the appropriate times. When a car was loaded, the simulation assigned information about the load to the attributes of the car. When a car was unloaded, this information enabled the simulation to calculate hours late or early by subtracting the required delivery time from the actual delivery time.

I modeled the process of interchanging cars with other railroads by applying data in two ways. First, the six-month record of car demand was used to identify when and where cars interchanged with other railroads. When a load destined for interchange with another railroad was loaded on a car, the car attributes were annotated accordingly. When the car arrived at the interchange point, the model delayed the car to account for time the car was held by the other railroad. To determine the amount of time a car was held, the model randomly drew from a distribution of times determined from past experience with interchanging cars at that location. Appendix B lists the stations where KCS interchanges cars and provides statistical data on interchange times.

Alternative Car Management Policies

A major objective of this study was to use the simulation model to evaluate alternative car management policies that could increase profit for the railroad by reducing

car movement costs. The cost of moving empty cars to pick up loads comprises a substantial portion of total car movement costs. According to Mark Davidson, it costs KCS $.40 per mile to transport empty cars. Additionally, car ownership costs add $.36 per hour during the time the empty car is positioning to pick up a load. In order to reduce car movement costs, this study evaluated alternative car management policies that incorporated optimization to minimize empty car miles. The optimization routine was embedded in the simulation model as a tool for increasing the effectiveness of the car manager's decision process. Six car management policies were formulated based on the extent to which optimization would replace the current policy. These policies are described in table 4.

Table 4. Alternative Car Management Policies

Policy One	Base Case Scenario. Maintain current size of pools. Assign freerunners to orders sequentially.
Policy Two	Maintain current size of pools, but assign freerunners using optimization.
Policy Three	Reduce size of pools by 25 percent. Assign freerunners using optimization.
Policy Four	Reduce size of pools by 50 percent. Assign freerunners using optimization.
Policy Five	Reduce size of pools by 75 percent. Assign freerunners using optimization.
Policy Six	Treat all cars as freerunners and assign using optimization.

Experimental Design

To evaluate alternative car management policies, the simulation model of the KCS system was used to estimate the performance of each policy. This study focused on

two performance related statistics, the number of hours each load was delivered early or late from the customer's required delivery date, and the number of miles an empty car traveled to pick up each load. Because the prototype model simulated gondola movement, and gondolas do not normally carry time-sensitive cargo, I assigned a nominal required delivery date to each load. Based on guidance from Mark Davidson, the simulation model allowed one week for delivery after the customer made a revenue-generating load available for shipment. In the case of non-revenue loads, two weeks were allowed for delivery. Additionally, the simulation measured the variability in the hours late or early for each delivery.

These two statistics were used to relate system performance to timely, reliable, affordable customer service in three ways. First, the average number of hours late or early was used to evaluate the capability of the KCS system to provide timely service to its customers when employing each of the six alternative car management policies. Second, consistency of delivery times was used to indicate the reliability of service to the customer. For example, a policy that resulted in all deliveries occurring within one week of the customer's required delivery date was considered more reliable than a policy that resulted in 80 percent of deliveries occurring a week early and the other 20 percent occurring a month late. Finally, the average number of miles an empty car traveled to pick up a load directly affected car movement cost. A policy that resulted in an average of 100 empty car miles per load delivered was more affordable to the customer than a policy resulting in an average of 200 empty car miles per load delivered.

In evaluating alternative car management policies, it was important to note that the outcome of the stochastic simulation model was really a random sample from a population of possible outcomes from the simulated process. Consequently, a performance measurement obtained from one instance of running the simulation of the KCS system was an estimator of the actual performance of the system. The level of confidence that should be placed in the accuracy of the estimate depends on the size of the random sample and the variability inherent in the population of possible outcomes of the modeled process. The Central Limit Theorem[7] of statistics states that increasing the size of the sample results in a corresponding decrease in the variability between the means of possible random samples. Furthermore, the theorem states that the mean of the sampling distribution of means is equal to the population mean. This implies that by taking a sufficient number of random samples of sufficient size, results from the simulation can be used to determine an interval estimate for performance measures of the simulated process that achieves some desired level of confidence. Based on input from managers at KCS, I decided to target the 95 percent confidence level. This meant that the team sought to use outcomes from the simulation model to determine an interval in which the true system performance could be expected to fall 95 times out of 100. To accomplish this, I simulated operation of the KCS system over a period of 180 days. Running the simulation for this period of time provided a sample size of over 4,000 observations on both performance statistics. I decided to conduct multiple simulation runs to narrow the interval of estimation so differences in performance between

alternative car management policies would be clearly visible to decision makers. The initial experimental design is shown in table 5.

Table 5. Initial Experimental Design

Run	Policy	Seed	Hours Late/Early (Average)	Hours Late/Early (Standard Deviation)	Empty Car Miles Per Load (Average)
11	1	1	?	?	?
12	1	2	?	?	?
13	1	3	?	?	?
21	2	1	?	?	?
22	2	2	?	?	?
23	2	3	?	?	?
31	3	1	?	?	?
32	3	2	?	?	?
33	3	3	?	?	?
41	4	1	?	?	?
42	4	2	?	?	?
43	4	3	?	?	?
51	5	1	?	?	?
52	5	2	?	?	?
53	5	3	?	?	?
61	6	1	?	?	?
62	6	2	?	?	?
63	6	3	?	?	?

[1]Sandra Strasser, "The Effect of Railroad Scheduling on Shipper Modal Selection," Journal of Business Logistics, May 1, 1992, 13, No. 2, 175.

[2]Mark Davidson, Interviews by author at KCS Headquarters, Kansas City, Missouri, September, 1997- April, 1998.

[3]Mark Davidson and Jack King, E-mail to author at Fort Leavenworth, Kansas, March 15, 1998.

[4]Bill Holmes, Interview by author at KCS Headquarters, Kansas City, Missouri, September 19, 1997.

[5]Billy Hughes, Interview by author at KCS Car Distribution Center, Shreveport, Louisiana, January 6, 1998.

[6]Davidson

[7]Donald H. Sanders, Statistics, A Fresh Approach (New York, McGraw Hill, 1990) 232.

CHAPTER 4

RESULTS

This chapter describes and interprets the results of simulation runs conducted according to the experimental design outlined in chapter 3. The first section discusses the statistical significance of simulation outcomes for estimating three performance measures affecting timely, reliable, affordable customer service. The second section interprets the results, drawing conclusions about the relative performance of alternative car management policies. Finally, the third section makes recommendations to KCS decision makers.

Table 6. Simulation Outcomes

Run	Policy	Seed	Hours Late/Early Average	Hours Late/Early Standard Deviation	Empty Car Miles Average
11	1	1	6.6 Early		280.6
12	1	2	15.3 Early		283.8
13	1	3	10.3 Early	159.4295	283.4
21	2	1	25.7 Early		278.1
22	2	2	10.8 Early		276.8
23	2	3	4.1 Late	244.0711	277.4
31	3	1	14.8 Early		257.3
32	3	2	10.1 Late		255.9
33	3	3	34.7 Late	303.7478	256.7
41	4	1	10.9 Late		238.9
42	4	2	30.6 Late		235.4
43	4	3	55.9 Late	423.025	232.3
51	5	1	43.8 Late		214.7
52	5	2	38.2 Late		211.8
53	5	3	49.1 Late	299.031	217.1
61	6	1	24.0 Early		203.3
62	6	2	22.4 Early		202.3
63	6	3	26.1 Early	67.75774	200.4

Simulation Outcomes

Table 6 depicts the raw results obtained from running the prototype simulation model of the KCS system according to the experimental design described in Chapter Three. The average number of hours late or early from the required delivery time for each load was used to evaluate alternative car management policies based on timely customer service. The average number of empty car miles per load delivered was used to evaluate alternative policies based on affordable customer service. For both of these performance measures, the objective of the experimental design was to use simulation outcomes to portray the difference between alternative car management policies clearly at the 95 percent confidence level. To accomplish this objective, the standard error of the mean was calculated for the outcomes of three independent simulation runs for each policy. Using the T-Distribution,[1] the 95 percent confidence intervals were calculated for the mean performance of each policy. Constructing intervals in this manner results in only a five-percent chance that the true mean performance falls outside of these intervals. The intervals for the mean number of hours late or early from the required delivery time for each load are plotted in figure 3. The intervals for the mean number of empty car miles per load delivered are plotted in figure 4.

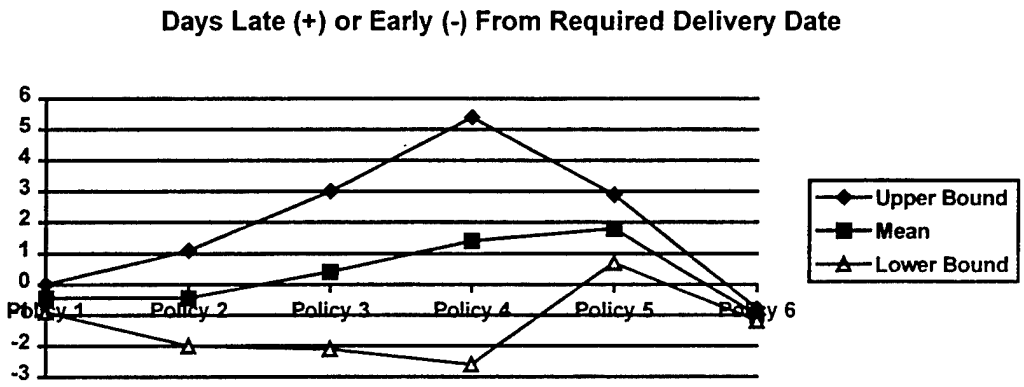

Figure 3. Average Delivery Time

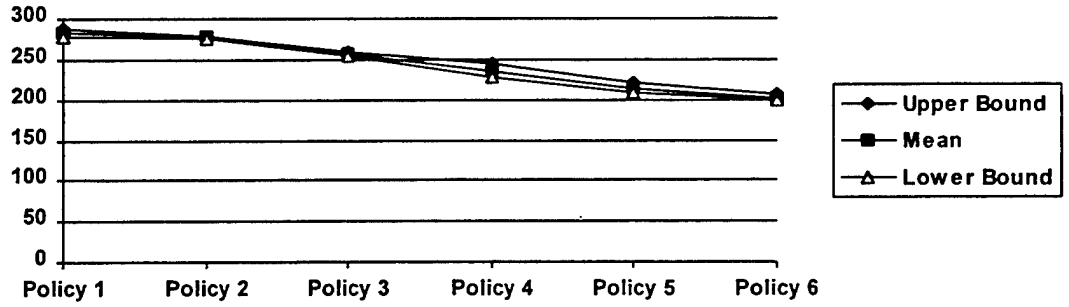

Figure 4. Average Empty Car Miles Per Load Delivered

It was also important to evaluate alternative car management policies in terms of reliable customer service. For this study, consistency in delivery time was used as an indicator of reliability. A policy providing a 95 percent chance that a given load would be delivered within one week was considered more reliable than a policy providing a 95 percent chance that a given load would be delivered within two weeks. Using the sample standard deviation for hours late or early, an upper bound for the number of hours late

from the required delivery time was calculated at the 95 percent confidence level for each policy. The resulting upper bounds are plotted in figure 5.

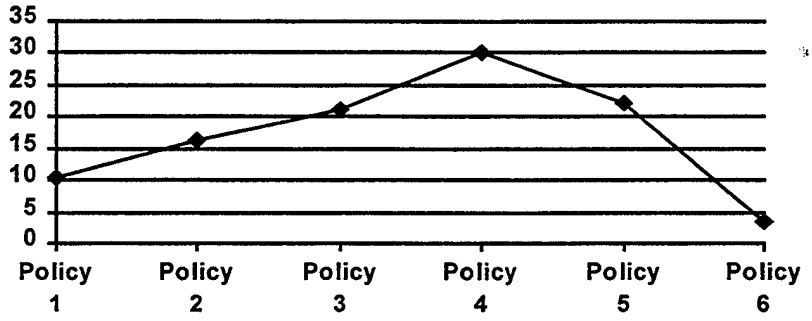

Figure 5. Latest Delivery Date (95% Confidence Bound)

Interpretation of Results

The simulation outcomes indicated a high degree of variability in average delivery time. Figure 3 shows how this variability resulted in wide prediction intervals that overlap from one policy to the next. Because prediction intervals for many of the policies overlapped, it was not possible to rank order these policies based on average delivery time. The only conclusion that could be drawn at the 95 percent confidence level was that maintaining the current pool size or getting rid of pool cars altogether provided more timely service than cutting the pool size by 75 percent. Additional simulation runs were needed to narrow the prediction interval and enable more conclusive evaluation of alternative car management policies based on average delivery time. The length of time

required to run the prototype simulation model for a 180-day time period prevented additional simulation runs from being conducted for this study.

While further study is needed to reduce uncertainty regarding average delivery times for each policy, one emerging trend was of great interest. The mean performance line in figure 3 shows a steady increase in delivery time as the number of pool cars was reduced. This trend was followed by a sharp decrease in delivery time when the last of the pool cars were converted to freerunners. The cause for this trend was quite intuitive, and revealed an interesting dilemma in simultaneously managing pool cars and freerunners. Car managers normally rely on pool cars to pick up loads at pool locations. However, if loads begin to back up at a pool location, the customer may ask for more cars, prompting the car manager to assign freerunners. In this case, loads at the pool location wait longer for service, causing later delivery times. This occurs more often as the number of pool cars is decreased. When all cars are treated as freerunners, however, there is no longer a need to wait and see if pool cars are going to suffice. Instead, freerunners are assigned to meet demand at any location as soon as an order is placed. Anticipating the demand for cars in this manner led to earlier delivery times.

The simulation outcomes indicated much less variability in the average number of empty car miles per load delivered than in the average hours late or early. From figure 4, it was clear that incorporating optimization in the car assignment process could substantially reduce empty car miles. The extent of this reduction was tied directly to the number of cars managed as freerunners. As discussed in Chapter Three, KCS pays $.40 per mile to move empty cars. Ownership costs add another $.36 for each hour a car

spends empty. Based on the six-month record of car demand provided by KCS, the gondola fleet moves about 9,800 loads per year. Figure 6 translates the reduction in empty car miles for each policy into expected annual savings for the gondola fleet.

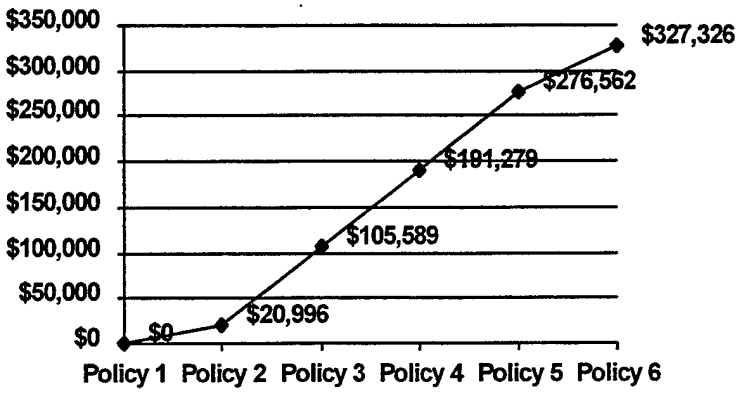

Figure 6. Projected Annual Savings for Gondola Fleet

Recommendations

The prototype simulation model indicated that managing the entire gondola fleet as freerunners while using an optimization tool to improve car assignment decisions provided the most timely, reliable, and affordable customer service. Based on this result, I recommend that KCS equip the manager of the gondola fleet with an optimization tool for reducing the number of empty car miles resulting from the car assignment process. Furthermore, KCS should reduce the number of gondolas assigned to pools in a phased approach, gradually transitioning to all freerunners. As the number of pool cars is reduced, car managers will need to anticipate shortages at the pool locations and respond proactively with freerunners to avoid delays in delivery. KCS should collect statistics on

empty car miles and average delivery time and compare the actual system performance with the expected performance at the end of each phase. If performance improves as expected for the gondola fleet, KCS should apply this method to manage other car types as well.

Managing gondolas as freerunners and using an optimization tool to aid the car assignment process could save KCS over $300,000 per year in car movement costs. These savings could be passed along to the customer if KCS so desires. Furthermore, managing the gondola fleet in this manner will likely result in more timely, reliable customer service. This could enable KCS to compete more favorably for movement of time sensitive cargo, potentially leading to an increase in KCS's market share. Finally, making similar changes to the management of other car types could lead to similar gains across the entire KCS fleet. Reducing empty car miles for all car types could result in direct savings of over $7 million per year. Reducing empty car miles will also increase the availability of cars for moving loads. Through aggressive marketing, KCS could capitalize on this opportunity to generate additional revenue.

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[1]Donald H. Sanders, Statistics, A Fresh Approach, (New York, McGraw Hill, 1990) 272.

CHAPTER 5

FUTURE RESEARCH

This chapter outlines three areas of additional research that should be conducted to further the accomplishments of this study. First, the prototype simulation model requires further development and testing. Second, this model should be expanded to a full-scale simulation model of the KCS system including all major tracks, stations, and car types. Finally, a systematic method should be developed for using the full-scale simulation model to support the decision process, to provide insight to KCS management over a broad range of business issues.

Development and Testing

Further development and testing of the prototype model is required in three areas. First, a more accurate assessment of resource levels is needed to determine the impact of constraints on the performance of the KCS system. KCS has initiated an investigation to determine the actual capacity of crews, locomotives, tracks, and switch engines at each of the stations modeled. For resource levels that were not currently known, the prototype model set the level artificially high so performance would not be hindered by the unknown factor. As KCS develops more accurate estimates, the prototype model should be adjusted to reflect those data.

Second, the distribution of interchange times should be studied more carefully because of its dramatic impact on system performance. The current prototype model

assigns interchange times by randomly drawing from a triangular distribution.[1] Appendix B lists the minimum, mean, and maximum values obtained from past experience with interchanging cars to other railroads. For some interchange locations, the maximum interchange time exceeded 100 days. Assigning an interchange time of this duration effectively removed the car from further consideration because the simulation run was terminated before the car was returned to KCS. Comparing simulation results with historical car event data indicated that this phenomenon occurred more often in the simulation than in reality. Consequently, I concluded that the triangular distribution is not the best to use because it assigns extremely high interchange times too frequently. A distribution with most of the interchange times grouped tightly around the mean and only rare instances in the extremes would be more representative of the actual interchange process. Further statistical analysis should be conducted to find a more representative distribution of interchange times for the simulation model.

Finally, before expanding to full-scale, the prototype model should be tested against historical car movement data to increase confidence in the accuracy of the model. The simulation should be run using historical car demand data. Results from the simulation should be compared with actual car movement records. Because the simulation is a stochastic model, accounting for inherent uncertainties in the system modeled, the load by load results of the simulation necessarily will vary from historical car movement. The long run averages from the simulation, however, should closely mirror averages from historical car movement records.

For this study, the prototype simulation model was run using a 180-day car demand record. Simulation results compared favorably with the car movement record for the same period with one exception. The simulation delivered fewer cars in the 180-day period than the car movement record indicated. This occurred because the simulation assigned extremely long interchange times to several cars. Consequently, it terminated before the loads on these cars were delivered. When I changed the minimum and maximum interchange times to values closer to the average, simulation results more closely matched actual car movement records. Before expanding to full scale, a more representative distribution for interchange times should be incorporated in the prototype model and additional validation testing should be accomplished.

Expanding the Model

The prototype simulation model needs to be expanded in two ways. First, additional stations and tracks should be added to cover the entire KCS system. The prototype simulation model explicitly modeled 44 stations considered by KCS to be most important to their operations. Other stations were handled as peripherals to the 44 modeled stations. As the model is expanded, peripheral stations should be modeled explicitly. This will result in greater fidelity in executing train schedules and tracking car movement.

The prototype simulation model also needs to be expanded to include additional tracks that are important to KCS operations. The current model only accounted for tracks owned by KCS. The greater KCS system includes tracks on which KCS has haulage and

joint rate trackage rights. This expands the network to include tracks from Minneapolis, Minnesota, to Veracruz, Mexico. To support the full range of KCS business decisions, the simulation model should be expanded to include these tracks.

Second, the prototype simulation model only accounted for gondola operations. Other car types such as boxcars, hoppers, and tank cars should be included in the full-scale simulation model. While gondolas are managed in a manner representative of other car types, each car type has some unique features that must be accounted for in the simulation model. Further study of the car management system is required to determine how to model other car types.

Physical expansion to include additional stations and tracks as well as logical expansion to include other types of cars cannot be accomplished with the current simulation software. The prototype simulation model was constructed using version 4.6 of SLAM. This version is FORTRAN based and uses fixed array dimensioning. The prototype simulation model already stretches the dimensional boundaries inherent in the software. To expand beyond the prototype model, future research should transition to the follow-on simulation software package called AWESIM. AWESIM is based on the "C" programming language and features variable array dimensioning. Expanding to a full-scale simulation model of the KCS system with AWESIM should not present a problem.

Supporting the Decision Process

The prototype simulation model captured the key processes, the limiting resources, and the major relationships influencing the successful operation of the KCS

system. Applying the prototype model to evaluate alternative car management policies provided valuable insight to KCS decision makers. Expanding to a full-scale simulation of the KCS system should provide even greater insight. Further research is needed, however, to determine the most effective way to use the simulation to support decision makers at KCS. The prototype model takes 14 hours to complete simulation of a 180-day operating period. A full-scale simulation model may require even more time. While this does not preclude setting up a unique experimental design to answer each business question KCS managers may have, a more effective method for using the simulation may be available. A systematic approach would be to use the simulation to identify major effects and interaction effects for key control parameters such as the frequency of trains or the number of cars operated by KCS. Once the major effects and interaction effects for these control parameters are understood, KCS managers can identify potentially advantageous policies defined by specific settings of the control parameters. These policies can be evaluated in greater depth through further use of the simulation. Rather than optimizing the performance of sub-components by addressing one issue at a time, this method can potentially achieve optimal performance of the overall KCS system.

Regardless of the method developed for using the simulation model to support decision makers, the potential for further research is wide open. This study scratched the surface by evaluating alternative car management policies. A wide range of questions still needs to be addressed. For example, how many cars of each car type should KCS operate? What is the most effective train schedule to support the pattern of car movement at KCS? Can KCS guarantee rapid delivery of time-sensitive cargo and thus increase its

market share? What are the primary causes of congestion and how can KCS reduce its adverse impact? Questions like these provide an open invitation for further research.

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[1]Jerry Banks and John S. Carson, II., Discrete-Event System Simulation (Engelwood Cliffs, NJ, Prentice Hall, 1984) 157-160.

APPENDIX A

TRAIN SCHEDULES

KCS operates 172 regularly scheduled trains divided into three major categories, general manifest, intermodal, and local. The prototype model simulated operation of trains based on the current train schedule provided by KCS. This schedule was used to generate trains at the appropriate time of day and on the appropriate days of the week. It was also used to mark the attributes of the train that prompted the train to stop at the appropriate stations and to swap crews at the scheduled times. The train schedule provided by KCS was read into the simulation as an EXCEL database. The train schedule database is depicted in the following pages.

Train Schedule
Category:KCS; Network:KCS; Blocks:KCS;
Trains:KCS

#	Train #	Train	Ver.	Category	Freq	HP/TON	Ready	Inbound Cutoff	Out-bound Cutoff	Originating	Blocks Swap Cutoff	Final Cutoff	Proc Time
	1	I ALAT1	1	Intermodal		7	2	0	0	100	100	0	100

Effective 5/19/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Alliance TX	KCS	0	0	CST	1600	0	100	25	0	Fuel Work Crew Insp
2	*	Greenville TX	KCS	2010	0		2030	0	20	32	102.7	Crew
3	*	Shreveport LA	KCS	125	1		345	1	220	8	260.3	Work
4	*	Bossier Yard	KCS	445	1		505	1	20	36	268.3	Crew
5	*	Monroe LA	KCS	745	1		745	1		30	363.6	
6	*	Vicksburg MS	KCS	1015	1		1015	1		22	437.5	

7 *	Jackson MS	KCS		1220	1		1220	1		8	482.3		
8 *	Jackson Yard MS	KCS		1300	1		1845	1	545	23	487.6	Crew	
9 *	Meridian MS	NS		2245	1		2300	1	15	29	578.1	Crew	
10 *	ATLA-RAMP	NS	EST	1100	2	EST	0	0	45		892.7	Fuel Work Crew Insp	

2	I ATAL1	1	Intermodal	7	2.5	0	0	100	100	0	100	

Effecti ve 5/19/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		ATLA-RAMP	NS		0	0	EST	500	0	45	30	0	Fuel Work Crew Insp
2 *		Meridian MS	KCS	CST	1440	0		1500	0	20	36	314.6	Crew
3 *		Jackson Yard MS	KCS		1730	0		2015	0	245	18	405.1	Work Crew
4 *		Vicksburg MS	KCS		2300	0		2300	0		33	455.2	
5 *		Bossier Yard	KCS		410	1		430	1	20	8	624.4	Crew
6 *		Shreveport LA	KCS		530	1		650	1	120	33	632.4	Work
7 *		Greenville TX	KCS		1140	1		1200	1	20	42	790	Crew
8 *		Lavon Jct.	KCS		1240	1		1240	1		17	818.2	
9 *		Alliance TX	KCS		1700	1		0	0	100		892.7	Fuel Work Insp

3	I ATDA1	3	Intermodal	7	2	0	0	100	100	0	100	

Effecti ve 5/19/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		ATLA-RAMP	NS		0	0	EST	100	0	45	29	0	Fuel Work Crew Insp
2 *		Meridian MS	KCS	CST	1055	0		1115	0	20	36	314.6	Crew
3 *		Jackson Yard MS	KCS		1345	0		1815	0	430	19	405.1	Work Crew
4 *		Vicksburg MS	KCS		2055	0		2055	0		29	455.2	
5 *		Monroe LA	KCS		2330	0		2330	0		36	529.1	
6 *		Bossier Yard	KCS		210	1		325	1	115	8	624.4	Crew
7 *		Shreveport LA	KCS		425	1		425	1		33	632.4	
8 *		Greenville TX	KCS		915	1		915	1		42	790	
9 *		Lavon Jct.	KCS		955	1		955	1		18	818.2	
10 *		Zacha Jct. TX	KCS		1045	1		0	0			833	

4	I DAAT1	1	Intermodal	7	0	0	0	100	100	0	100	

Effecti ve 5/19/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Zacha Jct. TX	KCS	0	0	CST	200	0	45	18	0	Fuel Work Crew Insp
2	*	Lavon Jct.	KCS	250	0		250	0		42	14.8	
3	*	Greenville TX	KCS	330	0		330	0		32	43	
4	*	Shreveport LA	KCS	825	0		825	0		8	200.6	
5	*	Bossier Yard	KCS	925	0		1025	0	100	36	208.6	Crew
6	*	Monroe LA	KCS	1305	0		1305	0		30	303.9	
7	*	Vicksburg MS	KCS	1535	0		1535	0		22	377.8	
8	*	Jackson MS	KCS	1740	0		1740	0		8	422.6	
9	*	Jackson Yard MS	KCS	1820	0		1950	0	130	31	427.9	Crew
10	*	Meridian MS	NS	CST 2245	0		2300	0	15	12	518.4	Crew
11	*	MERID-NS	NS	2305	0		2305	0		29	519.4	
12	*	ATLA-RAMP	NS	EST 1100	1	EST	0	0			833	

5	I DAKC1	1	Intermodal	7	0	0	0	1600	1600	0	1600	

Effecti ve 8/ 9/96 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Zacha Jct. TX	KCS	0	0		1700	0	45	29	0	Fuel Work Crew Insp
2	*	Greenville TX	KCS	1830	0		1850	0	20	36	43	Work Crew
3	*	Hughes Springs TX	KCS	2130	0		2300	0	130	33	138.3	Work
4	*	Texas Junction	KCS	45	1		105	1	20	8	196.3	Work Crew
5	*	Blanchard LA	KCS	110	1		110	1		30	197	
6	*	Heavener OK	KCS	810	1		1010	1	200	30	407.3	Work Crew
7	*	Sallisaw OK	KCS	1145	1		1305	1	120	28	454.2	Work
8	*	Pittsburg KS	KCS	1900	1		1930	1	30	30	618.5	Crew
9	*	Kansas City MO	KCS	2340	1		0	0	100		743.5	Fuel Work Insp

6	I DAMT1	1	Intermodal	6	0	0	0	430	0	0	0	

Effective 9/24/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	ZACHA-RAMP	KCS		0	0		600	0			0	Work
2	*	Zacha Jct. TX	KCS		605	0		605	0		10	0	
3	*	Renner Junction	KCS		715	0		715	0		29	11.9	
4	*	Metro TX	KCS		830	0		0	0			48.6	
7	I KCDA1		1 Intermodal		7	0	0	0	0	0	0	100	

Effective 1/ 5/98 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Blanchard Spur LA	KCS		0	0		205	1	20	41	0	Work Crew
2	*	Hughes Springs TX	KCS		330	1		525	1	155	36	57.7	Work
3	*	Greenville TX	KCS		805	1		845	1	40	42	153	Crew
4	*	Lavon Jct.	KCS		925	1		1010	1	45	18	181.2	Work
5	*	Zacha Jct. TX	KCS		1100	1		0	0	45		196	Fuel Work Insp
8	I KCND1		1 Intermodal		7	0	0	0	0	100	0	100	

Effective 1/ 5/98 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Kansas City MO	KCS		0	0	CST	5	0	100	26	0	Fuel Work Crew Insp
2	*	Pittsburg KS	KCS		450	0		530	0	40	22	125	Crew
3	*	Saginaw MO	KCS		700	0		700	0		28	158.1	
4	*	Neosho MO	KCS		730	0		730	0		29	172.3	
5	*	Sallisaw OK	KCS		1130	0		1230	0	100	31	289.3	Work
6	*	Heavener OK	KCS		1400	0		1500	0	100	28	336.2	Work Crew
7	*	South Hatton AR	KCS		1725	0		1725	0		30	403.2	
8	*	DeQueen AR	KCS		1820	0		1820	0		32	431.1	
9	*	Wade AR	KCS		1830	0		1830	0		14	436.4	
10	*	Wilton AR	KCS		2020	0		2120	0	100	29	461.2	Work

11	*	Ashdown AR	KCS	2135	0	2135	0		47	468.4			
12	*	Texas Junction	KCS	2315	0	105	1	150	7	547.2	Work		
13	*	Shreveport LA	KCS	140	1	0	0			551.5			

9	I KCNO1	1	Intermodal	7	0	0	0	0	0	0	0	0	0

Effective 1/ 5/98 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

				— Ariv —			— Dept —						Sta
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —	
1	*	Shreveport LA	KCS	0	0	CST	320	1	100	24	0	Fuel Work Crew Insp	
2	*	Latanier LA	KCS	910	1		930	1	20	28	139.5	Crew	
3	*	Baton Rouge LA	KCS	1255	1		1315	1	20	22	234.8	Work	
4	*	Reserve LA	KCS	1525	1		1545	1	20	20	281.8	Work	
5	*	New Orleans LA	KCS	1715	1		0	0			311.1		

10	I MTDA1	1	Intermodal	6	0	0	0	0	0	0	0	0	0

Effective 10/15/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

				— Ariv —			— Dept —						Sta
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —	
1	*	Metro TX	KCS	0	0		1600	0		28	0	Work Crew	
2	*	Renner Junction	KCS	1720	0		1720	0		7	36.7		
3	*	Zacha Jct. TX	KCS	1900	0		1900	0			48.6	Work	
4	*	ZACHA-RAMP	KCS	1935	0		0	0			48.6		

11	I NOKC1	1	Intermodal	7	0	0	0	100	100	0	100		

Effective 5/19/96 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

				— Ariv —			— Dept —						Sta
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —	
1	*	New Orleans LA	KCS	0	0		1930	0	100	20	0	Fuel Work Crew Insp	
2	*	Reserve LA	KCS	2100	0		2130	0	30	22	29.3	Work	
3	*	Baton Rouge LA	KCS	2340	0		30	1	50	12	76.3	Work Crew	

4 *	Lobdell LA	KCS	110	1	140	1	30	32	84.5	Work		
5 *	Latanier LA	KCS	425	1	510	1	45	24	171.6	Work Crew		
6 *	Grappes Bluff LA	KCS	820	1	850	1	30	21	248.6	Work		
7 *	Shreveport LA	KCS	1145	1	1315	1	130	28	311.1	Work Crew		
8 *	Heavener OK	KCS	2055	1	2215	1	120	30	526.4	Work Crew		
9 *	Sallisaw OK	KCS	2350	1	50	2	100	5	573.3	Work		
10 *	Pittsburg KS	KCS	645	3	715	3	30	26	737.6	Work		
11 *	Kansas City MO	KCS	1200	3	0	0			862.6			

12 IC 349 1 Local,Dodgers,Turn 7 0 0 0 0 0 0 0

Effective 2/22/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Ariv Day	Dept TZ	Dept Time	Dept Day	Sta Time	Speed	Dist	Yard Activity
1 *		Hattiesburg MS	IC	0	0		1400	0	600	12	0	
2 *		HATBG-NS	IC	1405	0		1410	0	5	24	1	
3 *		HATBG-IC	IC	1415	0		1425	0	10	12	3	
4 *		Hattiesburg MS	IC	1430	0		1440	0	10	36	4	
5 *		JACKN-IC	IC	1710	0		0	0			94	

13 IC 350 2 Local,Dodgers,Turn 7 0 0 0 0 0 0 0

Effective 12/17/96 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Ariv Day	Dept TZ	Dept Time	Dept Day	Sta Time	Speed	Dist	Yard Activity
1 *		JACKN-IC	IC	0	0	CST	800	0	1200	19	0	Work
2 *		Hattiesburg MS	IC	1245	0		0	0			90	

14 L DQSH1 1 Local,Dodgers,Turn 7 0 0 0 0 0 0 0

Effective 12/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Ariv Day	Dept TZ	Dept Time	Dept Day	Sta Time	Speed	Dist	Yard Activity
1 *		DeQueen AR	KCS	0	0		2330	0		21	0	Fuel Work Crew Insp
2 *		Wade AR	KCS	2345	0		2345	0		19	5.3	
3 *		Winthrop	KCS	20	1		20	1		17	16.4	

		AR											
4 *	Gifford Hill Spur	KCS		100	1		200	1	100	22	28		
5 *	Ashdown AR	KCS		225	1		325	1	100	17	37.3	Work	
6 *	Texarkana TX	KCS		425	1		525	1	100	24	54	Work	
7 *	Jury TX	KCS		540	1		540	1		19	59.9		
8 *	Sandra LA	KCS		655	1		700	1	5	20	83.9		
9 *	Shoreline LA	KCS		745	1		830	1	45	20	98.9	Work	
10 *	Blanchard LA	KCS		920	1		920	1		9	115.4		
11 *	Shreveport LA	KCS		955	1		0	0			120.4		

15 L GPHB1	1	Local,Dodgers,Turn	3	0	0	1200	1200	0	400	0		

Effective 12/17/96 Expiration ##### Operates: Mo We Fr

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Gulfport MS	KCS	0	0	CST	900	0	100	34	0	Fuel Work Crew Insp
2 *		Delisle MS	KCS	930	0		930	0		36	17	
3 *		Landon MS	KCS	955	0		955	0		46	32	
4 *		Hovey MS	KCS	1010	0		1010	0		20	43.5	
5 *		Howison MS	KCS	1020	0		1020	0		36	46.9	
6 *		McHenry MS	KCS	1025	0		1025	0		64	49.9	
7 *		Perkinston MS	KCS	1030	0		1030	0		34	55.2	
8 *		Wiggins MS	KCS	1040	0		1040	0		36	60.8	
9 *		Bond MS	KCS	1045	0		1045	0		35	63.8	
10 *		Brooklyn MS	KCS	1105	0		1105	0		31	75.6	
11 *		Camp Shelby MS	KCS	1125	0		1125	0		37	85.8	
12 *		Palmer MS	KCS	1135	0		1135	0		25	92	
13 *		Hattiesburg MS	KCS	1145	0		0	0	1200		96.2	

16 L GZNO1	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0		

Effective 1/22/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Gonzales LA	KCS	0	0		500	0	5	20	0	Fuel Work Crew Insp
2 *		Sorrento LA	KCS	515	0		515	0		16	4.9	
3 *		Barmen LA	KCS	525	0		525	0		30	7.6	
4 *		McElroy LA	KCS	530	0		530	0		19	10.1	

5 *	Gramercy LA	KCS		555	0		555	0		20	17.9	
6 *	Garyville LA	KCS		610	0		610	0		19	23	
7 *	Reserve LA	KCS		615	0		615	0		26	24.6	
8 *	Montegut LA	KCS		625	0		625	0		18	28.9	
9 *	Norco LA	KCS		650	0		650	0		23	36.3	
10 *	Frellsen LA	KCS		710	0		710	0		8	44	
11 *	New Orleans LA	KCS		825	0		0	0			53.9	

17 L HBGP1	1 Local,Dodgers ,Turn	3	0	0	0	0	0	0	0		

Effecti ve 12/18/96 Expiration ##### Operates: Tu Th Sa

# Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	Hattiesburg MS	KCS	0	0		900	0	100	17	0	Work Crew
2 *	Palmer MS	KCS	915	0		915	0		19	4.2	
3 *	Camp Shelby MS	KCS	935	0		935	0		24	10.4	Work
4 *	McLaurin Ms	KCS	940	0		940	0		20	12.4	
5 *	Brooklyn MS	KCS	1005	0		1005	0		17	20.6	
6 *	Maxie MS	KCS	1025	0		1025	0		22	26.2	
7 *	Wiggins MS	KCS	1050	0		1050	0		17	35.4	Work
8 *	Perkinston MS	KCS	1110	0		1110	0		21	41	
9 *	McHenry MS	KCS	1125	0		1125	0		19	46.3	
10 *	Wortham MS	KCS	1200	0		1200	0		19	57.6	
11 *	Delisle MS	KCS	1310	0		1310	0		20	79.2	
12 *	North Gulfport MS	KCS	1355	0		1355	0		12	94.2	
13 *	Gulfport MS	KCS	1405	0		0	0	100		96.2	Work

18 L NOGZ1	1 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effecti ve 1/22/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	New Orleans LA	KCS	0	0		2000	0	20	8	0	Fuel Work Crew Insp
2 *	Frellsen LA	KCS	2115	0		2135	0	20	23	9.9	
3 *	Norco LA	KCS	2155	0		2215	0	20	18	17.6	
4 *	Montegut LA	KCS	2240	0		2300	0	20	26	25	
5 *	Reserve LA	KCS	2310	0		110	1	200	19	29.3	
6 *	Garyville LA	KCS	115	1		135	1	20	20	30.9	
7 *	Gramercy	KCS	150	1		250	1	100	19	36	

		LA										
8 *	McElroy LA	KCS	315	1	335	1	20	30	43.8			
9 *	Barmen LA	KCS	340	1	410	1	30	16	46.3			
10 *	Sorrento LA	KCS	420	1	440	1	20	20	49			
11 *	Gonzales LA	KCS	455	1	0	0	200		53.9			

19 L PBSS1	1 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effecti ve 1/23/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa As Reqd

# Location	Railroad		— Ariv — TZ	Time	Dept — Day	TZ	Time	Sta Day	Time	Speed	Dist	— Yard Activity —
1 *	Pittsburg KS	KCS		0	0	CST	2000	0	45	15	0	Fuel Work Crew Insp
2 *	Joplin MO	KCS		2150	0		2150	0		17	27.4	
3 *	Saginaw MO	KCS		2210	0		2220	0	10	18	33.1	Work
4 *	Terminal Spur MO	KCS		2300	0		2310	0	10		45.3	Work
5 *	NEOSH-BN	KCS		2310	1		2310	1		12	46.2	
6 *	Neosho MO	KCS		2315	1		2345	1	30	20	47.2	Work
7 *	McElhany MO	KCS		5	2		20	2	15	15	53.9	Work
8 *	Goodman MO	KCS		35	2		35	2		21	57.7	
9 *	Anderson MO	KCS		55	2		125	2	30	18	64.8	Work
10 *	Noel MO	KCS		155	2		205	2	10	20	73.8	Work
11 *	Peterson AR	KCS		250	2		320	2	30	13	89.1	Work
12 *	Decatur AR	KCS		325	2		325	2		22	90.2	
13 *	Gentry AR	KCS		340	2		350	2	10	14	95.7	Work
14 *	Flint Creek AR	KCS		355	2		405	2	10	17	96.9	Work
15 *	Siloam Springs AR	KCS		425	2		525	2	100	20	102.5	Work
16 *	Watts OK	KCS		545	2		545	2		20	109.1	
17 *	Siloam Springs AR	KCS		605	2		0	0			115.8	

20 L SHDQ1	1 Local,Dodgers ,Turn	7	0	0	0	0	0	0	0		

Effecti ve 12/21/9 7 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

# Location	Railroad		— Ariv — TZ	Time	Dept — Day	TZ	Time	Sta Day	Time	Speed	Dist	— Yard Activity —
1 *	Shreveport LA	KCS		0	0		2230	0		9	0	Fuel Work Crew Insp
2 *	Blanchard LA	KCS		2305	0		2305	0		20	5	
3 *	Shoreline LA	KCS		2355	0		40	1	45	20	21.5	Work
4 *	Sandra LA	KCS		125	1		125	1		19	36.5	

5	*	Jury TX	KCS	240	1	240	1		24	60.5			
6	*	Texarkana TX	KCS	255	1	355	1	100	17	66.4	Work		
7	*	Ashdown AR	KCS	455	1	555	1	100	19	83.1	Work		
8	*	Gifford Hill Spur	KCS	625	1	625	1		25	92.4			
9	*	Wilton AR	KCS	630	1	630	1		21	94.5			
10	*	Winthrop AR	KCS	710	1	710	1		19	108.2			
11	*	Wade AR	KCS	745	1	745	1		21	119.3			
12	*	DeQueen AR	KCS	800	1	0	0			124.6			

21	M ALSH1	1	General Manifest	7	0	0	0	0	0	0	0	0	0

Effective 4/22/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Alliance TX	KCS		0	0	CST	100	0	45	19	0	Fuel Work Crew Insp
2	*	Greenville TX	KCS		625	0		755	0	130	25	102.7	Crew
3	*	Hughes Springs TX	KCS		1145	0		1555	0	410	22	198	Work
4	*	Shreveport LA	KCS		1845	0		0	0	100		260.3	Fuel Work Insp

22	M ARLC1	1	General Manifest	7	0	0	0	0	0	0	0	0	0

Effective 8/ 6/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Artesia MS	KCS		0	0	CST	2200	0	100	19	0	Fuel Work Crew Insp
2	*	Meridian MS	KCS		230	1		400	1	130	29	84	Work Crew
3	*	Jackson Yard MS	KCS		705	1		905	1	200	8	174.5	Work
4	*	Jackson MS	KCS		945	1		1015	1	30	17	179.8	
5	*	Vicksburg MS	KCS		1255	1		1315	1	20	23	224.6	Crew
6	*	Monroe LA	KCS		1630	1		1830	1	200	23	298.5	Work
7	*	Bossier Yard	KCS		2235	1		2255	1	20	22	393.8	Crew
8	*	Benson LA	KCS		112	2		142	2	30	30	443.2	Work
9	*	Leesville LA	KCS		350	2		520	2	130	30	507.1	Work
10	*	DeQuincy LA	KCS		700	2		745	2	45	24	557.7	Work
11	*	Westlake LA	KCS		835	2		835	2		29	577.8	
12	*	Lake	KCS		840	2		0	0	45		580.2	Fuel Work

Charles LA Insp

23	M ARME1	1	General Manifest	7	0	0	20	20	20	0	0	

Effective 12/10/96 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Corinth MS	KCS	0	0		800	0		24	0	Work Crew Insp
2	*	Rienzi MS	KCS	830	0		830	0		24	12.2	
3	*	Booneville MS	KCS	850	0		850	0		25	20.3	
4	*	Saltillo MS	KCS	940	0		1115	0	135	25	41.3	
5	*	Tupelo MS	KCS	1135	0		1135	0		29	49.8	
6	*	Glen MS	KCS	1150	0		1150	0		25	57	
7	*	West Point MS	KCS	1325	0		1325	0		24	95.9	
8	*	Tibbee MS	KCS	1340	0		1340	0		23	101.8	
9	*	Artesia MS	KCS	CST 1400	0		100	1	1100	26	109.6	Fuel Work Crew Insp
10	*	Macon MS	KCS	150	1		250	1	100	23	131.1	
11	*	Shuqualak MS	KCS	315	1		315	1		34	140.6	
12	*	Wahalak MS	KCS	325	1		325	1		24	146.3	
13	*	Marion MS	KCS	510	1		550	1	40	29	188.8	Work
14	*	Meridian MS	KCS	600	1		0	0	100		193.6	Work

24	M BMKC1	1	General Manifest	7	0	0	0	0	0	0	0	

Effective 12/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Beaumont TX	KCS	0	0	CST	200	0	100	31	0	Fuel Work Crew Insp
2	*	Ludington LA	KCS	435	0		520	0	45	32	79	Work
3	*	Leesville LA	KCS	555	0		725	0	130	22	97.6	Work
4	*	Shreveport LA	KCS	1235	0		1535	0	300	24	212.7	Work Crew
5	*	Heavener OK	KCS	35	1		435	1	400	10	428	Fuel Work Crew
6	*	NEOSH-BN	KCS	2105	1		2150	1	45	22	592.9	Work
7	*	Pittsburg KS	KCS	2355	1		130	2	135	23	639.1	Work Crew
8	*	Kansas City MO	KCS	655	2		0	0			764.1	

25	M DASH7	1	General Manifest	0	0	0	0	0	0	0	0	

Effecti ve 8/ 6/97 Expira tion ##### Operates: As Reqd

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Zacha Jct. TX	KCS		0	0		1300	0	45	15	0	Fuel Work Crew Insp
2	*	Garland TX	KCS		1315	0		1315	0		22	3.8	
3	*	Greenville TX	KCS		1500	0		1520	0	20	25	43	Crew
4	*	Sulphur Springs TX	KCS		1635	0		1650	0	15	26	74.3	Work
5	*	Hughes Springs TX	KCS		1920	0		2010	0	50	25	138.3	Work
6	*	Jefferson TX	KCS		2115	0		2115	0		20	165.3	
7	*	Shreveport LA	KCS		2300	0		0	0			200.6	
26	M HOSH1	1	General Manifest		7	0	0	0	0	0	0	0	

Effecti ve 11/5/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Houston TX	TM		0	0		2100	0	100	4	0	Fuel Work Crew Insp
2	*	Settegast Jct. TX	TM		2300	0		2300	0		21	9	
3	*	BMONT-TM	TM		255	1		255	1			90	
4	*	Beaumont TX	KCS		300	1		400	1	100	23	90	Crew
5	*	Leesville LA	KCS		815	1		815	1		18	187.6	
6	*	Harriet Street LA	KCS		1435	1		1435	1		6	300.3	
7	*	Shreveport LA	KCS		1500	1		0	0			302.7	
27	M JASH1	1	General Manifest		7	0	0	0	0	0	0	0	

Effecti ve 8/ 6/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Jackson Yard MS	KCS		0	0	CST	2300	0		19	0	Work
2	*	Vicksburg MS	KCS		135	1		335	1	200	23	50.1	Work Crew
3	*	Monroe LA	KCS		650	1		850	1	200	20	124	Work
4	*	Shreveport	KCS		1400	1		0	0	100		227.3	Fuel Work

LA Insp

28 M 1 General 7 0 0 0 0 0 0 0
KCBM1 Manifest

Effecti ve 12/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Kansas City MO	KCS	0	0		1400	0		20	0	Fuel Work Crew Insp
2	*	Pittsburg KS	KCS	2010	0		2205	0	155	20	125	Crew
3	*	Heavener OK	KCS	830	1		1120	1	250	20	336.2	Work Crew
4	*	Wade AR	KCS	1620	1		1650	1	30	37	436.4	Work
5	*	Wilton AR	KCS	1730	1		1800	1	30	26	461.2	Work
6	*	Shreveport LA	KCS	2130	1	CST	200	2	430	22	551.5	Work Crew
7	*	Leesville LA	KCS	710	2		840	2	130	32	666.6	Work
8	*	DeQuincy LA	KCS	1015	2		1115	2	100	30	717.2	Work
9	*	Beaumont TX	KCS	1250	2		0	0			764.1	

29 M 1 General 7 0 0 0 0 0 0 0
KCSH1 Manifest

Effecti ve 6/14/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Kansas City MO	KCS	0	0		700	0	100	23	0	Fuel Work Crew Insp
2	*	Oskaloosa MO	KCS	1150	0		1150	0		27	109.4	Work
3	*	Pittsburg KS	KCS	1225	0		1915	0	650	21	125	Work Crew
4	*	Neosho MO	KCS	2130	0		2130	0		10	172.3	
5	*	McElhany MO	KCS	2210	0		2310	0	100	22	179	Work
6	*	Siloam Springs AR	KCS	125	1		255	1	130	27	227.5	
7	*	Watts OK	KCS	310	1		410	1	100	25	234.2	Work
8	*	Heavener OK	KCS	815	1		1215	1	400	24	336.2	Fuel Work Crew
9	*	DeQueen AR	KCS	1610	1		1710	1	100	28	431.1	Work
10	*	Ashdown AR	KCS	1830	1		1830	1		25	468.4	
11	*	Texarkana TX	KCS	1910	1		1910	1		25	485.1	
12	*	South Texarkana TX	KCS	1940	1		2040	1	100	20	497.5	
13	*	Shreveport LA	KCS	2325	1		0	0			551.5	

30 M 1 General 7 0 0 0 0 0 0 0
LCAR1 Manifest

Effecti ve 8/ 6/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Lake Charles LA	KCS	0	0	CST	1000	0	45	28	0	Fuel Work Crew Insp
2	*	Ludington LA	KCS	1155	0		1240	0	45	28	54.5	Work
3	*	Leesville LA	KCS	1320	0		1405	0	45	23	73.1	Work
4	*	Bossier Yard	KCS	1855	0		1915	0	20	23	186.4	Crew
5	*	Monroe LA	KCS	2325	0		125	1	200	23	281.7	Work
6	*	Vicksburg MS	KCS	440	1		500	1	20	17	355.6	Crew
7	*	Jackson MS	KCS	735	1		805	1	30	8	400.4	
8	*	Jackson Yard MS	KCS	845	1		1045	1	200	29	405.7	Work
9	*	Meridian MS	KCS	1355	1		1525	1	130	19	496.2	Work Crew
10	*	Artesia MS	KCS	1955	1		0	0	100		580.2	Fuel Work Insp

31 M 1 General 7 0 0 0 0 0 0 0
LTPA1 Manifest

Effecti ve 8/ 6/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Latanier LA	KCS	0	0	CST	1700	0	45	15	0	Fuel Work Crew Insp
2	*	Elm Grove LA	KCS	35	1		120	1	45	9	115.3	
3	*	Shreveport LA	KCS	400	1		500	1	100	15	139.5	Crew
4	*	Leesville LA	KCS	1230	1		1330	1	100	28	254.6	Work
5	*	Beaumont TX	KCS	1700	1		0	0			352.2	Work

32 M 1 General 7 0 0 0 0 0 0 0
MEAR1 Manifest

Effecti ve 12/10/9 6 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Meridian	KCS	CST 0	0		700	0	100	29	0	Work

		MS											
2	*	Marion MS	KCS	710	0	710	0		23	4.8	Work		
3	*	Lauderdale MS	KCS	745	0	745	0		27	18.1			
4	*	Sucarnoche e MS	KCS	820	0	820	0		24	33.7			
5	*	Electric Mills MS	KCS	825	0	825	0		22	35.7			
6	*	Scooba MS	KCS	840	0	840	0		24	41.3			
7	*	Wahalak MS	KCS	855	0	855	0		23	47.3			
8	*	Shuqualak MS	KCS	910	0	910	0		29	53			
9	*	Macon MS	KCS	930	0	1030	0	100	23	62.5	Work		
10	*	Artesia MS	KCS	1125	0	2225	0	1100	31	84	Fuel Work Crew Insp		
11	*	Tibbee MS	KCS	2240	0	2240	0		25	91.8			
12	*	Tupelo MS	KCS	45	1	45	1		25	143.8			
13	*	Saltillo MS	KCS	105	1	240	1	135	23	152.3	Work		
14	*	Booneville MS	KCS	335	1	335	1		27	173.3			
15	*	Corinth MS	KCS	420	1	0	0			193.6			

33	M MXSH1	1	General Manifest	3	0	0	0	0	0	0	0		

Effective 8/ 6/97 Expiration ##### Operates: Su Tu Th As Reqd

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Laredo TX	TM	0	0		430	0	45	19	0	Fuel Work Crew Insp
2	*	Robstown TX	TM	1205	0		1235	0	30	23	142.6	Crew
3	*	Victoria TX	TM	1645	0		1730	0	45	18	238.2	
4	*	Flatonia TX	TM	2135	0		2235	0	100	23	311.9	
5	*	Houston TX	TM	345	1		405	1	20	16	429.4	Crew
6	*	Beaumont TX	KCS	950	1	CST	1035	1	45	31	519.4	Fuel Work Crew Insp
7	*	Ludington LA	KCS	1310	1		1340	1	30	32	598.4	Work
8	*	Leesville LA	KCS	1415	1		1540	1	125	23	617	Work
9	*	Harriet Street LA	KCS	2030	1		2100	1	30	10	729.7	
10	*	Shreveport LA	KCS	2115	1		0	0	100		732.1	Fuel Work Insp

34	M NOAL1	1	General Manifest	7	2	0	0	0	100	100	100		

Effective 8/ 6/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	New Orleans LA	KCS	0	0	CST	5	0	100	16	0	Fuel Work Crew Insp

2 *	Baton Rouge LA	KCS		500	0		545	0	45	21	76.3	Work	
3 *	Latanier LA	KCS		1015	0		1035	0	20	20	171.6	Crew	
4 *	Elm Grove LA	KCS		1615	0		1645	0	30	12	286.9		
5 *	Shreveport LA	KCS		1845	0		1930	0	45	22	311.1	Work Crew	
6 *	Hughes Springs TX	KCS		2220	0		2335	0	115	25	373.4	Work	
7 *	Greenville TX	KCS		320	1		340	1	20	24	468.7	Crew	
8 *	Lavon Jct.	KCS		450	1		520	1	30	21	496.9	Work	
9 *	Alliance TX	KCS		850	1		850	1			571.4		
10 *	ALLIT-BNSF	KCS		850	2		0	0			571.4		

35 M NOSH1	1	General Manifest	7	0	0	0	0	0	0	0	0	

Effective 10/19/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		New Orleans LA	KCS CST	0	0	CST	930	0	100	17	0	Fuel Work Crew Insp
2 *		Barmen LA	KCS	1210	0		1240	0	30	13	46.3	Work
3 *		Baton Rouge LA	KCS	1455	0		1610	0	115	21	76.3	Work Crew
4 *		Latanier LA	KCS	2040	0		245	1	605	9	171.6	Work Crew
5 *		Mallin LA	KCS	420	1		540	1	120	24	185.8	Work
6 *		Kraft LA	KCS	810	1		955	1	145	19	246.9	Work
7 *		Harriet Street LA	KCS	1310	1		1410	1	100	7	308.7	Work
8 *		Shreveport LA	KCS	1430	1		0	0	100		311.1	Fuel Work Insp

36 M NSSH1	1	General Manifest	7	0	0	0	0	0	0	0	0	

Effective 8/ 6/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		BHAM-NS	NS	0	0		1900	0		27	0	
2 *		MERID-NS	NS	55	1		55	1		12	159.9	
3 *		Meridian MS	KCS	100	1		120	1	20	29	160.9	Work Crew
4 *		Jackson Yard MS	KCS	430	1		700	1	230	17	251.4	Work
5 *		Vicksburg MS	KCS	955	1		1055	1	100	25	301.5	Work Crew
6 *		Monroe LA	KCS	1350	1		1550	1	200	23	375.4	Work
7 *		Bossier Yard	KCS	2000	1		2000	1		8	470.7	
8 *		Harriet Street LA	KCS	2040	1		2140	1	100	7	476.3	Work

9	*	Shreveport LA	KCS		2200	1		0	0	100		478.7	Fuel Work Insp

37	M PALT1	1	General Manifest		7	0	0	0	0	0	0	0	

Effective 8/ 6/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

			— Ariv —			— Dept —					
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Port Arthur TX	KCS	0	0	CST	1500	0		40	0	
2	*	Beaumont TX	KCS	1530	0		1600	0	30	42	20.1	Work
3	*	Benson LA	KCS	1950	0		2050	0	100	40	181.6	Work
4	*	Leesville LA	KCS	2225	0		2325	0	100	32	245.5	Work
5	*	Shreveport LA	KCS	300	1		400	1	100	13	360.6	Crew
6	*	Grappes Bluff LA	KCS	850	1		935	1	45	20	423.1	Work
7	*	Kraft LA	KCS	940	1		940	1		18	424.8	
8	*	Mallin LA	KCS	1300	1		1345	1	45	6	485.9	Work
9	*	Latanier LA	KCS	1600	1		0	0			500.1	

38	M SHHO1	1	General Manifest		7	0	0	0	0	0	0	0	

Effective 11/5/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

			— Ariv —			— Dept —					
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Shreveport LA	KCS	0	0	CST	2300	0		6	0	Fuel Work Crew Insp
2	*	Harriet Street LA	KCS	2325	0		2325	0		16	2.4	
3	*	Leesville LA	KCS	625	1		625	1		21	115.1	Work
4	*	Beaumont TX	TM	1100	1		1100	1			212.7	Work Crew
5	*	BMONT-TM	TM	1105	1		1201	1	56	20	212.7	
6	*	Settegast Jct. TX	TM	1600	1		1600	1		4	293.7	
7	*	Houston TX	TM	1800	1		0	0			302.7	Crew

39	M SHJA1	1	General Manifest		7	0	0	0	0	0	0	0	

Effective 8/ 6/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

			— Ariv —			— Dept —					
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —

1 *	Shreveport LA	KCS		0	0	CST	700	0	100	8	0	Fuel Work Crew Insp
2 *	Bossier Yard	KCS		800	0		800	0		23	8	
3 *	Monroe LA	KCS		1210	0		1410	0	200	23	103.3	Work
4 *	Vicksburg MS	KCS		1725	0		1925	0	200	19	177.2	Work Crew
5 *	Jackson MS	KCS		2145	0		2150	0	5	32	222	Work
6 *	Jackson Yard MS	KCS		2200	0		0	0			227.3	

40 M SHKC1	1 General Manifest	7	0	0	0	0	0	0	0		

Effective 6/14/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	—Ariv— Time	Day	TZ	—Dept— Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Shreveport LA	KCS	0	0	CST	100	0	100	22	0	Fuel Work Crew Insp
2 *		Texarkana TX	KCS	405	0		505	0	100	25	66.4	Work
3 *		DeQueen AR	KCS	715	0		905	0	150	24	120.4	Work
4 *		Heavener OK	KCS	1300	0		2100	0	800	25	215.3	Fuel Work Crew
5 *		Watts OK	KCS	105	1		105	1		27	317.3	
6 *		Siloam Springs AR	KCS	120	1		220	1	100	23	324	Work
7 *		Pittsburg KS	KCS	645	1		845	1	200	16	426.5	Work Crew
8 *		Kansas City MO	KCS	1630	1		0	0			551.5	

41 M SHMX1	1 General Manifest	7	0	0	0	0	0	0	0		

Effective 12/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	—Ariv— Time	Day	TZ	—Dept— Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Shreveport LA	KCS	0	0	CST	2330	0	100	10	0	Fuel Work Crew Insp
2 *		Harriet Street LA	KCS	2345	0		55	1	110	26	2.4	Work
3 *		Leesville LA	KCS	520	1		650	1	130	34	115.1	Work
4 *		DeQuincy LA	KCS	820	1		905	1	45	33	165.7	Work
5 *		Beaumont TX	TM	1030	1		1115	1	45	16	212.7	Fuel Work Crew Insp
6 *		Houston TX	TM	1700	1		1720	1	20	23	302.7	Crew
7 *		Flatonia TX	TM	2225	1		2325	1	100	18	420.2	
8 *		Victoria TX	TM	330	2		415	2	45	23	493.9	
9 *		Robstown TX	TM	825	2		855	2	30	19	589.5	Crew
10 *		Laredo TX	TM	1630	2		0	0	100		732.1	Fuel Work Insp

42 M 1 General 7 0 0 0 0 0 0 0
SHNO1 Manifest

Effecti ve 9/13/96 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0		1500	0	200	18	0	Fuel Work Crew Insp
2	*	Grappes Bluff LA	KCS	1830	0		1930	0	100	18	62.5	Work
3	*	Latanier LA	KCS	2340	0		140	1	200	21	139.5	Work Crew
4	*	Baton Rouge LA	KCS	610	1		840	1	230	13	234.8	Work Crew
5	*	Barmen LA	KCS	1055	1		1155	1	100	25	264.8	Work
6	*	Reserve LA	KCS	1235	1		1305	1	30	16	281.8	Work
7	*	NEWOR-CSXT	KCS	1450	1		1450	1		11	310.3	Work
8	*	New Orleans LA	KCS	1505	1		0	0			313.1	

43 M 1 General 7 0 0 0 0 0 0 0
SHNO7 Manifest

Effecti ve 9/13/96 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0		200	0	200	18	0	Fuel Work Crew Insp
2	*	Grappes Bluff LA	KCS	530	0		630	0	100	18	62.5	Work
3	*	Latanier LA	KCS	1040	0		1240	0	200	21	139.5	Work Crew
4	*	Baton Rouge LA	KCS	1710	0		1905	0	155	16	234.8	Work Crew
5	*	Reserve LA	KCS	2200	0		2300	0	100	15	281.8	Work
6	*	New Orleans LA	KCS	100	1		0	0			311.1	

44 M 1 General 7 0 0 0 0 0 0 0
SHNS1 Manifest

Effecti ve 8/ 6/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0	CST	1530	0	100	7	0	Fuel Work Crew Insp
2	*	Harriet	KCS	1550	0		1550	0		8	2.4	

		Street LA										
3	*	Bossier Yard	KCS	1630	0	1700	0	30	19	8	Work	
4	*	Monroe LA	KCS	2200	0	2315	0	115	21	103.3	Work	
5	*	Vicksburg MS	KCS	250	1	350	1	100	14	177.2	Work Crew	
6	*	Jackson Yard MS	KCS	730	1	930	1	200	24	227.3	Work	
7	*	Meridian MS	NS	1320	1	1420	1	100	12	317.8	Work	
8	*	MERID-NS	NS	1425	1	1425	1		25	318.8	Crew	
9	*	TSCSA-NS	NS	1815	1	1815	1		20	414.7		
10	*	BHAM-NS	NS	2125	1	0	0			478.7		

45	P ALNS1	1	General Manifest	7	0	0	0	0	0	0	0

Effective 10/12/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Alliance TX	KCS	0	0		1200	1		22	0	Crew
2	*	Greenville TX	KCS	1635	1		1705	1	30	24	102.7	Crew
3	*	Shreveport LA	KCS	2345	1	CST	45	2	100	21	260.3	Fuel Work Crew Insp
4	*	Vicksburg MS	KCS	910	2		940	2	30	15	437.5	Crew
5	*	Jackson Yard MS	KCS	1255	2		1325	2	30	29	487.6	Crew
6	*	Meridian MS	NS	1635	2		1705	2	30	12	578.1	Crew
7	*	MERID-NS	NS	1710	2		1710	2		27	579.1	
8	*	BHAM-NS	NS	2300	2		0	0			739	

46	R AB201	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0

Effective 2/12/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Aberdeen MS	KCS	0	0		300	0	100	22	0	Work Crew Insp
2	*	Binford MS	KCS	315	0		330	0	15	18	5.5	
3	*	Strongs MS	KCS	345	0		400	0	15	16	10	
4	*	Prairie MS	KCS	505	0		520	0	15	15	27.6	
5	*	Muldon MS	KCS	530	0		545	0	15	14	30.1	
6	*	West Point MS	KCS	620	0		650	0	30	12	38.5	Work
7	*	WSPOI-CAGY	KCS	655	0		655	0		8	39.5	Work
8	*	Tibbee MS	KCS	730	0		745	0	15	8	44.4	
9	*	Mayhew MS	KCS	805	0		835	0	30	8	47.2	
10	*	Artesia MS	KCS	915	0		0	0	100		52.2	Work

47	R AB201	2	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 2/12/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Artesia MS	KCS	0	0		2000	0	100	9	0	Fuel
2	*	Mayhew MS	KCS	2035	0		2035	0		7	5	
3	*	Tibbee MS	KCS	2100	0		2100	0		8	7.8	
4	*	WSPOI-CAGY	KCS	2135	0		2135	0		12	12.7	
5	*	West Point MS	KCS	2140	0		2140	0		17	13.7	
6	*	Muldon MS	KCS	2210	0		2210	0		15	22.1	
7	*	Prairie MS	KCS	2220	0		2220	0		16	24.6	
8	*	Strongs MS	KCS	2325	0		2325	0		18	42.2	
9	*	Binford MS	KCS	2340	0		2340	0		17	46.7	
10	*	Aberdeen MS	KCS	0	1		0	0			52.2	

48	R AD101	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 1/24/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Ashdown AR	KCS	0	0		800	0	45	6	0	Fuel Work Crew Insp
2	*	ASHDN-KRR	KCS	810	0		910	0	100	4	1	
3	*	Ashdown AR	KCS	925	0		0	0			2	

49	R AR101	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Artesia MS	KCS	0	0		1000	0	100	9	0	Fuel Work Crew Insp
2	*	CLMBM-BN	KCS	1145	0		1215	0	30	12	15	
3	*	CLMBM-CAGY	KCS	1225	0		1255	0	30	24	17	
4	*	CLMBM-GTRA	KCS	1300	0		1330	0	30	8	19	
5	*	CLMBM-NS	KCS	1345	0		1415	0	30	6	21	

6 *	Columbus MS	KCS		1425	0		0	0			22			

50 R AR101	2 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0			

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	---- Ariv ---- Time	Day	TZ	Sta Dept -- Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Columbus MS	KCS	0	0		1500	0		8	0	
2 *		McIntyre Hill MS	KCS	1540	0		1540	0		10	5.1	
3 *		Bentoak MS	KCS	1555	0		1555	0		8	7.7	
4 *		Billips MS	KCS	1635	0		1635	0		8	12.7	
5 *		Artesia MS	KCS	1645	0		0	0			14	

51 R AR102	1 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0			

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Fr Sa

#	Location	Railroad	TZ	---- Ariv ---- Time	Day	TZ	Sta Dept -- Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Artesia MS	KCS	0	0		1200	0		25	0	Fuel Work Crew Insp
2 *		Bentoak MS	KCS	1215	0		1215	0		31	6.3	
3 *		McIntyre Hill MS	KCS	1220	0		1220	0		20	8.9	
4 *		Columbus MS	KCS	1235	0		1235	0		26	14	
5 *		McCrary MS	KCS	1255	0		1255	0		24	22.7	
6 *		Reform AL	KCS	1345	0		1345	0		23	42.9	
7 *		Gordo AL	KCS	1405	0		1405	0		26	50.7	
8 *		Colony AL	KCS	1445	0		1445	0		26	68	
9 *		North Port AL	KCS	1455	0		1455	0		20	72.4	
10 *		Tuscaloosa AL	KCS	1500	0		0	0			74.1	

52 R AR102	2 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0			

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Fr Sa

#	Location	Railroad	TZ	---- Ariv ---- Time	Day	TZ	Sta Dept -- Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Tuscaloosa AL	KCS	0	0		1800	0		20	0	

2 *	North Port AL	KCS	1805	0	1805	0	18	1.7	
3 *	Colony AL	KCS	1820	0	1820	0	19	6.1	
4 *	Gordo AL	KCS	1915	0	1915	0	19	23.4	
5 *	Reform AL	KCS	1940	0	1940	0	20	31.2	
6 *	McCrary MS	KCS	2040	0	2040	0	17	51.4	
7 *	Columbus MS	KCS	2110	0	2110	0	20	60.1	
8 *	McIntyre Hill MS	KCS	2125	0	2125	0	16	65.2	
9 *	Bentoak MS	KCS	2135	0	2135	0	19	67.8	
10 *	Artesia MS	KCS	2155	0	0	0		74.1	

53 R AR201	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1 *	Artesia MS	KCS	0	0	100	0		20		0	Fuel Work Crew Insp
2 *	Crawford MS	KCS	125	0	125	0		19		8.2	
3 *	Brooksville MS	KCS	140	0	140	0		17		12.9	
4 *	Macon MS	KCS	210	0	210	0		19		21.5	
5 *	Shuqualak MS	KCS	240	0	240	0		23		31	
6 *	Wahalak MS	KCS	255	0	255	0		18		36.7	
7 *	Scooba MS	KCS	315	0	315	0		17		42.7	
8 *	Electric Mills MS	KCS	335	0	335	0		24		48.3	
9 *	Sucarnoche MS	KCS	340	0	340	0		17		50.3	
10 *	Porterville MS	KCS	350	0	0	0				53.2	

54 R AR201	2	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 2/12/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1 *	Porterville MS	KCS	0	0	2000	0		17		0	
2 *	Sucarnoche MS	KCS	2010	0	2010	0		24		2.9	
3 *	Electric Mills MS	KCS	2015	0	2015	0		17		4.9	
4 *	Scooba MS	KCS	2035	0	2035	0		24		10.5	
5 *	Wahalak MS	KCS	2050	0	2050	0		17		16.5	
6 *	Shuqualak	KCS	2110	0	2110	0		19		22.2	

		MS											
7	*	Macon MS	KCS		2140	0		2140	0		21	31.7	
8	*	Brooksville MS	KCS		2205	0		2205	0		19	40.3	
9	*	Crawford MS	KCS		2220	0		2220	0		8	45	
10	*	Artesia MS	KCS		2325	0		0	0	100		53.2	Work
55	R	AR202	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 7/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#		Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*		Artesia MS	KCS	0	0		1700	0		8	0	Fuel Work Crew Insp
2	*		Mayhew MS	KCS	1737	0		1737	0		8	5	
3	*		Tibbee MS	KCS	1758	0		1758	0		8	7.8	
4	*		West Point MS	KCS	1842	0		1842	0		15	13.7	
5	*		Muldon MS	KCS	1916	0		1916	0		17	22.1	
6	*		Prairie MS	KCS	1925	0		1925	0		15	24.6	
7	*		Egypt MS	KCS	2005	0		2005	0		14	34.8	
8	*		Okolona MS	KCS	2037	0		2037	0		14	42.2	
9	*		Chickasaw MS	KCS	2057	0		2057	0		13	46.9	
10	*		Shannon MS	KCS	2110	0		2140	0	30	15	49.8	Work
11	*		Glen MS	KCS	2151	0		2151	0		15	52.6	
12	*		Verona MS	KCS	2204	0		2204	0		15	55.8	
13	*		Tupelo MS	KCS	2220	0		2220	0		17	59.8	
14	*		Saltillo MS	KCS	2250	0		0	0			68.3	
56	R	AR202	2	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 7/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#		Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*		Saltillo MS	KCS	0	0		2300	0		17	0	
2	*		Tupelo MS	KCS	2330	0		2330	0		24	8.5	
3	*		Verona MS	KCS	2340	0		2340	0		19	12.5	
4	*		Glen MS	KCS	2350	0		2350	0		17	15.7	
5	*		Shannon MS	KCS	0	1		0	1		17	18.5	
6	*		Chickasaw MS	KCS	10	1		10	1		19	21.4	
7	*		Okolona MS	KCS	25	1		25	1		18	26.1	
8	*		Egypt MS	KCS	50	1		50	1		17	33.5	
9	*		Prairie MS	KCS	125	1		125	1		15	43.7	
10	*		Muldon MS	KCS	135	1		135	1		20	46.2	
11	*		West Point MS	KCS	200	1		200	1		10	54.6	
12	*		Tibbee MS	KCS	235	1		235	1		8	60.5	

13	*	Mayhew MS	KCS		255	1		255	1		10	63.3	
14	*	Artesia MS	KCS		325	1		0	0			68.3	

57	R AR203	1	Local,Dodgers ,Turn		7	0	0	0	0	0	0	0	

Effective 7/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Artesia MS	KCS	0	0		2300	0			0	

58	R BC101	1	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effective 5/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0		1400	0		10	0	
2	*	Fosters LA	KCS	1510	0		1510	0		19	11.4	
3	*	Haughton LA	KCS	1540	0		1540	0		18	21.1	
4	*	Sibley LA	KCS	1620	0		1620	0		19	33.4	
5	*	Ada LA	KCS	1650	0		1650	0		8	42.8	
6	*	Gibsland LA	KCS	1725	0		1725	0		19	47.6	
7	*	Arcadia LA	KCS	1750	0		1750	0		19	55.5	
8	*	Simsboro LA	KCS	1815	0		1815	0		30	63.3	
9	*	Pabco LA	KCS	1820	0		1820	0		19	65.8	
10	*	Ruston LA	KCS	1840	0		1840	0		18	72	
11	*	Choudrant LA	KCS	1905	0		1905	0		18	79.4	
12	*	Monroe LA	KCS	2025	0		0	0			103.3	

59	R BC101	2	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effective 5/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Monroe LA	KCS	0	0		700	0		18	0	
2	*	Choudrant LA	KCS	820	0		820	0		22	23.9	
3	*	Ruston LA	KCS	840	0		840	0		19	31.3	
4	*	Pabco LA	KCS	900	0		900	0		15	37.5	
5	*	Simsboro LA	KCS	910	0		910	0		19	40	

6	*	Arcadia LA	KCS		935	0		935	0		19	47.8	
7	*	Gibsland LA	KCS		1000	0		1000	0		10	55.7	
8	*	Ada LA	KCS		1030	0		1030	0		19	60.5	
9	*	Sibley LA	KCS		1100	0		1100	0		18	69.9	
10	*	Haughton LA	KCS		1140	0		1140	0		19	82.2	
11	*	Fosters LA	KCS		1210	0		1210	0		9	91.9	
12	*	Shreveport LA	KCS		1325	0		0	0			103.3	

60	R CO203	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 2/12/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Corinth MS	KCS		0	0		355	0	100		0	Fuel Work Crew Insp
2	*	CRNTH-RRC	KCS		355	1		355	1			1	
3	*	Corinth MS	KCS		355	2		355	2		11	2	
4	*	Five Point MS	KCS		405	2		405	2		20	3.8	
5	*	Sharp MS	KCS		425	2		425	2		20	10.6	
6	*	Yellow Creek MS	KCS		455	2		455	2		18	20.6	
7	*	Preston TN	KCS		545	2		545	2		13	35.8	
8	*	Counce TN	KCS		550	2		0	0			36.9	

61	R CO203	2	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 2/12/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Counce TN	KCS		0	0		100	0		13	0	
2	*	Preston TN	KCS		105	0		105	0		20	1.1	
3	*	Yellow Creek MS	KCS		150	0		150	0		17	16.3	
4	*	Sharp MS	KCS		225	0		225	0		20	26.3	
5	*	Five Point MS	KCS		245	0		245	0		11	33.1	
6	*	Corinth MS	KCS		255	0		0	0			34.9	

62	R DA101	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effecti ve 11/29/9 6 Expira tion ##### Operat es: Su We Th Fr Sa

— Ariv —	— Dept —	Sta

#	Location	Railroad		TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Dallas TX	KCS		0	0	CST	800	0	100		0	Fuel Work Crew Insp
2	*	DALAS-RAMP	KCS		800	1		1200	1	400		0.1	Work
3	*	Dallas TX	KCS		1200	2		0	0	300		0.2	Work

63	R DA102	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Su Mo Tu We Th Fr

#	Location	Railroad		TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
					— Ariv —			— Dept —			Sta		
1	*	Dallas TX	KCS		0	0	CST	1000	0	100	9	0	Fuel Work Crew Insp
2	*	Zacha Jct. TX	KCS		1105	0		1105	0		4	9.4	
3	*	Plano TX	KCS		1350	0		1350	0			21.5	
4	*	Cowley TX	KCS		1350	1		1350	1		17	22.1	
5	*	Metro TX	KCS		1600	1		1600	1		17	58	
6	*	Cowley TX	KCS		1805	1		1805	1			93.9	
7	*	Plano TX	KCS		1805	2		1805	2		4	94.5	
8	*	Zacha Jct. TX	KCS		2055	2		2055	2		9	106.6	
9	*	Dallas TX	KCS		2200	2		0	0			116	

64	R DA201	1	Local,Dodgers,Turn	5	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Su Mo Tu We Th

#	Location	Railroad		TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
					— Ariv —			— Dept —			Sta		
1	*	Dallas TX	KCS		0	0	CST	1600	0	100	10	0	Fuel Work Crew Insp
2	*	Zacha Jct. TX	KCS		1655	0		1655	0		18	9.4	
3	*	Lavon Jct.	KCS		1745	0		1745	0		18	24.2	
4	*	Zacha Jct. TX	KCS		1835	0		1835	0		9	39	
5	*	Dallas TX	KCS		1935	0		1935	0			48.4	
6	*	DALAS-RAMP	KCS		1935	1		1935	1			48.5	Work
7	*	Dallas TX	KCS		1935	2		0	0			48.6	

65	R DA202	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Mo Tu We Th Fr Sa

— Ariv —		— Dept —	Sta

#	Location	Railroad		TZ	Time	Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Dallas TX	KCS		0	0	CST	2200	0	100	9	0	Fuel Work Crew Insp
2	*	Zacha Jct. TX	KCS		2305	0		2305	0		4	9.4	
3	*	Cowley TX	KCS		155	1		155	1		17	22.1	
4	*	Metro TX	KCS		400	1		400	1		10	58	
5	*	Zacha Jct. TX	KCS		855	1		855	1		9	106.6	
6	*	Dallas TX	KCS		1000	1		0	0			116	
66	R DA301		1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Su Mo Tu We Th

#	Location	Railroad		TZ	— Ariv — Time	Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Dallas TX	KCS		0	0	CST	2359	1		3	0	Fuel Work Crew Insp
2	*	Zacha Jct. TX	KCS		310	2		310	2		5	9.4	
3	*	Lavon Jct.	KCS		600	2		600	2		5	24.2	
4	*	Zacha Jct. TX	KCS		850	2		850	2		3	39	
5	*	Dallas TX	KCS		1159	2		0	0			48.4	
67	R DA401		1	Local,Dodgers ,Turn	2	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Mo Tu

#	Location	Railroad		TZ	— Ariv — Time	Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Dallas TX	KCS		0	0	CST	800	0	100		0	Fuel Work Crew Insp
2	*	DALAS-RAMP	KCS		800	1		1200	1	400		0.1	Work
3	*	Dallas TX	KCS		1200	2		0	0	300		0.2	Work
68	R DA401		2	Local,Dodgers ,Turn	2	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: We Th

#	Location	Railroad		TZ	— Ariv — Time	Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —

1	*	Dallas TX	KCS		0	0	CST	1600	0	100		0	Fuel Work Crew Insp
2	*	DALAS-RAMP	KCS		1600	1		2000	1	400		0.1	Work
3	*	Dallas TX	KCS		2000	2		0	0	300		0.2	Work

69	R DA401	3	Local,Dodgers,Turn	2	0	0	0	0	0	0	0	

Effective 11/29/96 Expiration ##### Operates: Fr Sa

#	Location	Railroad		---- Ariv ---- TZ	Time	Day	---- Dept -- TZ	Time	Day	Sta Time	Speed	Dist	--- Yard Activity ---
1	*	Dallas TX	KCS		0	0	CST	2359	1		3	0	Fuel Work Crew Insp
2	*	Zacha Jct. TX	KCS		310	2		310	2		5	9.4	
3	*	Lavon Jct.	KCS		600	2		600	2		5	24.2	
4	*	Zacha Jct. TX	KCS		850	2		850	2		3	39	
5	*	Dallas TX	KCS		1159	2		0	0			48.4	

70	R DQ101	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 2/ 3/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad		---- Ariv ---- TZ	Time	Day	---- Dept -- TZ	Time	Day	Sta Time	Speed	Dist	--- Yard Activity ---
1	*	DeQueen AR	KCS		0	0		930	0			0	Fuel Work Crew Insp
2	*	DQUEN-DQE	KCS		930	1		930	1			1	Work
3	*	DeQueen AR	KCS		930	2		0	0			2	Work

71	R DQSH1	1	Local,Dodgers,Turn	7	0	0	0	0	0	0	0	

Effective 12/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad		---- Ariv ---- TZ	Time	Day	---- Dept -- TZ	Time	Day	Sta Time	Speed	Dist	--- Yard Activity ---
1	*	DeQueen AR	KCS		0	0		1800	0		21	0	Fuel Work Crew Insp
2	*	Wade AR	KCS		1815	0		1815	0		19	5.3	
3	*	Winthrop AR	KCS		1850	0		1850	0		17	16.4	
4	*	Gifford Hill	KCS		1930	0		2000	0	30	25	28	

	Spur										
5 *	Wilton AR	KCS		2005	0	2005	0		22	30.1	
6 *	Ashdown AR	KCS		2025	0	2125	0	100	17	37.3	
7 *	Texarkana TX	KCS		2225	0	2325	0	100	18	54	
8 *	Jury TX	KCS		2345	0	2345	0		21	59.9	
9 *	Sandra LA	KCS		55	1	55	1		20	83.9	
10 *	Shoreline LA	KCS		140	1	140	1		20	98.9	
11 *	Blanchard LA	KCS		230	1	230	1		8	115.4	
12 *	Shreveport LA	KCS		310	1	310	1		10	120.4	
13 *	Harriet Street LA	KCS		325	1	355	1	30	7	122.8	
14 *	Shreveport LA	KCS		415	1	0	0			125.2	

72 R FR101	2	Local,Dodgers,Turn		6	0	0	0	0	0	0	0

Effective 1/31/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *	Forest MS	KCS	0	0		1325	0	100	19	0	Fuel Work Crew Insp
2 *	Newton MS	KCS	1425	0		1525	0	100	19	18.6	
3 *	Hickory MS	KCS	1550	0		1610	0	20	22	26.7	
4 *	Chunky MS	KCS	1625	0		1645	0	20	16	32.3	
5 *	Meehan MS	KCS	1705	0		1725	0	20	20	37.5	
6 *	Meridian MS	KCS	1800	0		0	0	100		49.3	

73 R HD201	1	Local,Dodgers,Turn		6	0	0	0	0	0	0	0

Effective 5/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *	Hodge LA	KCS	0	0		1200	0		12	0	Work Crew Insp
2 *	Advance LA	KCS	1205	0		1205	0		21	1	Work
3 *	Danville LA	KCS	1230	0		1230	0		19	9.8	
4 *	Gibsland LA	KCS	1405	0		0	0			40	Work

74 R HD201	2	Local,Dodgers,Turn		7	0	0	0	0	0	0	0

Effective 5/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

# Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Sta Time	Speed	Dist	— Yard Activity —

#	Location	Railroad		TZ	Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Gibsland LA	KCS		0	0		600	0		19	0	Work
2	*	Danville LA	KCS		735	0		735	0		21	30.2	
3	*	Advance LA	KCS		800	0		800	0		12	39	Work
4	*	Hodge LA	KCS		805	0		0	0			40	Work
75	R HS101		1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 6/22/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		TZ	— Ariv — Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Hughes Springs TX	KCS		0	0	CST	600	0		6	0	Fuel Work Crew Insp
2	*	Avinger TX	KCS		730	0		730	0		5	8.9	
3	*	Wilkes Spur TX	KCS		815	0		815	0		5	13	
4	*	Orrs Tx	KCS		820	0		820	0		5	13.4	
5	*	Lassater TX	KCS		840	0		840	0		6	15.2	
6	*	Sarber TX	KCS		915	0		915	0		6	18.6	
7	*	Burford TX	KCS		1010	0		1010	0		6	24.1	
8	*	Jefferson TX	KCS		1040	0		1040	0			27	
9	*	JFRSN-UP	KCS		1040	1		1040	1			27	
10	*	Jefferson TX	KCS		1040	2		1040	2		6	27	
11	*	Baldwin TX	KCS		1200	2		1200	2		6	34.6	
12	*	Jefferson TX	KCS		1320	2		1320	2		6	42.2	
13	*	Burford TX	KCS		1350	2		1350	2		6	45.1	
14	*	Sarber TX	KCS		1445	2		1445	2		6	50.6	
15	*	Lassater TX	KCS		1520	2		1520	2		5	54	
16	*	Orrs Tx	KCS		1540	2		1540	2		5	55.8	
17	*	Wilkes Spur TX	KCS		1545	2		1545	2		6	56.2	
18	*	Avinger TX	KCS		1625	2		1625	2		6	60.3	
19	*	Hughes Springs TX	KCS		1800	2		0	0			69.2	
76	R HS102		1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 7/ 8/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		TZ	— Ariv — Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Hughes Springs TX	KCS		0	0	CST	800	0		3	0	Fuel Work Crew Insp
2	*	Veals TX	KCS		840	0		840	0		3	2.1	
3	*	Daingerfield TX	KCS		1000	0		1000	0		3	6.3	

4	*	Cason TX	KCS		1155	0		1155	0			3	12.5
5	*	Welsh TX	KCS		1225	0		1225	0			3	14.1
6	*	Faker TX	KCS		1400	0		1400	0			3	19.2
7	*	Welsh TX	KCS		1535	0		1535	0			3	24.3
8	*	Cason TX	KCS		1605	0		1605	0			3	25.9
9	*	Daingerfield TX	KCS		1800	0		1800	0			3	32.1
10	*	Veals TX	KCS		1920	0		1920	0			3	36.3
11	*	Hughes Springs TX	KCS		2000	0		0	0				38.4

77	R HV101	1	Local,Dodgers ,Turn		5	0	0	0	0	0		0	0

Effective 2/ 3/97 Expiration ##### Operates: Mo Tu We Th Fr

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Heavener OK	KCS		0	0		800	0		21	0	Fuel Work Crew Insp
2	*	Sugar Creek AR	KCS		820	0		820	0		11	6.9	
3	*	Hiawatha OK	KCS		830	0		830	0		20	8.7	
4	*	Coaldale AR	KCS		835	0		835	0		23	10.4	
5	*	Bates AR	KCS		845	0		845	0		19	14.3	
6	*	Cauthron AR	KCS		900	0		900	0		25	19	
7	*	Oliver AR	KCS		905	0		905	0		19	21.1	
8	*	Hon AR	KCS		920	0		920	0		18	25.8	
9	*	Waldron AR	KCS		940	0		0	0	200		31.8	

78	R HV101	2	Local,Dodgers ,Turn		5	0	0	0	0	0		0	0

Effective 2/ 3/97 Expiration ##### Operates: Mo Tu We Th Fr

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Waldron AR	KCS		0	0		1000	0		18	0	
2	*	Hon AR	KCS		1020	0		1020	0		19	6	
3	*	Oliver AR	KCS		1035	0		1035	0		25	10.7	
4	*	Cauthron AR	KCS		1040	0		1040	0		19	12.8	
5	*	Bates AR	KCS		1055	0		1055	0		16	17.5	
6	*	Coaldale AR	KCS		1110	0		1110	0		20	21.4	
7	*	Hiawatha OK	KCS		1115	0		1115	0		22	23.1	
8	*	Sugar Creek AR	KCS		1120	0		1120	0		21	24.9	
9	*	Heavener OK	KCS		1140	0		0	0			31.8	

79 R 1 Local,Dodgers 6 0 0 0 0 0 0 0
HV102 ,Turn

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Heavener OK	KCS	0	0		800	0		20	0	Fuel Work Crew Insp
2	*	Howe OK	KCS	815	0		815	0		20	5	
3	*	Poteau OK	KCS	835	0		835	0		17	11.6	
4	*	Cameron OK	KCS	900	0		900	0		19	18.8	
5	*	Fort Smith AR	KCS	1005	0		1005	0			39.3	
6	*	FTSMI-AM	KCS	1005	1		1005	1			39.3	
7	*	Fort Smith AR	KCS	1005	2		1005	2			39.3	
8	*	FTSMI-FSR	KCS	1005	3		1005	3			39.3	
9	*	Fort Smith AR	KCS	1005	4		1005	4			39.3	
10	*	FTSMI-UP	KCS	1005	5		1005	5			39.3	
11	*	Fort Smith AR	KCS	1005	6		0	0			39.3	

80 R 2 Local,Dodgers 6 0 0 0 0 0 0 0
HV102 ,Turn

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Fort Smith AR	KCS	0	0		1300	0		19	0	
2	*	Cameron OK	KCS	1405	0		1405	0		17	20.5	
3	*	Poteau OK	KCS	1430	0		1430	0		20	27.7	
4	*	Howe OK	KCS	1450	0		1450	0		20	34.3	
5	*	Heavener OK	KCS	1505	0		0	0			39.3	

81 R 1 Local,Dodgers 5 0 0 0 0 0 0 0
HV201 ,Turn

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Heavener OK	KCS	0	0		1900	0		21	0	Fuel Work Crew Insp

2 *	Sugar Creek AR	KCS		1920	0		1920	0		11	6.9
3 *	Hiawatha OK	KCS		1930	0		1930	0		20	8.7
4 *	Coaldale AR	KCS		1935	0		1935	0		23	10.4
5 *	Bates AR	KCS		1945	0		1945	0		19	14.3
6 *	Cauthron AR	KCS		2000	0		2000	0		25	19
7 *	Oliver AR	KCS		2005	0		2005	0		19	21.1
8 *	Hon AR	KCS		2020	0		2020	0		18	25.8
9 *	Waldron AR	KCS		2040	0		0	0	200		31.8

82 R HV201	2 Local,Dodgers ,Turn			5	0	0	0	0	0	0	0

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Waldron AR	KCS		0	0		2100	0		18	0	
2 *		Hon AR	KCS		2120	0		2120	0		19	6	
3 *		Oliver AR	KCS		2135	0		2135	0		25	10.7	
4 *		Cauthron AR	KCS		2140	0		2140	0		19	12.8	
5 *		Bates AR	KCS		2155	0		2155	0		16	17.5	
6 *		Coaldale AR	KCS		2210	0		2210	0		20	21.4	
7 *		Hiawatha OK	KCS		2215	0		2215	0		22	23.1	
8 *		Sugar Creek AR	KCS		2220	0		2220	0		21	24.9	
9 *		Heavener OK	KCS		2240	0		0	0			31.8	

83 R HV301	1 Local,Dodgers ,Turn			5	0	0	0	0	0	0	0

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Su Mo Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Heavener OK	KCS		0	0		2330	0		21	0	Fuel Work Crew Insp
2 *		Sugar Creek AR	KCS		2350	0		2350	0		14	6.9	
3 *		Coaldale AR	KCS		5	1		5	1		23	10.4	
4 *		Bates AR	KCS		15	1		15	1		19	14.3	
5 *		Cauthron AR	KCS		30	1		30	1		25	19	
6 *		Oliver AR	KCS		35	1		35	1		19	21.1	
7 *		Hon AR	KCS		50	1		50	1		18	25.8	
8 *		Waldron AR	KCS		110	1		0	0	200		31.8	

84 R HV301 2 Local,Turn Dodgers 5 0 0 0 0 0 0 0

Effective 2/ 3/97 Expiration ##### Operates: Su Mo Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Waldron AR	KCS	0	0		230	0		18	0	
2 *		Hon AR	KCS	250	0		250	0		19	6	
3 *		Oliver AR	KCS	305	0		305	0		25	10.7	
4 *		Cauthron AR	KCS	310	0		310	0		19	12.8	
5 *		Bates AR	KCS	325	0		325	0		16	17.5	
6 *		Coaldale AR	KCS	340	0		340	0		20	21.4	
7 *		Hiawatha OK	KCS	345	0		345	0		22	23.1	
8 *		Sugar Creek AR	KCS	350	0		350	0		21	24.9	
9 *		Heavener OK	KCS	410	0		0	0			31.8	

85 R HV401 2 Local,Turn Dodgers 5 0 0 0 0 0 0 0

Effective 2/ 3/97 Expiration ##### Operates: Su Mo Tu We Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Waldron AR	KCS	0	0		230	0		18	0	
2 *		Hon AR	KCS	250	0		250	0		19	6	
3 *		Oliver AR	KCS	305	0		305	0		25	10.7	
4 *		Cauthron AR	KCS	310	0		310	0		19	12.8	
5 *		Bates AR	KCS	325	0		325	0		16	17.5	
6 *		Coaldale AR	KCS	340	0		340	0		20	21.4	
7 *		Hiawatha OK	KCS	345	0		345	0		22	23.1	
8 *		Sugar Creek AR	KCS	350	0		350	0		21	24.9	
9 *		Heavener OK	KCS	410	0		0	0			31.8	

86 R JC101 1 Local,Turn Dodgers 6 0 0 0 0 0 0 0

Effective 12/17/96 Expiration ##### Operates: Su Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —

1	*	Jackson Yard MS	KCS		0	0		800	0	300	8	0	Work Crew Insp
2	*	Jackson MS	KCS		840	0	CST	1440	0	600	8	5.3	Work
3	*	JACKN-IC	KCS		1520	0		1620	0	100	9	10.4	Work
4	*	Jackson MS	KCS		1655	0		1755	0	100	8	15.5	
5	*	Jackson Yard MS	KCS		1835	0		0	0			20.8	

87	R JC102	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effective 12/17/96 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Jackson MS	KCS	0	0	CST	1440	0	600	8	0	Work
2	*	JACKN-IC	KCS	1518	0		1518	0		8	5.1	
3	*	Jackson MS	KCS	1556	0		0	0			10.2	

88	R JC201	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effective 12/17/96 Expiration ##### Operates: Su Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Jackson Yard MS	KCS	0	0		1500	0	300	8	0	Work Crew Insp
2	*	Jackson MS	KCS	1540	0	CST	2140	0	600	8	5.3	Work
3	*	JACKN-IC	KCS	2220	0		2320	0	100	9	10.4	Work
4	*	Jackson MS	KCS	2355	0		55	1	100	8	15.5	
5	*	Jackson Yard MS	KCS	135	1		0	0			20.8	

89	R JC301	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effective 12/17/96 Expiration ##### Operates: Su Mo Tu We Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Jackson Yard MS	KCS	0	0		2300	0	300	8	0	Work Crew Insp
2	*	Jackson MS	KCS	2340	0	CST	540	1	600	8	5.3	Work
3	*	JACKN-IC	KCS	620	1		720	1	100	9	10.4	Work
4	*	Jackson MS	KCS	755	1		855	1	100	8	15.5	
5	*	Jackson Yard MS	KCS	935	1		0	0			20.8	

90 R KR101 1 Local,Dodgers ,Turn 7 0 0 0 0 0 0 0

Effective 6/16/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Kraft LA	KCS	0	0		900	0		20	0	Fuel Work Crew Insp
2	*	Grappes Bluff LA	KCS	905	0		905	0		19	1.7	
3	*	Curtis LA	KCS	1130	0		1130	0		18	48.3	
4	*	Coushatta LA	KCS	1325	0		1325	0		20	83.5	
5	*	Grappes Bluff LA	KCS	1400	0		1400	0		20	94.9	
6	*	Kraft LA	KCS	1405	0		0	0			96.6	

91 R KR201 1 Local,Dodgers ,Turn 7 0 0 0 0 0 0 0

Effective 6/16/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Kraft LA	KCS	0	0		2100	0		20	0	Fuel Work Crew Insp
2	*	Grappes Bluff LA	KCS	2105	0		2105	0		19	1.7	
3	*	Curtis LA	KCS	2330	0		2330	0		19	48.3	
4	*	Grappes Bluff LA	KCS	200	1		200	1		20	94.9	
5	*	Kraft LA	KCS	205	1		0	0			96.6	

92 R LA101 1 Local,Dodgers ,Turn 6 0 0 0 0 0 0 0

Effective 1/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Time	Speed	Dist	Yard Activity
1	*	Latanier LA	KCS	0	0		700	0	20	8	0	Fuel Work Crew Insp
2	*	Alexandria LA	KCS	820	0		840	0	20	6	10.9	
3	*	Pineville Junction	KCS	845	0		905	0	20	8	11.4	
4	*	Tioga LA	KCS	945	0		1005	0	20	20	16.8	
5	*	Garnett LA	KCS	1025	0		1045	0	20	18	23.6	
6	*	Bentley LA	KCS	1055	0		1055	0		19	26.6	
7	*	Dry Prong	KCS	1110	0		1110	0		18	31.3	

		LA										
8	*	Willianna LA	KCS		1135	0		1135	0		21	38.7
9	*	Packton LA	KCS		1200	0		1210	0	10	17	47.5
10	*	Winnfield LA	KCS		1245	0		1305	0	20	21	57.4
11	*	Joyce LA	KCS		1315	0		1415	0	100	21	60.9
12	*	Winnfield LA	KCS		1425	0		0	0			64.4

93	R LA101	2	Local,Dodgers,Turn		6	0	0	0	0	0	0	0

Effective 1/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
	Location												
1	*	Winnfield LA	KCS		0	0		1430	0	5	19	0	
2	*	Willianna LA	KCS		1530	0		1530	0		22	18.7	
3	*	Dry Prong LA	KCS		1550	0		1550	0		19	26.1	
4	*	Bentley LA	KCS		1605	0		1605	0		20	30.8	
5	*	Garnett LA	KCS		1614	0		1614	0		19	33.8	
6	*	Tioga LA	KCS		1635	0		1635	0		8	40.6	
7	*	Pineville Junction	KCS		1715	0		1715	0		6	46	
8	*	Alexandria LA	KCS		1720	0		1720	0		8	46.5	
9	*	Latanier LA	KCS		1845	0		0	0			57.4	

94	R LA102	1	Local,Dodgers,Turn		6	0	0	0	0	0	0	0

Effective 3/ 7/97 Expiration ##### Operates: Su Mo Tu We Th Fr

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
	Location												
1	*	Alexandria LA	KCS		0	0		600	0		16	0	Fuel Work Crew Insp
2	*	Pineville LA	KCS		605	0		605	0		24	1.3	
3	*	Mallin LA	KCS		610	0		610	0		30	3.3	
4	*	Pineville LA	KCS		614	0		614	0		11	5.3	
5	*	Alexandria LA	KCS		621	0		621	0		11	6.6	
6	*	Latanier LA	KCS		720	0		720	0		18	17.5	
7	*	Bijou LA	KCS		745	0		745	0		16	25.2	
8	*	Belledeau LA	KCS		800	0		800	0		25	29.1	
9	*	Hessmer LA	KCS		810	0		810	0		17	33.3	
10	*	Mansura LA	KCS		825	0		825	0		20	37.5	
11	*	Hyde LA	KCS		910	0		910	0		14	52.4	
12	*	Legonier LA	KCS		920	0		920	0		19	54.8	
13	*	Keller LA	KCS		930	0		930	0		32	57.9	
14	*	Lettsworth LA	KCS		935	0		935	0		19	60.6	
15	*	Lobdell LA	KCS		1155	0		0	0			104.6	

95	R LA102	2	Local,Turn	Dodgers	6	0	0	0	0	0	0	0

Effective 3/ 7/97 Expiration ##### Operates: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Lobdell LA	KCS	0	0		1200	0		19	0	
2	*	Lettsworth LA	KCS	1420	0		1420	0		16	44	
3	*	Keller LA	KCS	1430	0		1430	0		19	46.7	
4	*	Legonier LA	KCS	1440	0		1440	0		29	49.8	
5	*	Hyde LA	KCS	1445	0		1445	0		20	52.2	
6	*	Mansura LA	KCS	1530	0		1530	0		17	67.1	
7	*	Hessmer LA	KCS	1545	0		1545	0		17	71.3	
8	*	Belledeau LA	KCS	1600	0		1600	0		23	75.5	
9	*	Bijou LA	KCS	1610	0		1610	0		18	79.4	
10	*	Latanier LA	KCS	1635	0		1635	0		8	87.1	
11	*	Alexandria LA	KCS	1755	0		1755	0			98	
12	*	ALXRA-UP	KCS	1755	1		1755	1			98	
13	*	Alexandria LA	KCS	1755	2		0	0			98	

96	R LA103	1	Local,Turn	Dodgers	6	0	0	0	0	0	0	0

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Kraft LA	KCS	0	0		1200	1		19	0	Fuel Work Crew Insp
2	*	Clarence LA	KCS	1235	1		1235	1		19	11.1	
3	*	Colfax LA	KCS	1405	1		1405	1		18	39.8	
4	*	Barrett LA	KCS	1500	1		1500	1		16	56.6	
5	*	Alexandria LA	KCS	1530	1		1530	1		8	64.4	
6	*	Latanier LA	KCS	1650	1		1650	1		18	75.3	
7	*	Bijou LA	KCS	1715	1		1715	1		19	83	
8	*	Hyde LA	KCS	1840	1		1840	1		29	110.2	
9	*	Legonier LA	KCS	1845	1		1845	1		19	112.6	
10	*	Keller LA	KCS	1855	1		1855	1		18	115.7	
11	*	West Junction LA	KCS	2135	1		2135	1		8	164.1	
12	*	Baton Rouge LA	KCS	2225	1		2225	1		11	170.6	
13	*	Gonzales LA	KCS	25	2		25	2		18	193	
14	*	Barmen LA	KCS	50	2		0	0			200.6	

97	R LA103	2	Local,Turn	Dodgers	6	0	0	0	0	0	0	0

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Barmen LA	KCS		0	0		1200	1		18	0	
2	*	Gonzales LA	KCS		1225	1		1225	1		11	7.6	
3	*	Baton Rouge LA	KCS		1425	1		1425	1		8	30	
4	*	West Junction LA	KCS		1515	1		1515	1		18	36.5	
5	*	Keller LA	KCS		1755	1		1755	1		22	84.9	
6	*	Hyde LA	KCS		1810	1		1810	1		19	90.4	
7	*	Bijou LA	KCS		1935	1		1935	1		18	117.6	
8	*	Latanier LA	KCS		2000	1		2000	1		8	125.3	
9	*	Alexandria LA	KCS		2125	1		2125	1		8	136.2	
10	*	Pineville LA	KCS		2135	1		2135	1		20	137.5	
11	*	Barrett LA	KCS		2155	1		2155	1		20	144	
12	*	Colfax LA	KCS		2245	1		2245	1		19	160.8	
13	*	Clarence LA	KCS		15	2		15	2		19	189.5	
14	*	Kraft LA	KCS		50	2		0	0			200.6	
98	R LE102	1	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effecti ve 6/23/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Leesville LA	KCS		0	0		900	0	200	21	0	Fuel Work Crew Insp
2	*	Gandy LA	KCS		1005	0		1035	0	30	19	22.9	Work
3	*	Florien LA	KCS		1045	0		1115	0	30	42	26	Work
4	*	Fisher LA	KCS		1120	0		1150	0	30	22	29.5	Work
5	*	Many LA	KCS		1205	0		1235	0	30	23	35.1	Work
6	*	Zwolle LA	KCS		1305	0		0	0	30		46.6	Work
99	R LE102	2	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effecti ve 6/23/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Zwolle LA	KCS		0	0		1330	0	125	23	0	
2	*	Many LA	KCS		1400	0		1400	0		22	11.5	
3	*	Fisher LA	KCS		1415	0		1415	0		42	17.1	
4	*	Florien LA	KCS		1420	0		1420	0		19	20.6	
5	*	Gandy LA	KCS		1430	0		1430	0		21	23.7	

6 *	Leesville LA	KCS		1535	0		0	0			46.6		

100	R LE201	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 6/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Leesville LA	KCS	0	0		1700	0		27	0	Fuel Work Crew Insp
2 *		Fort Polk LA	KCS	1710	0		1710	0		24	4.5	
3 *		Ludington LA	KCS	1745	0		1745	0			18.6	
4 *		Boise Southern LA	KCS	1745	1		1745	1		11	19	
5 *		DeRidder LA	KCS	1755	1		1755	1		27	20.8	
6 *		Singer LA	KCS	1830	1		0	0			36.7	

101	R LE201	2	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 6/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Singer LA	KCS	0	0		1930	0		27	0	
2 *		DeRidder LA	KCS	2005	0		2005	0			15.9	
3 *		DRIDR-BNSF	KCS	2005	1		2005	1			15.9	
4 *		DeRidder LA	KCS	2005	2		2005	2		22	15.9	
5 *		Boise Southern LA	KCS	2010	2		2010	2		5	17.7	
6 *		Ludington LA	KCS	2015	2		2015	2		28	18.1	
7 *		Fort Polk LA	KCS	2045	2		2045	2		18	32.2	
8 *		Leesville LA	KCS	2100	2		0	0			36.7	

102	R LV201	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 2/12/97 Expiration ##### Operates: Su Mo Tu We Th Fr

#	Location	Railroad	— Ariv — TZ	Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Louisville MS	KCS	0	0		1345	0	100	20	0	

2 *	Ackerman MS	KCS		1440	0		1440	0		17	18	
3 *	Sturgis MS	KCS		1510	0		1510	0		21	26.7	
4 *	Longview MS	KCS		1535	0		1535	0		18	35.5	
5 *	Starkville MS	KCS		1600	0		1600	0		21	42.8	
6 *	Osborn MS	KCS		1620	0		1620	0		17	49.8	
7 *	West Point MS	KCS		1645	0		1645	0		18	56.8	
8 *	Tibbee MS	KCS		1705	0		1705	0		34	62.7	
9 *	Mayhew MS	KCS		1710	0		1710	0		15	65.5	
10 *	Artesia MS	KCS		1730	0		0	0			70.5	

103 R LV201	2 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 2/12/97 Expiration ##### Operates: Su Mo Tu We Th Fr

# Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	Artesia MS	KCS	0	0		900	0		20	0	Fuel Work Crew Insp
2 *	Mayhew MS	KCS	915	0		915	0		17	5	
3 *	Tibbee MS	KCS	925	0		925	0		18	7.8	
4 *	West Point MS	KCS	945	0		945	0		21	13.7	
5 *	Osborn MS	KCS	1005	0		1005	0		17	20.7	
6 *	Starkville MS	KCS	1030	0		1030	0		22	27.7	
7 *	Longview MS	KCS	1050	0		1050	0		18	35	
8 *	Sturgis MS	KCS	1120	0		1120	0		21	43.8	
9 *	Ackerman MS	KCS	1145	0		1145	0		18	52.5	
10 *	High Point MS	KCS	1220	0		1220	0		18	63.2	
11 *	Louisville MS	KCS	1245	0		0	0			70.5	

104 R LV202	1 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 5/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr

# Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	Louisville MS	KCS	0	0		2355	0		17	0	Fuel Work Crew Insp
2 *	Estes MS	KCS	10	1		10	1		19	4.2	
3 *	Noxapater MS	KCS	25	1		25	1		23	8.9	
4 *	Stallo MS	KCS	40	1		40	1		19	14.6	
5 *	Burnside MS	KCS	55	1		55	1		18	19.3	
6 *	Philadelphia	KCS	115	1		115	1		12	25.2	

		MS											
7 *		Deweese MS	KCS		120	1		120	1		22	26.2	
8 *		McDonald MS	KCS		140	1		140	1		17	33.4	
9 *		Neshoba MS	KCS		150	1		150	1		22	36.2	
10 *		Union MS	KCS		200	1		200	1		17	39.9	
11 *		Decatur MS	KCS		235	1		235	1		19	49.7	
12 *		Jeff MS	KCS		240	1		240	1		20	51.3	
13 *		Doolittle MS	KCS		250	1		250	1		25	54.7	
14 *		Newton MS	KCS		300	1		0	0			58.8	

105	R LV202	2	Local,Dodgers ,Turn	7	0	0	0	0	0	0	0	

Effective 5/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Newton MS	KCS	0	0		400	0		16	0	
2 *		Doolittle MS	KCS	415	0		415	0		20	4.1	
3 *		Jeff MS	KCS	425	0		425	0		19	7.5	
4 *		Decatur MS	KCS	430	0		430	0		20	9.1	
5 *		Union MS	KCS	500	0		500	0		22	18.9	
6 *		Neshoba MS	KCS	510	0		510	0		17	22.6	
7 *		McDonald MS	KCS	520	0		520	0		17	25.4	
8 *		Deweese MS	KCS	545	0		545	0			32.6	
9 *		Philadelphia MS	KCS	545	1		545	1		18	33.6	
10 *		Stallo MS	KCS	620	1		620	1		18	44.2	
11 *		Estes MS	KCS	655	1		655	1		25	54.6	
12 *		Louisville MS	KCS	705	1		0	0			58.8	

106	R MA201	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effective 6/17/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Mena AR	KCS	0	0		1530	0		19	0	Work Crew
2 *		Rich Mountain AR	KCS	1610	0		1610	0		18	12.5	
3 *		Howard AR	KCS	1630	0		1630	0		20	18.5	
4 *		Page OK	KCS	1650	0		1650	0		19	25.1	
5 *		Hodgen OK	KCS	1730	0		1730	0		18	37.8	
6 *		Heavener Coal OK	KCS	1740	0		1740	0		6	40.8	
7 *		Heavener OK	KCS	1750	0		1750	0		18	41.8	

8 *	Hatfield AR	KCS		2050	0		2050	0			20	96	
9 *	Hatton AR	KCS		2125	0		2125	0			19	107.5	
10 *	DeQueen AR	KCS		2255	0		0	0				136.7	

107 R MA201	2 Local,Dodgers,Turn	6	0	0	0	0	0	0	0			

Effective 6/17/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		DeQueen AR	KCS	0	0		2300	0		19	0	
2 *		Hatton AR	KCS	33	1		33	1		19	29.2	
3 *		Hatfield AR	KCS	109	1		109	1		18	40.7	
4 *		Heavener OK	KCS	405	1		405	1		6	94.9	
5 *		Heavener Coal OK	KCS	415	1		415	1		18	95.9	
6 *		Hodgen OK	KCS	425	1		425	1		19	98.9	
7 *		Page OK	KCS	505	1		505	1		20	111.6	
8 *		Howard AR	KCS	525	1		525	1		18	118.2	
9 *		Rich Mountain AR	KCS	545	1		545	1		19	124.2	
10 *		Mena AR	KCS	625	1		0	0			136.7	

108 R ME101	1 Local,Dodgers,Turn	5	0	0	0	0	0	0	0			

Effective 12/29/96 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Meridian MS	KCS	0	0		700	0	100	17	0	Fuel Work Crew Insp
2 *		Sweatt MS	KCS	720	0		750	0	30	19	5.6	Work
3 *		Enterprise MS	KCS	820	0		850	0	30	22	15.2	Work
4 *		Quitman MS	KCS	920	0		950	0	30	18	26.1	Work
5 *		Shubuta MS	KCS	1030	0		1115	0	45	20	38.2	Work
6 *		Woodwards MS	KCS	1155	0		1225	0	30	6	51.2	Work
7 *		Stanley MS	KCS	1230	0		1300	0	30		51.7	Work
8 *		Waynesboro MS	KCS	1300	1		0	0	120		52.8	Work

109 R ME101	2 Local,Dodgers,Turn	7	0	0	0	0	0	0	0			

Effective 1/31/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —

#	Location	Railroad	TZ	Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Waynesboro MS	KCS	0	0	CST	1400	0	20	13	0	
2 *		Stanley MS	KCS	1405	0		1425	0	20		1.1	
3 *		Woodwards MS	KCS	1425	1		1445	1	20	20	1.6	
4 *		Shubuta MS	KCS	1525	1		1545	1	20	18	14.6	
5 *		Quitman MS	KCS	1625	1		1645	1	20	19	26.7	
6 *		Enterprise MS	KCS	1720	1		1740	1	20	19	37.6	
7 *		Sweatt MS	KCS	1810	1		1830	1	20	22	47.2	
8 *		Meridian MS	KCS	1845	1		0	0			52.8	
110 R	ME201	1 Local,Dodgers,Turn		7	0	0	0	0	0	0	0	

Effective 2/27/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Dept – Day	TZ	Sta — Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Tupelo MS	KCS	0	0		1300	0		17	0	
2 *		Saltillo MS	KCS	1330	0		1330	0		14	8.5	
3 *		Guntown MS	KCS	1350	0		1350	0		20	13.3	
4 *		Baldwyn MS	KCS	1405	0		1405	0		17	18.4	
5 *		Booneville MS	KCS	1445	0		1445	0		16	29.5	
6 *		Rienzi MS	KCS	1515	0		1515	0		16	37.6	
7 *		Corinth MS	KCS	1600	0		1600	0		22	49.8	
8 *		Middleton MS	KCS	1705	0		1705	0		20	73.5	
9 *		Brownfield MS	KCS	1720	0		1720	0		19	78.5	
10 *		Walnut MS	KCS	1730	0		1730	0		21	81.6	
11 *		Campbell MS	KCS	1810	0		1810	0		28	95.4	
12 *		Ripley MS	KCS	1815	0		1815	0		17	97.7	
13 *		Zorball MS	KCS	1830	0		1830	0		24	101.9	
14 *		Blue Mountain MS	KCS	1835	0		1835	0		30	103.9	
15 *		Cotton Plant MS	KCS	1845	0		1845	0		18	108.9	
16 *		New Albany MS	KCS	1910	0		0	0			116.5	
111 R	ME201	2 Local,Dodgers,Turn		7	0	0	0	0	0	0	0	

Effective 2/27/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Railroad	TZ	— Ariv — Time	Dept – Day	TZ	Sta — Time	Day	Time	Speed	Dist	— Yard

	Location										Activity —
1 *	New Albany MS	KCS		0	0		800	0	23	0	Fuel Work Crew Insp
2 *	Cotton Plant MS	KCS		820	0		820	0	20	7.6	
3 *	Blue Mountain MS	KCS		835	0		835	0	24	12.6	
4 *	Zorball MS	KCS		840	0		840	0	17	14.6	
5 *	Ripley MS	KCS		855	0		855	0	28	18.8	
6 *	Campbell MS	KCS		900	0		900	0	21	21.1	
7 *	Walnut MS	KCS		940	0		940	0	19	34.9	
8 *	Brownfield MS	KCS		950	0		950	0	30	38	
9 *	Middleton MS	KCS		1000	0		1000	0	20	43	
10 *	Corinth MS	KCS		1110	0		1110	0	16	66.7	
11 *	Rienzi MS	KCS		1155	0		1155	0	16	78.9	
12 *	Booneville MS	KCS		1225	0		1225	0	17	87	
13 *	Baldwyn MS	KCS		1305	0		1305	0	20	98.1	
14 *	Guntown MS	KCS		1320	0		1320	0	14	103.2	
15 *	Saltillo MS	KCS		1340	0		1340	0	17	108	
16 *	Tupelo MS	KCS		1410	0		0	0		116.5	

112	R MI101	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 7/ 9/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Minden LA	KCS		0	0		800	0		29	0	Work Crew Insp
2 *		Pace LA	KCS		810	0		810	0			4.8	
3 *		Treat LA	KCS		830	2		830	2		22	16	
4 *		Cotton Valley LA	KCS		835	2		835	2		33	17.8	
5 *		Sarepta LA	KCS		845	2		845	2		31	23.3	
6 *		Cullen LA	KCS		855	2		0	0			28.5	

113	R MI101	2	Local,Dodgers ,Turn	7	0	0	0	0	0	0	0	

Effecti ve 7/ 9/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Cullen LA	KCS		0	0		1000	0		21	0	
2 *		Sarepta LA	KCS		1015	0		1015	0		17	5.2	
3 *		Cotton Valley LA	KCS		1035	0		1035	0		22	10.7	
4 *		Treat LA	KCS		1040	0		1040	0		19	12.5	

5	*	Pace LA	KCS		1115	0		1115	0		19	23.7	
6	*	Minden LA	KCS		1130	0		0	0			28.5	

114	R	MI201	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 6/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad		---- Ariv ---- TZ	Time	Sta -- Dept -- Day	TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1	*	Minden LA	KCS		0	0		2000	0		10	0	Work Crew Insp
2	*	Gifford LA	KCS		2020	0		2020	0		17	3.2	
3	*	Doyline LA	KCS		2025	0		2025	0		20	4.6	
4	*	Goodwill LA	KCS		2035	0		2035	0		20	7.9	
5	*	Rex LA	KCS		2050	0		2050	0			12.8	
6	*	Princeton LA	KCS		2050	1		2050	1		19	13.7	
7	*	Adner LA	KCS		2105	1		2105	1		15	18.5	
8	*	Carruthers LA	KCS		2120	1		2120	1			22.2	
9	*	Ferguson LA	KCS		2120	2		2120	2		17	23.1	
10	*	Hinkle LA	KCS		2130	2		2130	2		8	26	
11	*	Louisiana Junction	KCS		2140	2		2140	2		8	27.4	
12	*	Wilsons Alley	KCS		2200	2		2200	2		10	30.1	
13	*	N Wye Switch	KCS		2205	2		2205	2		8	30.9	
14	*	Harriet Street LA	KCS		2225	2		2225	2		7	33.4	
15	*	Shreveport LA	KCS		2245	2		0	0			35.8	

115	R	MI201	2	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effective 7/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad		---- Ariv ---- TZ	Time	Sta -- Dept -- Day	TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1	*	Shreveport LA	KCS		0	0		2330	0		7	0	
2	*	Harriet Street LA	KCS		2350	0		2350	0		10	2.4	
3	*	N Wye Switch	KCS		5	1		5	1		5	4.9	
4	*	Wilsons Alley	KCS		15	1		15	1		8	5.7	
5	*	Louisiana Junction	KCS		35	1		35	1		8	8.4	
6	*	Hinkle LA	KCS		45	1		45	1		35	9.8	
7	*	Ferguson LA	KCS		50	1		50	1		11	12.7	
8	*	Carruthers	KCS		55	1		55	1		22	13.6	

		LA																	
9	*	Adner LA	KCS			105	1		105	1		19	17.3						
10	*	Princeton LA	KCS			120	1		120	1		11	22.1						
11	*	Rex LA	KCS			125	1		125	1		20	23						
12	*	Goodwill LA	KCS			140	1		140	1		20	27.9						
13	*	Doyline LA	KCS			150	1		150	1		17	31.2						
14	*	Gifford LA	KCS			155	1		155	1		10	32.6						
15	*	Minden LA	KCS			215	1		0	0			35.8						
116	R MN101		1	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0						

Effecti ve 6/23/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Monroe LA	KCS	0	0		1100	0		8	0	Fuel Work Crew Insp
2	*	West Monroe LA	KCS	1105	0		1105	0		15	0.7	
3	*	Steven LA	KCS	1115	0		1115	0		20	3.2	
4	*	Calhoun LA	KCS	1150	0		1150	0		22	14.7	
5	*	Tremont LA	KCS	1205	0		1205	0		14	20.3	
6	*	Choudrant LA	KCS	1220	0		1220	0		22	23.9	
7	*	Ruston LA	KCS	1240	0		1240	0		17	31.3	
8	*	Grambling LA	KCS	1255	0		1255	0		23	35.6	
9	*	Pabco LA	KCS	1300	0		1300	0		15	37.5	
10	*	Simsboro LA	KCS	1310	0		1310	0		19	40	
11	*	Gibsland LA	KCS	1400	0		0	0			55.7	
117	R MN101		2	Local,Dodgers ,Turn		6	0	0	0	0	0	0	0						

Effecti ve 6/23/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Gibsland LA	KCS	0	0		1500	0		3	0	
2	*	Arcadia LA	KCS	1750	0		1750	0		3	7.9	
3	*	Simsboro LA	KCS	2035	0		2035	0		3	15.7	
4	*	Pabco LA	KCS	2130	0		2130	0		3	18.2	
5	*	Grambling LA	KCS	2210	0		2210	0		3	20.1	
6	*	Ruston LA	KCS	2345	0		2345	0		3	24.4	
7	*	Choudrant LA	KCS	220	1		220	1		3	31.8	
8	*	Tremont LA	KCS	330	1		330	1		3	35.4	
9	*	Calhoun LA	KCS	535	1		535	1		3	41	
10	*	Steven LA	KCS	935	1		935	1		3	52.5	
11	*	West Monroe LA	KCS	1030	1		1030	1		1	55	

12 *	Monroe LA	KCS		1100	1		0	0			55.7		

118 R MN102 1 Local,Dodgers ,Turn 6 0 0 0 0 0 0 0

Effective 6/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	Ariv TZ	Ariv Time	Dept Day	Dept TZ	Dept Time	Sta Day	Sta Time	Speed	Dist	Yard Activity
1 *		Monroe LA	KCS	0	0		1600	0		8	0	Fuel Work Crew Insp
2 *		West Monroe LA	KCS	1605	0		1605	0		15	0.7	
3 *		Steven LA	KCS	1615	0		1615	0		20	3.2	
4 *		Calhoun LA	KCS	1650	0		1650	0		22	14.7	
5 *		Tremont LA	KCS	1705	0		1705	0		14	20.3	
6 *		Choudrant LA	KCS	1720	0		1720	0		22	23.9	
7 *		Ruston LA	KCS	1740	0		1740	0		17	31.3	
8 *		Grambling LA	KCS	1755	0		1755	0		23	35.6	
9 *		Pabco LA	KCS	1800	0		1800	0		15	37.5	
10 *		Simsboro LA	KCS	1810	0		1810	0		19	40	
11 *		Gibsland LA	KCS	1900	0		1900	0			55.7	Work
12 *		GLAND-LNW	KCS	1900	1		1900	1			55.7	Work
13 *		Gibsland LA	KCS	1900	2		0	0			55.7	Work

119 R MN102 2 Local,Dodgers ,Turn 6 0 0 0 0 0 0 0

Effective 6/23/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	Ariv TZ	Ariv Time	Dept Day	Dept TZ	Dept Time	Sta Day	Sta Time	Speed	Dist	Yard Activity
1 *		Gibsland LA	KCS	0	0		1930	0		19	0	
2 *		Arcadia LA	KCS	1955	0		1955	0		19	7.9	
3 *		Simsboro LA	KCS	2020	0		2020	0		15	15.7	
4 *		Pabco LA	KCS	2030	0		2030	0		23	18.2	
5 *		Grambling LA	KCS	2035	0		2035	0		17	20.1	
6 *		Ruston LA	KCS	2050	0		2050	0		22	24.4	
7 *		Choudrant LA	KCS	2110	0		2110	0		22	31.8	
8 *		Tremont LA	KCS	2120	0		2120	0		17	35.4	
9 *		Calhoun LA	KCS	2140	0		2140	0		20	41	
10 *		Steven LA	KCS	2215	0		2215	0		15	52.5	
11 *		West Monroe LA	KCS	2225	0		2225	0		8	55	
12 *		Monroe LA	KCS	2230	0		0	0			55.7	

120 R MO101 1 Local,Dodgers ,Turn 5 0 0 0 0 0 0 0

Effective 6/22/97 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Mossville LA	KCS		0	0		700	0	100	22	0	Fuel Work Crew Insp
2	*	Westlake LA	KCS		710	0		730	0	20		3.7	
3	*	WLAKE-SP	KCS		730	1		800	1	30		3.7	
4	*	Westlake LA	KCS		800	2		815	2	15	14	3.7	
5	*	Lake Charles LA	KCS		825	2		845	2	20		6.1	
6	*	LKCHA-UP	KCS		845	3		925	3	40		6.1	Work
7	*	Lake Charles LA	KCS		925	4		945	4	20		6.1	
8	*	LKCHA-SP	KCS		945	5		1025	5	40		6.2	Work
9	*	Lake Charles LA	KCS		1025	6		1045	6	20	20	6.3	
10	*	Rose Bluff LA	KCS		1105	6		1105	6		18	13	
11	*	W Lake Charles LA	KCS		1115	6		1130	6	15	18	16	Work
12	*	Rose Bluff LA	KCS		1140	6		1200	6	20	24	19	Work
13	*	Mossville LA	KCS		1210	6		0	0	200		23	
121	R MO201	1	Local,Dodgers,Turn		5	0	0	0	0	0	0	0	

Effective 6/22/97 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Mossville LA	KCS		0	0		1500	0	100	22	0	Fuel Work Crew Insp
2	*	Westlake LA	KCS		1510	0		1530	0	20		3.7	
3	*	WLAKE-SP	KCS		1530	1		1600	1	30		3.7	
4	*	Westlake LA	KCS		1600	2		1615	2	15	14	3.7	
5	*	Lake Charles LA	KCS		1625	2		1645	2	20		6.1	
6	*	LKCHA-UP	KCS		1645	3		1725	3	40		6.1	Work
7	*	Lake Charles LA	KCS		1725	4		1745	4	20		6.1	
8	*	LKCHA-SP	KCS		1745	5		1825	5	40		6.2	Work
9	*	Lake Charles LA	KCS		1825	6		1845	6	20	20	6.3	
10	*	Rose Bluff LA	KCS		1905	6		1905	6		18	13	
11	*	W Lake Charles LA	KCS		1915	6		1930	6	15	18	16	Work
12	*	Rose Bluff LA	KCS		1940	6		2000	6	20	24	19	Work

13 *	Mossville LA	KCS		2010	6		0	0	200		23		

122 R MO204		1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0		

Effective 6/22/97 Expiration ##### Operates: Su Mo Tu We Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1 *	Mossville LA	KCS		0	0		1700	0	100	22	0	Fuel Work Crew Insp
2 *	Westlake LA	KCS		1710	0		1730	0	20		3.7	
3 *	WLAKE-SP	KCS		1730	1		1800	1	30		3.7	
4 *	Westlake LA	KCS		1800	2		1815	2	15	14	3.7	
5 *	Lake Charles LA	KCS		1825	2		1845	2	20		6.1	
6 *	LKCHA-UP	KCS		1845	3		1925	3	40		6.1	Work
7 *	Lake Charles LA	KCS		1925	4		1945	4	20		6.1	
8 *	LKCHA-SP	KCS		1945	5		2025	5	40		6.2	Work
9 *	Lake Charles LA	KCS		2025	6		2045	6	20	20	6.3	
10 *	Rose Bluff LA	KCS		2105	6		2105	6		18	13	
11 *	W Lake Charles LA	KCS		2115	6		2130	6	15	18	16	Work
12 *	Rose Bluff LA	KCS		2140	6		2200	6	20	24	19	Work
13 *	Mossville LA	KCS		2210	6		0	0	200		23	

123 R MO205		1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0		

Effective 6/22/97 Expiration ##### Operates: Su Mo Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1 *	Mossville LA	KCS		0	0		1700	0	100	22	0	Fuel Work Crew Insp
2 *	Westlake LA	KCS		1710	0		1730	0	20		3.7	
3 *	WLAKE-SP	KCS		1730	1		1800	1	30		3.7	
4 *	Westlake LA	KCS		1800	2		1815	2	15	14	3.7	
5 *	Lake Charles LA	KCS		1825	2		1845	2	20		6.1	
6 *	LKCHA-UP	KCS		1845	3		1925	3	40		6.1	Work
7 *	Lake Charles LA	KCS		1925	4		1945	4	20		6.1	
8 *	LKCHA-SP	KCS		1945	5		2025	5	40		6.2	Work
9 *	Lake Charles LA	KCS		2025	6		2045	6	20	20	6.3	

10 *	Rose Bluff LA	KCS		2105	6		2105	6		18	13		
11 *	W Lake Charles LA	KCS		2115	6		2130	6	15	18	16	Work	
12 *	Rose Bluff LA	KCS		2140	6		2200	6	20	24	19	Work	
13 *	Mossville LA	KCS		2210	6		0	0	200		23		

124	R MO206	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 6/22/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Mossville LA	KCS	0	0		2000	0		20	0	Fuel Work Crew Insp
2 *		Buhler LA	KCS	2020	0		2020	0		17	6.7	Work
3 *		DeQuincy LA	KCS	2055	0		2055	0			16.4	Work
4 *		DQUIN-UP	KCS	2055	1		2055	1			16.4	
5 *		DeQuincy LA	KCS	2055	2		2055	2		28	16.4	
6 *		Helme LA	KCS	2105	2		2105	2		38	21	
7 *		Green Island LA	KCS	2110	2		2110	2		19	24.2	Work
8 *		Lucas LA	KCS	2115	2		2115	2		29	25.8	
9 *		Ruliff TX	KCS	2140	2		2140	2		30	38	
10 *		Lemonville TX	KCS	2155	2		2155	2			45.5	Work
11 *		LMNVL-SRN	KCS	2155	3		2155	3			45.6	Work
12 *		Lemonville TX	KCS	2155	4		2155	4		25	45.7	Work
13 *		Mauriceville TX	KCS	2200	4		2200	4		31	47.8	
14 *		Vidor TX	KCS	2220	4		2220	4		22	58	
15 *		Beaumont TX	KCS	2235	4		2235	4		20	63.6	Work
16 *		Port Arthur TX	KCS	2335	4		0	0			83.7	

125	R MO206	2	Local,Dodgers,Turn	7	0	0	0	0	0	0	0	

Effective 6/22/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Port Arthur TX	KCS	0	0		2355	0		20	0	
2 *		Beaumont TX	KCS	55	1		55	1		22	20.1	Work
3 *		Vidor TX	KCS	110	1		110	1		24	25.7	
4 *		Mauriceville	KCS	135	1		135	1		26	35.9	

		TX										
5 *	LMNVL-SRN	KCS	140	1	145	1	5	1	38.1	Work		
6 *	Lemonville TX	KCS	150	1	155	1	5	45	38.2	Work		
7 *	Ruliff TX	KCS	205	1	205	1		24	45.7			
8 *	Lucas LA	KCS	235	1	235	1		19	57.9			
9 *	Green Island LA	KCS	240	1	240	1		19	59.5	Work		
10 *	Helme LA	KCS	250	1	250	1		28	62.7			
11 *	DeQuincy LA	KCS	300	1	300	1			67.3	Work		
12 *	DQUIN-UP	KCS	305	1	305	1			67.3			
13 *	DeQuincy LA	KCS	310	1	310	1		29	67.3			
14 *	Buhler LA	KCS	330	1	330	1		16	77			
15 *	Mossville LA	KCS	355	1	355	1		24	83.7			
16 *	Lake Charles LA	KCS	410	1	0	0			89.8			

126	R MO301	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effecti ve 6/22/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad		TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
					— Ariv —			— Dept —					Sta
1 *		Mossville LA	KCS		0	0		2300	0	100	22	0	Fuel Work Crew Insp
2 *		Westlake LA	KCS		2310	0		2330	0	20		3.7	
3 *		WLAKE-SP	KCS		2330	1		0	2	30		3.7	
4 *		Westlake LA	KCS		0	3		15	3	15	14	3.7	
5 *		Lake Charles LA	KCS		25	3		45	3	20		6.1	
6 *		LKCHA-UP	KCS		45	4		125	4	40		6.1	Work
7 *		Lake Charles LA	KCS		125	5		145	5	20		6.1	
8 *		LKCHA-SP	KCS		145	6		225	6	40		6.2	Work
9 *		Lake Charles LA	KCS		225	7		245	7	20	20	6.3	
10 *		Rose Bluff LA	KCS		305	7		305	7		18	13	
11 *		W Lake Charles LA	KCS		315	7		330	7	15	18	16	Work
12 *		Rose Bluff LA	KCS		340	7		400	7	20	24	19	Work
13 *		Mossville LA	KCS		410	7		0	0			23	

127	R MR101	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effecti ve 12/29/9 6 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

		— Ariv —		— Dept —		Sta

#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Morton MS	KCS	0	0	CST	600	0	30	18	0	Work
2 *		Pelahatchie MS	KCS	630	0		640	0	10	20	8.8	Work
3 *		Rankin MS	KCS	700	0		800	0	100	20	15.5	Work
4 *		Brandon MS	KCS	815	0		915	0	100	18	20.6	Work
5 *		Greenfield MS	KCS	930	0		940	0	10	18	25	Work
6 *		Whitfield MS	KCS	945	0		945	0		23	26.5	Work
7 *		Jackson Yard MS	KCS	955	0		1055	0	100	8	30.3	Work
8 *		Jackson MS	KCS	1135	0		0	0	10		35.6	
128 R	MR201	1 Local,Dodgers,Turn		6	0	0	0	0	0	0	0	

Effective 12/29/96 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1 *		Morton MS	KCS	0	0	CST	1800	0	30	18	0	Work
2 *		Pelahatchie MS	KCS	1830	0		1830	0		20	8.8	Work
3 *		Rankin MS	KCS	1850	0		1950	0	100	20	15.5	Work
4 *		Brandon MS	KCS	2005	0		2105	0	100	18	20.6	Work
5 *		Greenfield MS	KCS	2120	0		2120	0		18	25	Work
6 *		Whitfield MS	KCS	2125	0		2125	0		23	26.5	Work
7 *		Jackson Yard MS	KCS	2135	0		2235	0	100	8	30.3	Work
8 *		Jackson MS	KCS	2315	0		0	0			35.6	
129 R	MR201	2 Local,Dodgers,Turn		7	0	0	0	0	0	0	0	

Effective 1/28/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Jackson MS	KCS	0	0		30	0	45	8	0	Work Crew
2 *		Jackson Yard MS	KCS	110	0		210	0	100	23	5.3	
3 *		Whitfield MS	KCS	220	0		220	0		18	9.1	
4 *		Greenfield MS	KCS	225	0		225	0		18	10.6	
5 *		Brandon MS	KCS	240	0		310	0	30	20	15	
6 *		Rankin MS	KCS	325	0		345	0	20	16	20.1	
7 *		Pelahatchie MS	KCS	410	0		430	0	20	21	26.8	
8 *		Morton MS	KCS	455	0		0	0	20		35.6	

130 R 1 Local,Dodgers 6 0 0 0 0 0 0 0
NA101 ,Turn

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv — Time	Day	Dept — TZ	Time	Day	Sta — Time	Speed	Dist	— Yard Activity —
1	*	Nashville AR	KCS	0	0		1105	0			0	Fuel Work Crew Insp
2	*	NSHVL-UP	KCS	1105	1		1105	1			0	
3	*	Nashville AR	KCS	1105	2		1105	2			0	
4	*	Elberta AR	KCS	1105	3		1105	3		6	0.5	
5	*	J J R Spur AR	KCS	1110	3		1110	3		15	1	
6	*	Mineral Springs AR	KCS	1130	3		1130	3		17	6	
7	*	Okay Junction AR	KCS	1155	3		1155	3		12	13	
8	*	Sand Hill AR	KCS	1215	3		1215	3		16	17	
9	*	Millwood AR	KCS	1230	3		1230	3		15	21	
10	*	Ashdown AR	KCS	1310	3		0	0			31	

131 R 2 Local,Dodgers 5 0 0 0 0 0 0 0
NA101 ,Turn

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv — Time	Day	Dept — TZ	Time	Day	Sta — Time	Speed	Dist	— Yard Activity —
1	*	Ashdown AR	KCS	0	0		1400	0		15	0	
2	*	Millwood AR	KCS	1440	0		1440	0		16	10	
3	*	Sand Hill AR	KCS	1455	0		1455	0		16	14	
4	*	Okay Junction AR	KCS	1510	0		1510	0		14	18	
5	*	Mineral Springs AR	KCS	1540	0		1540	0		15	25	
6	*	J J R Spur AR	KCS	1600	0		1600	0			30	
7	*	Elberta AR	KCS	1600	1		1600	1		6	30.5	
8	*	Nashville AR	KCS	1605	1		0	0			31	

132 R 1 Local,Dodgers 5 0 0 0 0 0 0 0
NA102 ,Turn

Effecti ve 2/12/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv — Time	Day	Dept — TZ	Time	Day	Sta — Time	Speed	Dist	— Yard Activity —

#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Corinth MS	KCS	0	0		100	0		19	0	
2 *		Ripley MS	KCS	330	0		330	0		19	47.9	
3 *		Blue Mountain MS	KCS	350	0		350	0		19	54.1	
4 *		New Albany MS	KCS	430	0		430	0			66.7	
5 *		NALBY-BN	KCS	430	1		430	1			66.7	
6 *		New Albany MS	KCS	430	2		430	2		19	66.7	
7 *		Ecru MS	KCS	505	2		505	2		18	77.8	
8 *		Pontotoc MS	KCS	530	2		530	2		20	85.5	
9 *		Houlka MS	KCS	615	2		615	2		16	100.5	
10 *		Pine MS	KCS	640	2		640	2		19	107.3	
11 *		Houston MS	KCS	650	2		0	0			110.4	
133 R	NA102	2 Local,Turn	Dodgers	5	0	0	0	0	0	0	0	

Effective 2/12/97 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		Houston MS	KCS	0	0		635	0	30	19	0	
2 *		Pine MS	KCS	645	0		645	0		20	3.1	
3 *		Houlka MS	KCS	705	0		705	0		18	9.9	
4 *		Pontotoc MS	KCS	755	0		755	0		23	24.9	
5 *		Ecru MS	KCS	815	0		815	0		19	32.6	
6 *		New Albany MS	KCS	850	0		850	0		19	43.7	
7 *		Blue Mountain MS	KCS	930	0		930	0		19	56.3	
8 *		Ripley MS	KCS	950	0		950	0		19	62.5	
9 *		Corinth MS	KCS	1225	0		0	0			110.4	
134 R	NO201	1 Local,Turn	Dodgers	6	0	0	0	0	0	0	0	

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *		New Orleans LA	KCS	0	0		100	0		8	0	
2 *		Kenner LA	KCS	150	0		150	0		7	6.9	
3 *		Frellsen LA	KCS	215	0		215	0		23	9.9	
4 *		Norco LA	KCS	235	0		235	0		18	17.6	
5 *		Montegut LA	KCS	300	0		300	0		26	25	

6 *	Reserve LA	KCS		310	0		310	0		19	29.3	
7 *	Garyville LA	KCS		315	0		315	0		20	30.9	
8 *	Gramercy LA	KCS		330	0		330	0		19	36	
9 *	McElroy LA	KCS		355	0		355	0		30	43.8	
10 *	Barmen LA	KCS		400	0		430	0	30	16	46.3	
11 *	Sorrento LA	KCS		440	0		440	0		20	49	
12 *	Gonzales LA	KCS		455	0		455	0		22	53.9	
13 *	Prairieville LA	KCS		510	0		510	0		18	59.4	
14 *	Kleinpeter LA	KCS		525	0		525	0		9	64	
15 *	Essen LA	KCS		605	0		605	0		8	69.7	
16 *	Baton Rouge LA	KCS		655	0		0	0			76.3	

135 R NO201	2 Local,Dodgers,Turn	6	0	0	0	0	0	0	0		

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

# Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *	Baton Rouge LA	KCS	0	0		1300	0		8	0	
2 *	Essen LA	KCS	1350	0		1350	0		9	6.6	
3 *	Kleinpeter LA	KCS	1430	0		1430	0		18	12.3	
4 *	Prairieville LA	KCS	1445	0		1445	0		22	16.9	
5 *	Gonzales LA	KCS	1500	0		1500	0		20	22.4	
6 *	Sorrento LA	KCS	1515	0		1515	0		16	27.3	
7 *	Barmen LA	KCS	1525	0		1525	0		30	30	
8 *	McElroy LA	KCS	1530	0		1530	0		19	32.5	
9 *	Gramercy LA	KCS	1555	0		1555	0		20	40.3	
10 *	Garyville LA	KCS	1610	0		1610	0		19	45.4	
11 *	Reserve LA	KCS	1615	0		1615	0		17	47	
12 *	Montegut LA	KCS	1630	0		1630	0		22	51.3	
13 *	Norco LA	KCS	1650	0		1650	0		18	58.7	
14 *	Frellsen LA	KCS	1715	0		1715	0		9	66.4	
15 *	Kenner LA	KCS	1735	0		1735	0		8	69.4	
16 *	New Orleans LA	KCS	1825	0		0	0			76.3	

136 R NR101	1 Local,Dodgers,Turn	7	0	0	0	0	0	0	0		

Effective 1/22/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

# Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1 *	Norco LA	KCS	0	0		800	0	100	10	0	Fuel Work

													Crew Insp
2 *	Montegut LA	KCS	845	0	915	0	30	10	7.4				
3 *	Reserve LA	KCS	940	0	1040	0	100	10	11.7				
4 *	Garyville LA	KCS	1050	0	1120	0	30	10	13.3				
5 *	Gramercy LA	KCS	1150	0	1220	0	30	10	18.4				
6 *	Garyville LA	KCS	1250	0	1320	0	30	10	23.5				
7 *	Reserve LA	KCS	1330	0	1430	0	100	9	25.1				
8 *	Montegut LA	KCS	1500	0	1520	0	20	11	29.4				
9 *	Norco LA	KCS	1600	0	0	0	100	10	36.8				

137	R NR102	1	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effecti ve 1/22/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Norco LA	KCS		0	0		900	0	100	10	0	Fuel Work Crew Insp
2 *		Montegut LA	KCS		945	0		1015	0	30	10	7.4	
3 *		Reserve LA	KCS		1040	0		1140	0	100	10	11.7	
4 *		Garyville LA	KCS		1150	0		1220	0	30	10	13.3	
5 *		Gramercy LA	KCS		1250	0		1320	0	30	10	18.4	
6 *		Garyville LA	KCS		1350	0		1420	0	30	10	23.5	
7 *		Reserve LA	KCS		1430	0		1530	0	100	9	25.1	
8 *		Montegut LA	KCS		1600	0		1620	0	20	11	29.4	
9 *		Norco LA	KCS		1700	0		0	0	100	10	36.8	

138	R NR103	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0		

Effecti ve 1/22/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Norco LA	KCS		0	0		1630	0	100	10	0	Fuel Work Crew Insp
2 *		Montegut LA	KCS		1715	0		1745	0	30	10	7.4	
3 *		Reserve LA	KCS		1810	0		1910	0	100	10	11.7	
4 *		Garyville LA	KCS		1920	0		1950	0	30	10	13.3	
5 *		Gramercy LA	KCS		2020	0		2050	0	30	9	18.4	
6 *		McElroy LA	KCS		2140	0		2210	0	30	10	26.2	
7 *		Gramercy LA	KCS		2255	0		2325	0	30	10	34	
8 *		Garyville LA	KCS		2355	0		25	1	30	10	39.1	
9 *		Reserve LA	KCS		35	1		135	1	100	10	40.7	
10 *		Montegut LA	KCS		200	1		220	1	20	10	45	

11	*	Norco LA	KCS		305	1		0	0	100	10	52.4	

139	R NW101	1	Local,Dodgers,Turn		5	0	0	0	0	0	0	0	

Effective 5/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Newton MS	KCS		0	0		800	0	100	16	0	
2	*	Doolittle MS	KCS		815	0		815	0		20	4.1	
3	*	Jeff MS	KCS		825	0		825	0		19	7.5	
4	*	Decatur MS	KCS		830	0		830	0		20	9.1	
5	*	Union MS	KCS		900	0		1100	0	200	22	18.9	
6	*	Neshoba MS	KCS		1110	0		1110	0		18	22.6	
7	*	Sebastopol MS	KCS		1205	0		0	0	100		39	

140	R NW101	2	Local,Dodgers,Turn		5	0	0	0	0	0	0	0	

Effective 5/ 9/97 Expiration ##### Operates: Mo Tu We Th Fr

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Sebastopol MS	KCS		0	0		1400	0		19	0	
2	*	Union MS	KCS		1440	0		1640	0	200	20	12.7	
3	*	Decatur MS	KCS		1710	0		1810	0	100	19	22.5	
4	*	Jeff MS	KCS		1815	0		1815	0		20	24.1	
5	*	Doolittle MS	KCS		1825	0		1825	0		16	27.5	
6	*	Newton MS	KCS		1840	0		0	0	120		31.6	

141	R NW102	1	Local,Dodgers,Turn		6	0	0	0	0	0	0	0	

Effective 6/24/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#		Railroad		— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Sta Time	Speed	Dist	— Yard Activity —
1	*	Philadelphia MS	KCS		0	0		1300	0			0	
2	*	Deweese MS	KCS		1300	1		1300	1		29	1	
3	*	McDonald MS	KCS		1315	1		1315	1		34	8.2	
4	*	Neshoba MS	KCS		1320	1		1320	1		23	11	
5	*	Hill Track	KCS		1325	1		1325	1		22	12.9	

		MS												
6	*	Union MS	KCS		1330	1		1330	1			29	14.7	
7	*	Decatur MS	KCS		1350	1		1350	1			19	24.5	
8	*	Jeff MS	KCS		1355	1		1355	1			41	26.1	
9	*	Doolittle MS	KCS		1400	1		1400	1			25	29.5	
10	*	Newton MS	KCS		1410	1		0	0				33.6	

142	R NW102	2	Local,Dodgers ,Turn	6	0	0	0	0	0	0	0	

Effective 6/24/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Newton MS	KCS	0	0		1600	0		16	0	Fuel Work Crew Insp
2	*	Doolittle MS	KCS	1615	0		1615	0		20	4.1	Work
3	*	Jeff MS	KCS	1625	0		1625	0		19	7.5	
4	*	Decatur MS	KCS	1630	0		1630	0		20	9.1	
5	*	Union MS	KCS	1700	0		1700	0		22	18.9	
6	*	Hill Track MS	KCS	1705	0		1705	0		23	20.7	
7	*	Neshoba MS	KCS	1710	0		1710	0		17	22.6	
8	*	McDonald MS	KCS	1720	0		1720	0		17	25.4	
9	*	Deweese MS	KCS	1745	0		1745	0			32.6	
10	*	Philadelphia MS	KCS	1745	1		0	0			33.6	

143	R NW201	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Newton MS	KCS	0	0		1800	0		1	0	Fuel Work Crew Insp
2	*	Roberts MS	KCS	2330	0		2330	0		18	8	
3	*	Montrose MS	KCS	2355	0		2355	0		17	15.4	
4	*	Louin MS	KCS	10	1		10	1		24	19.7	
5	*	Stevens MS	KCS	20	1		20	1		17	23.7	
6	*	Bay Springs MS	KCS	30	1		0	0	30		26.5	

144	R NW201	2	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effective 3/ 7/97 Expiration ##### Operates: Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity

#	Location	Railroad	TZ	Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Bay Springs MS	KCS	0	0		100	0	30	17	0	
2 *		Stevens MS	KCS	110	0		140	0	30	24	2.8	
3 *		Louin MS	KCS	150	0		220	0	30	17	6.8	
4 *		Montrose MS	KCS	235	0		305	0	30	18	11.1	
5 *		Roberts MS	KCS	330	0		400	0	30	19	18.5	
6 *		Newton MS	KCS	425	0		0	0	100		26.5	
145 R	NW301	1 Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effecti ve 12/29/9 6 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Newton MS	KCS	0	0	CST	30	0	100	16	0	Work
2 *		Lawrence MS	KCS	45	0		45	0		23	4.1	
3 *		Lake MS	KCS	100	0		100	0		17	9.9	
4 *		Forest MS	KCS	130	0		130	0		22	18.6	Work
5 *		Raworth MS	KCS	145	0		145	0		22	24.1	
6 *		Morton MS	KCS	200	0		200	0		18	29.5	
7 *		Pelahatchie MS	KCS	230	0		230	0		20	38.3	Work
8 *		Rankin MS	KCS	250	0		250	0		20	45	Work
9 *		Brandon MS	KCS	305	0		305	0		18	50.1	Work
10 *		Greenfield MS	KCS	320	0		320	0		18	54.5	
11 *		Whitfield MS	KCS	325	0		325	0		15	56	
12 *		Jackson Yard MS	KCS	340	0		440	0	100	8	59.8	Work
13 *		Jackson MS	KCS	520	0		0	0			65.1	
146 R	NW301	2 Local,Dodgers ,Turn		6	0	0	0	0	0	0	0	

Effecti ve 1/17/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Dept – Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Jackson MS	KCS	0	0		525	0		8	0	Work Crew
2 *		Jackson Yard MS	KCS	605	0		635	0	30	23	5.3	Work
3 *		Whitfield MS	KCS	645	0		645	0		18	9.1	
4 *		Greenfield MS	KCS	650	0		650	0		18	10.6	
5 *		Brandon MS	KCS	705	0		705	0		20	15	
6 *		Rankin MS	KCS	720	0		720	0		16	20.1	

7	*	Pelahatchie MS	KCS		745	0		745	0		21	26.8	
8	*	Morton MS	KCS		810	0		810	0		16	35.6	Work
9	*	Raworth MS	KCS		830	0		830	0		22	41	
10	*	Forest MS	KCS		845	0		845	0		21	46.5	Work
11	*	Lake MS	KCS		910	0		910	0		17	55.2	
12	*	Lawrence MS	KCS		930	0		930	0		16	61	
13	*	Newton MS	KCS		945	0		0	0			65.1	

147	R PB201	1	Local,Dodgers,Turn	6	0	0	0	0	0	0	0	

Effective 7/18/97 Expiration ##### Operates: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Pittsburg KS	KCS	0	0		1000	0		10	0	Fuel Work Crew Insp
2	*	Empire KS	KCS	1035	0		1035	0		10	5.7	
3	*	Pittsburg KS	KCS	1110	0		0	0			11.4	

148	R SH101	1	Local,Dodgers,Turn	7	0	0	0	0	0	0	0	

Effective 8/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0		800	0	100	9	0	Fuel Work Crew Insp
2	*	Texas Junction	KCS	830	0		830	0		22	4.3	
3	*	Hammock LA	KCS	840	0		840	0		18	8	
4	*	Fox TX	KCS	925	0		925	0		18	21.6	
5	*	Jefferson TX	KCS	1010	0		1010	0		20	35.3	
6	*	Lassater TX	KCS	1045	0		1045	0		18	47.1	
7	*	Hughes Springs TX	KCS	1135	0		0	0			62.3	Work

149	R SH101	2	Local,Dodgers,Turn	7	0	0	0	0	0	0	0	

Effective 8/ 9/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Hughes	KCS	0	0	CST	1435	0		18	0	Work

		Springs TX												
2	*	Lassater TX	KCS		1525	0		1525	0			20	15.2	
3	*	Jefferson TX	KCS		1600	0		1600	0			18	27	
4	*	Fox TX	KCS		1645	0		1645	0			20	40.7	
5	*	Hammock LA	KCS		1725	0		1725	0			15	54.3	
6	*	Texas Junction	KCS		1740	0		1740	0			9	58	
7	*	Shreveport LA	KCS		1810	0		0	0				62.3	

150	R	1	Local,Dodgers,Turn	7	0	0	0	0	0	0	0		
	SH201												

Effective 7/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport LA	KCS	0	0		1900	0	100	7	0	Fuel Work Crew Insp
2	*	Harriet Street LA	KCS	1920	0		2020	0	100	12	2.4	
3	*	Frierson LA	KCS	2200	0		2200	0		25	23	
4	*	Bayou Pierre LA	KCS	2210	0		0	0			27.2	

151	R	2	Local,Dodgers,Turn	7	0	0	0	0	0	0	0		
	SH201												

Effective 7/21/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Bayou Pierre LA	KCS	0	0		2230	0		25	0	
2	*	Frierson LA	KCS	2240	0		2240	0		12	4.2	
3	*	Harriet Street LA	KCS	20	1		20	1		7	24.8	
4	*	Shreveport LA	KCS	40	1		0	0			27.2	

152	R	1	Local,Dodgers,Turn	7	0	0	0	0	0	0	0		
	SHDQ1												

Effective 12/22/97 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Day	Dept TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Shreveport	KCS	0	0		1800	0		9	0	Fuel Work

		LA										Crew Insp
2	*	Blanchard LA	KCS	1835	0	1835	0		20	5		
3	*	Shoreline LA	KCS	1925	0	1925	0		20	21.5		
4	*	Sandra LA	KCS	2010	0	2010	0		19	36.5		
5	*	Jury TX	KCS	2125	0	2125	0		24	60.5		
6	*	Texarkana TX	KCS	2140	0	2140	0		17	66.4		
7	*	Ashdown AR	KCS	2240	0	2340	0	100	19	83.1	Work	
8	*	Gifford Hill Spur	KCS	10	1	40	1	30	25	92.4	Work	
9	*	Wilton AR	KCS	45	1	45	1		21	94.5		
10	*	Winthrop AR	KCS	125	1	125	1		19	108.2		
11	*	Wade AR	KCS	200	1	200	1		21	119.3		
12	*	DeQueen AR	KCS	215	1	0	0			124.6		

153 R SP101 1 Local,Dodgers ,Turn 5 0 0 0 0 0 0 0

Effecti ve 6/13/97 Expira tion ##### Operat es: Su Tu We Th Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Sulphur Springs TX	KCS	0	0		1200	0	200	16	0	Fuel Work Crew Insp
2	*	Tugco TX	KCS	1215	0		1215	0		18	4.1	
3	*	Thermo TX	KCS	1220	0		1320	0	100	20	5.6	Work
4	*	Eser TX	KCS	1415	0		1415	0		18	23.9	
5	*	Tidewater TX	KCS	1430	0		1430	0		21	28.3	
6	*	Newsome TX	KCS	1440	0		1440	0		19	31.8	
7	*	Leesburg TX	KCS	1450	0		1450	0		18	34.9	
8	*	Monticello TX	KCS	1505	0		1505	0		16	39.3	
9	*	Pittsburg TX	KCS	1515	0		1515	0		20	42	
10	*	Veals TX	KCS	1615	0		1615	0		13	61.9	
11	*	Hughes Springs TX	KCS	1625	0		0	0			64	

154 R SP101 2 Local,Dodgers ,Turn 5 0 0 0 0 0 0 0

Effecti ve 6/13/97 Expira tion ##### Operat es: Su Tu We Th Sa

#	Location	Railroad	— Ariv — TZ	Time	— Dept — Day	TZ	Time	Day	Time	Speed	Dist	Sta — Yard Activity —
1	*	Hughes Springs TX	KCS	0	0		1630	0		19	0	
2	*	Pittsburg TX	KCS	1740	0		1740	0		16	22	
3	*	Monticello	KCS	1750	0		1820	0	30	18	24.7	Work

			TX										
4	*	Leesburg TX	KCS		1835	0		1835	0		19	29.1	
5	*	Newsome TX	KCS		1845	0		1845	0		21	32.2	
6	*	Tidewater TX	KCS		1855	0		1855	0		18	35.7	
7	*	Eser TX	KCS		1910	0		1910	0		20	40.1	
8	*	Thermo TX	KCS		2005	0		2035	0	30	18	58.4	Work
9	*	Tugco TX	KCS		2040	0		2040	0		16	59.9	
10	*	Sulphur Springs TX	KCS		2055	0		2055	0		19	64	
11	*	Greenville TX	KCS		2235	0		0	0			95.3	

155	R SS101	1	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effecti ve 1/29/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Siloam Springs AR	KCS	0	0		1800	0		19	0	Fuel Work Crew Insp
2	*	Noel MO	KCS	1930	0		1950	0	20	18	28.6	
3	*	Gravette AR	KCS	2020	0		2040	0	20	18	37.8	
4	*	Peterson AR	KCS	2100	0		2120	0	20		43.8	
5	*	Decatur AR	KCS	2120	1		2140	1	20	17	44.9	
6	*	Gentry AR	KCS	2200	1		2220	1	20		50.4	
7	*	Flint Creek AR	KCS	2220	2		2240	2	20	17	51.6	
8	*	Siloam Springs AR	KCS	2300	2		2320	2	20	20	57.2	
9	*	Watts OK	KCS	2340	2		0	0	100		63.9	

156	R SS101	2	Local,Dodgers ,Turn	5	0	0	0	0	0	0	0	

Effecti ve 1/29/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad	TZ	— Ariv — Time	Day	TZ	— Dept — Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Watts OK	KCS	0	0		1240	0		20	0	
2	*	Siloam Springs AR	KCS	1300	0		1300	0		17	6.7	
3	*	Flint Creek AR	KCS	1320	0		1320	0			12.3	
4	*	Gentry AR	KCS	1320	1		1320	1		17	13.5	
5	*	Decatur AR	KCS	1340	1		1340	1			19	
6	*	Peterson AR	KCS	1340	2		1340	2		18	20.1	
7	*	Gravette AR	KCS	1400	2		1400	2		18	26.1	
8	*	Noel MO	KCS	1430	2		0	0	20		35.3	

157 R 1 Local,Dodgers 6 0 0 0 0 0 0 0
SW101 ,Turn

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Sallisaw OK	KCS	0	0		800	0	20		0	Work Crew Insp
2	*	SLSAW-UP	KCS	800	1		800	1			1	
3	*	Sallisaw OK	KCS	800	2		800	2			2	
4	*	SLSAW-RAMP	KCS	800	3		800	3			3	
5	*	Sallisaw OK	KCS	800	4		800	4		20	4	
6	*	Marble City OK	KCS	830	4		850	4	20	19	14	
7	*	Bunch OK	KCS	920	4		940	4	20	18	23.4	
8	*	Stilwell OK	KCS	1025	4		1045	4	20	20	36.9	
9	*	Baron OK	KCS	1110	4		1130	4	20	17	45.1	
10	*	Westville OK	KCS	1150	4		1210	4	20	20	50.7	
11	*	Hudson OK	KCS	1220	4		1240	4	20	20	54.1	
12	*	Watts OK	KCS	1255	4		0	0			59.1	

158 R 2 Local,Dodgers 5 0 0 0 0 0 0 0
SW101 ,Turn

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Mo Tu We Th Fr

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Watts OK	KCS	0	0		1330	0		20	0	
2	*	Hudson OK	KCS	1345	0		1345	0		20	5	
3	*	Westville OK	KCS	1355	0		1355	0		17	8.4	
4	*	Baron OK	KCS	1415	0		1415	0		20	14	
5	*	Stilwell OK	KCS	1440	0		1440	0		18	22.2	
6	*	Bunch OK	KCS	1525	0		1525	0		19	35.7	
7	*	Marble City OK	KCS	1555	0		1555	0		20	45.1	
8	*	Sallisaw OK	KCS	1625	0		0	0			55.1	

159 R 1 Local,Dodgers 6 0 0 0 0 0 0 0
TC201 ,Turn

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	Ariv Time	Dept Day	TZ	Time	Day	Sta Time	Speed	Dist	Yard Activity
1	*	Tuscaloosa AL	KCS	0	0	CST	1800	0	100	8	0	Fuel Work Crew Insp

2 *	Holt AL	KCS	1845	0	1850	0	5	8	5.9			
3 *	Fox AL	KCS	1905	0	1910	0	5	8	8			
4 *	Howton AL	KCS	2045	0	2050	0	5	8	20.8			
5 *	Brookwood AL	KCS	2115	0	2125	0	10	6	24.3			
6 *	BRKWA-CSXT	KCS	2135	0	2145	0	10	20	25.3			
7 *	Birmingham AL	KCS	2330	0	2350	0	20	4	59.6	Work		
8 *	BHAM-CSXT	KCS	5	1	35	1	30	6	60.6	Work		
9 *	Birmingham AL	KCS	45	1	0	0	100		61.6			

160 R TC201	2 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0			

Effecti ve 3/ 7/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Birmingham AL	KCS	0	0		100	1		19	0	Work
2 *		BRKWA-CSXT	KCS	250	1		250	1		12	34.3	
3 *		Brookwood AL	KCS	255	1		255	1		8	35.3	
4 *		Howton AL	KCS	320	1		320	1		8	38.8	
5 *		Fox AL	KCS	455	1		455	1		6	51.6	
6 *		Holt AL	KCS	515	1		515	1		9	53.7	
7 *		Tuscaloosa AL	KCS	555	1		0	0			59.6	

161 R TP101	1 Local,Dodgers ,Turn	7	0	0	0	0	0	0	0			

Effecti ve 2/12/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Tupelo MS	KCS	0	0		800	0			0	Fuel Work Crew Insp
2 *		TUPEL-BN	KCS	800	1		800	1			0	
3 *		Tupelo MS	KCS	800	2		800	2		15	0	
4 *		Saltillo MS	KCS	835	2		835	2		14	8.5	
5 *		Guntown MS	KCS	855	2		855	2		15	13.3	
6 *		Baldwyn MS	KCS	915	2		0	0	300		18.4	

162 R TP101	2 Local,Dodgers ,Turn	7	0	0	0	0	0	0	0			

Effecti ve 2/12/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Sta — Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Baldwyn MS	KCS		0	0		1200	0	300	20	0	
2	*	Guntown MS	KCS		1215	0		1315	0	100	19	5.1	
3	*	Saltillo MS	KCS		1330	0		1430	0	100	17	9.9	
4	*	Tupelo MS	KCS		1500	0		0	0	100		18.4	

163 R VB101 1 Local,Dodgers ,Turn 7 0 0 0 0 0 0 0

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Sta — Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Vicksburg MS	KCS		0	0		1200	0			0	
2	*	National Cemetery	KCS		2310	0		2310	0		7	3.6	
3	*	Kings MS	KCS		2320	0		2320	0		8	4.8	
4	*	Blakely MS	KCS		2350	0		2350	0		8	8.7	
5	*	Redwood MS	KCS		5	1		0	0			10.8	Fuel Work Crew Insp

164 R VB101 2 Local,Dodgers ,Turn 7 0 0 0 0 0 0 0

Effecti ve 2/ 3/97 Expira tion ##### Operat es: Su Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Sta — Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1	*	Redwood MS	KCS		0	0		5	0		8	0	Fuel Work Crew Insp
2	*	Blakely MS	KCS		20	0		20	0		8	2.1	
3	*	Kings MS	KCS		50	0		50	0		7	6	
4	*	National Cemetery	KCS		100	0		100	0		9	7.2	
5	*	Vicksburg MS	KCS		125	0		0	0			10.8	

165 R VB201 1 Local,Dodgers ,Turn 6 0 0 0 0 0 0 0

Effecti ve 6/13/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad		— Ariv — TZ	Time	Sta — Dept — Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —

1 *	Vicksburg MS	KCS		0	0		2300	0		20	0	Fuel Work Crew Insp
2 *	Newmans MS	KCS		2325	0		2325	0		14	8.4	
3 *	Bovina MS	KCS		2335	0		2335	0		24	10.7	
4 *	Smiths MS	KCS		2345	0		2345	0		16	14.7	
5 *	Edwards MS	KCS		0	1		100	1	100	18	18.7	Work
6 *	Bolton MS	KCS		130	1		130	1		19	27.6	
7 *	Clinton MS	KCS		155	1		255	1	100	8	35.5	Work
8 *	Jackson MS	KCS		405	1		405	1		8	44.8	
9 *	Jackson Yard MS	KCS		445	1		0	0			50.1	

166 R VB201	2 Local,Dodgers ,Turn	6	0	0	0	0	0	0	0		

Effecti ve 6/13/97 Expira tion ##### Operat es: Mo Tu We Th Fr Sa

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	Jackson Yard MS	KCS		0	0		500	1		8	0	
2 *	Jackson MS	KCS		540	1		540	1		8	5.3	
3 *	Clinton MS	KCS		650	1		750	1	100	19	14.6	Work
4 *	Bolton MS	KCS		815	1		815	1		18	22.5	
5 *	Edwards MS	KCS		845	1		945	1	100	24	31.4	Work
6 *	Smiths MS	KCS		955	1		955	1		16	35.4	
7 *	Bovina MS	KCS		1010	1		1010	1		28	39.4	
8 *	Newmans MS	KCS		1015	1		1015	1		17	41.7	
9 *	Vicksburg MS	KCS		1045	1		0	0			50.1	

167 S VLPA1	1 Local,Dodgers ,Turn	0	0	0	0	0	0	0	0		

Effecti ve 12/12/9 6 Expira tion ##### Operates: As Reqd

#	Location	Railroad	TZ	— Ariv — Time	Day	— Dept — TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *	Shreveport LA	KCS		0	0	CST	5	0		13	0	
2 *	Frierson LA	KCS		150	0		150	0		28	23	
3 *	Benson LA	KCS		250	0		250	0		27	51.2	
4 *	Leesville LA	KCS		510	0		510	0		27	115.1	
5 *	Fort Polk LA	KCS		520	0		520	0		34	119.6	
6 *	Ludington LA	KCS		545	0		545	0		27	133.7	
7 *	Singer LA	KCS		625	0		625	0		33	151.8	
8 *	DeQuincy LA	KCS		650	0		650	0		55	165.7	
9 *	Helme LA	KCS		655	0		655	0		29	170.3	
10 *	Lucas LA	KCS		705	0		705	0		29	175.1	

11 *	Ruliff TX	KCS		730	0		730	0		30	187.3		
12 *	Vidor TX	KCS		810	0		810	0		34	207.1		
13 *	Beaumont TX	KCS		820	0		820	0		21	212.7		
14 *	Port Neches TX	KCS		910	0		910	0		20	230		
15 *	Port Arthur TX	KCS		940	0		0	0			240.2		

168 Y HD101		1 Local,Dodgers ,Turn		1	0	0	0	0	0	0	0		

Effective 1/23/97 Expiration ##### Operates: Tu

			— Ariv —			— Dept —						
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Hodge LA	KCS	0	0		900	0			0	Fuel Work Crew Insp
2 *		HODGE IND	KCS	900	1		900	1			0	
3 *		Hodge LA	KCS	900	2		0	0			0	

169 Y HD201		1 Local,Dodgers ,Turn		5	0	0	0	0	0	0	0		

Effective 1/23/97 Expiration ##### Operates: Su Mo Tu We Th

			— Ariv —			— Dept —						
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Hodge LA	KCS	0	0		1900	0			0	Fuel Work Crew Insp
2 *		HODGE IND	KCS	1900	1		1900	1			0	
3 *		Hodge LA	KCS	1900	2		0	0			0	

170 Y HD401		1 Local,Dodgers ,Turn		6	0	0	0	0	0	0	0		

Effective 1/23/97 Expiration ##### Operates: Su Tu We Th Fr Sa

			— Ariv —			— Dept —						
#	Location	Railroad	TZ	Time	Day	TZ	Time	Day	Time	Speed	Dist	— Yard Activity —
1 *		Hodge LA	KCS	0	0		900	0			0	Fuel Work Crew Insp
2 *		HODGE IND	KCS	900	1		900	1			0	
3 *		Hodge LA	KCS	900	2		0	0			0	

171 Y		2 Local,Dodgers		6	0	0	0	0	0	0	0		

HD401 ,Turn

Effective 1/23/97 Expiration ##### Operates: Su Tu We Th Fr Sa

#	Location	Railroad		--- Ariv --- TZ	Time	-- Dept -- Day	TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1	*	Hodge LA	KCS		0	0		1900	0			0	
2	*	HODGE IND	KCS		1900	1		1900	1			0	
3	*	Hodge LA	KCS		1900	2		0	0			0	
172	Y JC101		1	Local,Dodgers ,Turn	7	0	0	0	0	0	0	0	

Effective 12/17/96 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad		--- Ariv --- TZ	Time	-- Dept -- Day	TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1	*	Jackson Yard MS	KCS		0	0		600	0	300	8	0	Work Crew Insp
2	*	Jackson MS	KCS		640	0	CST	1240	0	600	8	5.3	Work
3	*	JACKN-IC	KCS		1320	0		1420	0	100	9	10.4	Work
4	*	Jackson MS	KCS		1455	0		1555	0	100	8	15.5	
5	*	Jackson Yard MS	KCS		1635	0		0	0			20.8	
173	Y JC201		1	Local,Dodgers ,Turn	7	0	0	0	0	0	0	0	

Effective 12/17/96 Expiration ##### Operates: Su Mo Tu We Th Fr Sa

#	Location	Railroad		--- Ariv --- TZ	Time	-- Dept -- Day	TZ	Time	Day	Time	Speed	Dist	--- Yard Activity ---
1	*	Jackson Yard MS	KCS		0	0		1800	0	300	8	0	Work Crew Insp
2	*	Jackson MS	KCS		1840	0	CST	40	1	600	8	5.3	Work
3	*	JACKN-IC	KCS		120	1		220	1	100	9	10.4	Work
4	*	Jackson MS	KCS		255	1		355	1	100	8	15.5	
5	*	Jackson Yard MS	KCS		435	1		0	0			20.8	

MultiRail
MultiModal Applied Systems, Inc. 1 #####

APPENDIX B

INTERCHANGE TIMES

When KCS picks up or delivers a load to a customer located off of KCS's network of tracks, the car must be interchanged to another railroad. This means that the car is placed in the custody of another railroad for part of its cycle. The point where the gaining railroad takes custody of the car from KCS is called an interchange point. The gaining railroad moves the car from an interchange point to the customer. KCS has agreements with most railroads to promptly return cars to the owning railroad via reverse routing back to the interchange point. If the gaining railroad needs the car, however, they may use it for a period of time before returning it to the owning railroad. During this period of time, the gaining railroad pays the owning railroad a negotiated daily fee called per diem. In order to represent the interchange process in the simulation, car movement records were analyzed to determine the minimum, mean, and maximum number of hours KCS cars spent in the hands of other railroads. Table 7 lists these statistics for each of the simulation nodes where interchanges took place. Whenever an interchange occurred in the simulation, the interchange time was assigned by making a random draw from a triangular distribution possessing the minimum, mean, and maximum duration as described in table 7.

Table 7. Interchange Times

NODE #	OBSERVATIONS	MIN (HRS)	MEAN (HRS)	MAX (HRS)
1	153	18.33	746.6289542	2723.67
3	23	255.17	375.44	707.2
6	14	24.63	224.52	1243.83
8	10	246.5	381.65	496
11	12	214.75	703.59	1867.58
15	261	108.33	419.3596071	2794.6
17	1308	0.5	104.32	607.08
19	127	16.1	345.1020755	1940.25
20	475	21.02	507.2	2200.33
21	29	43.92	102.75	183.83
24	2959	4.67	357.2933333	2758.67
26	25	65.67	310.18	1068.5
27	928	23.5	385.9092086	756.5
29	108	106.25	385.9092086	2930.52
30	145	0.08	551.74	2157.5
33	44	8.25	379.02	1128.25
34	95	40.33	389.1	1971.08
41	505	17.08	118.4791709	513.42
43	12	217.75	397.22	563.95

APPENDIX C

ORDERED SEARCH VECTORS

When car managers assign freehandlers to meet car demand, they fill orders sequentially. In each case, they look for available cars at the nearest stations first. They expand their search to include more distant stations until sufficient cars can be located to fill the order. To simulate this process in the prototype model, distances were calculated between each possible origin and destination. For each origin, possible destinations were sorted from nearest to farthest. The resulting vectors for each origin were used to guide the simulation in searching for available cars to fill each order. The ordered search vectors were input to the simulation model using the following EXCEL database. The first column is the station number where cars were ordered. Columns extending to the right contain station numbers that could supply the needed cars. These potential supply points are ordered from nearest to most distant.

NODE #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	1	2	3	4	5	6	7	8	9	10	11	12	44	21	38	39	17	22	13	40	14
2	2	3	4	1	5	6	7	8	9	10	11	12	44	21	38	39	17	22	13	40	14
3	3	2	4	5	6	1	7	8	9	10	11	12	44	21	38	39	17	22	13	40	14
4	4	3	5	2	6	7	8	1	9	10	11	12	44	21	38	39	17	22	13	40	14
5	5	6	4	7	3	8	2	9	10	11	1	12	44	21	38	39	17	22	13	40	14
6	6	7	5	8	4	9	10	3	2	11	12	44	21	38	39	17	22	13	1	40	14
7	7	6	8	5	9	10	4	11	12	3	44	21	38	39	17	2	22	13	40	14	18
8	8	9	7	10	6	11	5	12	44	21	38	39	17	4	22	13	40	3	14	18	23
9	9	10	8	11	7	12	44	6	21	38	39	17	5	22	13	40	4	14	18	23	16
10	10	9	8	11	12	44	7	21	38	39	17	6	22	13	5	40	14	18	23	4	16
11	11	12	44	21	38	39	10	17	9	22	13	8	40	14	18	7	23	16	15	19	6
12	12	11	44	21	38	39	13	10	17	9	22	14	8	40	16	15	18	7	23	19	6
13	13	14	16	12	15	11	44	21	38	39	10	17	9	22	8	40	18	7	23	19	6
14	14	16	15	13	12	11	44	21	38	39	10	17	9	22	8	40	18	7	23	19	6
15	15	14	16	13	12	11	44	21	38	39	10	17	9	22	8	40	18	7	23	19	6
16	16	14	15	13	12	11	44	21	38	39	10	17	9	22	8	40	18	7	23	19	6
17	17	11	18	12	44	21	38	39	19	10	9	22	13	8	40	14	7	23	16	15	6
18	18	19	17	11	12	44	20	21	38	39	10	9	22	13	8	40	14	7	23	16	15
19	19	18	17	20	11	12	44	21	38	39	10	9	22	13	8	40	14	7	23	16	15
20	20	19	18	17	11	12	44	21	38	39	10	9	22	13	8	40	14	7	23	16	15
21	21	38	11	22	12	44	39	10	17	23	9	13	8	24	40	25	14	18	7	16	15
22	22	21	38	23	11	24	12	44	25	39	10	17	9	26	13	8	40	14	18	7	27
23	23	24	22	25	21	26	38	11	12	44	27	35	28	39	10	17	9	29	32	33	36
24	24	25	23	26	22	27	21	35	38	28	11	29	32	33	36	12	44	37	30	39	10
25	25	24	26	23	27	28	22	29	32	33	21	35	38	30	11	34	36	12	44	37	31
26	26	25	27	24	28	23	29	32	33	30	22	34	21	31	35	38	11	36	12	44	37
27	27	28	29	32	33	26	30	34	25	24	31	23	22	21	35	38	11	36	12	44	37
28	28	27	29	32	33	30	26	34	25	31	24	23	22	21	35	38	11	36	12	44	37
29	29	28	30	27	32	31	33	26	34	25	24	23	22	21	35	38	11	36	12	44	37
30	30	29	31	28	27	32	33	26	34	25	24	23	22	21	35	38	11	36	12	44	37
31	31	30	29	28	27	32	33	26	34	25	24	23	22	21	35	38	11	36	12	44	37
32	32	28	27	29	33	30	26	34	25	31	24	23	22	21	35	38	11	36	12	44	37
33	33	34	27	28	29	32	26	30	25	24	31	23	22	21	35	38	11	12	44	36	37
34	34	33	27	28	29	32	26	30	25	24	31	23	22	21	35	38	11	12	44	36	37
35	35	36	37	24	25	23	26	38	22	27	21	28	39	11	29	32	12	33	44	40	30
36	36	37	35	24	25	23	26	38	22	27	21	28	39	11	29	32	12	33	44	40	30
37	37	36	35	24	25	23	26	38	22	27	21	28	39	11	29	32	12	33	44	40	30
38	38	21	11	22	12	44	39	10	17	23	9	13	8	24	40	25	14	18	7	16	15
39	39	11	40	12	44	21	38	10	17	9	22	41	13	8	42	14	18	7	23	43	16
40	40	39	41	11	42	12	44	43	21	38	10	17	9	22	13	8	14	18	7	23	16
41	41	42	43	40	39	11	12	44	21	38	10	17	9	22	13	8	14	18	7	23	16
42	42	43	41	40	39	11	12	44	21	38	10	17	9	22	13	8	14	18	7	23	16
43	43	42	41	40	39	11	12	44	21	38	10	17	9	22	13	8	14	18	7	23	16
44	44	11	12	21	38	39	10	17	9	22	13	8	40	14	18	7	23	16	15	19	6

NODE #	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
1	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
2	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
3	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
4	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
5	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
6	18	23	16	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
7	23	16	1	15	19	24	41	25	42	26	43	20	27	35	28	29	32	33	36	37	30	34	31
8	2	16	15	19	24	41	25	42	1	26	43	20	27	35	28	29	32	33	36	37	30	34	31
9	3	15	19	24	41	2	25	42	26	43	1	20	27	35	28	29	32	33	36	37	30	34	31
10	15	19	24	41	3	25	42	2	26	43	20	27	35	28	1	29	32	33	36	37	30	34	31
11	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
12	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
13	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
14	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
15	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
16	24	41	25	5	42	26	43	4	3	20	27	35	28	2	29	32	33	36	37	30	34	1	31
17	24	41	20	25	5	42	26	43	4	3	27	35	28	2	29	32	33	36	37	30	34	1	31
18	6	24	41	25	5	42	26	43	4	3	27	35	28	2	29	32	33	36	37	30	34	1	31
19	6	24	41	25	5	42	26	43	4	3	27	35	28	2	29	32	33	36	37	30	34	1	31
20	6	24	41	25	5	42	26	43	4	3	27	35	28	2	29	32	33	36	37	30	34	1	31
21	26	19	6	41	5	42	27	35	43	28	4	29	32	33	36	3	20	37	30	2	34	31	1
22	35	28	16	15	19	6	41	29	32	33	36	5	42	37	30	43	34	4	31	3	20	2	1
23	13	8	37	40	30	14	18	34	7	16	15	19	31	6	41	5	42	43	4	3	20	2	1
24	17	34	9	13	8	31	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
25	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
26	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
27	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
28	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
29	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
30	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
31	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
32	39	10	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
33	10	39	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
34	10	39	17	9	13	8	40	14	18	7	16	15	19	6	41	5	42	43	4	3	20	2	1
35	10	17	9	34	13	8	31	41	14	18	7	42	16	15	19	6	43	5	4	3	20	2	1
36	10	17	9	34	13	8	31	41	14	18	7	42	16	15	19	6	43	5	4	3	20	2	1
37	10	17	9	34	13	8	31	41	14	18	7	42	16	15	19	6	43	5	4	3	20	2	1
38	26	19	6	35	41	5	42	36	27	37	43	28	4	29	32	3	33	20	30	2	34	31	1
39	15	19	6	24	25	5	26	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31
40	15	19	6	24	25	5	26	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31
41	15	19	6	24	25	5	26	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31
42	15	19	6	24	25	5	26	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31
43	15	19	6	24	25	5	26	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31
44	24	41	25	5	42	26	43	35	4	3	36	20	27	37	28	2	29	32	33	30	34	1	31

APPENDIX D

TRAIN AND CAR ATTRIBUTES

Attributes are characteristics of an actor in the simulation that influence the way the actor is processed as it transits the system. Some attributes are permanent defining characteristics of the actor. Other attributes vary to reflect the current disposition of the actor. Attributes that were used to model trains and cars are listed in table 8.

Table 8. Train and Car Attributes

Actor	Attribute	Description
Train	1	Station number for first stop en route.
	2	Station number for second stop en route.
	3	Station number for third stop en route.
	4	Station number for fourth stop en route.
	5	Station number for fifth stop en route.
	6	Station number for sixth stop en route.
	7	Station number for seventh stop en route.
	8	Station number for eighth stop en route.
	9	Station number for ninth stop en route.
	10	Station number for last stop en route.
	11	Attribute number (1 through 10) containing next stop enroute.
	12	Total capacity of train expressed in number of cars.
	13	Capacity to be released for picking up cars enroute.
	14	Train identification code number.
	15	Time at which current crew's duty day ends.
	16	Batching code number for associating train with carried cars.
	17	Station number where current crew originated
	18	Time when train departed originating station
Car	1	Station number for first checkpoint en route to car's destination.
	2	Station number for second checkpoint en route to destination.
	3	Station number for third checkpoint en route to car's destination.
	4	Attribute number (1 through 3) containing next checkpoint.
	5	Identification number for current load.
	6	Originating station number for current load.
	7	Destination station number for current load.

Actor	Attribute	Description
Car	8	Current train type (pipeline = 1; local = 2)
	9	Revenue generated by current load.
	10	Mileage cost for current car cycle.
	11	Required delivery time for current load.
	12	Extended switching time for delivery to peripheral station.
	13	Interchange (equals one for interchange; zero otherwise).
	14	Car identification number.
	15	Beginning time for current car cycle.
	16	Batching number for association with a specific train.

APPENDIX E

CAR DEMAND FILE

The prototype simulation model used the EXCEL data file in table 9 to generate demand for cars. The first column is a unique load number used to track an order for cars. The second column designates the load type (equals three for gondolas). The third and fourth columns contain the origin and destination for that order. The fifth, sixth, and seventh columns represent the time the order was placed, when the loads were available for loading, and the required delivery time. The eighth column indicates the revenue generated by each load in that order. The ninth column tells whether or not the destination is an interchange to another railroad. Finally, the tenth column provides additional delivery time needed when the destination is a peripheral station.

Table 9. Car Demand Data

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1	3	1	6	1	536	608	776	643	0	24
2	3	1	6	1	2608	2680	2848	663	0	24
3	3	1	6	1	2600	2672	2840	652	0	24
4	3	1	6	1	3560	3632	3800	896	0	24
5	3	1	6	1	3592	3664	3832	922	0	24
6	3	1	6	1	4064	4136	4304	774	0	24
7	3	1	6	1	4072	4144	4312	886	0	24
8	3	1	6	1	4064	4136	4304	914	0	24
9	3	1	6	1	4072	4144	4312	918	0	24
10	3	1	6	2	4064	4136	4304	463	0	24
11	3	1	15	1	3064	3136	3304	1069	1	0
12	3	1	41	1	1688	1760	1928	1327	1	0
13	3	3	2	1	2752	2824	3160	0	0	0
14	3	3	11	1	784	856	1192	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
15	3	3	11	3	176	248	584	0	0	24
16	3	3	11	1	208	280	616	0	0	24
17	3	3	11	1	200	272	608	0	0	24
18	3	3	11	2	256	328	664	0	0	24
19	3	3	11	2	256	328	664	0	0	24
20	3	3	11	1	344	416	752	0	0	24
21	3	3	11	1	352	424	760	0	0	24
22	3	3	11	2	368	440	776	0	0	24
23	3	3	11	4	512	584	920	0	0	24
24	3	3	11	1	544	616	952	0	0	24
25	3	3	11	1	560	632	968	0	0	24
26	3	3	11	1	704	776	1112	0	0	24
27	3	3	11	5	808	880	1216	0	0	24
28	3	3	11	2	872	944	1280	0	0	24
29	3	3	11	1	872	944	1280	0	0	24
30	3	3	11	3	928	1000	1336	0	0	24
31	3	3	11	1	944	1016	1352	0	0	24
32	3	3	11	2	1048	1120	1456	0	0	24
33	3	3	11	1	1352	1424	1760	0	0	24
34	3	3	11	1	1408	1480	1816	0	0	24
35	3	3	11	1	1400	1472	1808	0	0	24
36	3	3	11	1	1408	1480	1816	0	0	24
37	3	3	11	1	1400	1472	1808	0	0	24
38	3	3	11	1	1408	1480	1816	0	0	24
39	3	3	11	1	1568	1640	1976	0	0	24
40	3	3	11	3	1576	1648	1984	0	0	24
41	3	3	11	4	1736	1808	2144	0	0	24
42	3	3	11	2	1912	1984	2320	0	0	24
43	3	3	11	2	1904	1976	2312	0	0	24
44	3	3	11	1	1936	2008	2344	0	0	24
45	3	3	11	1	1952	2024	2360	0	0	24
46	3	3	11	2	2080	2152	2488	0	0	24
47	3	3	11	1	2096	2168	2504	0	0	24
48	3	3	11	2	2584	2656	2992	0	0	24
49	3	3	11	3	2720	2792	3128	0	0	24
50	3	3	11	1	2752	2824	3160	0	0	24
51	3	3	11	1	2744	2816	3152	0	0	24
52	3	3	11	1	3056	3128	3464	0	0	24
53	3	3	11	1	3064	3136	3472	0	0	24
54	3	3	11	2	3080	3152	3488	0	0	24
55	3	3	11	1	3112	3184	3520	0	0	24
56	3	3	11	1	3200	3272	3608	0	0	24
57	3	3	11	1	3376	3448	3784	0	0	24
58	3	3	11	3	3368	3440	3776	0	0	24
59	3	3	11	3	3424	3496	3832	0	0	24
60	3	3	11	1	3416	3488	3824	0	0	24
61	3	3	11	1	3448	3520	3856	0	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
62	3	3	11	2	3464	3536	3872	0	0	24
63	3	3	11	1	3472	3544	3880	0	0	24
64	3	3	11	1	3584	3656	3992	0	0	24
65	3	3	11	1	3616	3688	4024	0	0	24
66	3	3	11	1	3784	3856	4192	0	0	24
67	3	3	11	2	3968	4040	4376	0	0	24
68	3	3	11	4	4072	4144	4480	0	0	24
69	3	3	11	1	4136	4208	4544	0	0	24
70	3	3	11	1	4240	4312	4648	0	0	24
71	3	3	11	2	4232	4304	4640	0	0	24
72	3	3	11	1	4240	4312	4648	0	0	24
73	3	3	11	1	248	320	656	0	0	0
74	3	3	11	5	448	520	856	0	0	0
75	3	3	11	2	640	712	1048	0	0	0
76	3	3	11	2	880	952	1288	0	0	0
77	3	3	11	2	1088	1160	1496	0	0	0
78	3	3	11	1	1120	1192	1528	0	0	0
79	3	3	11	3	2536	2608	2944	0	0	0
80	3	3	11	1	2552	2624	2960	0	0	0
81	3	3	11	2	3704	3776	4112	0	0	0
82	3	3	11	1	3736	3808	4144	0	0	0
83	3	3	11	2	3752	3824	4160	0	0	0
84	3	4	3	1	1424	1496	1664	487	1	0
85	3	4	3	1	1720	1792	1960	487	1	0
86	3	4	3	1	1928	2000	2168	487	1	0
87	3	4	3	1	2056	2128	2296	487	1	0
88	3	4	3	1	2264	2336	2504	492	1	0
89	3	4	3	1	2296	2368	2536	492	1	0
90	3	4	3	1	2408	2480	2648	492	1	0
91	3	4	3	1	2504	2576	2744	492	1	0
92	3	4	3	1	2632	2704	2872	492	1	0
93	3	4	3	1	2936	3008	3176	500	1	0
94	3	4	3	1	3040	3112	3280	500	1	0
95	3	4	3	1	3104	3176	3344	500	1	0
96	3	4	3	1	3256	3328	3496	500	1	0
97	3	4	3	1	3440	3512	3680	500	1	0
98	3	4	3	1	3544	3616	3784	500	1	0
99	3	4	3	1	3752	3824	3992	500	1	0
100	3	4	3	1	3976	4048	4216	500	1	0
101	3	4	3	1	4208	4280	4448	500	1	0
102	3	4	3	1	2440	2512	2848	0	0	24
103	3	4	3	1	352	424	760	0	0	24
104	3	4	17	1	248	320	488	1205	1	0
105	3	4	17	1	448	520	688	1250	1	0
106	3	4	17	1	752	824	992	1211	1	0
107	3	4	17	1	904	976	1144	1211	1	0
108	3	4	17	1	1064	1136	1304	1260	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
109	3	4	17	1	1360	1432	1600	1229	1	0
110	3	4	11	1	3584	3656	3824	736	0	0
111	3	4	11	1	3592	3664	3832	736	0	0
112	3	5	16	5	3944	4016	4184	140	0	0
113	3	6	2	1	1312	1384	1720	0	0	0
114	3	6	2	1	2120	2192	2528	0	0	0
115	3	7	1	15	1280	1352	1520	56	0	0
116	3	7	1	1	1312	1384	1552	846	0	0
117	3	7	1	13	1304	1376	1544	65	0	0
118	3	7	1	15	1376	1448	1616	57	0	0
119	3	7	1	5	1424	1496	1664	170	0	0
120	3	7	1	9	1424	1496	1664	95	0	0
121	3	7	1	1	1432	1504	1672	852	0	0
122	3	7	1	12	1528	1600	1768	70	0	0
123	3	7	1	10	1576	1648	1816	85	0	0
124	3	7	1	12	2440	2512	2680	71	0	0
125	3	7	1	2	2744	2816	3152	0	0	0
126	3	7	1	12	3920	3992	4160	71	0	0
127	3	7	1	8	4072	4144	4312	108	0	0
128	3	7	1	4	4096	4168	4336	215	0	0
129	3	7	1	12	4216	4288	4456	71	0	0
130	3	7	1	2	2816	2888	3224	0	0	24
131	3	7	1	12	1240	1312	1648	0	0	24
132	3	7	2	2	1280	1352	1688	0	0	0
133	3	7	2	2	1280	1352	1688	0	0	0
134	3	7	2	6	2392	2464	2800	0	0	0
135	3	7	2	2	3800	3872	4208	0	0	0
136	3	7	6	2	0	40	376	0	0	0
137	3	7	6	2	40	112	448	0	0	0
138	3	7	6	4	440	512	848	0	0	0
139	3	7	6	2	752	824	1160	0	0	0
140	3	7	6	2	1600	1672	2008	0	0	0
141	3	7	6	2	1592	1664	2000	0	0	0
142	3	7	6	4	1888	1960	2296	0	0	0
143	3	7	6	6	1888	1960	2296	0	0	0
144	3	7	6	10	2024	2096	2432	0	0	0
145	3	7	6	8	2480	2552	2888	0	0	0
146	3	7	6	2	2480	2552	2888	0	0	0
147	3	7	6	2	2488	2560	2896	0	0	0
148	3	7	6	2	3056	3128	3464	0	0	0
149	3	7	6	2	3568	3640	3976	0	0	0
150	3	7	6	4	3872	3944	4280	0	0	0
151	3	7	6	4	2384	2456	2792	0	0	24
152	3	7	7	22	1544	1616	1952	0	0	24
153	3	7	7	2	1912	1984	2320	0	0	24
154	3	7	7	4	2384	2456	2792	0	0	24
155	3	7	8	1	2200	2272	2608	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
156	3	7	8	2	1288	1360	1696	0	0	0
157	3	7	8	2	1496	1568	1904	0	0	0
158	3	7	8	1	2056	2128	2464	0	0	0
159	3	7	8	12	2384	2456	2792	0	0	0
160	3	7	8	4	3136	3208	3544	0	0	0
161	3	7	10	14	1408	1480	1648	25	0	0
162	3	7	10	10	1640	1712	1880	35	0	0
163	3	7	10	8	2368	2440	2608	38	0	0
164	3	7	11	1	0	40	208	467	0	0
165	3	7	11	7	0	32	200	67	0	0
166	3	7	11	10	8	80	248	47	0	0
167	3	7	11	1	776	848	1016	379	0	0
168	3	7	11	4	1016	1088	1424	0	0	0
169	3	7	11	9	1112	1184	1352	53	0	0
170	3	7	11	17	1256	1328	1496	25	0	0
171	3	7	11	1	1432	1504	1672	400	0	0
172	3	7	11	4	1424	1496	1832	0	0	0
173	3	7	11	42	1504	1576	1912	0	0	0
174	3	7	11	6	1496	1568	1904	0	0	0
175	3	7	11	26	1576	1648	1984	0	0	0
176	3	7	11	2	1592	1664	2000	0	0	0
177	3	7	11	3	1592	1664	1832	130	0	0
178	3	7	11	2	1616	1688	1856	238	0	0
179	3	7	11	6	1696	1768	1936	63	0	0
180	3	7	11	1	1720	1792	1960	371	0	0
181	3	7	11	6	1792	1864	2032	72	0	0
182	3	7	11	1	1880	1952	2120	402	0	0
183	3	7	11	21	1880	1952	2120	20	0	0
184	3	7	11	8	1928	2000	2168	55	0	0
185	3	7	11	7	1936	2008	2176	62	0	0
186	3	7	11	3	1928	2000	2168	145	0	0
187	3	7	11	4	1960	2032	2200	87	0	0
188	3	7	11	10	1976	2048	2216	49	0	0
189	3	7	11	1	2056	2128	2464	0	0	0
190	3	7	11	10	2048	2120	2288	49	0	0
191	3	7	11	8	2048	2120	2456	0	0	0
192	3	7	11	7	2080	2152	2320	62	0	0
193	3	7	11	6	2192	2264	2432	72	0	0
194	3	7	11	1	2200	2272	2440	431	0	0
195	3	7	11	7	2288	2360	2528	62	0	0
196	3	7	11	1	2312	2384	2552	434	0	0
197	3	7	11	2	2488	2560	2896	0	0	0
198	3	7	11	20	2528	2600	2936	0	0	0
199	3	7	11	1	2536	2608	2944	0	0	0
200	3	7	11	2	2720	2792	2960	185	0	0
201	3	7	11	10	2872	2944	3112	49	0	0
202	3	7	11	7	2896	2968	3136	66	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
203	3	7	11	3	2920	2992	3160	134	0	0
204	3	7	11	5	3056	3128	3296	89	0	0
205	3	7	11	11	3272	3344	3512	43	0	0
206	3	7	11	3	3368	3440	3608	145	0	0
207	3	7	11	2	3392	3464	3632	207	0	0
208	3	7	11	12	3464	3536	3704	38	0	0
209	3	7	11	11	3472	3544	3712	42	0	0
210	3	7	11	3	3560	3632	3800	146	0	0
211	3	7	11	12	3560	3632	3800	36	0	0
212	3	7	11	23	3712	3784	3952	20	0	0
213	3	7	11	9	3736	3808	3976	54	0	0
214	3	7	11	8	3752	3824	3992	60	0	0
215	3	7	11	6	3784	3856	4024	86	0	0
216	3	7	11	1	3824	3896	4064	443	0	0
217	3	7	11	2	3880	3952	4288	0	0	0
218	3	7	11	8	3896	3968	4136	58	0	0
219	3	7	11	2	3968	4040	4208	230	0	0
220	3	7	11	8	4048	4120	4288	54	0	0
221	3	7	11	1	4088	4160	4328	390	0	0
222	3	7	11	7	4144	4216	4384	66	0	0
223	3	7	11	15	4240	4312	4480	28	0	0
224	3	7	11	7	3592	3664	3832	62	0	24
225	3	7	11	18	16	88	256	24	0	24
226	3	7	11	18	80	152	320	25	0	24
227	3	7	11	7	88	160	328	65	0	24
228	3	7	11	29	184	256	424	16	0	24
229	3	7	11	1	176	248	416	474	0	24
230	3	7	11	2	536	608	776	236	0	24
231	3	7	11	1	584	656	824	472	0	24
232	3	7	11	28	592	664	832	18	0	24
233	3	7	11	9	776	848	1016	42	0	24
234	3	7	11	11	944	1016	1184	36	0	24
235	3	7	11	6	1016	1088	1256	67	0	24
236	3	7	11	9	1024	1096	1264	45	0	24
237	3	7	11	11	1208	1280	1448	36	0	24
238	3	7	11	2	1216	1288	1456	195	0	24
239	3	7	11	1	1264	1336	1504	418	0	24
240	3	7	11	19	1360	1432	1600	23	0	24
241	3	7	11	1	1352	1424	1592	442	0	24
242	3	7	11	1	1360	1432	1600	442	0	24
243	3	7	11	12	1432	1504	1672	33	0	24
244	3	7	11	1	1520	1592	1760	353	0	24
245	3	7	11	3	1528	1600	1768	118	0	24
246	3	7	11	3	1624	1696	1864	159	0	24
247	3	7	11	11	1624	1696	1864	43	0	24
248	3	7	11	2	1696	1768	1936	189	0	24
249	3	7	11	7	1712	1784	1952	53	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
250	3	7	11	13	2072	2144	2312	33	0	24
251	3	7	11	2	2080	2152	2488	0	0	24
252	3	7	11	1	2080	2152	2320	431	0	24
253	3	7	11	1	2200	2272	2440	337	0	24
254	3	7	11	9	2296	2368	2536	48	0	24
255	3	7	11	4	2320	2392	2560	108	0	24
256	3	7	11	13	2576	2648	2816	30	0	24
257	3	7	11	6	2728	2800	2968	62	0	24
258	3	7	11	20	2792	2864	3032	22	0	24
259	3	7	11	6	2912	2984	3152	67	0	24
260	3	7	11	17	3064	3136	3304	26	0	24
261	3	7	11	16	3128	3200	3368	27	0	24
262	3	7	11	14	3208	3280	3448	30	0	24
263	3	7	11	16	3280	3352	3520	30	0	24
264	3	7	11	8	3368	3440	3608	55	0	24
265	3	7	11	6	3584	3656	3824	72	0	24
266	3	7	11	19	3832	3904	4072	23	0	24
267	3	7	11	16	3904	3976	4144	29	0	24
268	3	7	11	22	3976	4048	4216	21	0	24
269	3	7	11	9	4040	4112	4280	48	0	24
270	3	7	11	8	4112	4184	4352	57	0	24
271	3	7	11	15	4136	4208	4376	31	0	24
272	3	7	12	1	8	80	248	550	0	0
273	3	7	12	9	16	88	256	61	0	0
274	3	7	12	12	784	856	1024	38	0	0
275	3	7	12	1	800	872	1040	418	0	0
276	3	7	12	8	848	920	1088	69	0	0
277	3	7	12	2	856	928	1096	276	0	0
278	3	7	12	10	1120	1192	1360	55	0	0
279	3	7	12	3	1136	1208	1376	156	0	0
280	3	7	12	3	1288	1360	1528	149	0	0
281	3	7	12	6	3544	3616	3784	86	0	0
282	3	7	12	6	3704	3776	3944	86	0	0
283	3	7	12	2	3760	3832	4000	251	0	0
284	3	7	12	5	0	32	200	98	0	24
285	3	7	12	8	136	208	376	66	0	24
286	3	7	12	7	1048	1120	1288	73	0	24
287	3	7	12	1	1568	1640	1808	418	0	24
288	3	7	12	1	1816	1888	2056	418	0	24
289	3	7	12	10	1984	2056	2224	55	0	24
290	3	7	12	10	2200	2272	2440	56	0	24
291	3	7	12	10	2240	2312	2480	56	0	24
292	3	7	12	7	2312	2384	2552	73	0	24
293	3	7	12	3	2488	2560	2728	150	0	24
294	3	7	12	4	2824	2896	3064	116	0	24
295	3	7	12	10	2888	2960	3128	56	0	24
296	3	7	12	10	3104	3176	3344	56	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
297	3	7	12	7	3160	3232	3400	75	0	24
298	3	7	12	10	3296	3368	3536	56	0	24
299	3	7	12	9	3424	3496	3664	61	0	24
300	3	7	12	3	3568	3640	3808	160	0	24
301	3	7	12	3	3752	3824	3992	167	0	24
302	3	7	12	1	3880	3952	4120	561	0	24
303	3	7	12	9	3872	3944	4112	62	0	24
304	3	7	12	9	4216	4288	4456	61	0	24
305	3	7	12	3	4232	4304	4472	183	0	24
306	3	7	12	6	4240	4312	4480	92	0	24
307	3	7	12	3	4256	4328	4496	175	0	24
308	3	7	12	4	4264	4336	4504	131	0	24
309	3	7	13	5	104	176	344	104	0	24
310	3	7	13	6	2960	3032	3200	91	0	24
311	3	7	13	10	3464	3536	3704	59	0	24
312	3	7	13	5	3560	3632	3800	109	0	24
313	3	7	13	1	3560	3632	3800	545	0	24
314	3	7	13	1	3952	4024	4192	483	0	24
315	3	7	13	8	4040	4112	4280	71	0	24
316	3	7	13	2	520	592	928	0	0	0
317	3	7	13	14	1760	1832	2000	39	0	0
318	3	7	13	4	2032	2104	2272	138	0	0
319	3	7	13	2	2024	2096	2264	275	0	0
320	3	7	13	5	2032	2104	2272	110	0	0
321	3	7	13	5	2824	2896	3064	100	0	0
322	3	7	13	8	2968	3040	3208	70	0	0
323	3	7	13	2	2968	3040	3208	280	0	0
324	3	7	13	12	3088	3160	3328	48	0	0
325	3	7	13	2	3496	3568	3736	271	0	0
326	3	7	13	5	3488	3560	3728	108	0	0
327	3	7	13	7	4144	4216	4384	75	0	0
328	3	7	13	7	1064	1136	1304	78	0	24
329	3	7	13	9	1688	1760	1928	64	0	24
330	3	7	13	3	2048	2120	2288	162	0	24
331	3	7	13	7	2072	2144	2312	78	0	24
332	3	7	13	1	2128	2200	2368	460	0	24
333	3	7	13	12	3080	3152	3320	50	0	24
334	3	7	13	5	3376	3448	3616	111	0	24
335	3	7	13	1	3376	3448	3616	554	0	24
336	3	7	13	7	4256	4328	4496	81	0	24
337	3	7	13	2	1072	1144	1312	290	0	24
338	3	7	13	5	1064	1136	1304	116	0	24
339	3	7	13	5	808	880	1048	113	0	24
340	3	7	13	7	808	880	1048	80	0	24
341	3	7	13	2	904	976	1144	234	0	24
342	3	7	13	9	976	1048	1216	61	0	24
343	3	7	13	2	976	1048	1216	276	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
344	3	7	13	7	1072	1144	1312	83	0	24
345	3	7	13	10	1216	1288	1456	55	0	24
346	3	7	13	1	1208	1280	1448	552	0	24
347	3	7	13	1	2056	2128	2296	486	0	24
348	3	7	13	3	2080	2152	2320	181	0	24
349	3	7	13	12	2144	2216	2384	47	0	24
350	3	7	13	14	2192	2264	2432	42	0	24
351	3	7	13	17	2264	2336	2504	34	0	24
352	3	7	13	1	2264	2336	2504	578	0	24
353	3	7	13	7	2360	2432	2600	74	0	24
354	3	7	13	6	2416	2488	2656	85	0	24
355	3	7	13	8	2456	2528	2696	66	0	24
356	3	7	13	5	2584	2656	2824	100	0	24
357	3	7	13	13	2624	2696	2864	46	0	24
358	3	7	13	2	2632	2704	2872	297	0	24
359	3	7	13	12	2944	3016	3184	48	0	24
360	3	7	13	5	2992	3064	3232	104	0	24
361	3	7	13	15	3088	3160	3328	40	0	24
362	3	7	13	8	3128	3200	3368	66	0	24
363	3	7	13	8	3232	3304	3472	68	0	24
364	3	7	13	9	3256	3328	3496	65	0	24
365	3	7	13	6	3368	3440	3608	90	0	24
366	3	7	13	1	3376	3448	3616	541	0	24
367	3	7	13	7	3416	3488	3656	77	0	24
368	3	7	13	14	3488	3560	3728	42	0	24
369	3	7	13	11	3568	3640	3808	53	0	24
370	3	7	13	2	3568	3640	3808	291	0	24
371	3	7	13	10	3712	3784	3952	56	0	24
372	3	7	13	7	3752	3824	3992	77	0	24
373	3	7	13	14	3896	3968	4136	42	0	24
374	3	7	13	8	3976	4048	4216	69	0	24
375	3	7	13	7	4064	4136	4304	80	0	24
376	3	7	13	3	4064	4136	4304	187	0	24
377	3	7	13	6	4208	4280	4448	89	0	24
378	3	7	13	12	4288	4360	4528	49	0	24
379	3	7	14	5	1688	1760	1928	129	0	24
380	3	7	14	5	1856	1928	2096	127	0	24
381	3	7	14	2	2272	2344	2512	282	0	24
382	3	7	14	5	2648	2720	2888	120	0	24
383	3	7	14	7	2816	2888	3056	91	0	24
384	3	7	14	4	4120	4192	4360	150	0	24
385	3	7	14	7	4280	4352	4520	91	0	24
386	3	7	15	6	2552	2624	2960	0	0	0
387	3	7	16	2	3056	3128	3464	0	0	0
388	3	7	17	7	4232	4304	4472	37	0	0
389	3	7	17	2	1552	1624	1960	0	0	0
390	3	7	17	2	1712	1784	2120	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
391	3	7	18	2	2408	2480	2816	0	0	0
392	3	7	18	2	2744	2816	3152	0	0	0
393	3	7	19	4	232	304	640	0	0	0
394	3	7	19	2	224	296	632	0	0	0
395	3	7	19	14	232	304	640	0	0	0
396	3	7	19	14	224	296	632	0	0	0
397	3	7	19	4	256	328	664	0	0	0
398	3	7	19	4	3128	3200	3536	0	0	0
399	3	7	19	2	3152	3224	3560	0	0	0
400	3	7	19	3	3392	3464	3800	0	0	0
401	3	7	19	14	2480	2552	2888	0	0	24
402	3	7	20	16	1544	1616	1952	0	0	24
403	3	7	20	14	2488	2560	2896	0	0	24
404	3	7	21	10	2072	2144	2480	0	0	0
405	3	7	21	5	1144	1216	1384	100	0	0
406	3	7	21	11	1400	1472	1640	53	0	0
407	3	7	21	1	1408	1480	1648	578	0	0
408	3	7	21	2	1792	1864	2032	294	0	0
409	3	7	21	10	1784	1856	2024	59	0	0
410	3	7	21	1	1808	1880	2048	549	0	0
411	3	7	21	7	1816	1888	2056	78	0	0
412	3	7	21	1	2248	2320	2488	460	0	0
413	3	7	21	14	2456	2528	2696	43	0	0
414	3	7	21	5	3152	3224	3392	106	0	0
415	3	7	21	6	3224	3296	3464	90	0	0
416	3	7	21	12	3880	3952	4120	49	0	0
417	3	7	21	4	3968	4040	4208	130	0	0
418	3	7	21	6	4112	4184	4352	90	0	0
419	3	7	23	4	688	760	1096	0	0	0
420	3	7	23	22	760	832	1168	0	0	0
421	3	7	23	20	752	824	1160	0	0	24
422	3	7	23	6	760	832	1168	0	0	24
423	3	7	24	12	712	784	1120	0	0	0
424	3	7	24	2	544	616	952	0	0	0
425	3	7	24	2	704	776	1112	0	0	0
426	3	7	24	46	704	776	1112	0	0	0
427	3	7	24	18	3136	3208	3544	0	0	0
428	3	7	24	2	3160	3232	3568	0	0	0
429	3	7	25	24	2392	2464	2800	0	0	24
430	3	7	26	2	176	248	584	0	0	0
431	3	7	26	2	416	488	824	0	0	0
432	3	7	26	2	2392	2464	2800	0	0	24
433	3	7	28	4	392	464	800	0	0	0
434	3	7	28	16	400	472	808	0	0	0
435	3	7	28	28	184	256	592	0	0	24
436	3	7	28	6	400	472	808	0	0	24
437	3	7	28	24	392	464	800	0	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
438	3	7	28	4	392	464	800	0	0	24
439	3	7	28	4	400	472	808	0	0	24
440	3	7	28	32	536	608	776	2	0	24
441	3	7	28	2	544	616	952	0	0	24
442	3	7	29	8	1592	1664	2000	0	0	0
443	3	7	29	4	0	32	368	0	0	0
444	3	7	29	8	2536	2608	2944	0	0	0
445	3	7	32	20	424	496	832	0	0	24
446	3	7	39	2	1232	1304	1472	206	0	0
447	3	7	39	6	1192	1264	1432	77	0	24
448	3	7	39	1	1216	1288	1456	403	0	24
449	3	7	40	2	32	104	440	0	0	0
450	3	7	40	2	32	104	440	0	0	24
451	3	7	40	18	2528	2600	2936	0	0	24
452	3	7	40	10	2752	2824	3160	0	0	24
453	3	7	40	2	2768	2840	3176	0	0	24
454	3	7	40	2	784	856	1024	298	0	24
455	3	7	40	8	2728	2800	2968	86	0	24
456	3	7	40	5	3376	3448	3616	134	0	24
457	3	7	41	2	3560	3632	3968	0	0	0
458	3	7	41	2	4160	4232	4568	0	0	0
459	3	7	43	2	2224	2296	2632	0	0	0
460	3	7	43	2	3808	3880	4216	0	0	0
461	3	7	44	2	1448	1520	1688	239	0	24
462	3	7	44	5	3704	3776	3944	107	0	24
463	3	7	44	11	3728	3800	3968	51	0	24
464	3	7	44	2	4072	4144	4312	267	0	24
465	3	7	44	3	4072	4144	4312	178	0	24
466	3	7	44	6	128	200	368	83	0	24
467	3	7	44	9	1256	1328	1496	62	0	24
468	3	7	44	8	1592	1664	1832	69	0	24
469	3	7	44	12	1744	1816	1984	48	0	24
470	3	7	44	15	1864	1936	2104	38	0	24
471	3	7	44	16	1904	1976	2144	35	0	24
472	3	7	44	10	2096	2168	2336	56	0	24
473	3	7	44	2	2104	2176	2344	279	0	24
474	3	7	44	1	2120	2192	2360	558	0	24
475	3	7	44	16	2296	2368	2536	35	0	24
476	3	7	44	18	2608	2680	2848	32	0	24
477	3	7	44	6	2776	2848	3016	79	0	24
478	3	7	44	10	2936	3008	3176	54	0	24
479	3	7	44	8	3224	3296	3464	69	0	24
480	3	7	44	6	0	40	208	89	0	0
481	3	7	44	11	88	160	328	52	0	0
482	3	7	44	9	584	656	824	61	0	0
483	3	7	44	6	872	944	1112	86	0	0
484	3	7	44	2	968	1040	1208	233	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
485	3	7	44	1	1048	1120	1288	584	0	0
486	3	7	44	11	1040	1112	1280	53	0	0
487	3	7	44	4	1208	1280	1448	124	0	0
488	3	7	44	2	1288	1360	1528	232	0	0
489	3	7	44	2	1456	1528	1696	239	0	0
490	3	7	44	4	1568	1640	1976	0	0	0
491	3	7	44	10	1576	1648	1984	0	0	0
492	3	7	44	2	1600	1672	2008	0	0	0
493	3	7	44	6	1600	1672	1840	88	0	0
494	3	7	44	4	1600	1672	2008	0	0	0
495	3	7	44	4	1720	1792	1960	123	0	0
496	3	7	44	8	1808	1880	2048	67	0	0
497	3	7	44	10	1952	2024	2192	59	0	0
498	3	7	44	12	2216	2288	2456	49	0	0
499	3	7	44	9	2464	2536	2704	61	0	0
500	3	7	44	8	2752	2824	2992	67	0	0
501	3	7	44	12	2864	2936	3104	50	0	0
502	3	7	44	2	2944	3016	3184	252	0	0
503	3	7	44	1	2936	3008	3176	542	0	0
504	3	7	44	10	2984	3056	3224	60	0	0
505	3	7	44	2	3064	3136	3472	0	0	0
506	3	7	44	9	3112	3184	3352	63	0	0
507	3	7	44	5	3400	3472	3640	106	0	0
508	3	7	44	1	3472	3544	3712	555	0	0
509	3	7	44	7	3472	3544	3712	79	0	0
510	3	7	44	8	3736	3808	3976	69	0	0
511	3	7	44	6	3760	3832	4000	90	0	0
512	3	7	44	9	3824	3896	4064	63	0	0
513	3	7	44	6	3904	3976	4144	90	0	0
514	3	7		15	1040	1112	1280	36	0	0
515	3	8	6	1	2608	2680	3016	0	0	24
516	3	8	15	1	376	448	784	0	0	0
517	3	8	17	1	2528	2600	2936	0	0	24
518	3	9	6	1	1136	1208	1544	0	0	0
519	3	9	6	1	4000	4072	4408	0	0	0
520	3	9	39	7	1960	2032	2200	48	0	24
521	3	9	39	6	2936	3008	3176	56	0	24
522	3	10	6	1	832	904	1240	0	0	0
523	3	10	11	2	440	512	848	0	0	24
524	3	11	1	1	2936	3008	3176	1089	1	0
525	3	11	1	1	3280	3352	3520	1100	1	0
526	3	11	1	1	3448	3520	3688	1090	1	0
527	3	11	2	1	1712	1784	2120	0	0	0
528	3	11	3	6	2768	2840	3176	0	0	24
529	3	11	3	3	2768	2840	3176	0	0	24
530	3	11	3	1	2800	2872	3208	0	0	24
531	3	11	3	2	2792	2864	3200	0	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
532	3	11	3	2	2776	2848	3184	0	0	24
533	3	11	3	1	3248	3320	3656	0	0	0
534	3	11	3	2	3256	3328	3664	0	1	0
535	3	11	3	2	3272	3344	3680	0	0	0
536	3	11	3	2	3296	3368	3704	0	0	0
537	3	11	3	1	3304	3376	3712	0	0	0
538	3	11	3	1	3344	3416	3752	0	0	0
539	3	11	3	3	3752	3824	4160	0	0	0
540	3	11	3	1	3760	3832	4168	0	0	0
541	3	11	3	3	3752	3824	4160	0	0	24
542	3	11	3	1	3784	3856	4192	0	0	24
543	3	11	3	1	3800	3872	4208	0	0	24
544	3	11	3	1	3808	3880	4216	0	0	24
545	3	11	6	1	1592	1664	2000	0	0	24
546	3	11	6	4	1616	1688	2024	0	0	24
547	3	11	6	1	1688	1760	2096	0	0	24
548	3	11	6	3	1952	2024	2360	0	0	24
549	3	11	6	1	1984	2056	2392	0	0	24
550	3	11	6	2	2024	2096	2432	0	0	24
551	3	11	6	4	2080	2152	2488	0	0	24
552	3	11	6	5	688	760	1096	0	0	0
553	3	11	6	8	776	848	1184	0	0	0
554	3	11	6	1	832	904	1240	0	0	0
555	3	11	6	4	880	952	1288	0	0	0
556	3	11	6	4	1360	1432	1768	0	0	0
557	3	11	6	4	1400	1472	1808	0	0	0
558	3	11	6	4	1568	1640	1976	0	0	0
559	3	11	6	1	1624	1696	2032	0	0	0
560	3	11	6	2	1696	1768	2104	0	0	0
561	3	11	6	1	2968	3040	3376	0	0	0
562	3	11	6	1	2960	3032	3368	0	0	24
563	3	11	7	5	1552	1624	1960	0	0	24
564	3	11	7	5	1544	1616	1952	0	0	24
565	3	11	7	1	3800	3872	4208	0	0	24
566	3	11	8	1	64	136	472	0	0	0
567	3	11	8	1	56	128	464	0	0	0
568	3	11	8	1	80	152	488	0	0	0
569	3	11	8	1	568	640	976	0	0	0
570	3	11	10	4	376	448	784	0	0	0
571	3	11	10	2	392	464	800	0	0	0
572	3	11	10	1	392	464	800	0	0	0
573	3	11	10	4	560	632	968	0	0	0
574	3	11	10	1	592	664	1000	0	0	0
575	3	11	11	1	400	472	808	0	0	24
576	3	11	11	1	1432	1504	1840	0	0	0
577	3	11	11	1	1448	1520	1856	0	0	0
578	3	11	11	1	1904	1976	2312	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
579	3	11	11	1	2072	2144	2480	0	0	0
580	3	11	11	5	2408	2480	2816	0	0	0
581	3	11	11	1	2432	2504	2840	0	0	0
582	3	11	11	6	2440	2512	2848	0	0	0
583	3	11	11	7	2464	2536	2872	0	0	0
584	3	11	11	2	4120	4192	4528	0	0	0
585	3	11	11	2	4136	4208	4544	0	0	0
586	3	11	11	1	4240	4312	4648	0	0	0
587	3	11	11	1	2992	3064	3400	0	0	0
588	3	11	11	1	4112	4184	4520	0	0	0
589	3	11	12	2	1888	1960	2296	0	0	24
590	3	11	12	5	1912	1984	2320	0	0	24
591	3	11	12	6	3808	3880	4048	86	0	24
592	3	11	13	2	2416	2488	2824	0	0	24
593	3	11	13	1	1864	1936	2272	0	0	0
594	3	11	13	2	3800	3872	4208	0	0	0
595	3	11	13	1	2072	2144	2480	0	0	24
596	3	11	15	2	0	32	200	202	1	0
597	3	11	15	5	64	136	304	81	1	0
598	3	11	15	5	88	160	328	81	1	0
599	3	11	15	9	400	472	640	45	1	0
600	3	11	15	10	440	512	848	0	1	0
601	3	11	15	5	536	608	776	81	1	0
602	3	11	15	5	560	632	800	81	1	0
603	3	11	15	4	1072	1144	1480	0	1	0
604	3	11	15	12	1112	1184	1520	0	1	0
605	3	11	15	7	1408	1480	1816	0	1	0
606	3	11	15	6	1424	1496	1832	0	1	0
607	3	11	15	2	2960	3032	3368	0	1	0
608	3	11	15	8	3112	3184	3352	53	1	0
609	3	11	15	2	3104	3176	3344	210	1	0
610	3	11	15	7	3256	3328	3496	60	1	0
611	3	11	15	1	3248	3320	3488	420	1	0
612	3	11	15	2	3280	3352	3520	210	1	0
613	3	11	17	1	920	992	1328	0	0	0
614	3	11	17	1	976	1048	1384	0	0	0
615	3	11	17	4	584	656	992	0	0	0
616	3	11	17	1	616	688	1024	0	0	0
617	3	11	17	3	632	704	1040	0	0	0
618	3	11	17	2	952	1024	1360	0	0	0
619	3	11	17	1	968	1040	1376	0	0	0
620	3	11	17	1	3272	3344	3512	753	1	0
621	3	11	20	1	3808	3880	4048	1	1	0
622	3	11	21	1	3800	3872	4208	0	0	24
623	3	11	23	1	872	944	1280	0	0	0
624	3	11	23	1	1456	1528	1864	0	0	0
625	3	11	23	1	2296	2368	2704	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
626	3	11	23	1	848	920	1256	0	0	24
627	3	11	23	3	880	952	1288	0	0	24
628	3	11	23	2	2744	2816	3152	0	0	0
629	3	11	24	1	8	80	248	768	1	0
630	3	11	24	1	40	112	280	653	1	0
631	3	11	24	1	1720	1792	1960	656	1	0
632	3	11	24	1	3224	3296	3464	673	1	0
633	3	11	24	2	3280	3352	3520	335	1	0
634	3	11	24	1	3760	3832	4000	673	1	0
635	3	11	24	1	4144	4216	4384	673	1	0
636	3	11	28	2	2920	2992	3328	0	0	24
637	3	11	30	1	3992	4064	4400	0	0	24
638	3	11	33	2	1712	1784	1952	561	0	24
639	3	11	38	1	2416	2488	2824	0	0	0
640	3	11	39	3	1856	1928	2264	0	0	24
641	3	11	39	2	2080	2152	2488	0	0	24
642	3	11	39	4	2128	2200	2536	0	0	24
643	3	11	39	10	2144	2216	2552	0	0	24
644	3	11	39	1	2432	2504	2840	0	0	24
645	3	11	39	1	4232	4304	4640	0	0	24
646	3	11	39	1	1960	2032	2368	0	0	24
647	3	11	40	1	4264	4336	4672	0	0	0
648	3	11	40	1	1600	1672	2008	0	0	24
649	3	11	40	1	2384	2456	2792	0	0	24
650	3	11	40	1	2752	2824	3160	0	0	0
651	3	11	41	1	4000	4072	4408	0	0	24
652	3	11	41	1	544	616	952	0	0	0
653	3	11	41	1	568	640	976	0	0	0
654	3	11	41	1	2888	2960	3128	734	0	0
655	3	11	42	1	1048	1120	1456	0	0	0
656	3	11	42	4	1048	1120	1456	0	0	0
657	3	11	42	9	1576	1648	1984	0	0	0
658	3	11	42	1	1576	1648	1984	0	0	0
659	3	11	42	1	224	296	632	0	0	24
660	3	11	42	4	968	1040	1376	0	0	24
661	3	11	42	1	1232	1304	1640	0	0	0
662	3	11	43	1	976	1048	1384	0	0	0
663	3	11	43	1	1016	1088	1424	0	0	0
664	3	11	43	2	1040	1112	1448	0	0	0
665	3	11	43	2	1040	1112	1448	0	0	0
666	3	11	43	1	1568	1640	1976	0	0	0
667	3	11	44	1	2968	3040	3376	0	0	0
668	3	12	20	1	1760	1832	2000	796	1	0
669	3	12	20	1	1768	1840	2008	796	1	0
670	3	13	11	2	1928	2000	2336	0	0	24
671	3	13	11	4	1936	2008	2344	0	0	24
672	3	13	11	1	32	104	440	0	0	24

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
673	3	13	11	4	2504	2576	2912	0	0	24
674	3	13	11	1	3400	3472	3808	0	0	24
675	3	13	11	1	1216	1288	1624	0	0	0
676	3	13	11	1	464	536	872	0	0	24
677	3	13	11	4	472	544	880	0	0	24
678	3	13	11	1	800	872	1208	0	0	24
679	3	13	11	3	808	880	1216	0	0	24
680	3	13	11	1	944	1016	1352	0	0	24
681	3	13	11	1	952	1024	1360	0	0	24
682	3	13	11	6	968	1040	1376	0	0	24
683	3	13	11	1	1792	1864	2200	0	0	24
684	3	13	11	2	1784	1856	2192	0	0	24
685	3	13	11	1	1984	2056	2392	0	0	24
686	3	13	11	1	2072	2144	2480	0	0	24
687	3	13	11	1	2080	2152	2488	0	0	24
688	3	13	11	1	2120	2192	2528	0	0	24
689	3	13	11	1	2320	2392	2728	0	0	24
690	3	13	11	3	2312	2384	2720	0	0	24
691	3	13	11	1	2464	2536	2872	0	0	24
692	3	13	11	1	2648	2720	3056	0	0	24
693	3	13	11	1	3064	3136	3472	0	0	24
694	3	13	11	1	3056	3128	3464	0	0	24
695	3	13	11	1	3064	3136	3472	0	0	24
696	3	13	11	1	3536	3608	3944	0	0	24
697	3	13	11	2	3544	3616	3952	0	0	24
698	3	13	11	1	3560	3632	3968	0	0	24
699	3	13	11	2	3568	3640	3976	0	0	24
700	3	13	11	3	3824	3896	4232	0	0	24
701	3	13	11	1	3832	3904	4240	0	0	24
702	3	13	11	4	3896	3968	4304	0	0	24
703	3	13	11	2	3976	4048	4384	0	0	24
704	3	13	13	1	760	832	1168	0	0	24
705	3	13	43	3	1232	1304	1472	278	1	0
706	3	15	1	1	4144	4216	4384	1307	1	0
707	3	15	1	1	296	368	704	0	1	0
708	3	15	1	1	280	352	688	0	1	0
709	3	15	1	5	400	472	640	305	1	0
710	3	15	11	1	1072	1144	1480	0	0	0
711	3	15	15	1	80	152	320	426	1	0
712	3	15	15	1	824	896	1064	681	1	0
713	3	15	15	1	1496	1568	1736	677	1	0
714	3	15	15	1	1984	2056	2224	660	1	0
715	3	15	15	1	1976	2048	2216	669	1	0
716	3	15	15	1	4112	4184	4352	440	1	0
717	3	15	15	1	2816	2888	3056	394	0	0
718	3	15	15	1	2864	2936	3104	407	0	0
719	3	15	15	1	0	40	208	395	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
720	3	15	15	1	56	128	296	417	0	0
721	3	15	15	1	88	160	328	400	0	0
722	3	15	15	2	224	296	464	207	0	0
723	3	15	15	1	272	344	512	389	0	0
724	3	15	15	1	416	488	656	404	0	0
725	3	15	15	1	424	496	664	455	0	0
726	3	15	15	1	440	512	680	408	0	0
727	3	15	15	1	520	592	760	404	0	0
728	3	15	15	1	560	632	800	401	0	0
729	3	15	15	1	856	928	1096	387	0	0
730	3	15	15	1	848	920	1088	402	0	0
731	3	15	15	1	928	1000	1168	399	0	0
732	3	15	15	1	920	992	1160	399	0	0
733	3	15	15	1	928	1000	1168	387	0	0
734	3	15	15	1	920	992	1160	387	0	0
735	3	15	15	1	952	1024	1192	391	0	0
736	3	15	15	1	1016	1088	1256	450	0	0
737	3	15	15	1	1048	1120	1288	387	0	0
738	3	15	15	1	1096	1168	1336	448	0	0
739	3	15	15	1	1088	1160	1328	431	0	0
740	3	15	15	2	1168	1240	1408	194	0	0
741	3	15	15	1	1208	1280	1448	406	0	0
742	3	15	15	1	1216	1288	1456	437	0	0
743	3	15	15	2	1232	1304	1472	231	0	0
744	3	15	15	1	1288	1360	1528	400	0	0
745	3	15	15	1	1280	1352	1520	387	0	0
746	3	15	15	1	1360	1432	1600	390	0	0
747	3	15	15	1	1376	1448	1616	385	0	0
748	3	15	15	1	1384	1456	1624	397	0	0
749	3	15	15	2	1424	1496	1664	192	0	0
750	3	15	15	1	1480	1552	1720	386	0	0
751	3	15	15	2	1544	1616	1784	200	0	0
752	3	15	15	2	1552	1624	1792	211	0	0
753	3	15	15	1	1592	1664	1832	383	0	0
754	3	15	15	1	1648	1720	1888	384	0	0
755	3	15	15	1	1688	1760	1928	397	0	0
756	3	15	15	1	1864	1936	2104	386	0	0
757	3	15	15	1	1856	1928	2096	383	0	0
758	3	15	15	1	1864	1936	2104	383	0	0
759	3	15	15	2	1976	2048	2216	194	0	0
760	3	15	15	1	2032	2104	2272	383	0	0
761	3	15	15	1	2024	2096	2264	383	0	0
762	3	15	15	1	2056	2128	2296	383	0	0
763	3	15	15	1	2048	2120	2288	387	0	0
764	3	15	15	1	2272	2344	2512	387	0	0
765	3	15	15	2	2360	2432	2600	212	0	0
766	3	15	15	1	2392	2464	2632	391	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
767	3	15	15	1	2408	2480	2648	448	0	0
768	3	15	15	1	2440	2512	2680	388	0	0
769	3	15	15	1	2456	2528	2696	390	0	0
770	3	15	15	1	2464	2536	2704	390	0	0
771	3	15	15	1	2528	2600	2768	442	0	0
772	3	15	15	1	2536	2608	2776	404	0	0
773	3	15	15	1	2552	2624	2792	404	0	0
774	3	15	15	1	2584	2656	2824	391	0	0
775	3	15	15	1	2576	2648	2816	387	0	0
776	3	15	15	1	2728	2800	2968	422	0	0
777	3	15	15	1	2720	2792	2960	388	0	0
778	3	15	15	1	2728	2800	2968	430	0	0
779	3	15	15	1	2936	3008	3176	400	0	0
780	3	15	15	1	2944	3016	3184	393	0	0
781	3	15	15	1	3008	3080	3248	406	0	0
782	3	15	15	1	3056	3128	3296	405	0	0
783	3	15	15	1	3064	3136	3304	400	0	0
784	3	15	15	1	3104	3176	3344	398	0	0
785	3	15	15	1	3160	3232	3400	404	0	0
786	3	15	15	1	3256	3328	3496	393	0	0
787	3	15	15	1	3248	3320	3488	405	0	0
788	3	15	15	1	3376	3448	3616	437	0	0
789	3	15	15	1	3784	3856	4024	402	0	0
790	3	15	15	1	3776	3848	4016	417	0	0
791	3	15	15	1	3808	3880	4048	403	0	0
792	3	15	15	1	3896	3968	4136	406	0	0
793	3	15	15	1	3904	3976	4144	398	0	0
794	3	15	15	1	3968	4040	4208	406	0	0
795	3	15	15	1	3976	4048	4216	424	0	0
796	3	15	15	1	3968	4040	4208	392	0	0
797	3	15	15	1	4048	4120	4288	403	0	0
798	3	15	15	1	4040	4112	4280	394	0	0
799	3	15	15	1	4048	4120	4288	437	0	0
800	3	15	15	1	4040	4112	4280	434	0	0
801	3	15	15	1	4096	4168	4336	399	0	0
802	3	15	15	1	4088	4160	4328	411	0	0
803	3	15	15	1	4144	4216	4384	401	0	0
804	3	15	15	1	4136	4208	4376	406	0	0
805	3	15	15	1	4144	4216	4384	399	0	0
806	3	15	15	1	4216	4288	4456	401	0	0
807	3	15	15	1	4280	4352	4520	402	0	24
808	3	15	17	1	688	760	928	808	1	0
809	3	15	17	1	704	776	944	754	1	0
810	3	15	17	2	712	784	952	404	1	0
811	3	15	17	2	704	776	944	394	1	0
812	3	15	17	15	784	856	1024	54	1	0
813	3	15	17	1	776	848	1016	803	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
814	3	15	17	1	784	856	1024	748	1	0
815	3	15	17	2	800	872	1040	374	1	0
816	3	15	17	1	1064	1136	1304	840	1	0
817	3	15	17	4	1096	1168	1336	209	1	0
818	3	15	17	2	1088	1160	1328	377	1	0
819	3	15	17	8	1096	1168	1336	104	1	0
820	3	15	17	12	1088	1160	1328	70	1	0
821	3	15	17	3	2744	2816	2984	256	1	0
822	3	15	17	11	2800	2872	3040	70	1	0
823	3	15	17	1	2824	2896	3064	828	1	0
824	3	15	17	1	2840	2912	3080	772	1	0
825	3	15	17	15	2848	2920	3088	51	1	0
826	3	15	17	2	2944	3016	3184	378	1	0
827	3	15	17	2	3064	3136	3304	404	1	0
828	3	15	17	9	3056	3128	3296	90	1	0
829	3	15	17	1	3088	3160	3328	683	1	0
830	3	15	17	1	3152	3224	3392	784	1	0
831	3	15	17	4	3280	3352	3520	188	1	0
832	3	15	17	6	3296	3368	3536	131	1	0
833	3	15	17	2	3304	3376	3544	392	1	0
834	3	15	17	1	3344	3416	3584	768	1	0
835	3	15	17	2	3376	3448	3616	392	1	0
836	3	15	17	3	3368	3440	3608	267	1	0
837	3	15	17	1	3392	3464	3632	800	1	0
838	3	15	17	1	4208	4280	4448	797	1	0
839	3	15	17	1	4232	4304	4472	888	1	0
840	3	15	18	1	1456	1528	1696	1793	0	0
841	3	15	18	1	1592	1664	1832	1044	0	0
842	3	15	18	3	1856	1928	2096	341	0	0
843	3	15	18	2	4064	4136	4304	591	0	0
844	3	15	19	1	2632	2704	2872	705	1	24
845	3	15	19	1	2656	2728	2896	704	1	24
846	3	15	19	1	2800	2872	3040	686	1	24
847	3	15	19	1	3272	3344	3512	710	1	24
848	3	15	19	1	3472	3544	3712	708	1	24
849	3	15	20	1	3976	4048	4216	882	1	0
850	3	15	20	5	0	64	232	171	1	0
851	3	15	20	1	64	136	304	855	1	0
852	3	15	20	1	280	352	520	940	1	0
853	3	15	20	1	424	496	664	987	1	0
854	3	15	20	1	464	536	704	855	1	0
855	3	15	20	4	520	592	760	214	1	0
856	3	15	20	1	536	608	776	923	1	0
857	3	15	20	2	568	640	808	467	1	0
858	3	15	20	1	632	704	872	950	1	0
859	3	15	20	1	712	784	952	950	1	0
860	3	15	20	1	704	776	944	945	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
861	3	15	20	2	760	832	1000	428	1	0
862	3	15	20	1	752	824	992	855	1	0
863	3	15	20	1	760	832	1000	855	1	0
864	3	15	20	2	976	1048	1216	453	1	0
865	3	15	20	1	968	1040	1208	885	1	0
866	3	15	20	1	1000	1072	1240	870	1	0
867	3	15	20	1	1016	1088	1256	860	1	0
868	3	15	20	2	1048	1120	1288	430	1	0
869	3	15	20	1	1040	1112	1280	928	1	0
870	3	15	20	1	1096	1168	1336	952	1	0
871	3	15	20	1	1256	1328	1496	948	1	0
872	3	15	20	7	1336	1408	1576	123	1	0
873	3	15	20	1	1328	1400	1568	860	1	0
874	3	15	20	2	1400	1472	1640	455	1	0
875	3	15	20	1	1448	1520	1688	860	1	0
876	3	15	20	3	1480	1552	1720	296	1	0
877	3	15	20	1	1504	1576	1744	860	1	0
878	3	15	20	2	1520	1592	1760	430	1	0
879	3	15	20	3	1552	1624	1792	287	1	0
880	3	15	20	3	1568	1640	1808	287	1	0
881	3	15	20	2	1600	1672	1840	430	1	0
882	3	15	20	2	1600	1672	1840	430	1	0
883	3	15	20	1	1616	1688	1856	925	1	0
884	3	15	20	3	1672	1744	1912	287	1	0
885	3	15	20	1	1760	1832	2000	962	1	0
886	3	15	20	3	1840	1912	2080	290	1	0
887	3	15	20	1	1888	1960	2128	872	1	0
888	3	15	20	3	1928	2000	2168	287	1	0
889	3	15	20	4	2056	2128	2296	236	1	0
890	3	15	20	1	2072	2144	2312	922	1	0
891	3	15	20	1	2120	2192	2360	905	1	0
892	3	15	20	2	2168	2240	2408	459	1	0
893	3	15	20	1	2200	2272	2440	915	1	0
894	3	15	20	1	2384	2456	2624	930	1	0
895	3	15	20	1	2440	2512	2680	906	1	0
896	3	15	20	1	2600	2672	2840	883	1	0
897	3	15	20	6	2696	2768	2936	151	1	0
898	3	15	20	6	2728	2800	2968	135	1	0
899	3	15	20	1	2768	2840	3008	869	1	0
900	3	15	20	1	2776	2848	3016	869	1	0
901	3	15	20	4	2792	2864	3032	223	1	0
902	3	15	20	1	2792	2864	3032	869	1	0
903	3	15	20	1	2800	2872	3040	869	1	0
904	3	15	20	1	3128	3200	3368	991	1	0
905	3	15	20	2	3296	3368	3536	484	1	0
906	3	15	20	2	3352	3424	3592	441	1	0
907	3	15	20	1	3368	3440	3608	882	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
908	3	15	20	1	3376	3448	3616	963	1	0
909	3	15	20	1	3392	3464	3632	954	1	0
910	3	15	20	3	3424	3496	3664	294	1	0
911	3	15	20	3	3416	3488	3656	312	1	0
912	3	15	20	3	3464	3536	3704	325	1	0
913	3	15	20	4	3520	3592	3760	241	1	0
914	3	15	20	5	3656	3728	3896	176	1	0
915	3	15	20	1	3712	3784	3952	882	1	0
916	3	15	20	1	3728	3800	3968	882	1	0
917	3	15	20	1	3800	3872	4040	931	1	0
918	3	15	20	1	3832	3904	4072	997	1	0
919	3	15	20	1	3824	3896	4064	882	1	0
920	3	15	20	2	3832	3904	4072	474	1	0
921	3	15	20	3	3872	3944	4112	313	1	0
922	3	15	20	2	3904	3976	4144	441	1	0
923	3	15	20	1	3920	3992	4160	948	1	0
924	3	15	20	1	3928	4000	4168	882	1	0
925	3	15	20	1	3944	4016	4184	882	1	0
926	3	15	20	2	4072	4144	4312	441	1	0
927	3	15	20	1	4072	4144	4312	882	1	0
928	3	15	20	1	4064	4136	4304	882	1	0
929	3	15	20	1	4096	4168	4336	882	1	0
930	3	15	20	3	4160	4232	4400	318	1	0
931	3	15	20	5	4192	4264	4432	192	1	0
932	3	15	20	1	4208	4280	4448	970	1	0
933	3	15	20	1	4264	4336	4504	958	1	0
934	3	15	20	1	3352	3424	3592	882	1	0
935	3	15	20	1	3704	3776	3944	882	1	0
936	3	15	20	1	4240	4312	4480	480	1	0
937	3	15	24	1	2104	2176	2344	838	1	0
938	3	15	24	1	2096	2168	2336	838	1	0
939	3	15	24	1	2104	2176	2344	838	1	0
940	3	15	26	1	3008	3080	3248	1111	1	0
941	3	15	26	2	0	32	200	542	1	0
942	3	15	26	1	1408	1480	1648	1115	1	0
943	3	15	26	1	1816	1888	2056	1037	1	0
944	3	15	26	1	1808	1880	2048	1105	1	0
945	3	15	26	1	2152	2224	2392	1087	1	0
946	3	15	26	1	2648	2720	2888	1071	1	0
947	3	15	26	1	3304	3376	3544	1129	1	0
948	3	15	26	1	3808	3880	4048	1158	1	0
949	3	15	26	1	3272	3344	3512	1080	1	0
950	3	15	32	1	2216	2288	2456	1786	0	24
951	3	15	32	1	2224	2296	2464	1786	0	24
952	3	15	32	1	3808	3880	4048	1814	0	24
953	3	15	32	1	3800	3872	4040	1814	0	24
954	3	15	34	1	368	440	608	1461	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
955	3	15	34	1	1072	1144	1312	1367	1	0
956	3	15	34	2	1064	1136	1304	704	1	0
957	3	15	34	1	1112	1184	1352	1344	1	0
958	3	15	34	1	1120	1192	1360	1360	1	0
959	3	15	43	1	0	56	224	923	1	0
960	3	15	43	1	3232	3304	3472	963	1	0
961	3	23	17	1	16	88	256	1011	1	0
962	3	23	17	2	8	80	248	505	1	0
963	3	23	17	1	592	664	832	853	1	0
964	3	23	17	1	632	704	872	859	1	0
965	3	23	17	1	640	712	880	859	1	0
966	3	23	17	1	1088	1160	1328	859	1	0
967	3	23	17	1	2752	2824	2992	871	1	0
968	3	23	17	1	2744	2816	2984	871	1	0
969	3	23	17	1	2752	2824	2992	871	1	0
970	3	23	17	1	2744	2816	2984	871	1	0
971	3	23	17	1	2992	3064	3232	889	1	0
972	3	23	17	4	4208	4280	4448	244	1	0
973	3	23	17	1	4264	4336	4504	978	1	0
974	3	24	11	2	2432	2504	2840	0	0	24
975	3	24	11	2	2576	2648	2984	0	0	24
976	3	24	11	1	3616	3688	4024	0	0	24
977	3	24	11	1	3848	3920	4088	498	0	24
978	3	24	11	1	3680	3752	4088	0	0	24
979	3	24	11	1	3784	3856	4024	498	0	24
980	3	24	15	1	416	488	656	439	1	0
981	3	24	28	2	2416	2488	2656	315	0	0
982	3	24	28	1	2488	2560	2728	631	0	0
983	3	24	9	1	616	688	1024	0	0	0
984	3	24	9	1	632	704	1040	0	0	0
985	3	25	23	3	4120	4192	4528	0	0	0
986	3	36	36	1	1136	1208	1376	458	1	0
987	3	30	22	1	568	640	808	1703	1	0
988	3	30	32	6	1280	1352	1520	69	0	0
989	3	30	32	3	1312	1384	1552	139	0	0
990	3	30	32	7	1808	1880	2048	62	0	0
991	3	30	32	2	1912	1984	2152	219	0	0
992	3	30	32	7	2072	2144	2312	63	0	0
993	3	30	32	9	3784	3856	4024	48	0	0
994	3	30	32	9	4064	4136	4304	50	0	0
995	3	29	11	1	3040	3112	3448	0	0	24
996	3	29	11	1	3056	3128	3464	0	0	24
997	3	29	24	1	1232	1304	1640	0	0	0
998	3	29	29	1	2824	2896	3064	1	1	0
999	3	29	31	1	280	352	688	0	0	0
1000	3	29	34	1	2984	3056	3224	1	1	0
1001	3	29	40	1	1592	1664	2000	0	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1002	3	29	44	1	1240	1312	1648	0	0	0
1003	3	28	24	1	2080	2152	2320	624	1	0
1004	3	28	24	1	2264	2336	2504	631	1	0
1005	3	28	24	1	2384	2456	2624	631	1	0
1006	3	28	24	1	2392	2464	2632	631	1	0
1007	3	28	24	1	3376	3448	3616	641	1	0
1008	3	28	30	1	448	520	688	460	1	0
1009	3	28	30	1	1880	1952	2120	460	1	0
1010	3	28	30	1	2272	2344	2512	465	1	0
1011	3	28	34	1	184	256	424	501	1	0
1012	3	28	34	1	176	248	416	501	1	0
1013	3	28	34	1	376	448	616	501	1	0
1014	3	28	34	1	416	488	656	501	1	0
1015	3	28	34	1	848	920	1088	531	1	0
1016	3	28	34	1	1192	1264	1432	531	1	0
1017	3	28	34	1	1256	1328	1496	531	1	0
1018	3	28	34	1	1768	1840	2008	531	1	0
1019	3	28	34	1	3248	3320	3488	545	1	0
1020	3	27	11	3	3128	3200	3536	0	0	24
1021	3	30	23	3	1552	1624	1960	0	0	0
1022	3	30	23	3	1712	1784	2120	0	0	0
1023	3	30	23	1	1936	2008	2344	0	0	0
1024	3	31	26	3	1592	1664	2000	0	0	0
1025	3	28	24	13	928	1000	1336	0	0	0
1026	3	32	30	1	2936	3008	3176	606	1	0
1027	3	32	30	1	3008	3080	3248	606	1	0
1028	3	32	30	1	3112	3184	3352	606	1	0
1029	3	32	33	1	3016	3088	3256	718	0	24
1030	3	32	33	1	3248	3320	3488	718	0	24
1031	3	32	34	2	680	752	920	302	1	0
1032	3	32	34	1	952	1024	1192	608	1	0
1033	3	32	34	1	4144	4216	4384	549	1	0
1034	3	32	11	2	2072	2144	2480	0	0	0
1035	3	32	11	1	2920	2992	3160	1365	1	0
1036	3	32	24	1	2960	3032	3200	792	1	0
1037	3	32	29	1	304	376	544	576	1	0
1038	3	32	29	1	296	368	536	576	1	0
1039	3	32	29	1	400	472	640	576	1	0
1040	3	32	29	1	392	464	632	579	1	0
1041	3	32	29	1	448	520	688	576	1	0
1042	3	32	29	1	536	608	776	576	1	0
1043	3	32	29	1	896	968	1136	579	1	0
1044	3	32	29	1	976	1048	1216	579	1	0
1045	3	32	29	2	1064	1136	1304	290	1	0
1046	3	32	29	1	1144	1216	1384	579	1	0
1047	3	32	29	1	1184	1256	1424	579	1	0
1048	3	32	29	1	3784	3856	4024	594	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1049	3	32	29	1	3872	3944	4112	594	1	0
1050	3	32	29	1	3928	4000	4168	594	1	0
1051	3	32	29	1	3968	4040	4208	594	1	0
1052	3	32	29	1	4048	4120	4288	594	1	0
1053	3	32	29	1	4136	4208	4376	594	1	0
1054	3	32	33	1	856	928	1096	625	1	0
1055	3	32	33	1	1544	1616	1784	772	0	24
1056	3	32	33	1	1624	1696	1864	772	0	24
1057	3	32	33	1	1712	1784	1952	772	0	24
1058	3	32	33	1	1720	1792	1960	772	0	24
1059	3	32	33	1	1856	1928	2096	772	0	24
1060	3	32	33	1	1888	1960	2128	772	0	24
1061	3	32	33	1	1952	2024	2192	772	0	24
1062	3	32	33	1	2056	2128	2296	772	0	24
1063	3	32	33	1	2120	2192	2360	780	0	24
1064	3	32	33	1	3040	3112	3280	792	0	24
1065	3	32	33	1	3080	3152	3320	792	0	24
1066	3	32	33	1	3136	3208	3376	792	0	24
1067	3	32	33	1	3200	3272	3440	792	0	24
1068	3	32	33	1	3256	3328	3496	792	0	24
1069	3	32	33	1	3320	3392	3560	792	0	24
1070	3	32	33	1	3376	3448	3616	792	0	24
1071	3	32	33	1	3416	3488	3656	792	0	24
1072	3	32	33	1	3472	3544	3712	792	0	24
1073	3	32	33	1	3536	3608	3776	792	0	24
1074	3	32	6	1	64	136	304	1324	1	24
1075	3	32	6	1	56	128	296	1324	1	24
1076	3	32	6	1	712	784	952	1331	1	24
1077	3	32	6	1	752	824	992	1324	1	24
1078	3	32	6	1	1528	1600	1768	1331	1	24
1079	3	32	6	1	2200	2272	2440	1345	1	24
1080	3	32	6	1	2240	2312	2480	1345	1	24
1081	3	32	6	1	2296	2368	2536	1345	1	24
1082	3	32	6	1	2360	2432	2600	1345	1	24
1083	3	32	6	1	2440	2512	2680	1345	1	24
1084	3	32	6	1	2480	2552	2720	1345	1	24
1085	3	32	6	1	3592	3664	3832	1365	1	24
1086	3	32	6	1	3728	3800	3968	1365	1	24
1087	3	25	44	2	1216	1288	1624	0	0	0
1088	3	16	24	1	616	688	856	1249	1	0
1089	3	16	41	1	248	320	488	695	0	0
1090	3	16	41	4	400	472	640	175	0	0
1091	3	16	41	1	560	632	800	695	0	0
1092	3	16	41	1	608	680	848	695	0	0
1093	3	16	41	1	712	784	952	698	0	0
1094	3	16	41	1	704	776	944	698	0	0
1095	3	16	41	1	760	832	1000	698	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1096	3	16	41	1	848	920	1088	698	0	0
1097	3	16	41	1	880	952	1120	748	0	0
1098	3	16	41	1	896	968	1136	698	0	0
1099	3	16	41	1	928	1000	1168	698	0	0
1100	3	16	41	1	944	1016	1184	748	0	0
1101	3	16	41	1	976	1048	1216	698	0	0
1102	3	16	41	1	1064	1136	1304	709	0	0
1103	3	16	41	1	1192	1264	1432	698	0	0
1104	3	16	41	1	1184	1256	1424	698	0	0
1105	3	16	41	1	1384	1456	1624	724	0	0
1106	3	16	41	1	1400	1472	1640	698	0	0
1107	3	16	41	1	1456	1528	1696	698	0	0
1108	3	16	41	1	1448	1520	1688	698	0	0
1109	3	16	41	1	1528	1600	1768	698	0	0
1110	3	16	41	1	1544	1616	1784	698	0	0
1111	3	16	41	1	1600	1672	1840	698	0	0
1112	3	16	41	1	1736	1808	1976	710	0	0
1113	3	16	41	1	1744	1816	1984	748	0	0
1114	3	16	41	1	1760	1832	2000	698	0	0
1115	3	16	41	1	1768	1840	2008	701	0	0
1116	3	16	41	1	1856	1928	2096	698	0	0
1117	3	16	41	1	1888	1960	2128	698	0	0
1118	3	16	41	1	1976	2048	2216	698	0	0
1119	3	16	41	2	2128	2200	2368	364	0	0
1120	3	16	41	1	2120	2192	2360	705	0	0
1121	3	16	41	1	2152	2224	2392	705	0	0
1122	3	16	41	2	2288	2360	2528	353	0	0
1123	3	16	41	1	2416	2488	2656	705	0	0
1124	3	16	41	1	2432	2504	2672	705	0	0
1125	3	16	41	1	2464	2536	2704	705	0	0
1126	3	16	41	1	2528	2600	2768	705	0	0
1127	3	16	41	1	2608	2680	2848	705	0	0
1128	3	16	41	1	2624	2696	2864	705	0	0
1129	3	16	41	1	2632	2704	2872	736	0	0
1130	3	27	29	1	1760	1832	2168	0	0	0
1131	3	27	34	3	2224	2296	2464	145	1	0
1132	3	27	34	1	2456	2528	2696	434	1	0
1133	3	33	1	2	1216	1288	1456	895	1	0
1134	3	33	33	1	3944	4016	4184	889	0	24
1135	3	33	1	3	424	496	664	595	1	0
1136	3	33	1	9	680	752	920	234	1	0
1137	3	33	1	2	704	776	944	970	1	0
1138	3	33	1	1	1048	1120	1288	1848	1	0
1139	3	33	1	1	1040	1112	1280	1746	1	0
1140	3	33	1	2	1120	1192	1360	874	1	0
1141	3	33	1	2	1216	1288	1456	924	1	0
1142	3	33	1	1	1352	1424	1592	1739	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1143	3	33	1	2	1376	1448	1616	898	1	0
1144	3	33	1	1	1744	1816	1984	1818	1	0
1145	3	33	1	1	2792	2864	3032	1742	1	0
1146	3	33	1	2	3104	3176	3344	858	1	0
1147	3	33	1	1	3544	3616	3784	1807	1	0
1148	3	33	1	1	3920	3992	4160	1701	1	0
1149	3	33	1	2	3928	4000	4168	850	1	0
1150	3	33	11	1	1096	1168	1336	1036	1	0
1151	3	33	11	1	1088	1160	1328	1036	1	0
1152	3	33	11	1	1208	1280	1448	1036	1	0
1153	3	33	11	1	1424	1496	1664	1036	1	0
1154	3	33	11	1	1616	1688	1856	1143	1	0
1155	3	33	15	1	16	88	256	1366	1	0
1156	3	33	15	1	176	248	416	1492	1	0
1157	3	33	15	1	200	272	440	1641	1	0
1158	3	33	15	2	232	304	472	812	1	0
1159	3	33	15	1	256	328	496	1409	1	0
1160	3	33	15	2	424	496	664	771	1	0
1161	3	33	15	6	440	512	680	268	1	0
1162	3	33	15	1	560	632	800	1473	1	0
1163	3	33	15	6	688	760	928	273	1	0
1164	3	33	15	2	712	784	952	819	1	0
1165	3	33	15	1	752	824	992	1631	1	0
1166	3	33	15	2	880	952	1120	823	1	0
1167	3	33	15	2	944	1016	1184	755	1	0
1168	3	33	15	2	1048	1120	1288	764	1	0
1169	3	33	15	1	1160	1232	1400	1522	1	0
1170	3	33	15	1	1168	1240	1408	1579	1	0
1171	3	33	15	1	1160	1232	1400	1498	1	0
1172	3	33	15	3	1208	1280	1448	503	1	0
1173	3	33	15	1	1264	1336	1504	1349	1	0
1174	3	33	15	2	1312	1384	1552	719	1	0
1175	3	33	15	2	2104	2176	2344	749	1	0
1176	3	33	15	5	2200	2272	2440	323	1	0
1177	3	33	15	2	2224	2296	2464	829	1	0
1178	3	33	15	6	2272	2344	2512	277	1	0
1179	3	33	15	1	2272	2344	2512	1376	1	0
1180	3	33	15	2	2360	2432	2600	823	1	0
1181	3	33	15	9	2440	2512	2680	181	1	0
1182	3	33	15	12	2528	2600	2768	136	1	0
1183	3	33	15	3	2552	2624	2792	543	1	0
1184	3	33	15	1	2552	2624	2792	1577	1	0
1185	3	33	15	1	2632	2704	2872	1376	1	0
1186	3	33	15	2	2768	2840	3008	826	1	0
1187	3	33	15	1	2800	2872	3040	1537	1	0
1188	3	33	15	2	2936	3008	3176	739	1	0
1189	3	33	15	1	3112	3184	3352	1670	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1190	3	33	15	5	3208	3280	3448	297	1	0
1191	3	33	15	1	3224	3296	3464	1433	1	0
1192	3	33	15	1	3248	3320	3488	1459	1	0
1193	3	33	15	2	3536	3608	3776	678	1	0
1194	3	33	15	3	3904	3976	4144	466	1	0
1195	3	33	15	1	3904	3976	4144	1445	1	0
1196	3	33	29	2	184	256	424	352	1	0
1197	3	33	29	2	224	296	464	273	1	0
1198	3	33	29	2	400	472	640	292	1	0
1199	3	33	29	7	416	488	656	80	1	0
1200	3	33	29	1	448	520	688	562	1	0
1201	3	33	29	2	536	608	776	281	1	0
1202	3	33	29	2	568	640	808	356	1	0
1203	3	33	29	2	704	776	944	317	1	0
1204	3	33	29	2	760	832	1000	380	1	0
1205	3	33	29	1	752	824	992	697	1	0
1206	3	33	29	2	872	944	1112	368	1	0
1207	3	33	29	1	1040	1112	1280	724	1	0
1208	3	33	29	1	1192	1264	1432	550	1	0
1209	3	33	29	2	1304	1376	1544	282	1	0
1210	3	33	29	1	1360	1432	1600	701	1	0
1211	3	33	29	1	1624	1696	1864	774	1	0
1212	3	33	29	1	2096	2168	2336	708	1	0
1213	3	33	29	1	2120	2192	2360	567	1	0
1214	3	33	29	3	2192	2264	2432	188	1	0
1215	3	33	29	1	2216	2288	2456	570	1	0
1216	3	33	29	2	2264	2336	2504	333	1	0
1217	3	33	29	1	2288	2360	2528	561	1	0
1218	3	33	29	1	2368	2440	2608	715	1	0
1219	3	33	29	1	2536	2608	2776	715	1	0
1220	3	33	29	1	2560	2632	2800	697	1	0
1221	3	33	29	2	2776	2848	3016	317	1	0
1222	3	33	29	1	2944	3016	3184	719	1	0
1223	3	33	29	1	3104	3176	3344	691	1	0
1224	3	33	29	1	3128	3200	3368	721	1	0
1225	3	33	29	3	3232	3304	3472	244	1	0
1226	3	33	29	2	3256	3328	3496	359	1	0
1227	3	33	29	3	3544	3616	3784	222	1	0
1228	3	33	29	1	3592	3664	3832	753	1	0
1229	3	33	29	1	3896	3968	4136	719	1	0
1230	3	33	29	2	4240	4312	4480	353	1	0
1231	3	33	27	1	736	808	976	531	1	0
1232	3	33	27	1	880	952	1120	531	1	0
1233	3	33	27	1	1240	1312	1480	531	1	0
1234	3	33	27	1	1232	1304	1472	531	1	0
1235	3	33	27	1	1304	1376	1544	531	1	0
1236	3	33	33	1	32	104	272	565	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1237	3	33	33	7	112	184	352	68	1	0
1238	3	33	33	1	248	320	488	451	1	0
1239	3	33	33	1	424	496	664	451	1	0
1240	3	33	33	2	560	632	800	276	1	0
1241	3	33	33	2	1432	1504	1672	265	1	0
1242	3	33	33	3	1448	1520	1688	170	1	0
1243	3	33	33	3	1528	1600	1768	185	1	0
1244	3	33	33	2	1880	1952	2120	272	1	0
1245	3	33	33	1	2296	2368	2536	499	1	0
1246	3	33	33	1	2792	2864	3032	511	1	0
1247	3	33	33	1	2872	2944	3112	546	1	0
1248	3	33	33	1	3968	4040	4208	521	1	0
1249	3	33	34	2	592	664	832	154	1	0
1250	3	33	34	1	1736	1808	1976	348	1	0
1251	3	33	34	2	2104	2176	2344	176	1	0
1252	3	33	34	1	2360	2432	2600	362	1	0
1253	3	33	34	1	3248	3320	3488	378	1	0
1254	3	33	34	1	3536	3608	3776	374	1	0
1255	3	33	34	2	3704	3776	3944	146	1	0
1256	3	33	34	1	4232	4304	4472	301	1	0
1257	3	33	19	1	392	464	632	1654	1	24
1258	3	33	19	1	416	488	656	1650	1	24
1259	3	33	19	1	544	616	784	1685	1	24
1260	3	33	19	1	1312	1384	1552	1487	1	24
1261	3	33	19	1	1384	1456	1624	1496	1	24
1262	3	33	19	1	3112	3184	3352	1527	1	24
1263	3	39	11	2	2152	2224	2560	0	0	0
1264	3	40	42	1	1568	1640	1976	0	0	24
1265	3	41	42	2	1048	1120	1456	0	0	0
1266	3	43	11	2	1016	1088	1256	265	1	0
1267	3	43	11	2	1120	1192	1360	265	1	0
1268	3	30	30	1	1520	1592	1760	438	1	0
1269	3	30	15	1	1096	1168	1336	1284	1	0
1270	3	30	15	1	3232	3304	3472	1786	1	0
1271	3	30	15	1	3272	3344	3512	1714	1	0
1272	3	30	15	1	3280	3352	3520	1849	1	0
1273	3	30	15	1	3272	3344	3512	1788	1	0
1274	3	30	15	1	3424	3496	3664	1695	1	0
1275	3	30	15	1	3416	3488	3656	1834	1	0
1276	3	30	15	1	3416	3488	3656	1650	1	0
1277	3	30	15	1	4288	4360	4528	1787	1	0
1278	3	30	15	1	4280	4352	4520	1721	1	0
1279	3	30	15	1	4288	4360	4528	1735	1	0
1280	3	30	15	1	4280	4352	4520	1730	1	0
1281	3	30	30	1	32	104	272	421	1	0
1282	3	30	30	1	376	448	616	290	1	0
1283	3	30	30	1	368	440	608	442	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1284	3	30	30	1	400	472	640	452	1	0
1285	3	30	30	1	896	968	1136	288	1	0
1286	3	30	30	1	1112	1184	1352	290	1	0
1287	3	30	30	1	1264	1336	1504	290	1	0
1288	3	30	30	2	1552	1624	1792	205	1	0
1289	3	30	30	1	1600	1672	1840	437	1	0
1290	3	30	30	1	1880	1952	2120	290	1	0
1291	3	30	30	1	2096	2168	2336	421	1	0
1292	3	30	30	1	2432	2504	2672	293	1	0
1293	3	30	30	1	2560	2632	2800	493	1	0
1294	3	30	30	1	2552	2624	2792	363	1	0
1295	3	30	30	1	2800	2872	3040	416	1	0
1296	3	30	30	1	2920	2992	3160	287	1	0
1297	3	30	30	1	2912	2984	3152	287	1	0
1298	3	30	30	1	2944	3016	3184	287	1	0
1299	3	30	30	1	2960	3032	3200	282	1	0
1300	3	30	30	1	3208	3280	3448	388	1	0
1301	3	30	30	1	3224	3296	3464	397	1	0
1302	3	30	30	1	3280	3352	3520	297	1	0
1303	3	30	30	1	4136	4208	4376	553	1	0
1304	3	30	30	1	4168	4240	4408	349	1	0
1305	3	30	30	1	4216	4288	4456	439	1	0
1306	3	30	30	1	4208	4280	4448	571	1	0
1307	3	30	30	3	4208	4280	4448	125	1	0
1308	3	30	30	1	4288	4360	4528	561	1	0
1309	3	30	29	1	16	88	256	405	1	0
1310	3	30	29	1	856	928	1096	405	1	0
1311	3	30	29	2	1592	1664	1832	204	1	0
1312	3	30	29	4	1648	1720	1888	102	1	0
1313	3	30	29	1	2464	2536	2704	661	1	0
1314	3	30	29	2	2552	2624	2792	206	1	0
1315	3	30	29	1	2584	2656	2824	411	1	0
1316	3	30	29	1	2608	2680	2848	411	1	0
1317	3	30	29	2	3152	3224	3392	209	1	0
1318	3	30	29	1	3904	3976	4144	418	1	0
1319	3	30	29	1	3896	3968	4136	418	1	0
1320	3	30	29	1	3904	3976	4144	418	1	0
1321	3	30	29	1	3976	4048	4216	418	1	0
1322	3	30	29	1	4024	4096	4264	418	1	0
1323	3	30	29	2	4040	4112	4280	209	1	0
1324	3	30	29	1	4064	4136	4304	418	1	0
1325	3	30	29	1	4072	4144	4312	418	1	0
1326	3	30	29	1	4208	4280	4448	418	1	0
1327	3	30	29	1	4216	4288	4456	418	1	0
1328	3	30	29	1	4232	4304	4472	604	1	0
1329	3	30	34	1	184	256	424	741	1	0
1330	3	30	34	1	176	248	416	759	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1331	3	30	34	3	728	800	968	278	1	0
1332	3	30	34	1	1240	1312	1480	792	1	0
1333	3	30	34	1	1256	1328	1496	770	1	0
1334	3	30	34	1	1448	1520	1688	775	1	0
1335	3	30	34	1	1568	1640	1808	753	1	0
1336	3	30	34	1	2104	2176	2344	966	1	0
1337	3	30	34	1	2416	2488	2656	870	1	0
1338	3	30	34	1	2576	2648	2816	778	1	0
1339	3	30	34	1	2744	2816	2984	761	1	0
1340	3	30	34	1	2912	2984	3152	817	1	0
1341	3	30	34	1	3112	3184	3352	840	1	0
1342	3	30	34	1	3272	3344	3512	1211	1	0
1343	3	30	34	1	3424	3496	3664	1091	1	0
1344	3	30	34	1	3944	4016	4184	697	1	0
1345	3	30	34	1	3968	4040	4208	648	1	0
1346	3	30	34	1	4072	4144	4312	697	1	0
1347	3	30	34	1	4216	4288	4456	765	1	0
1348	3	30	19	1	416	488	656	1705	1	24
1349	3	30	19	1	568	640	808	1861	1	24
1350	3	44	7	2	1760	1832	2168	0	0	24
1351	3	44	43	1	1984	2056	2392	0	0	0
1352	3	44	15	1	3968	4040	4208	1140	0	24
1353	3	44	15	2	4048	4120	4288	578	0	24
1354	3	44	15	1	1688	1760	1928	873	0	0
1355	3	44	15	1	1768	1840	2008	873	0	0
1356	3	44	15	1	2240	2312	2480	878	0	0
1357	3	44	15	1	2392	2464	2632	878	0	0
1358	3	44	15	1	2456	2528	2696	878	0	0
1359	3	44	15	1	2536	2608	2776	878	0	0
1360	3	44	15	1	2624	2696	2864	878	0	0
1361	3	44	15	1	2776	2848	3016	881	0	0
1362	3	44	15	1	2792	2864	3032	881	0	0
1363	3	44	15	1	2896	2968	3136	891	0	0
1364	3	44	15	1	2912	2984	3152	891	0	0
1365	3	44	15	1	3040	3112	3280	891	0	0
1366	3	44	15	1	3104	3176	3344	892	0	0
1367	3	44	15	1	3400	3472	3640	892	0	0
1368	3	44	15	1	3544	3616	3784	892	0	0
1369	3	44	15	1	3584	3656	3824	891	0	0
1370	3	44	15	1	3784	3856	4024	891	0	0
1371	3	44	15	1	3896	3968	4136	891	0	0
1372	3	44	15	1	3416	3488	3656	892	0	0
1373	3	44	41	1	104	176	344	494	0	0
1374	3	44	41	1	280	352	520	494	0	0
1375	3	44	41	1	536	608	776	494	0	0
1376	3	44	41	1	2552	2624	2792	574	0	0
1377	3	44	41	1	2584	2656	2824	502	0	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1378	3	44	42	1	1760	1832	2168	0	0	24
1379	3	44	20	1	1576	1648	1816	888	1	0
1380	3	44	20	1	1912	1984	2152	888	1	0
1381	3	17	1	2	88	160	496	0	0	0
1382	3	17	2	1	1232	1304	1640	0	0	0
1383	3	17	2	1	2368	2440	2776	0	0	0
1384	3	17	3	1	944	1016	1352	0	0	24
1385	3	17	3	1	1456	1528	1864	0	0	24
1386	3	17	3	1	1744	1816	2152	0	0	24
1387	3	17	3	1	1880	1952	2288	0	0	24
1388	3	17	3	1	1960	2032	2368	0	0	24
1389	3	17	3	1	2528	2600	2936	0	0	24
1390	3	17	3	2	2792	2864	3200	0	0	24
1391	3	17	3	1	1192	1264	1600	0	0	24
1392	3	17	3	1	2632	2704	3040	0	0	24
1393	3	17	3	1	3280	3352	3688	0	0	0
1394	3	17	3	1	4096	4168	4504	0	0	0
1395	3	17	3	1	4280	4352	4688	0	0	24
1396	3	17	4	3	3896	3968	4304	0	0	0
1397	3	17	21	1	3056	3128	3464	0	0	0
1398	3	17	22	1	3040	3112	3448	0	0	24
1399	3	17	38	1	1736	1808	2144	0	0	0
1400	3	17	44	1	2072	2144	2480	0	0	0
1401	3	17	1	5	32	104	272	245	1	0
1402	3	17	1	1	232	304	472	1342	1	0
1403	3	17	1	4	248	320	488	279	1	0
1404	3	17	1	2	280	352	520	651	1	0
1405	3	17	1	2	320	392	560	622	1	0
1406	3	17	1	1	376	448	616	1133	1	0
1407	3	17	1	2	512	584	752	701	1	0
1408	3	17	1	3	880	952	1120	413	1	0
1409	3	17	1	1	1192	1264	1432	1190	1	0
1410	3	17	1	5	1352	1424	1592	233	1	0
1411	3	17	1	2	1408	1480	1648	579	1	0
1412	3	17	1	1	1520	1592	1760	1321	1	0
1413	3	17	1	1	1552	1624	1792	1322	1	0
1414	3	17	1	1	1592	1664	1832	1267	1	0
1415	3	17	1	1	2224	2296	2464	1368	1	0
1416	3	17	1	1	2216	2288	2456	1274	1	0
1417	3	17	1	2	2392	2464	2632	673	1	0
1418	3	17	1	3	2624	2696	2864	429	1	0
1419	3	17	1	1	2800	2872	3040	1277	1	0
1420	3	17	1	1	2864	2936	3104	1279	1	0
1421	3	17	1	2	2936	3008	3176	650	1	0
1422	3	17	1	1	2968	3040	3208	1279	1	0
1423	3	17	1	1	3040	3112	3280	1279	1	0
1424	3	17	1	3	3080	3152	3320	419	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1425	3	17	1	2	3104	3176	3344	618	1	0
1426	3	17	1	2	3320	3392	3560	749	1	0
1427	3	17	1	1	3376	3448	3616	1499	1	0
1428	3	17	1	1	3568	3640	3808	1153	1	0
1429	3	17	1	1	3968	4040	4208	1229	1	0
1430	3	17	1	3	4208	4280	4448	455	1	0
1431	3	17	1	1	1184	1256	1424	1217	1	0
1432	3	17	1	1	1528	1600	1768	1217	1	0
1433	3	17	1	1	2168	2240	2408	1315	1	0
1434	3	17	1	1	2896	2968	3136	1216	1	0
1435	3	17	1	4	2944	3016	3184	299	1	0
1436	3	17	1	1	3088	3160	3328	1197	1	0
1437	3	17	1	2	3976	4048	4216	628	1	0
1438	3	17	15	27	64	136	304	28	1	0
1439	3	17	15	1	2936	3008	3176	537	1	0
1440	3	17	15	1	3424	3496	3664	928	1	0
1441	3	17	15	23	3800	3872	4040	33	1	0
1442	3	17	34	3	4168	4240	4408	403	1	0
1443	3	17	17	1	3088	3160	3328	1301	0	0
1444	3	17	19	3	0	40	208	160	1	24
1445	3	17	19	2	40	112	280	230	1	24
1446	3	17	19	1	104	176	344	477	1	24
1447	3	17	19	1	368	440	608	477	1	24
1448	3	17	19	2	520	592	760	238	1	24
1449	3	17	19	1	1264	1336	1504	523	1	24
1450	3	17	19	1	1352	1424	1592	519	0	24
1451	3	17	19	3	2224	2296	2464	163	1	24
1452	3	17	19	1	2248	2320	2488	488	1	24
1453	3	17	19	1	2288	2360	2528	491	1	24
1454	3	17	19	2	2384	2456	2624	246	1	24
1455	3	17	19	1	2408	2480	2648	515	1	24
1456	3	17	19	2	2416	2488	2656	264	1	24
1457	3	17	19	3	2432	2504	2672	171	1	24
1458	3	17	19	1	2960	3032	3200	499	1	24
1459	3	17	19	3	3032	3104	3272	164	1	24
1460	3	17	19	9	3232	3304	3472	56	1	24
1461	3	17	19	2	3272	3344	3512	261	1	24
1462	3	17	19	3	3328	3400	3568	163	1	24
1463	3	17	19	2	3352	3424	3592	233	1	24
1464	3	17	19	2	3368	3440	3608	253	1	24
1465	3	17	19	2	3472	3544	3712	220	1	24
1466	3	17	19	2	3536	3608	3776	269	1	24
1467	3	17	19	1	3560	3632	3800	518	1	24
1468	3	17	19	2	3664	3736	3904	262	1	24
1469	3	17	19	1	3808	3880	4048	518	1	24
1470	3	17	19	4	3968	4040	4208	111	1	24
1471	3	17	20	8	32	104	272	68	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1472	3	17	20	1	112	184	352	556	1	0
1473	3	17	20	2	152	224	392	292	1	0
1474	3	17	20	4	376	448	616	149	1	0
1475	3	17	20	3	584	656	824	212	1	0
1476	3	17	20	1	616	688	856	632	1	0
1477	3	17	20	1	680	752	920	555	1	0
1478	3	17	20	1	856	928	1096	548	1	0
1479	3	17	20	4	848	920	1088	139	1	0
1480	3	17	20	1	920	992	1160	511	1	0
1481	3	17	20	1	952	1024	1192	549	1	0
1482	3	17	20	1	1112	1184	1352	520	1	0
1483	3	17	20	7	1192	1264	1432	74	1	0
1484	3	17	20	3	1232	1304	1472	175	1	0
1485	3	17	20	1	1360	1432	1600	522	1	0
1486	3	17	20	2	1472	1544	1712	277	1	0
1487	3	17	20	1	1744	1816	1984	558	1	0
1488	3	17	20	2	1808	1880	2048	277	1	0
1489	3	17	20	8	1912	1984	2152	69	1	0
1490	3	17	20	10	1952	2024	2192	55	1	0
1491	3	17	20	2	2032	2104	2272	273	1	0
1492	3	17	20	4	2024	2096	2264	135	1	0
1493	3	17	20	4	2128	2200	2368	144	1	0
1494	3	17	20	2	2216	2288	2456	261	1	0
1495	3	17	20	3	2392	2464	2632	195	1	0
1496	3	17	20	1	2608	2680	2848	564	1	0
1497	3	17	20	4	2632	2704	2872	141	1	0
1498	3	17	20	5	2648	2720	2888	113	1	0
1499	3	17	20	2	2728	2800	2968	282	1	0
1500	3	17	20	5	2744	2816	2984	113	1	0
1501	3	17	20	1	3280	3352	3520	577	1	0
1502	3	17	20	3	3320	3392	3560	190	1	0
1503	3	17	20	1	3344	3416	3584	522	1	0
1504	3	17	20	1	3416	3488	3656	577	1	0
1505	3	17	20	1	4048	4120	4288	577	1	0
1506	3	17	20	3	4112	4184	4352	192	1	0
1507	3	17	20	3	4216	4288	4456	192	1	0
1508	3	18	44	1	1424	1496	1832	0	0	0
1509	3	18	44	1	1432	1504	1840	0	0	0
1510	3	18	44	2	2408	2480	2816	0	0	0
1511	3	18	44	1	1432	1504	1840	0	0	0
1512	3	18	44	1	2024	2096	2432	0	0	0
1513	3	19	17	1	0	40	208	532	1	0
1514	3	19	17	2	56	128	296	227	1	0
1515	3	19	17	3	88	160	328	151	1	0
1516	3	19	17	2	344	416	584	227	1	0
1517	3	19	17	1	376	448	616	454	1	0
1518	3	19	17	2	416	488	656	227	1	0

LD #	LD TYPE	ORIGIN	DEST	#CARS	ORDERED	AVAIL	RDD	REVENUE	INTRCHG	EXT DEST TIME
1519	3	19	17	1	520	592	760	454	1	0

APPENDIX F

MILITARY APPLICATION

This thesis has direct application to the U.S. Air Force in managing its strategic airlift system. Like Kansas City Southern Railway, the strategic airlift system is complex and highly stochastic. Aircraft reliability, weather, and congestion on air routes and at airfields are examples of uncertain events in the airlift system that make the overall system performance stochastic. After describing similarities between the KCS system and the strategic airlift system, this appendix describes how thesis recommendations apply to the U.S. Air Force.

The key actors in the simulation of the KCS system were railcars, trains, and car managers. Railcars hauled cargo from origin to destination. Car managers assigned empty railcars to meet each customer's demand for cars. Trains moved railcars through the network of tracks and stations. In a similar manner, key actors in the strategic airlift system are loads, aircraft, and the Tanker Airlift Control Center (TACC) . Loads are configured to accommodate troops, their equipment, and supporting cargo. Airlift controllers in the TACC assign empty aircraft to pick up and deliver loads. Aircraft move loads through the network of air routes and air bases. The processes and resource constraints that affect aircraft as they transit the system to deliver loads are very similar in nature to the processes and constraints affecting trains. Likewise, the decision logic used to route empty aircraft to pick up loads is similar to that used to assign empty cars to meet customer demand. Finally, the simulation of the KCS system measured performance in

terms of timely, reliable, affordable customer service. These performance parameters are also applicable to the strategic airlift system. In short, the same methodology used to model the KCS system could be used to create a detailed, stochastic model of the strategic airlift system. Such a model could provide valuable insight to TACC decision-makers on a number of issues affecting successful operation of the strategic airlift system in an environment of uncertainty.

This thesis demonstrated the benefit of a simulation model of the KCS system by evaluating alternative car management policies. The results of the simulation revealed that managing cars as freerunners while using optimization to make car assignments provided more timely, reliable, affordable customer service. A similar model of the strategic airlift system could be used to evaluate alternative policies for managing the airlift fleet. Just as optimization improved the car assignment process, resulting in a significant reduction in non-productive car miles, an optimization tool could help the TACC reduce non-productive flight hours by making better assignments of aircraft to loads. This could reduce the cost of operating the strategic airlift system and increase the amount of cargo the fleet could deliver in a contingency. While detailed simulation models of the strategic airlift system exist, none of the existing models adequately capture the impact of uncertainty. Furthermore, none of the current models make allowance for the use of an optimization tool to support the aircraft assignment process. Based on the results of this simulation effort, I recommend the U.S. Air Force develop such a model and use it to evaluate alternative management policies for the TACC.

APPENDIX G

PROCESS FLOW DIAGRAM FOR A TRAIN STATION

This appendix describes the processes that take place as a train and its associated cars transit a station. The steps for each process are described in text. The manner in which processes are sequenced is illustrated using SLAM icons and network flow diagrams. The depicted station is not an actual working station in the network. It is an example intended to highlight the key processes involved at a typical station.

Train Arrival at Station

1) A train arrives at Station 1 (STN1).
2) The train waits in line for the resource TRACK.
3) The model determines if STN1 is a scheduled stop for this train.
4) Index "II" is set to indicate the train attribute number containing information about the trains schedule.
5) If ATTRIB(II) equals one, the train stops at STN1.
6) Otherwise, the train passes through STN1 without stopping.

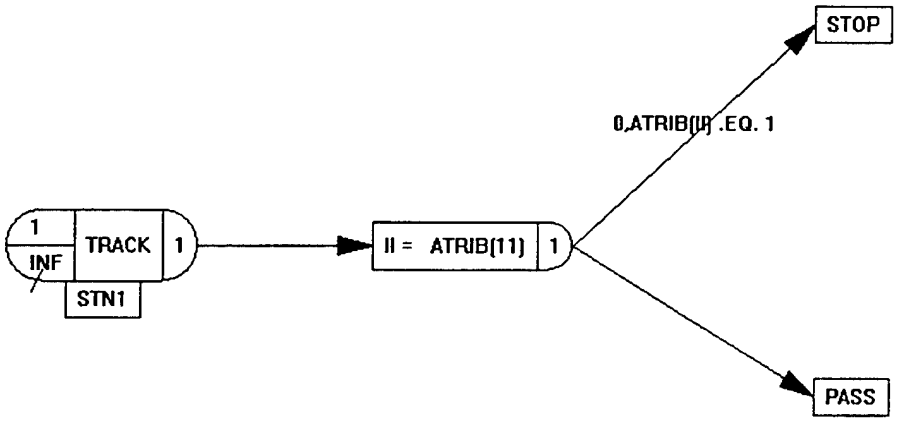

Figure 7. Train Arrival at STN1

Train Passes Through Station 1 Without Stopping

1) Train releases the resource TRACK.
2) The model determines direction of travel for train.
3) If ATTRIB(II) equals two, three, or four, train departs for STN2, STN3, or STN4, respectively.
4) The EXCEL file "KCSR:RouteTime" contains route times for all possible combinations of origins and destinations.

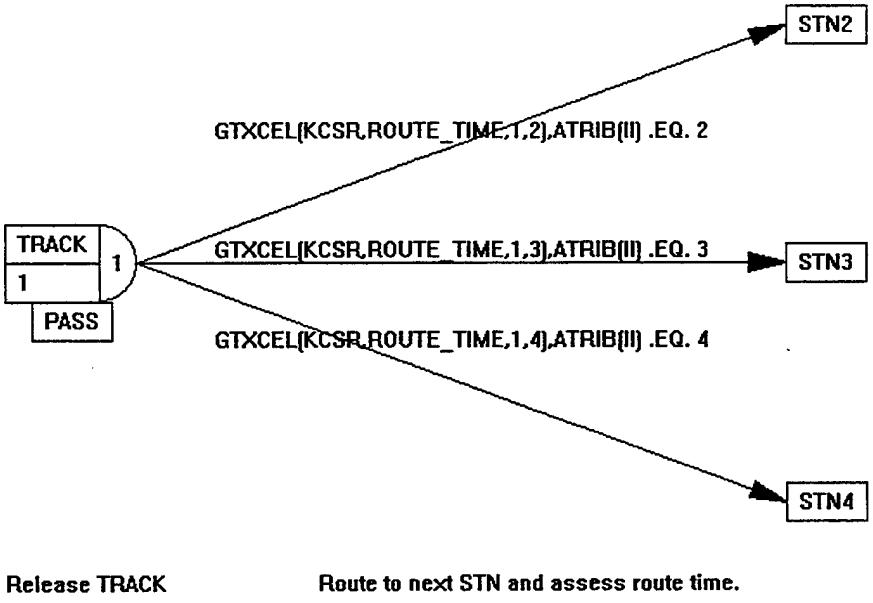

Figure 8. Train Passes Through Station 1 Without Stopping

Train Stops at Station 1

1) If ATTRIB(10) equals one, STN1 is the last stop for this train.
2) Otherwise, process this train as a continuing train.
3) For terminating trains, all cars are decoupled and evaluated for further movement.
4) A terminating train releases TRACK and locomotive POWER.
5) After a 12-hour rest period, the crew from a terminating train is made available for another assignment.
6) Decoupled cars begin the switching process.

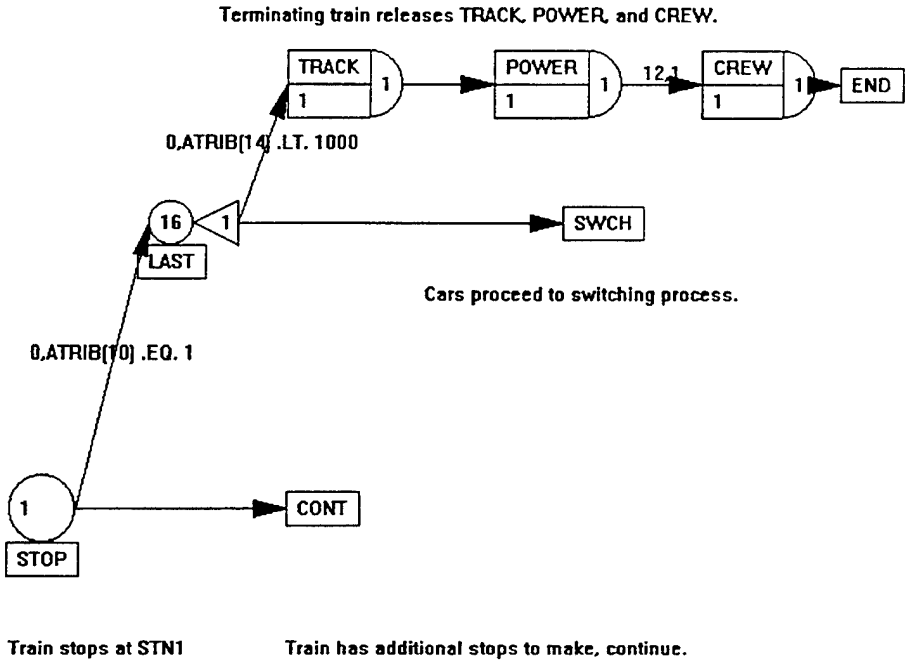

Figure 9. Train Stops at Station 1

Train Continues Beyond Station 1

1) The model determines which cars need to get off of the train at STN1.
2) The model determines if a crew change is required before this train continues.
3) The model calculates the length of time needed to process this train.
4) The model determines how many additional cars the train can take on.
5) The train starts the departure process.

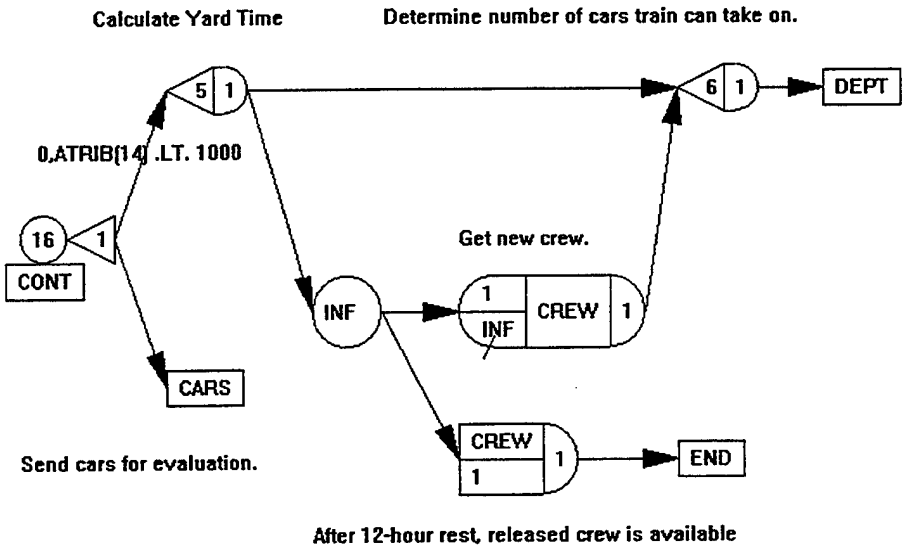

Figure 10. Train Continues Beyond Station 1

Train Departs Station 1

1) Departing trains are sorted by direction of travel.

2) Departing trains offer capacity to cars headed in the same direction as the train.

3) Additional cars are coupled with the train as appropriate.

4) The train and its cars depart for the next station.

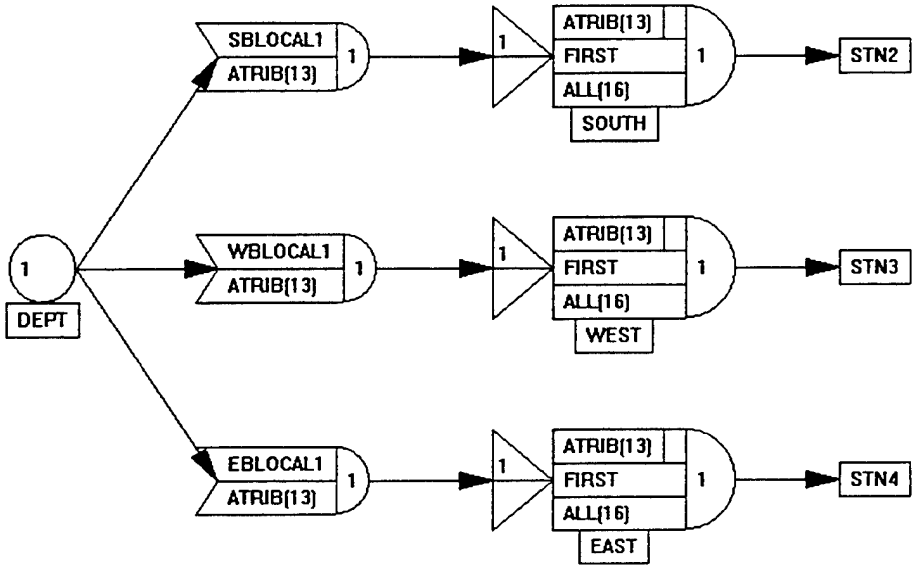

Figure 11. Train Departs Station 1

Cars From Continuing Trains are Evaluated

1) ATTRIB(4) indicates the next checkpoint for the car.

2) Based on direction to the next checkpoint, the car may be decoupled from the train.

3) Decoupled cars begin the switching process.

4) Other cars remain on train and do not require switching.

5) Cars depart with their associated train.

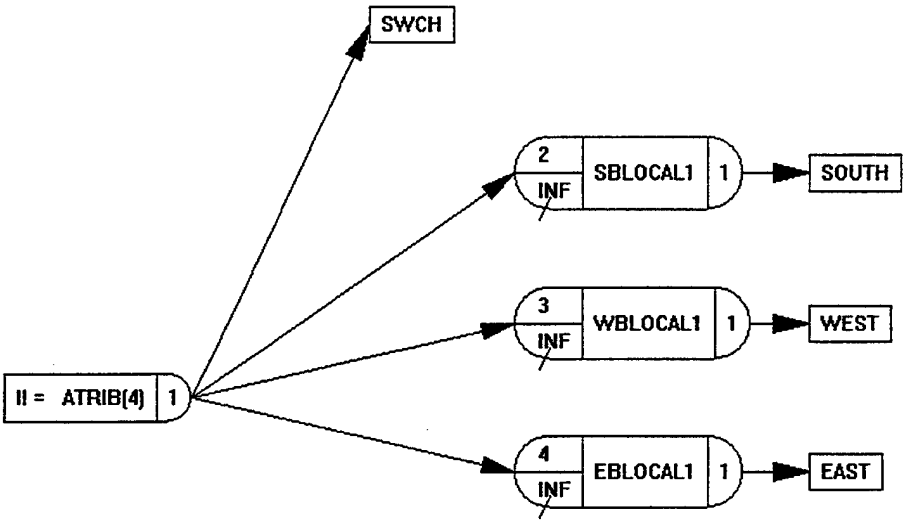

Figure 12. Cars From Continuing Trains are Evaluated

Cars Begin Switching Process

1) Cars require the resource SWITCH.
2) ATTRIB(4) is used to determine the next action for the car.
3) Cars that have reached their final destination begin final processing.
4) Cars that require further movement wait for capacity on a train heading in the desired direction.
5) When capacity is available, these cars will depart with their associated train.

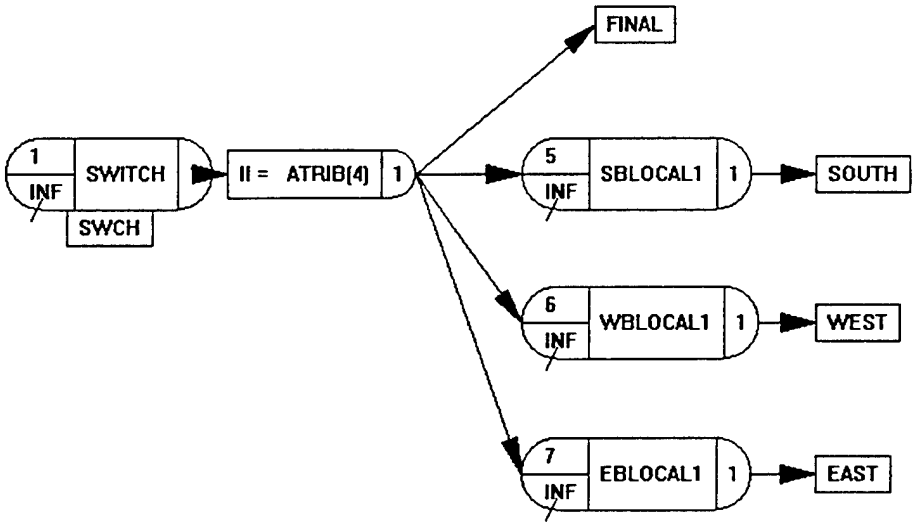

Figure 13. Cars Begin the Switching Process

Cars Begin Final Processing at Station 1

1) The model determines if the car is loaded or empty.
2) Loaded cars are unloaded, checked for maintenance, and made available for another assignment.
3) If the car is a freerunner, it will wait to be assigned by the car manager.
4) If the car is a pool car, it begins the switching process and is automatically routed back to its designated pool location.
5) Empty cars check maintenance and wait for their assigned load.
6) After loading, they are sent for switching and routed for delivery of their load.
7) If the load assignment involves an interchange to another railroad, the interchange time is determined and assessed.

8) Likewise, if the delivery is to a peripheral station, extended delivery time is determined and assessed.

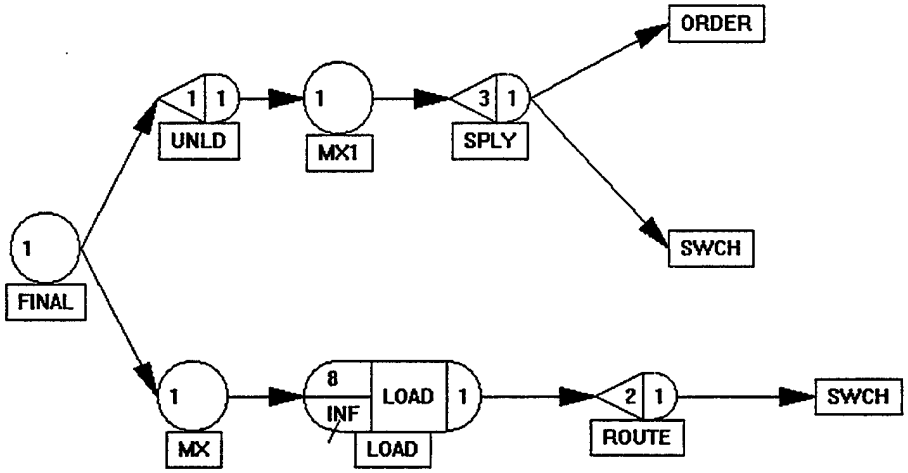

Figure 14. Final Processing for Cars at Station 1

Freerunners Wait for ORDER

1) Cars that are identified as freerunners, are made available for assignment by the car manager.
2) Freerunners wait in line for the resource ORDER.
3) When an ORDER is available, freerunners are routed for delivery.
4) Freerunners begin the switching process.

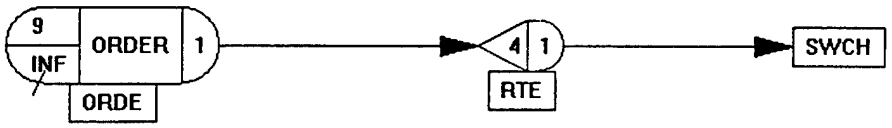

Figure 15. Freerunners Await ORDER

Trains Originating at Station 1

1) Originating trains require CREW, locomotive POWER, and TRACK.

2) After seizing these resources, originating trains are sent for departure.

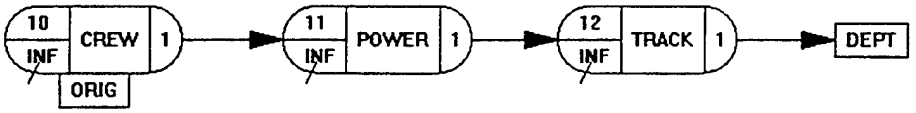

Figure 16. Originating Trains at Station 1

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