PRELIMINARY ANALYSIS OF CNW'S NEBRASKA RAIL LINE
VOLUME II

by

Denver. D. Tolliver

UGPTI Publication No. 85

Preliminary Analysis of CNW's Nebraska Rail Line

Impacts of Abandonment

Feasibility of Continued Operation as an Independent Short Line Railroad

Technical Addendums

February 1991

Prepared by:

Upper Great Plains Transportation Institute

North Dakota State University
P.O. Box 5074
Fargo, ND 58105
(701) 237-7767

Transportation Operations, Inc.

595 Forest Avenue, Suite 6B
Plymouth, MI 48170
(313) 453-8410

TABLE OF CONTENTS

February 18, 1991

ADDENDUM A-ECONOMIC AND HIGHWAY IMPACT DETAIL

TO

PRELIMINARY ANALYSIS OF CNW'S NEBRASKA RAIL LINES

IMPACT OF ABANDONMENT

FEASIBILITY OF CONTINUED OPERATION AS AN INDEPENDENT SHORT LINE RAILROAD

Transportation Operations, Inc.
595 Forest Avenue, Suite 6B
Plymouth, Michigan 48170

Dr. Denver Tolliver
Upper Great Plains Transportation Institute
P. O. Box 5074
Fargo, North Dakota 58105

ADDENDUM A:

HIGHWAY IMPACT PROCEDURE

The loss of rail service in non-metropolitan areas can generate a wide range of highway impacts. Some of these costs are quantifiable. Others are not.

At the highest level of aggregation, highway costs consist of two major types: (1) infrastructure and (2) user. Infrastructure costs include the resource costs associated with designing, building and maintaining the system, plus the transportation administrative costs associated with the management of highway programs and agencies. User costs (which include operating, capital, and opportunity costs) are affected by the infrastructure in three primary ways: (1) through the design level of service, (2) through the present condition and performance of the pavement, and (3) through the level of vehicle capacity.

This analysis focuses on three primary aspects or categories of highway cost:

1. transportation agency costs ("build-sooner" costs),
2. net resource costs (which affect the broader society),
3. highway user costs.

Admittedly, all highway costs (in the final analysis) accrue to the broader society. However, for purposes of this analysis, the incremental highway costs resulting from diverted rail traffic have been partitioned into separate (non-duplicative) areas, each of which has its own set of logic and analytical procedures. Each of the categories (and its unique terminology) will be explained in subsequent sections of the report.

The material in this appendix is organized as follows. First, some important concepts in pavement life-cycle costs and highway impact analysis are introduced. In this section of the report, the pavement deterioration models used in the study are previewed, and some of the underlying theory and assumptions are set forth. Second, some of the major pavement impact models available for use in this project are described and contrasted. The potential models are evaluated and the justifications for the selected model are presented. Third, the data sources used in the CN&W line analysis are highlighted, and some of the important computational procedures are discussed. Fourth, the results and interpretations of the analysis are presented.

LIFE-CYCLE PAVEMENT CONCEPTS

Pavements deteriorate through use and environmental degradation. A new section of highway will not last indefinitely even if the traffic load is minuscule or nonexistent. Rather, the pavement surface will deteriorate from climatic effects and natural aging processes over time. This natural decay function introduces the concept of a "maximum feasible life" for pavements.

The effects of environment are felt not only in the surface and base courses of a highway, but in the sub-base and base as well. Temperature and moisture can combine to create instability, deformation, and motion in the underlying materials of a highway section, leading to frost heaving and swelling. While environment plays a major role in highway deterioration, the traffic demand or load is the principal source of deterioration on many types of highways (and under many conditions). Heavily trafficked highways which do not have the surface thickness or the base and sub-base characteristics to withstand heavy loads may deteriorate much more rapidly than the effects of environment alone might dictate.

Traffic and environment are not independent of each other. Rather, they are thought to interact in a significant fashion. Nevertheless, many pavement damage models treat them as independent forces. The reasons for doing so relate primarily to the lack of field data or models which isolate the effects of the interactive term. However, as will be detailed later, recent studies have found the interactive effect is much less influential on the predictive capabilities of pavement deterioration models than was previously feared. So, the approach taken in this study is to model the natural decay of pavements, but to disregard interactive effects between traffic and environmental factors.

The objectives of the remainder of this section of the report are:

1. To introduce some fundamental theoretical concepts in pavement life-cycle analysis;

2. To formulate a theoretical model which describes the impacts of subterminal traffic on pavement costs;

3. To specify equations for estimating the incremental cost of subterminal traffic.

A Theoretical Model of Pavement Life

As noted previously, a highway will deteriorate over time in the absence of traffic (as a result of natural decay). The shape of the decay curve is unknown. However, Figure 1 depicts a likely form for the function (negative exponential). The negative exponential function suggests that pavement condition declines rapidly when initially exposed to the elements, but then deteriorates at a decreasing rate over time. This type of decay process seems to characterize many natural and built phenomena, not just highways. Alternatively, Figure 2 shows the effects of axle loads on a hypothetical pavement section over time.

The separate effects of time and non-use related pavement deterioration are difficult to isolate and model. Theoretically, a pavement which has never been exposed to traffic may last up to 100 years (Balta and Markow, 1985). However, this has never been verified empirically. Assuming away the effects of time (for the moment), pavement life can be viewed as a function of the cumulative number of axle passes in a given climatic zone, the soil support factor, and the strength of the highway section. This relationship is depicted in equation (1).

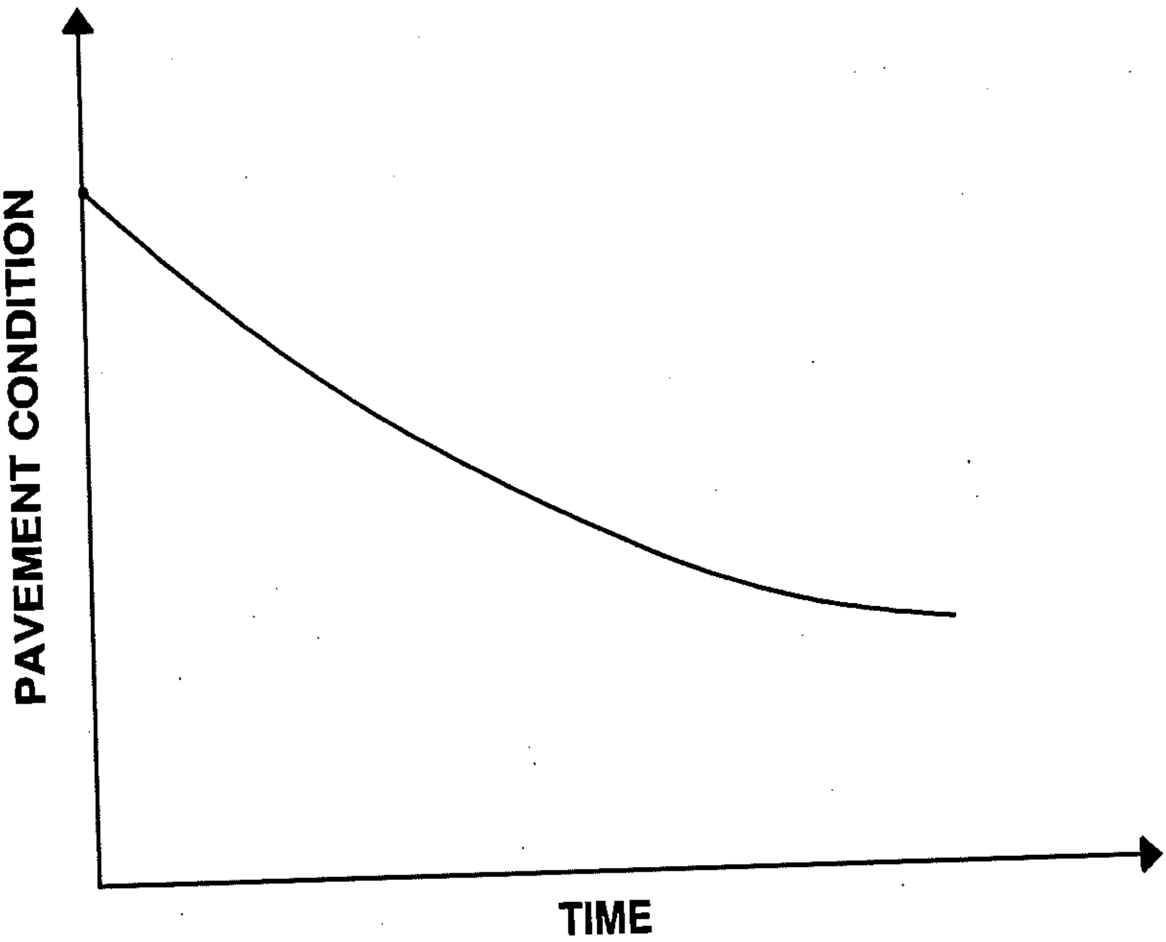


Figure 1: (Hypothetical) Natural Pavement Decay Process

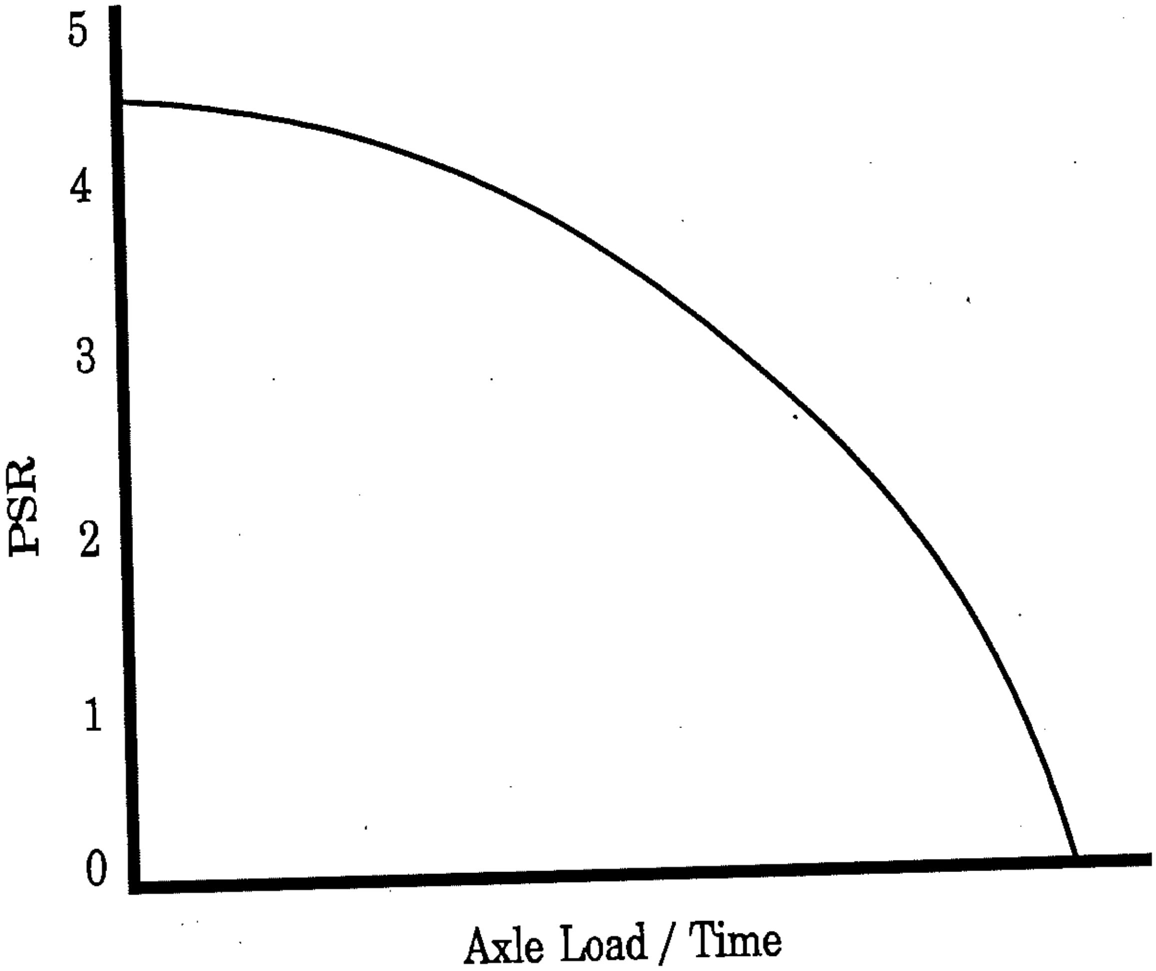


FIGURE 2. Theoretical Pavement Deterioration Function.

PSR - Pavement Serviceability Rating (an index ranging from 0.0 to 5.0)

$$PL = f(N, C, SSN, STR) \tag{1}$$

where:

PL =	Pavement life
N =	Cumulative passes of a given axle type and load
C =	Climatic zone or regional factor
SSN =	Soil support number or index
STR =	Strength of the highway section (some function of D or SN, T1, and/or T2)

where:

D =	Slab thickness (PCC pavements)
SN =	Structural number (flexible pavements)
T1 =	Thickness of asphaltic concrete layers
T2 =	Thickness of the base

If values are defined for the soil support index and the regional factor, equation (1) can be simplified as follows:

$$PL = f(N, STR) \tag{2}$$

For a mixed traffic stream, the effects of different axle passes can be translated into ESALs. So, if the strength of a pavement section is held constant, pavement life becomes a function of ESALs. Consequently, equation (2) may be simplified as follows.

$$PL = f(ESAL) \tag{3}$$

The life of a highway section is comprised of a sequence of cycles. Typically, pavements are rehabilitated or reconstructed prior to the full expiration of pavement life. When a pavement is replaced, the highway section enters a new phase or stage. As illustrated in Figure 3, the section is typically restored to some acceptable level of condition, from which the decay process starts all over again.

The cycles between replacement are of fundamental importance in evaluating the effects of rail-line abandonment. Intuitively, each cycle may be viewed as a discrete pavement life span in the overall existence of a highway section. The incremental heavy truck traffic generated by an abandonment can reduce the length of the cycles between resurfacing or replacement. Thus, replacement costs are incurred sooner than originally anticipated.

To recap:

1. Each pavement section has a useful life, which expires with traffic over time.
2. The useful life of a highway section may be expressed in ESALs.
3. A typical section moves through a series of pavement life cycles over its entire existence.
4. Diverted truck traffic resulting from abandonment may shorten the interval between rehabilitation or capital outlays.

"Build-Sooner" Costs

Employing the concepts of life-cycle costs introduced above, a quantifiable variable may be defined for use in highway impact analysis -- "build-sooner" cost[1].

[1]The term build-sooner cost was originally coined by Bisson, Brander, and Innes (1985) during their evaluation of the incremental effects of heavy truck traffic on New Brunswick highways. On page 10 they write: "Build-sooner cost is related to the hypothesis that loading a large increment of heavy traffic onto a link will cause two conditions to evolve. First, pavement life cycles are likely to become shorter, and, second, future capacity improvements will be needed sooner."

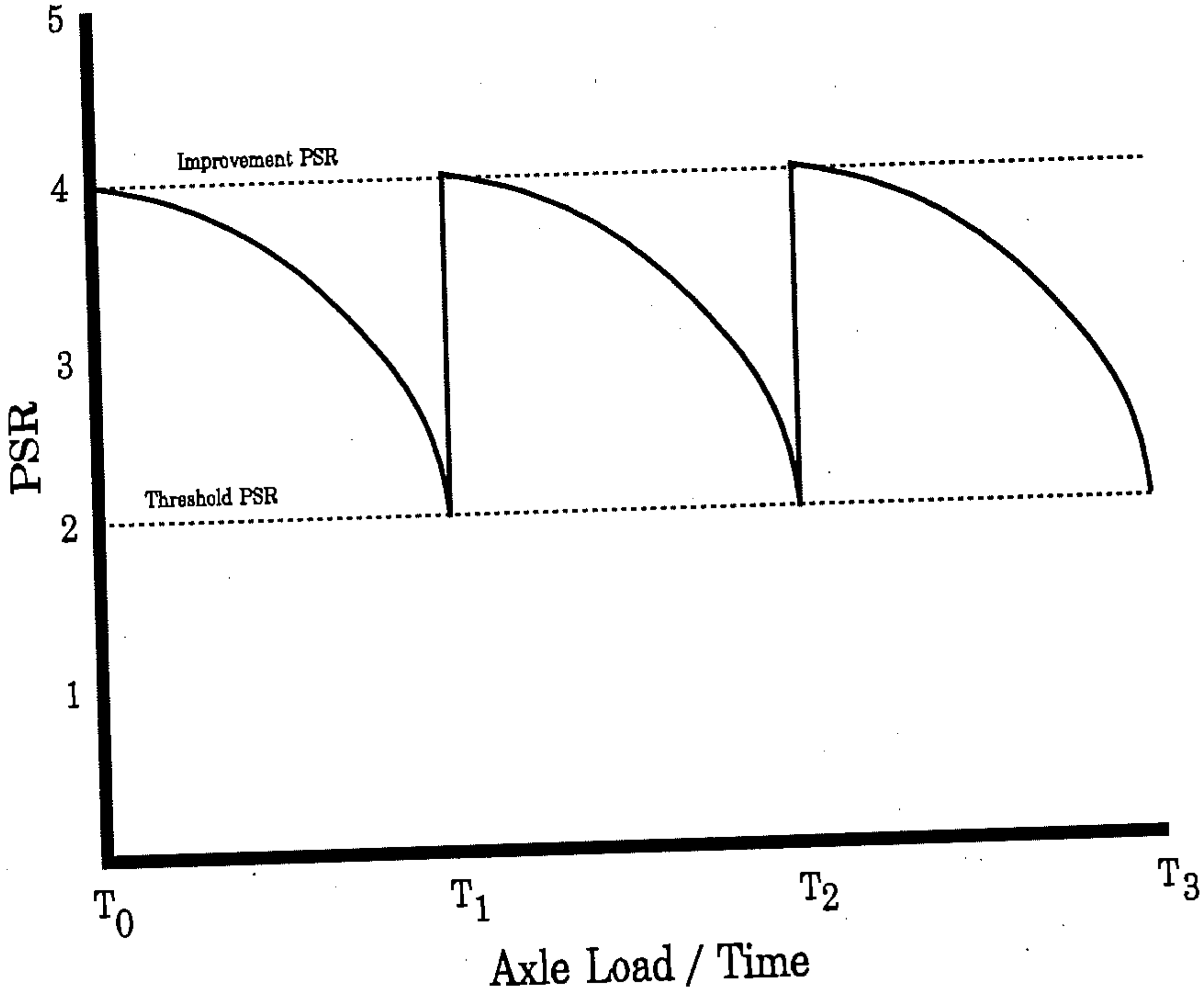


FIGURE 3. Pavement Replacement Cycles

PSR	-	Pavement Serviceability Rating
Improvement PSR	-	The condition rating of a newly built or replaced pavement.
Threshold PSR	-	The pavement condition rating at which replacement activities are triggered.

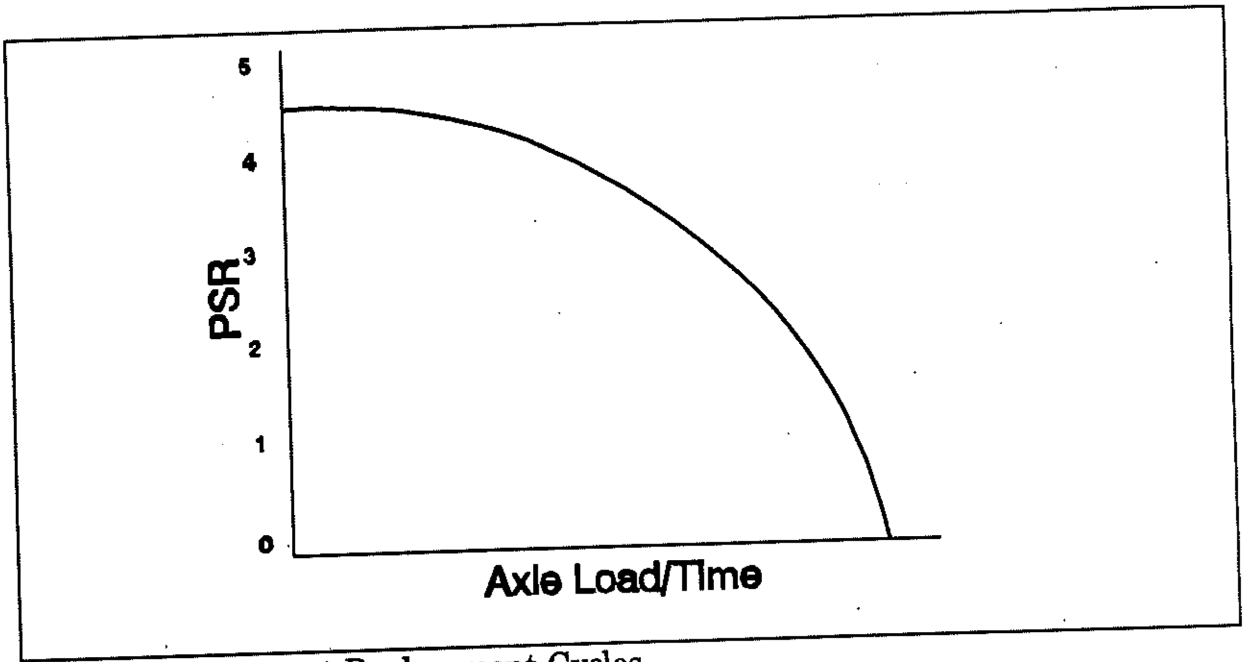


Figure 2 Pavement Replacement Cycles

Build-sooner costs constitute the incremental highway impacts of increased heavy truck traffic, arising from the timing of future replacement activities. More specifically, build-sooner costs are concerned with the shortening of replacement cycles as illustrated in Figure 4.

The logic of Figure 4 is as follows. Over the life of a highway section, the pavement is replaced periodically when the PSR or serviceability reaches some threshold or trigger level (e.g., 2.0). Upon restoration, the section is replaced essentially as before, and the condition rating is returned to its previous level (e.g., 4.2). This is called the improvement PSR, or PSR_I. Assume that in Stage 1 of the section's life, a significant increment of heavy truck traffic is added to the traffic stream. The baseline pavement deterioration curve P_{1a} is shifted to the left in response. This shift (represented by curve P_{1b}) reflects the accelerated rate of decay attributable to the new traffic stream. Build-Sooner Period 1 (BSP_1) may be thought of as the reduction in pavement life in Stage 1 due to incremental traffic.

A fundamental concept in the economic analysis of highways is the time value of money. Money has a different value to highway officials, users, and taxpayers over time. If given a free choice, everyone would prefer to receive a dollar today rather than 5 years from now; ceteris paribus. The same is true for capital outlays. Highway officials, given a free choice, would prefer to spend a dollar on highway improvements five years from now rather than today; ceteris paribus[2].

Differences in the value of money over time are accounted for by expressing all future outflows (or inflows) in present dollars. The present value of a dollar ten years in the future is calculated by "discounting" the dollar to reflect the fact that highway officials and users value it less than a dollar available today. Discount rates for transportation analysis are typically based on the opportunity

---

[2]This is only rational behavior. The retention of the dollar(s), all things being equal, provides highway officials with greater management flexibility, and allows funds to be used for some competing, alternative purpose. This preference, it should be noted, is independent of inflation.

cost of public sector capital minus inflationary expectations. Such a rate is referred to as a "real" interest or discount rate. A real discount rate of .045 (which was developed by the Federal Railroad Administration) has been used in this analysis. This is the same discount rate currently used by the Nebraska Department of Roads (DOR) in all rail assistance projects.

Returning to the concept of build-sooner cost, if the capital outlays incurred at the end of the baseline replacement cycle (P_{1a}) and the altered replacement cycle (P_{1b}) are both discounted to present value, then the build-sooner costs in Stage 1 assume a real monetary value. They are equal to the difference between the present value (PV) of the capital outlay which would have occurred at the end of the baseline replacement cycle, and the PV of the outlay which now occurs at the end of the altered replacement cycle. If acted out over stages 2, 3, and so forth, the accumulated difference in present value represents the build-sooner cost associated with a particular increment of heavy traffic over the life of a highway section.

The present value of a future sum accruing at time "n" is given by:

$$PV = \frac{FS_n}{(1 + r)^n} \tag{4}$$

where:

PV =	Present value of a future sum
FS_n =	Future sum accruing at year "n"
r =	Rate of interest or discount rate

As an illustration, consider the following hypothetical case. The replacement cycle for a principal rural arterial extends for 20 years under normal traffic conditions. Under an impact scenario, the cycle is reduced to 15 years. As a result, expenditures are encountered 5 years earlier than originally anticipated.

Assume that the replacement cost per mile is $288,000 and that the discount rate (r) is 10 percent. Using equation (4), the present value of replacement expenditures for a one-mile section of highway 15 years in the future is approximately $69,000. In contrast, the present value of the same expenditure 20 years in the future is $43,000. The build-sooner cost (the difference between the two) amounts to $26,000.

To recap, the class of impacts known as build-sooner costs:

1. Represent the reductions in pavement life-cycles attributable to incremental (diverted) truck traffic;

2. Are concerned with the timing of future monetary outlays;

3. Are premised on the time value of money; and

4. Are expressed as the difference in the present value of the discounted capital outlays between the baseline and the altered traffic streams.

Before proceeding, two important concepts should be noted about build-sooner costs: (1) they reflect only the time value of money, and (2) they primarily affect the transportation agency. Build-sooner costs say little or nothing about who is consuming pavement capacity and whether their contribution (in user fees) is sufficient to cover the resource costs. At first glance, this may appear to be a rather academic question. However, it has a real impact on societal welfare and the distribution of income among groups in society.

Net Resource Costs

As previously illustrated, each highway section has an expected life (in terms of ESALs). Each truck trip consumes a portion of that life, and consequently a portion of the resources expended by society in the provision of highway services.

Traffic which is diverted from rail to truck not only consumes a portion of the highway capacity available to society but at the same time generates new user revenues. If the incremental revenues generated from the diverted traffic (e.g. vehicle registration fees and motor fuel taxes) are equal to the incremental highway costs, then other highway users and taxpayers are no worse-off than before (from a highway infrastructure perspective). Furthermore, if the incremental revenues exceed the highway costs, then there has been a net gain to other highway users and to society in general. Consequently, any excess of new highway revenues (over and above the resource costs) should be credited against the build-sooner costs. In essence, even though the diverted traffic stream is creating a cost to the Department of Roads (as a result of the time value of money), it is also generating a surplus of new revenues. However, if the incremental revenues do not cover the additional resource costs, then other highway users (and society in general) will have been made worse-off by the abandonment.

When incremental highway revenues fail to recover the incremental highway costs, several long-run consequences may result (none of which are really favorable).

1. Highway funds may have to be diverted from an alternative use to cover the shortfall in replacement needs,

2. New highway revenues may have to be generated through new user fees or taxes,

3. The level of highway service may permanently decline.

As the life span of a highway section is shortened, it may have to be moved forward on the Department of Roads' priority list. Thus, over a multi-year planning period, the DOR may have to divert highway funds from some alternative use in order to maintain the affected highway at the same level of serviceability for the same design period as before (e.g. 20 years).

Since highway funds are limited by budgetary constraints and by the propensity of highway users to endure new taxes, they must be thought of as scarce funds. Scarce resources have an opportunity cost associated with their use. The opportunity cost is the value of the other miles of highway in the state that could have been resurfaced or replaced if the funds had not been needed for the impacted highways. Alternatively, opportunity costs may be thought of as the value of the benefits that would have accrued to other highway users elsewhere in the state had the funds not been diverted to the impact region.

In the short-run, existing highway funds may have already been obligated through multi-year capital programs and budgets, or the sum of all projected statewide needs may exceed the pool of existing revenues. In either event, new highway revenues may be needed.

New highway user fees are frequently portrayed as "taxes" by their opponents, and thus have a limited chance of implementation. Even if additional user fees are implemented based on existing motor fuel tax relationships, a cross-subsidy may occur. That is, operators of passenger cars, vans, and light trucks may assume responsibility for a portion of the incremental costs even though they did not contribute (directly) to the additional highway needs. In essence, when a shortfall in highway revenues occurs, someone pays for it; if not the trucker, then other highway users; if not other highway users, then the general taxpayer.

If existing revenues are not diverted to the impacted section, or if new revenues are not generated, the level of service provided by the highway may decline. Highway level of service encompasses two major elements which are relevant to this analysis: (1) pavement performance, and (2) capacity. Pavement performance refers to capability of a highway section to provide a safe, comfortable, and economical ride at or close to the design speed. As pavement performance declines, highway user costs increase. Surface irregularities and roughness (such as rutting and cracking) typically grow in frequency and magnitude as maintenance and resurfacing activities diminish. As a result, the vibrations and oscillations of a vehicle's frame and parts increase. These forces tend to increase normal maintenance costs for the life of the vehicle. In addition, poor pavement performance reduces the life expectancy of vehicles and hastens their replacement.

Pavement roughness and irregularities can result in increased vertical and lateral motion of a vehicle along its path of movement. Vertical and lateral motions tend to increase both wind and rolling resistance, requiring more fuel to traverse a given distance at a particular speed.

Highway users may react to poor pavement performance in several ways. As the discomfort associated with rougher rides mounts, travelers may reduce their operating speeds. To the extent that speeds are significantly reduced below the legal level, highway users will face higher opportunity costs.[3]

User costs may also rise due to capacity constraints. Each highway section has a throughput capacity (in terms of vehicles per lane per hour) which is a function of the design speed. As the ratio of existing to maximum utilization increases, vehicle speeds decline. When they do, fuel costs and air pollution tend to increase. Furthermore, travelers incur the costs associated with lost time (as in the case of poor pavement performance).

Capacity-related costs are typically not a major outgrowth of diverted rail traffic in rural areas (since the ratio of existing to potential capacity is generally low). However, the design and actual operating speeds on low-volume highways can be significantly lower than on interstate highways. So, there may be instances where capacity-related costs result from incremental heavy truck traffic in non-metropolitan areas. However, they are not addressed in this analysis.

To recap:

- The incremental revenues generated by heavy truck traffic on low-volume roads may not cover the incremental pavement costs
- If a shortfall occurs, funds may have to be diverted from an alternative use, or new user fees and taxes will have to be implemented
- The ability of the transportation agency to adjust user fees or develop new sources of highway funds is constrained by broader sociopolitical trends and values

---

[3]Each highway user has alternative uses for the time spent in a vehicle (whether it be leisure or income-generating uses). Thus, each highway user has an opportunity cost associated with his or her travel time. Consequently, as trip times increase, so do user opportunity costs.

- If funds are constrained and the diversion of monies (or new user fees) is not practical, then the level of highway services may decline

- A decline in highway serviceability may lead to increased user costs for repairs, replacement, fuel, and lost time.

Before discussing the highway deterioration models, a major point regarding the scope of the impacts flowing from rail-line abandonments should be noted. Most abandonments occur in rural regions. In the short-run, highway funds are somewhat segregated and maintained by environment (urban vs. rural) and by functional class of highway. However, in the long-run, significant abandonments or traffic diversions may divert highway funds to rural regions or result in general user fees hikes. Thus, in the long-run, all highway users tend to be affected by a rail-line abandonment or traffic diversion *regardless of location*, even urban residents. In essence, the impacts of rail-line abandonment can be statewide in scope.

PAVEMENT DETERIORATION MODELS

Pavements deteriorate through use and natural (environmental) decay. Although the two forces clearly interact, they are assumed to be independent (for purposes of this analysis). Thus, in order to model pavement deterioration, two classes of models are introduced: (1) damage models and (2) decay models. The purpose of the decay model is to simulate the decline in pavement serviceability resulting from climatic and natural forces in the absence of significant traffic levels. The purpose of the damage model is to predict the decline in serviceability resulting from axle passes.

In this analysis, both classes of models have been applied simultaneously to the same section. When the present serviceability rating (PSR) of a section reaches a trigger level, either a resurfacing or reconstruction activity is simulated. Sometimes the activity is triggered by natural decay processes rather than by traffic. This happens on lightly trafficked sections. However, in many instances, the replacement activity is triggered by traffic (e.g. the damage model).

Which model triggers the simulated activity is of no concern to the calculation of build-sooner costs. Build-sooner costs are computed by comparing a base case (reflecting existing traffic levels) to an impact scenario (reflecting the incremental traffic). If the decay model triggers the activity, then the time of the simulated replacement activity under the base case and the impact scenario will be identical. Thus, the build-sooner costs will be zero. On the other hand, if the damage model triggers a resurfacing or reconstruction act, then the time at which the activity occurs will be shifted forward. Consequently, the build-sooner costs (in this instance) will be positive.

Net resource costs must be handled differently than the build sooner costs. The deterioration of any pavement is partly a function of natural decay and environmental forces. So clearly, not all of the responsibility for a resurfacing or reconstruction event can be allocated to traffic. Logically, the *accelerated* decline in pavement serviceability is the only component of resource costs that can be allocated to truck traffic.

Suppose that the damage model predicts a resurfacing event in 2011. Further suppose that the decay model predicts a decline in PSR from 4.5 to 3.5 over this period, while the damage model predicts a decline from 4.5 to 3.0 (the optimal resurfacing PSR). In essence, the stand-alone decay model has predicted that the serviceability of the highway section will decline by 1/3 regardless of the traffic level. This portion of the consumption of pavement life cannot be attributed to traffic. So, it must be removed from the replacement cost base which is allocated to highway users.

The computational procedure for achieving this objective is as follows. When an activity is simulated, the total decline in PSR is estimated (1.5 in this instance). The decline in PSR due to environmental decay (EPSR) is also calculated (1.0 in this case). The proportion of PSR loss attributable to traffic is then computed as follows:

$$TPSR = 1.0 - (\Delta ESPR/\Delta PSR)$$

where:

TPSR = Proportion of PSR loss due to traffic

EPSR = Loss in PSR due to environmental decay

PSR = Total loss in PSR

Continuing this example, suppose that the cost per mile to resurface the highway section in question is $250,000. The proportion of this cost allocated to traffic is .33 or $75,000. The remainder is not allocated to any group, but is assumed to constitute the base-case cost to society of providing the highway capacity.

The Marginal Cost of an Axle Pass

Recall from Figure 2 (and related discussion) that the marginal cost of an axle pass of a given type and load will vary with the age and serviceability of a highway section. Due to the concave nature of the damage function (Figure 2), the time at which the incremental traffic is introduced into the traffic stream will determine (in part) the extent to which the current replacement cycle is shortened.

The manner in which the marginal cost (MC) of an axle pass is determined for vehicles of different axle configurations and loads involves the concept of equivalent single axle loads (ESALs). For the reference axle, the MC at any point on the decay curve is given by the derivative of pavement serviceability with respect to cumulative axle passes. For axles other than the reference axle, an equivalent rate of damage is determined by converting raw axle passes to ESALs.

The AASHTO axle equivalency formulas for single and tandem axles are presented later in the report. The example discussed in the following paragraph uses the AASHTO equations to illustrate the effects of axle passes on pavement damage at different serviceability levels.

Assume that the 16,000 single axle is the axle of interest and that the terminal serviceability of the impacted highway is 2.0. Table 1 illustrates the change in ESALs resulting from a single axle pass at different PSR's as the pavement serviceability rating declines from 4.0 to 2.1.

TABLE 1. CHANGE IN ESALs WITH DECLINE IN PSR FOR A 16,000 POUND SINGLE AXLE

Pavement Serviceability Rating	ESALs
4.0	.47
2.5	.55
2.1	.79

As Table 1 illustrates, the marginal cost of an axle pass (expressed in ESALs) increases significantly with a decline in serviceability. Therefore, the incremental cost of a particular class of heavy truck traffic (such as diverted rail traffic) will be at its greatest on an old, deteriorated highway. This has some important implications for Build-Sooner Period # 1. Unless the section has been replaced recently, the initial consumption of pavement life during the present cycle will occur at a relatively rapid pace. Consequently, the reaction time or planning horizon for the worst-case highways may be limited.

PAVEMENT DAMAGE MODELS

The purpose of this section of the report is to discuss the theory behind the pavement damage models, and to introduce and evaluate some of the major pavement damage functions in use today.

Pavement damage analysis is really the flip-side of pavement design. Once the pavement is designed for a given axle loading and time period, the damage model predicts how that life will be consumed. The design traffic inputs are based on forecasts which usually do not reflect predicted abandonments and traffic diversions. So, the job of the damage model is not only to predict how the pavement will deteriorate under existing or base-line traffic levels, but how it will deteriorate under altered traffic conditions.

Because the study focuses on *incremental* impacts or costs, the selection of a damage model is probably less critical than for pavement design. This does not mean that absolute accuracy is not important (because it is). However, it is equally important that the model address a wide array of factors (such as tire types and pressures) typically not addressed by design models, and that it predict reasonable and consistent results across a range of conditions.

Any of the models described in this section could have been used in the study. However, as will be noted later, some of the models predict extremely high or low ESAL lives for pavements at the lower and upper end of the structural range, and were therefore discarded as potential models.

This section begins with the presentation of some general background concepts in pavement damage analysis. The discussion will cover some familiar ground for many readers. However, it sets the stage for the selected damage function and adjustments described later in the analysis.

Pavement Damage Functions: Background

Figure 2, it will be recalled, presented a theoretical pavement deterioration curve in which the pavement serviceability rating declined with axle passes over time. This general relationship is expressed by equation (5):

$$g = \left(\frac{N}{\tau}\right)^{\beta} \tag{5}$$

where:

g = an index of damage or deterioration

N = the number of passes of an axle group of specified weight and configuration (e.g. the 18-kip single axle)

τ = the number of axle passes at which the section reaches failure

ß = a shape factor

At any time between construction (or replacement) and pavement failure, the value of g (the damage index) will range between 0.0 and 1.0. When N equals zero for a newly-constructed or rehabilitated section, g equals zero. On the other hand, when N (the number of cumulative axle passes) equals the life of a highway section (τ), g equals 1.0.

There are several ways to model the deterioration of pavements and the decision to rehabilitate or reconstruct. A "distress approach" may be taken in which the occurrence of specific distresses (such as rutting or fatigue cracking) is modeled. In this approach, a damage function is developed for each distress, and the decision to replace a pavement is modeled collectively from the occurrence of individual distresses.[4]

The distress approach is preferable for highway cost allocation because different axle weights have different effects on pavement life within the context of different distresses. However, modeling individual distresses requires considerable data and is not practical for use in this study.

---

[4]In this approach, the relative contribution of each distress in terms of the decision to rehabilitate is determined empirically. For example, rutting may account for 14 percent of the decision to replace a pavement. Consequently, 14 percent of the cost of replacement is assigned to rutting. For a detailed discussion of this approach and the development of damage functions for individual distresses see: Rauhut, J.B., R.L. Lytton, and M.I. Darter. Pavement Damage Functions for Cost Allocation, FHWA Report No.: FHWA/RD-841018, Washington, D.C., 1984.

Alternatively, the traditional approach, which has been taken in pavement deterioration analysis, is to model the decline in pavement serviceability rating. A pavement serviceability rating (PSR or PSI) is a composite index which reflects the general serviceability of pavements at the time of evaluation. The verbal rating scheme used in determining the PSR (Figure 5), considers the smoothness of the ride as well as the extent of rutting and other distresses. Thus by modeling the decline in PSR, one is to a certain extent modeling the occurrence of individual distresses as well.

To return to the general damage function presented earlier, if the ratio of the decline in pavement serviceability relative to the total capacity of a highway section is used to represent the damage index, then equation (18) may be rewritten as follows:

$$\frac{P_i - P}{P_i - P_t} = \left(\frac{N}{\tau}\right)^{\beta} \qquad (6)$$

where:

P_i = Initial pavement serviceability rating

P_t = Terminal pavement serviceability rating

P = Current or present serviceability rating

The term "P_i - P" on the left-hand side of the equation represents the decline in pavement serviceability rating from the time the highway was initially constructed (or replaced) until the present. The numerator in the expression (P_i - P_t) represents the total decline in pavement serviceability which is possible from the time the pavement is built (or replaced) until it reaches failure (terminal serviceability). Intuitively, equation (6) is saying that the deterioration of a highway section at any time can be measured by a damage index which represents the proportion of the total capacity or pavement life of a section which has been consumed to date.

	Verbal Rating	Description
5	Very Good	Only new (or nearly new) pavements are likely to be smooth enough and sufficiently free of cracks and patches to qualify for this category. All pavements constructed or resurfaced recently should be rated very good.
4	Good	Pavements in this category, although not quite as smooth as those described above, give first-class ride and exhibit few, if any visible signs of surface deterioration. Flexible pavements may be beginning to show evidence of rutting and fine random cracks. Rigid pavements may be beginning to show evidence of slight surface deterioration, such as minor cracks and spalling.
3	Fair	The riding qualities of pavements in this category are noticeably inferior to those of new pavements, and may be barely tolerable for high-speed traffic. Surface defects of flexible pavements may include rutting, map cracking, and more or less extensive patching. Rigid pavements in this group may have a few joint failures, faulting and cracking, and some pumping.
2	Poor	Pavements that have deteriorated to such an extent that they are in need of resurfacing.
1	Very Poor	Pavements which are in an extremely deteriorated condition and may even need complete reconstruction.
0		

FIGURE 5. Present Serviceability Rating (PSR)

Source: U.S. DOT, Status of the Nation's Highways, July, 1983.

In an earlier study, Tolliver (1989) conducted a review of literature to identify existing damage models[5]. Altogether, five major pavement damage models were scrutinized, including:

1. The AASHO damage function,
2. The HPMS deterioration model,
3. The revised AASHTO pavement design equation,
4. The FHWA pavement damage model (the Rauhut model), and
5. The revised FHWA model.

The results of the evaluation are presented at the end of this section. But first, each model is briefly introduced, starting with the original AASHO model. The examples and equations presented in this section deal with flexible pavements. However, each model also includes a rigid pavement damage function.

The AASHO Damage Function

Perhaps the best known pavement deterioration function is the one developed by the American Association of State Highway Officials (AASHO). The AASHO damage model is based on the results of a road test conducted in Ottawa, Illinois between November, 1958 and November, 1960[6]. Although the AASHO model is not used in this study, some of the fundamental relationships and variables are employed in the damage function.

---

[5]See: The Impacts of Grain Subterminals on Rural Highways, Denver Tolliver, a published dissertation, Virginia Polytechnic Institute, 1989.

[6]Six test loops were constructed in Ottawa over which 110 vehicles operated between six and seven days per week (except in spring thaw). Altogether, the vehicles applied 1.14 million axle loads to the test sections over the duration of the project. Tractor/semi-trailer combinations operated over the four largest test loops. To control for axle configuration, both single- and tandem-axle combination trucks were used. The load levels on the four loops were: 14, 18, and 22 kips respectively for single-axle vehicles, and 18, 26, 34, and 38 kips for tandem-axle trucks.

Variables and Relationships

In order to analyze pavement decay, AASHO researchers employed a serviceability measure known as the Present Serviceability Index (PSI). The PSI is a composite index which reflects the extent to which certain physical distresses affect the serviceability of a pavement section.

Four types of distresses were considered in the calculation of the PSI for flexible pavements during the road test:

1. cracking,
2. patching,
3. slope variance or longitudinal roughness, and
4. rut depth.

The extent to which each of these distresses altered the PSI for a given pavement section was measured by the following formula:

$$PSI = 5.03 - 1.91\,LOG_{10}(1 + SV) - 0.01\,(c + p)^{0.5} - 1.3\,RD^{2} \qquad (7)$$

where:

SV =	slope variance
RD =	rut depth
c =	extent of cracking
p =	extent of patching

Using the PSI, AASHO researchers were able to relate accumulated traffic and axle loads to changes in pavement serviceability. Each highway section at Ottawa was evaluated at two week intervals throughout the duration of the test. From the occurrence of distress (or lack thereof) the current PSI was calculated. Given the current PSI and the cumulative axle loads, the value of the damage index (g) was calculated (for each test section) based on the original and terminal

PSI[7]. The unknown parameters in the equation (ß and τ) were estimated through regression analysis. The form of the regression equation for each parameter is given by equations (8) and (9) respectively.

$$LOG_{10}(\tau) = 5.93 + 9.36\,LOG_{10}(SN + 1) - 4.79\,LOG_{10}(L1 + L2) + 4.33\,LOG_{10}(L2) \tag{8}$$

$$\beta = 0.40 + \frac{0.081\,(L1 + L2)^{3.23}}{(SN + 1)^{5.19}\,L2^{3.23}} \tag{9}$$

where:

SSN =	AASHO soil support index
R =	Regional factor
L1 =	Axle load (in kips or thousand pounds)
L2 =	Axle type (where "1"= single axle and "2"= tandem axle)

In pavement damage analysis, the 18,000 pound single axle is typically used as a reference axle for developing traffic equivalence factors. Substituting a value of "18" for L1 and "1" for L2 in equation (8) yields a condensed function for τ which is specific to the reference axle (referred to as τ_{18}).

[7]AASHO officials found, somewhat surprisingly, that the PSI of a new section which had never been exposed to traffic was 4.2. In other words, none of the sections were ever rated at their theoretical maximum of 5.0. The terminal PSI for pavements at the road test was determined to be 1.5. This figure represents actual pavement failure; that is the point at which the serviceability of the section is such that safe and reasonably economic transport is no longer possible. True pavement failure is different from effective terminal serviceability, in which a threshold or trigger PSI is established (e.g. 2.5) which, when reached, results in the decision to rehabilitate.

$$LOG_{10}(\tau_{18}) = 9.36\, LOG_{10}(SN + 1) - 0.2 \qquad (10)$$

A similar substitution into equation (9) yields ß for the reference axle ($ß_{18}$).

$$\beta_{18} = 0.40 + \frac{1094}{(SN + 1)^{5.19}} \qquad (11)$$

From equation (6) it will be recalled that τ represents the number of axle passes of a given configuration and load at which the damage index equals 1.0. Consequently, τ may be thought of (at least in theory) as the life of a pavement in axle passes. It follows then that τ_{18} represents the theoretical life of a pavement in 18,000 pound single-axle passes or ESALs.

While equation (10) represents the life of a pavement in theory, the effective or actual life of a section may be much shorter. Equation (10) assumes that the pavement will be allowed to deteriorate until it reaches a terminal serviceability of 1.5 (at which time safe and economic transport over the section will be impractical).[8] In actuality, most highway sections are replaced or upgraded much earlier. Federal Aid Highways (which include the Interstate and much of the principal arterial systems) are typically replaced when the PSR reaches 2.5. Other arterials, collectors, and local roads are usually rehabilitated when the PSR declines to 2.0. In these instances, equation (12) may be used in lieu of equation (10) to predict the **effective** ESAL life of a highway section. The terminal serviceability level in the equation (P_t) may be set at either 2.5 or 2.0 to reflect the expected replacement cycle for a given class of highway.

$$LOG_{10}(ESAL) = 9.36\, LOG_{10}(SN + 1) - 0.2 + \frac{G}{\beta} \qquad (12)$$

[8]At a terminal serviceability of 1.5, user costs will rise dramatically and the quality of the ride will be at an unacceptable level.

where:

$$LOG_{10}(ESAL) = \text{Log of effective ESAL life}$$

$$G = LOG_{10}\left(\frac{4.2 - P_t}{2.7}\right) \quad (13)$$

Problems and Qualifications

The AASHO damage function has been widely criticized by practitioners and academics alike[9]. The major criticisms are:

1. Only one climatic zone was evaluated at the road test;
2. All test sections had essentially the same type of soil;
3. Only one level of load was applied to a test section for a given axle type (thus the effects of mixed traffic and axle loads were not analyzed);
4. The range of axle loads applied to the test sections was small;
5. Because of accelerated testing, the effects of the environment over a relatively long period of time were not accounted for.

But for all of its criticisms, the AASHO model has been widely used (Van Til, 1972). To its credit, a recent study by Wang (1982) found that the decay of test sections at the Pennsylvania Transportation Research Facility tended to follow the AASHO power function shown in Figure 2. The primary benefit of the AASHO model for this study is in highlighting the fundamental relationships and variables found in most pavement damage models.

---

[9]An implicit assumption of the AASHO Road Test is that the decline in pavement serviceability (PSI) is due entirely to the effects of traffic (axle loads) upon pavements. A recent critique by Coree and White (1988) suggests that the initiation of significant deterioration in the test sections at Ottawa was linked to spring-thaw, a fact which critically affected the performance of test sections in subsequent evaluation periods. In addition, the flexible pavement layer coefficients used in the calculation of the structural number were criticized by Coree and White as "secondary regression coefficients with no physical significance as indicators of pavement strength".

The HPMS Damage Function

The Highway Performance Monitoring System (HPMS) employs a modified AASHO damage function. The original AASHO function has been modified in two major ways.

First, HPMS uses the PSR instead of the PSI used at the road test. The difference is that the PSR entails a verbal rating scheme (as shown in Figure 5) whereas the PSI is derived from the mathematical relationship shown in equation (7). Also in HPMS, the original or design serviceability rating is set at its theoretical maximum (5.0) instead of at 4.2. This has the effect of increasing the range over which the pavement serviceability index is allowed to decline.

The second major modification to the AASHO equation (and perhaps the most important) concerns the rate of decay of flexible pavement with ESALs. In order to illustrate this change, the HPMS flexible pavement damage function is introduced in equation (14).[10]

$$LOG_{10}(ESAL) = 9.36\,LOG_{10}\left(SN + \sqrt{\frac{6}{SN}}\right) - 0.2 + \frac{G}{\beta} \qquad (14)$$

where:

$$G = LOG_{10}\frac{P_i - PSR}{\Delta PSR} \qquad (15)$$

$$\beta = 0.4 + \frac{1094}{\left(SN + \sqrt{\frac{6}{SN}}\right)^{5.19}} \qquad (16)$$

Note that the term "SN+1" in the AASHO equation has been replaced by the term "$(6/SN)^{0.5}$" in the HPMS function. In practice, this modification has the

[10]The term "G" represents the damage index in the HPMS function. When the PSR is set to 1.5 (terminal serviceability), the term "G/ß" becomes zero. The log of G then becomes Zero and the entire term (G/ß) resolves to zero.

effect of predicting higher ESAL life-times on highways with lower structural numbers (e.g. 2.5 or lower).

$$LOG_{10}(ESAL) = A + \frac{G}{\beta} \tag{17}$$

where:

$$A = 7.35 \times LOG(D + 1) - 0.06 \tag{18}$$

$$\beta = 1 + \frac{16240000}{(D + 1)^{8.46}} \tag{19}$$

$$G = LOG\left(\frac{5 - PSRI}{3.5}\right) \tag{20}$$

$$PSRI = \text{PSR at the beginning of the analysis year} \tag{21}$$

One of the applied problems associated with the AASHO pavement damage function is that it has been shown to exhibit poor predictive capabilities at the lower end of the range of highway structural numbers.[11] For example, on a highway section with a structural number of 2.0, equation (12) predicts on ESAL life of 16,458. On the same highway section, equation (14) predicts a pavement life of 115,011 ESALs.

The Rauhut Model

While the AASHO model has been roundly criticized, until recently a strong effort had not been made to come up with a workable alternative. In the Federal Aid Highway Act of 1978, Congress stipulated that the DOT must conduct a new highway cost allocation study and report the findings to Congress by January of 1982. As part of a set of studies funded by the FHWA, a new set of pavement damage functions was developed by Rauhut, Lytton, and Darter (1982).

[11]This observation is based on conversations with ND and WA highway engineers, and is felt to be a fairly common perception of the AASHO formula.

Background

The form of the equation relating damage to axle loads in the Rauhut model is the same as that which was shown earlier in equation (5). Damage is defined as an index ranging from 0.0 to 1.0, as a pavement moves from initial or design serviceability to terminal serviceability. Like the AASHO model, τ denotes a constant which represents the number of cumulative axle passes which accrue at terminal serviceability.[12]

In the Rauhut study, a regression model was formulated which will predict either τ or β based on the thickness of the pavement layers for a given highway section and the resilient modulus of elasticity (an indicator of soil support). The function (shown in equation 17) has the same form for either parameter. However, the values of the constants and the coefficients in the equation are different for each.

where:

$t =$ thickness of all asphaltic concrete layers (in inches);

$E_s =$ subgrade modulus of elasticity (psi).

$X_a = (B_1+B_2t+B_3t^2+E_2E_s+E_3E_s^2)$

$X_b = (C_1+C_2t+C_3t^2+G_2E_s+G_3E_s^2)$

Values for the constants and coefficients were estimated for each of four different climatic zones:

1. A wet freeze zone
2. A dry freeze zone
3. A wet no-freeze zone
4. A dry no-freeze zone.

---

[12]But unlike the AASHO function, the Rauhut model assumes a higher terminal serviceability rating (2.5). This is based on the observation that Federal Aid highways are rarely allowed to deteriorate to a serviceability rating of 2.0 or lower.

Calibration

The flexible pavement damage functions developed in the Rauhut study reflect a combination of mechanistic and statistical techniques. Mechanistic models do not directly predict pavement deterioration. Instead, they simulate structural responses. The structural responses are related to pavement deterioration through means of a performance model which predicts the level of distress or loss of serviceability that occurs from wheel loadings or environmental conditions. The mechanistic-statistical modeling process is essentially as follows.

1. A mechanistic model is applied to a range of hypothetical axle loads, pavement types, and subgrade conditions in order to generate a "data base" of structural responses.

2. The **output** of the mechanistic model is used to calculate the values of the parameters in the damage function (τ and β) for various combinations of input variables.

3. The manner in which τ and β vary with changes in the independent variables in the model (e.g. pavement thickness or subgrade modulus) is determined through regression analysis on the data base of observations.

4. The formulated regression model is then used to predict the values of τ and β for any given load level, axle configuration, and soil support measure.

Generally (as a check against the reasonableness of the estimates), the distress or loss of serviceability which is predicted by the regression model is compared to observed values for sample pavement sections. In fact, the predicted results may be correlated with actual observations (if sufficient data are available) and the equations for τ and β refined to reflect real-world effects and experiences.

The major inputs to the mechanistic model in the Rauhut study consisted of: (1) the environmental region, (2) the subgrade modulus, (3) the thickness of the surface course, (4) the structural number, and (5) the load level. Within each environmental zone, 3 subgrade values were simulated. In addition, 3 different levels of surface thickness, 3 subgrade thicknesses, 3 structural numbers, and 8 different load levels were analyzed. Altogether, a total of 216 computer runs resulting from the combinations of these variables were made in each of the 4 environmental zones. In the author's words, the computer runs represented:

> ...separate, miniature versions of the AASHO Road Test in each of the four climatic regions with the important distinction that three different subgrades were used instead of one as at the AASHO Road Test.[13]

In addition to equation (17), a second regression model for τ and ß was formulated which included the thickness of the aggregate base as an independent variable.

The Revised FHWA Model

The original FHWA pavement damage model (the Rauhut Model) was updated in 1987 by Villarreal, Garcia-Diaz, and Lytton. The updated deterioration model employs an "S-shaped" decay function in lieu of the power function shown in equation (17). In addition to a revised functional form, the updated FHWA model utilized an expanded and improved data base. With these exceptions, the theory and calibration of the model are essentially the same as those described previously.

Perhaps the major enhancement (from a predictive standpoint) is the inclusion of explanatory variables in the model to account for the effects of different types of tires (bias versus radial) and variations in truck tire pressure. This modification has the potential for greatly enhancing the predictive capabilities of the model.

Model Inputs

The revised FHWA model (like the original function) can be used to predict the loss of serviceability on a given highway section caused by accumulated axle passes. However, before the model can be applied, one must specify values for three types of parameters:

1. tire characteristics and use,

---

[13]Rauhut, 1984, p. 152.

2. pavement surface thickness, and
3. subgrade support.

In terms of tire use, values must be specified for three important truck operating factors:

1. the type of tire which is used (radial versus bias).
2. the number of tires (dual or single).
3. the tire pressure (in psi).

The exact distribution of truck tire use in Nebraska is unknown. However, recent studies in Montana and North Dakota can help shed some light on typical tire-use patterns in the Plains states. In the Fall of 1984, the Montana Department of Highways conducted a truck tire survey at various sites along the interstate and arterial network. Altogether, over 2,300 tires were sampled. The major conclusions of the study were:

1. over 82% of the truck tires used in Montana consist of belted radials;
2. the average (statewide) air pressure for truck radial tires is 105 pounds;
3. the average tire pressure for bias-ply tires is 84 psi;
4. on the average, tire pressures in eastern Montana are higher than in the West, ranging between 100 and 110 psi.

In the Fall of 1984, the ND DOT also conducted a truck/tire study. The type of tire was not determined in the North Dakota study. However, sample data were compiled regarding truck tire pressures. The results of the North Dakota survey are summarized in Table 2.

TABLE 2. TRUCK TIRE PRESSURES IN NORTH DAKOTA

Truck-Type	N	Mean	Standard Deviation
CO-5AX	530	97	13.7
SU-3AX	35	92	12.7
SU-2AX	12	85	9.0

Source: Unpublished NDDOT survey data.

As Table 2 depicts, the mean tire pressure in North Dakota for combination 5 axle (CO-5AX) trucks is somewhat lower than the average in Montana. However, both estimates tend to support the same general conclusion: that truck tire pressures are considerably higher today than the 75 psi which is reflected in the AASHO damage function.

To summarize the major implications of the North Dakota and Montana studies, it may be said that: (1) truck tires (particularly on heavy trucks) consist largely of steel belted radials, and (2) the average pressure per tire on combination trucks operating in Western states is probably 100 PSI.

Model Structure and Form

Predicting the ESAL life of a flexible pavement section using the revised FHWA model is a multi-step process. First, the values of τ and β must be predicted based on the characteristics of the highway and patterns of tire use. The form of the predictive equation for either parameter is given by:

$$LOG_{10}(\tau, \beta) = (L1 + L2 + L3)^{K1} \cdot L2^{K2} \cdot L3^{K3} \cdot (L4 + 1)^{K4} \cdot T1^{A17} \cdot ES^{A18} \cdot P^{A19} - C \qquad (23)$$

where:

K1 = A1 + A2 * T1 + A3 * ES + A4 * P
K2 = A5 + A6 * T1 + A7 * ES + A8 * P
K3 = A9 + A10 * T1 + A11 * ES + A12 * p
K4 = A13 + A14 * T1 + A15 * ES + A16 * P
L3 = Tire code ("1" for one tire, "2" for dual tires)
L4 = Tire type ("1" for radial, "2" for bias)
T1 = Thickness of AC surface layer
ES = Subgrade modulus of elasticity
P = Tire inflation pressure (PSI)

Northern Nebraska is located in the dry-freeze zone. The dry-freeze zone constants and coefficients for τ and ß are shown in Table 3.

As noted previously, the revised damage function is a sigmoidal or S-shaped curve (rather than a concave function). So the form of the damage function is given by:

$$g = c\, e^{\left(\frac{\tau_{18}}{N_{18}}\right)^{\beta_{18}}} \tag{24}$$

where:

$$c = \frac{P_i - P_f}{P_i - P_t} \tag{25}$$

N_{18} = ESAL life
P_f = final terminal PSR
P_t = effective terminal PSR

TABLE 3. DRY-FREEZE ZONE COEFFICIENTS AND CONSTANTS FOR REVISED FHWA MODEL

Coefficient	τ	ß
A0	8.54580997	-0.86987349
A1	-1.92636492	0.00000000
A2	0.00000000	0.09442385
A3	0.0000090	-0.00001860
A4	-0.00087092	-0.00022683
A5	1.79275336	0.00000000
A6	0.00000000	0.10482985
A7	-0.00001170	0.00001300
A8	0.00000000	0.00000000
A9	1.85872192	0.00000000
A10	0.00000000	-0.10122395
A11	-0.00000860	0.00002340
A12	0.00000000	0.00000000
A13	-4.37832061	-0.08745997
A14	0.67225250	0.01632584
A15	0.00000930	-0.00000080
A16	0.00000000	0.00000000
A17	0.00000000	-0.84335410
A18	-0.12346038	0.63703782
A19	0.00000000	0.00000000
C	0.00000000	11.00000000

The true terminal serviceability rating (that which occurs at structural failure) is generally assumed to be 1.5, while the effective terminal serviceability rating is typically much higher (2.0-2.5). Typically, the terminal PSR (P_t) is assumed to be 2.5 for interstates and principal arterials, and 2.0 for all other highways.

In order to predict ESAL life, equation (19) must be solved for "N". Taking the natural log of the equation and manipulating the terms yields:

$$N_{18} = \frac{\tau_{18}}{\left(-\ln\frac{g}{c}\right)^{\frac{1}{\beta_{18}}}} \tag{26}$$

which can be used to predict the effective life of a flexible pavement for an assumed terminal serviceability rating.

Sensitivity to Inputs

The effects of changes in important inputs (such as tire pressure and subgrade modulus) were investigated in Tolliver (1989). The model was applied to over 30 in-place low-volume highway sections. In the test, a range of reasonable values was established for each variable. For example, the subgrade modulus was allowed to vary between 4500 and 8000 psi, while the tire pressure was permitted to range from 75 to 100 pounds.

Of the two parameters, tire pressure was found to be the most influential. Increasing the ES from 4500 to 8000 psi on a 5-inch pavement decreased the projected lives of the sections from 678,819 ESALs to 657,159, a change of only 3.2 percent. This conclusion is consistent with recent findings of the Transportation Research Board (TRB, 1989). The TRB found that the incremental costs of pavement replacement attributable to heavy axle loads was not very sensitive to changes in environmental factors (such as thermal cracking, frost heaving, and subgrade swelling)[14]. According to the TRB, incremental pavement costs vary by only 2.3 percent per ESAL when going from the best to the worst environmental zones.

What this means is that for the range of typical soil and moisture conditions found in northern Nebraska, the effects of environmental factors on the ability to forecast incremental pavement costs are quite limited. However, this finding should not be construed to mean that a natural aging or decay process does not

[14]See: Providing Access for Large Trucks, TRB Special Report 223, Washington DC, 1989, pages 305-307.

exist and should not be modeled. Rather, it means that the inclusion of resilient modulus or other environmental factors in the damage model will have limited effects of the predicted results. So, while the deterioration of highways due to the natural decay process shown in Figure 1 is modeled in the study, no interactive effects between traffic and environment are assumed to exist.

Figure 6 shows the difference in projected ESAL life for a range of surface thicknesses due to variations in tire type and pressure. In this example, the tire pressure was set at 75 pounds for bias-ply tires and 100 pounds for radials[15]. As Figure 6 depicts, the difference between the two types of tires on thinner pavements is minimal, with bias-ply tires actually yielding lower (projected) pavement lives. However, on thicker pavements, the effects of steel belted radials are quite noticeable, markedly reducing the predicted pavement life of a section. Figure 7 more clearly isolates the effects of tire pressure on pavement life, showing the projected life of a typical low-volume highway section when tire pressures are set at 75, 90, and 100 psi respectively.[16]

As the graph depicts, increasing the average tire pressure on a 5-inch pavement from 75 to 100 psi reduces the projected ESAL life by 6.25 percent. In summary, it may be said that the revised FHWA model is:

1. relatively insensitive to moderate changes in the subgrade modulus of elasticity,

2. moderately sensitive to changes in truck type pressure,

3. quite sensitive to the type of tire which is specified.

---

[15]As the Montana study illustrated, steel belted radials are usually inflated to a higher pressure than bias-ply tires.

[16]This example assumes: (1) radial tires, (2) a surface thickness of 5 inches (roughly equivalent to a SN of 2.6 in the Devils Lake region), and (3) a subgrade modulus (ES) of 4500.

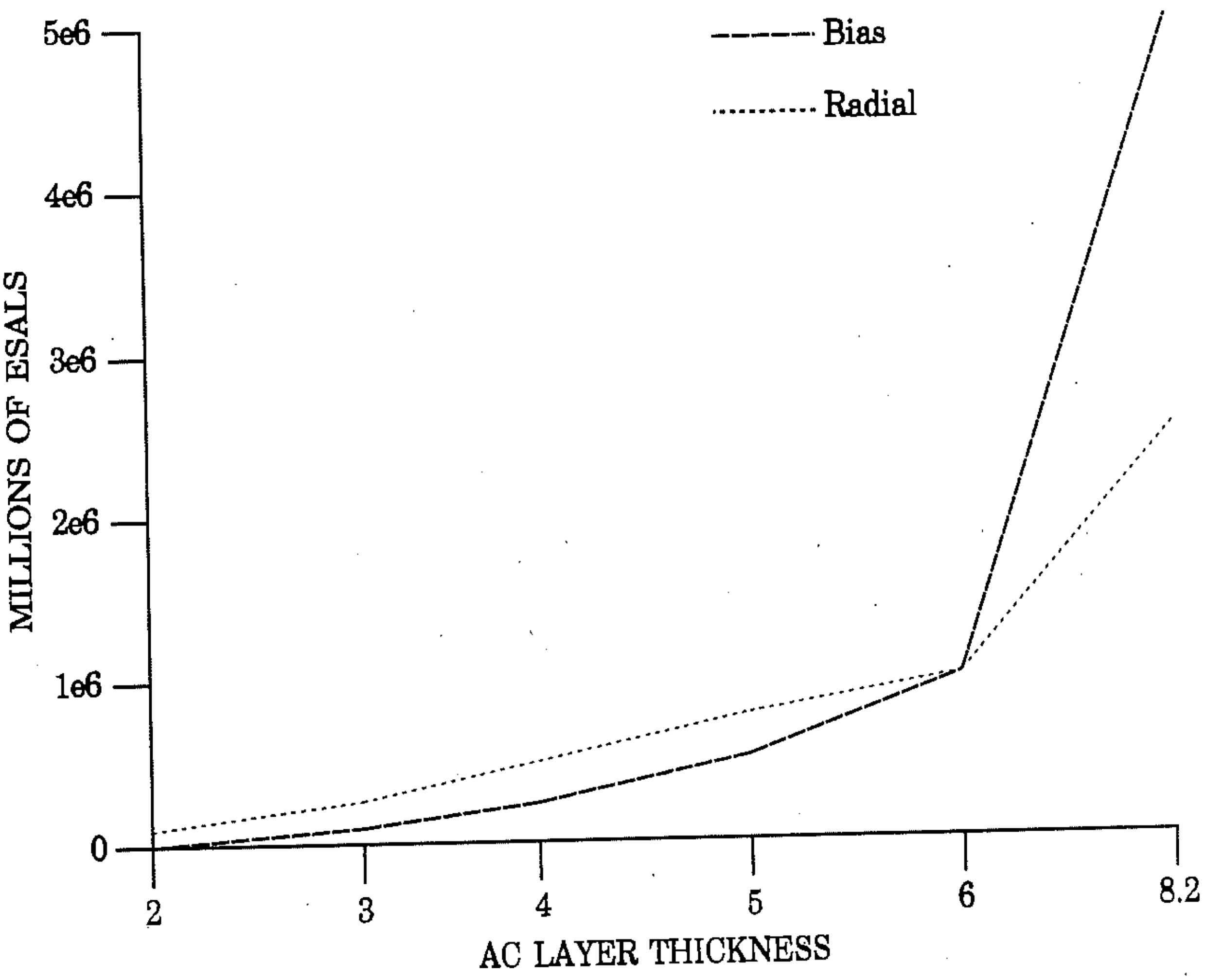


FIGURE 6. Estimated ESAL Life-Times Using Revised FHWA Model

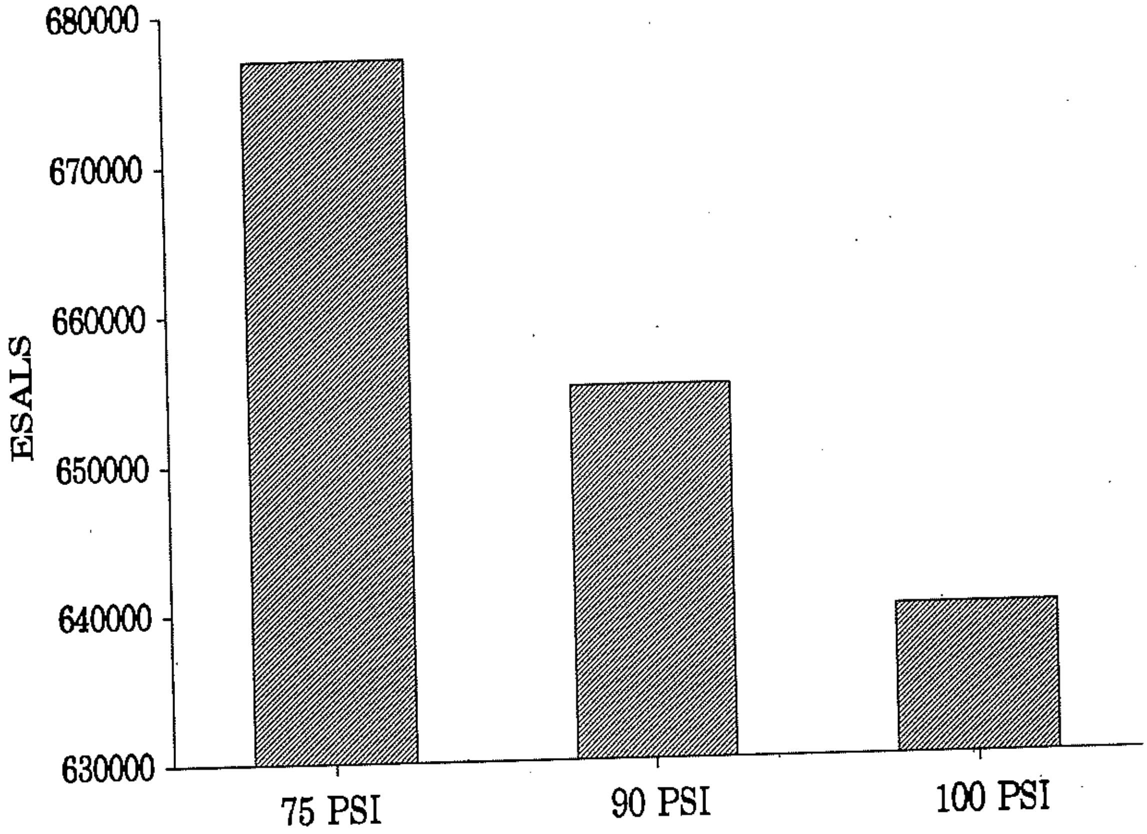


FIGURE 7. Effects of Truck Tire Pressure on Flexible Pavement Life

Evaluation of Flexible Pavement Deterioration Models

Tolliver (1989) evaluated each model by predicting the ESAL life of over 30 sample sections in central North Dakota. For each highway section, data concerning the SN, the thickness of the AC surface layers, the thickness of the aggregate base, the elastic modulus of the subgrade, and the current PSR were collected.

Reasonableness of the Estimates

The reasonableness of the estimates was assessed in three major ways. First, the ESAL lives predicted by the various models were arrayed and compared. Second, the predicted ESAL life-times were compared to national averages (by functional class of highway) developed by the FHWA (1982). And third, the results of the models were evaluated in light of the experiences and expectations of ND DOT engineers familiar with the nature and rate of pavement decay in the soil and climatic regions of the Upper Great Plains.

With respect to the first test of reasonableness, two of the models predicted very similar results over the range of structural numbers represented by the 30 test sections. These were: (1) the HPMS deterioration function and (2) the revised FHWA model[17]. Both the original AASHO formula and the revised AASHTO model predicted little or no ESAL life at the lower end of the strength range. Thus, their utility in low-volume highway impact analysis is circumspect. Furthermore, both models were quite sensitive to modest changes in the soil support variable (the SSN or the MR). The Rauhut model was particularly problematic on highway sections with moderate or high SN's, predicting extremely high ESAL lives.

Column (b) of Table 6 gives estimates of ESAL life-times developed by the FHWA for use in their 1982 highway cost allocation study. The estimates reflect the average pavement condition rating and strength of arterials, collectors, and

[17]When the revised FHWA model was set to a tire-type of "bias" and a psi of 75, it closely paralleled HPMS predicted values for pavement life.

local roads nationwide[18]. For purposes of comparison, mean values were predicted for the 30 test sections in North Dakota using the AASHO equation (column d), HPMS (column c) and the updated FHWA model.

TABLE 6. ESTIMATED ESAL LIFE OF PAVEMENTS: BY FUNCTIONAL CLASS

Functional Class (a)	FHWA Averages (b)	HPMS Predicted Values (c)	AASHO Predicted Values (c)
Arterial	1,500,000	1,762,734	422,858
Collector	400,000	88,051	5,053
Local	80,000	76,711	208

As Table 6 indicates, HPMS produces estimates which are roughly in line with the national averages (particularly on arterials and local roads). However, the AASHO model does not, predicting much lower pavement lives, especially on collectors and local roads. The revised FHWA model generates estimates which are similar to HPMS when the tire type is set to "bias" and the tire pressure is set at 75 psi. The two remaining models (the Rauhut model and the AASHTO design equation) generally produce estimates which are out-of-range when compared with the other models.

For the reasons cited above, the HPMS damage function has been used to predict ESAL life times in this study. The primary reason for using the HPMS model instead of the TTI function is that the later has its own traffic equivalence formulas. Thus, base-line ESALs computed using the AASHTO formulas would be

[18]While it cannot be contended that the attributes of North Dakota's rural highways are identical to national "averages", there should be similarities within functional classes.

inconsistent with those predicted for the incremental ESALs. However, the results of the HPMS function are adjusted to reflect (on the average) a 7 percent reduction in pavement life due to the tire characteristics of 3S2 trucks. This is probably a conservative estimate, it should be noted, as many analysts use adjustment factors between 10 and 15 percent.

TRUCK WEIGHT AND OPERATING DATA

Before incremental impact highway costs can be computed, a range of truck weight and operating factors must be specified. The purpose of this section of the report is to highlight the variables in the truck impact procedures and discuss the sources of the data.

In order to compute ESALs for the incremental traffic, average or typical truck axle weights must be specified. Table 7 shows the average tare weight and tare axle weights for combination trucks. As the table depicts, the axle weights will vary by type of vehicle rather than by type of commodity. Both grain and dry fertilizers are typically transported in dry van 3S2's. Farm machinery and lumber are transported on flat-bed trucks, while liquid fertilizer and sand or gravel require specialized types of equipment.

The data in Table 7 were developed from truck weight survey data compiled in North Dakota and in Washington[19]. So were the data in Table 8 (which depicts gross vehicle and axle weights). Table 9 shows truck variable and fixed operating unit-costs per mile. These data come from several sources including: Dooley, Wilson, and Bertram (1988), Tolliver (1988), and Northwest Economic Associates (1983). The truck unit-costs are not used directly in the highway impact study. However, they are used in the economic impact portion of an abandonment analysis.

[19]For a description of the North Dakota survey and results see Tolliver, 1989.

TABLE 7: TARE WEIGHTS AND AXLE LOADS FOR COMBINATION TRUCKS, BY TYPE OF COMMODITY (IN LBS)				
		TARE AXLE WEIGHTS		
COMMODITY	TARE WEIGHT	AXLE 1	AXLE 2	AXLE 3
Grain	26650	8890	11170	7590
Liquid Fertilizers	24000	5100	11100	7700
Dry Fertilizers	26650	8890	11170	7590
Farm Machinery	25700	5100	11900	8300
Lumber	25700	5500	11900	8300
Sand & Gravel	28700	6200	13300	9200

TABLE 8: GROSS WEIGHTS AND AXLE LOADS FOR MAJOR COMMODITIES					
			GROSS AXLE WEIGHTS		
COMMODITY	GROSS WEIGHT	NET WEIGHT	AXLE 1	AXLE 2	AXLE 3
Grain	80000	26.7	12000	34000	34000
Liquid Fertilizers	76000	26.0	11800	32600	32600
Dry Fertilizers	80000	26.0	12000	34000	34000
Farm Machinery	65300	13.5	9900	27700	27700
Lumber	46700	24.0	7100	19800	19800
Sand & Gravel	77000	26.7	11600	32200	32200

The characteristics of the diverted traffic (in terms of axle groups and weights) are limited to a few types of vehicles with known axle weights and characteristics. In contrast, the composition of the existing or base-line traffic stream is diverse and less is known about the specific characteristics of each truck-type. Consequently, the ESALs per VMT are computed for the base by multiplying the truck ADT by the average ESAL factor for specific classes of highways. Table 10 shows the current average ESAL factor for each functional highway system in Nebraska. These factors have been used in the analysis.

TABLE 9: AVERAGE ESAL FACTORS PER VMT, BY FUNCTIONAL HIGHWAY SYSTEM

FUNCTIONAL SYSTEM	RIGID ESALS PER VMT	FLEXIBLE ESALS PER VMT
Rural Principal Arterial - Interstate	1.9556	1.2366
Rural Principal Arterial - Other	1.2341	0.6931
Rural Minor Arterial	1.5076	0.8758
Rural Major Collector	0.8339	0.4592
Rural Minor Collector	0.8339	0.4592
Urban Principal Arterial - Interstate	0.9711	0.6320
Urban Other Principal Arterial	1.3260	0.8142
Urban Minor Arterial	0.6485	0.5090

As noted previously, each pavement is assumed to have a maximum feasible life, the boundary of which is set by a natural decay process. Table 10 depicts the maximum feasible pavement lives for each class of highway used in the analysis.

The values were developed by the Federal Highway Administration and have been used by the FHWA and others in previous studies.

TABLE 10: MAXIMUM FEASIBLE PAVEMENT LIVES

TYPE OF PAVEMENT	PAVEMENT SECTION		
	HEAVY	MEDIUM	LIGHT
Flexible	55	50	45
Rigid	60	55	50

INCREMENTAL REVENUES

As noted earlier, the incremental costs constitute only one side of the equation. Diverted truck traffic also generates incremental revenues in the form of highway user fees (motor vehicle registration fees and fuel taxes). The purpose of this section of the report is to describe the methods and procedures used to estimate incremental highway revenues.

The motor fuel tax in Nebraska is currently 26.67 cents per gallon. At an average consumption rate of five miles per gallon, each incremental truck VMT generates approximately 10.7 cents in new revenue. Furthermore, the mean motor vehicle registration fee in Nebraska in 1989 was $816. Thus, for every truck required to handle the diverted traffic (in terms of annual capacity), $816 in incremental revenues are generated.

From the above discussion, it is apparent that the number of (equivalent) trucks (or truck capacity) must be computed before the incremental revenues can be estimated. The truck capacity required to transport the diverted traffic depends primarily on two factors: (1) the diverted volume (in terms of equivalent truck loads), and (2) the average time required per round trip. The round trip time, in turn, depends on the mileage, the average operating speed, layovers, and loading and unloading times.

The round trip time is computed as follows. The average operating speed on non-interstate rural highways (50 MPH) is divided by the round trip distance. This yields the theoretical running time for a team-driver operation. However, most grain truckers are owner-operators or small firms. A single driver typically accomplishes the over-the-road service for a given movement. To account for mandatory layovers, the theoretical running time is divided by ten (the maximum allowable hours of continuous operation). After ten hours of operation, each driver must (presumably) rest a minimum of eight hours before commencing further operations. Thus, to simulate layovers, eight hours have been added to each ten-hour interval. The sum of the estimated road time plus layovers constitutes the running portion of the round-trip time.

The average time at origin and destination cannot be predicted as easily from operation models. The time required to load a 3S2 truck at origin has been estimated from data obtained during the Nebraska Department of Roads grain elevator survey. The average time spent at destination has been obtained from a more extensive survey of grain truckers conducted at the Upper Great Plains Transportation Institute.

Once the trip time is computed, three steps remain in the calculation of incremental registration fees. First, the number of active-truck-days-per-year (280) is divided by the average trip time to determine the average number of trips per year that each truck serving the elevators can make. Second, the incremental truck capacity (the number of equivalent trucks required) is computed by dividing the diverted truck loads by the average trips per year. Third, the number of equivalent trucks is multiplied by the average vehicle registration fee to estimate the additional revenues generated (from registration fees).

Motor fuel taxes are more easily estimated. They are simply a function of the incremental VMT. The incremental VMT, in turn, are a function of the average trip distance and the number of diverted truck loads.

The purpose of this report has been to document in as much detail as possible the procedures used in the highway impact assessment. Although voluminous in nature, the documentation is still somewhat sparse. However, this should be interpreted as a draft document which may be expanded for the final project report.

TABLE 11. BUILD-SOONER COSTS OF BASELINE RAIL TRAFFIC (Millions of Dollars)			
	Present Value of Resurfacing or Reconstruction Events		
Budgetary Scenario	Base Case	Impact Scenario	Build-Sooner Costs
0	$274.084	$287.093	$13.009
1	$379.653	$415.261	$35.608
2	$410.826	$463.984	$52.435

TABLE 12. BUILD-SOONER COSTS ASSOCIATED WITH BASELINE RAIL AND RECAPTURED HIGHWAY TRAFFIC (Millions of Dollars)			
	Present Value of Resurfacing or Reconstruction Events		
Budgetary Scenario	Base Case	Impact Scenario	Build-Sooner Costs
0	$274.084	$290.036	$15.952
1	$379.653	$417.649	$37.996
2	$410.826	$470.227	$59.401

HIGHWAY USER COSTS

As noted previously, the costs of other highway users may change as a result of rail-line abandonment. Changes in highway user costs have been estimated from equations given in Balta and Markow (1985).[20] The functions were derived through simulations of the computer model EAROMAR.[21] EAROMAR simulates a roadway system in considerable detail (including its structured design, capacity, and traffic characteristics). The model generates estimates of user costs at different levels of capacity traffic mix.

The user costs generated by EAROMAR include travel time and vehicle operating costs. The vehicle operating costs include fuel, oil, and tire consumption. However, the model does not simulate accelerated repairs and vehicle replacement. So, its results should be considered conservative in nature. The function for estimating annual user costs is:

$$UC = 3.03^{6} - 0.212\ PSR + 1.139 \times 10^{-3} \times ESAL^{6} \qquad (27)$$

Where:

UC = Annual user costs

PSR = Present serviceability rating

ESAL = Annual ESALS

Changes in user costs were estimated in the following manner. The costs were computed for each year of the 25 year analysis period, the base case and the

---

[20]Balta, W.S. and M.J. Markow. Demand Responsive Approach to Highway Maintenance and Rehabilitation, Vol. 2, US Department of Transportation Report #DOT/OST/P-34/871054, Washington, DC June 1985.

[21]For a description of EAROMAR see: Markow, M.J. and B. Brademeyer, Modification of the System EAROMAR, FHWA Report DOT-FH-11-9350, Washington, DC 1981.

impact scenario. Since the PSR will probably change for each year of the analysis period, the term "UC" could assume a unique value for each year. So, in order to compute the change in user costs, each cost stream was translated into its present value. As in the case of build-sooner costs, the difference between the present value of user costs under the base-case and the impact scenario constitutes a cost of abandonment. The avoidance of this cost is thus a benefit of rail preservation.

February 18, 1991

ADDENDUM B-RAIL ENGINEERING DETAIL

TO

PRELIMINARY ANALYSIS OF CNW'S NEBRASKA RAIL LINES

IMPACT OF ABANDONMENT

FEASIBILITY OF CONTINUED OPERATION AS AN INDEPENDENT SHORT LINE RAILROAD

FOR THE NEBRASKA DEPARTMENT OF ROADS

Prepared by:

Transportation Operations, Inc.
595 Forest Avenue, Suite 6B
Plymouth, Michigan 48170

Addendum B-Background Information on Engineering Study

Line Profile

The Northern Line is comprised of the following:

23.2 miles of 112# CWR rail in good condition
13.25 miles of 112# rail in good condition
178.5 miles of 10035# rail in fair condition, but showing signs of corrugation; 49.1 miles of this rail type is short rail
5.35 miles of 10030# rail in fair condition
85.0 miles of 9035# rail in fair condition, but showing signs of corrugation
12.4 miles of 9030# rail in fair condition
29.0 miles of side track
136 turnouts (97 Main and 39 Side)
279 public crossings
179 farm and other crossings
24 crossing Signals
1,031 spans of pile bridge
99 spans of pile & frame bent bridges
49 spans of steel
49 stone box & stone arch bridges
44 concrete & T-rail bridges
415 culverts 48" and under
24 culverts over 48"
1 car body at Neligh
1 trailer depot at Neligh (poor)
1 trailer depot at O'Neill (good)
1 old depot at O'Neill (poor)
1 depot at Long Pine (good)
1 twelve-room dorm at Long Pine (under contract)
1 section tool house at Valentine (good)
1 trailer depot at Valentine (good)
1 trailer depot at Gordon (good)
1 tool house (8x20) at Gordon (good)

Proposed Engineering Department Staffing

Engineering Department staffing is recommended as follows:

	1	Supervisor (track and bridges)
	1	Track Inspector
	1	Mobile HyRail Crane Operator
	1	Boom Truck Operator
	1	Tamper Operator
	6	Three Section Crews with 1 Foreman & 1 Trackman full time
*	3	Trackman for each Section Crew from May - October
	2	Bridge Crew with 1 Foreman and 1 Bridgeman full time
*	1	Bridgeman from May - October
	1	Signalman
	14	Full time Engineering Employees
	4	Additional Employees form May - October
	18	**Total Engineering Employees Required**

The Supervisor, Track Inspector, three Machine Operators and the one Signalman should be headquartered at O'Neill. The three Section Crews should be headquartered at O'Neill, Long Pine and Valentine. This would give each Section Crew approximately 106 miles of track to maintain.

The signal work could be contracted out, however it may cost more and not satisfy the Railroad's requirements.

YEAR NO. 1

Estimated Cost To Rehabilitate Track
To Class 3
Neligh to Stuart
M.P. 115.7 to M.P. 182.7
67.0 Miles

LABOR

unload and distribute ties 45,000 @ 2.00	90,000	
install ties 45,000 @ 5.00	225,000	
clean up old ties 45,000 @ 1.00	45,000	
install rail anchors 68,000 @ 0.35	23,800	
unload ballast 675 cars @ 15.00	10,125	
surface track 67.0 miles @ 500.00	33,500	
install 480 switch ties @ 20.00	9,600	
change out rail 34 @ 35.00	1,190	
change out angle bars 268 @ 20.00	5,360	
signal work (6 signals)	2,000	
crossing work 3005 ft. @ 10.00	30,050	
work train service 34 days @ 200.00	6,800	
raise bridges 303 spans	20,000	502,425

MATERIAL

ties new 45,000 @ 18.00	810,000	
switch ties 35 M.B.M. @ 700.00	24,500	
spikes 800 kgs @ 60.00	48,000	
rail anchors 68,000 @ 0.78	53,040	
angle bars usa 268 @ 4.50	1,206	
rail usa 1,326′ @ 3.75	4,973	
signal material	3,000	
crossing plank 565 @ 40.00	22,600	
boat spikes (1/2x12) 3,755 @ 0.85	3,192	
tie plates (7x10 1/2) usa 2,000 @ 1.50	3,000	
track bolts 15 kgs @ 150.00	2,250	
nut locks 2,000 @ 0.31	620	
misc. track & switch material	8,000	
bridge material	5,000	989,381

(Year NO. 1 Continued)

OTHER

ballast 675 cars @ 70 Tons = 47,250 Tons @ 5.00	236,250	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 675 cars @ 250.00	168,750	
rental of equipment	150,000	
expenses	10,800	
work train fuel	5,100	
fuel & lube	22,000	
machinery repairs	14,000	
small tools & supplies	7,000	
engineering supervision & accounting	50,000	
black top	10,000	724,900

ADDITIVES

Labor 40% of 502,425	200,970	
Material 5% of 989,381	49,469	
Contingencies 10% of 2,467,145	246,715	497,154
Estimated Cost-Track		2,713,860

Bridge Rehabilitation *(by contract)*

Bridge No. 234 M.P. 121.7	190,000	
Bridge No. 235 M.P. 121.96	85,500	
Bridge No. 236 M.P. 122.09	95,000	370,500
Total Estimated Cost - Year No.1		**$3,084,360**

YEAR NO. 2

Estimated Cost To Rehabilitate Track
To Class 3
Bassett to Valentine
M.P. 205.9 to M.P. 275.0
67.6 Miles

LABOR

unload and distribute ties 37,600 @ 2.00	75,200	
install ties 37,600 @ 5.00	188,000	
clean up old ties 37,600 @ 1.00	37,600	
install rail anchors 69,000 @ 0.35	24,150	
unload ballast 690 cars @ 15.00	10,350	
surface track 69.1 miles @ 500.00	34,550	
install 520 switch ties @ 20.00	10,400	
change out rail 35 @ 35.00	1,225	
change out angle bars 270 @ 20.00	5,400	
signal work (5 signals)	1,800	
crossing work 1914 ft. @ 10.00	19,140	
work train service 35 days @ 200.00	7,000	
raise bridges 61 spans	4,000	418,815

MATERIAL

ties new 37,600 @ 18.00	676,800	
switch ties 38 M.B.M. @ 700.00	26,600	
spikes 670 kgs @ 60.00	40,200	
rail anchors 69,000 @ 0.78	53,820	
angle bars usa 270 @ 4.50	1,215	
rail usa 1,365′ @ 3.75	5,119	
signal material	2,500	
crossing plank 360 @ 40.00	14,400	
boat spikes ($^1/_2$x12) 2,400 @ 0.85	2,040	
tie plates (7x10 $^1/_2$) usa 2,000 @ 1.50	3,000	
track bolts 15 kgs @ 150.00	2,250	
nut locks 2,000 @ 0.31	620	
misc. track & switch material	7,500	
bridge material	1,000	837,064

(Year No. 2 Continued)

OTHER

ballast 690 cars @ 70 Tons = 47,250 Tons @ 5.00	241,500	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 690 cars @ 250.00	172,500	
rental of equipment	130,000	
expenses	10,800	
work train fuel	5,250	
fuel & lube	20,000	
machinery repairs	13,000	
small tools & supplies	6,500	
engineering supervision & accounting	45,000	
black top	7,500	702,250

ADDITIVES

Labor 40% of 418,815	167,526	
Material 5% of 837,064	41,853	
Contingencies 10% of 2,167,508	216,751	426,130
Estimated Cost-Track		2,384,250

Bridge Rehabilitation *(by contract)*

Bridge No. 289 M.P. 152.98	200,000	
Bridge No. 290 M.P. 153.20	172,000	372,000

Total Estimated Cost - Year No.2 **$2,756,259**

YEAR NO. 3

Estimated Cost To Rehabilitate Track
To Class 3
Valentine to Irwin
M.P. 275.0 to M.P. 345.0
70.0 Miles

LABOR

unload and distribute ties 41,500 @ 2.00	83,000	
install ties 41,500 @ 5.00	207,500	
clean up old ties 41,500 @ 1.00	41,500	
install rail anchors 70,000 @ 0.35	24,500	
unload ballast 700 cars @ 15.00	10,500	
surface track 70.0 miles @ 500.00	35,000	
install 260 switch ties @ 20.00	5,200	
change out rail 35 @ 35.00	1,225	
change out angle bars 270 @ 20.00	5,400	
signal work (2 signals)	1,200	
crossing work 1316 ft. @ 10.00	13,160	
work train service 35 days @ 200.00	7,000	
raise bridges 138 spans	9,200	444,385

MATERIAL

ties new 41,500 @ 18.00	747,000	
switch ties 19 M.B.M. @ 700.00	13,300	
spikes 750 kgs @ 60.00	45,000	
rail anchors 70,000 @ 0.78	54,600	
angle bars usa 270 @ 4.50	1,215	
rail usa 1,365′ @ 3.75	5,119	
signal material	1,000	
crossing plank 250 @ 40.00	10,000	
boat spikes ($^{1}/_{2}$x12) 1,800 @ 0.85	1,530	
tie plates (7x10 $^{1}/_{2}$) usa 2,000 @ 1.50	3,000	
track bolts 15 kgs @ 150.00	2,250	
nut locks 2,000 @ 0.31	620	
misc. track & switch material	5,000	
bridge material	2,300	891,934

(Year NO. 3 Continued)

OTHER

ballast 700 cars @ 70 Tons = 49,000 Tons @ 5.00	245,000	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 700 cars @ 250.00	175,000	
rental of equipment	340,000	
expenses	10,800	
work train fuel	5,250	
fuel & lube	21,000	
machinery repairs	14,000	
small tools & supplies	7,000	
engineering supervision & accounting	48,000	
black top	6,000	922,250

ADDITIVES

Labor 40% of 444,385	177,754	
Material 5% of 891,934	44,596	
Contingencies 10% of 2,480,919	248,092	470,442
Estimated Cost-Track		2,729,011

Bridge Rehabilitation *(by contract)*

Bridge No. 265	M.P. 134.30	57,000	
Bridge No. 363	M.P. 189.85	30,000	
Bridge No. 512	M.P. 319.63	57,000	
Bridge NO. 530 1/2	M.P. 334.22	28,500	
Bridge No. 545	M.P. 343.25	38,000	
Bridge No. 560	M.P. 359.56	57,000	267,500

Total Estimated Cost - Year No.3 **$2,996,511**

YEAR NO. 4

Estimated Cost To Rehabilitate Track
To Class 3
Irwin to Chadron
M.P. 345.0 to M.P. 403.0
58.0 Miles

LABOR

unload and distribute ties 34,400 @ 2.00	68,800	
install ties 34,400 @ 5.00	172,000	
clean up old ties 34,400 @ 1.00	34,400	
install rail anchors 58,000 @ 0.35	20,300	
unload ballast 580 cars @ 15.00	8,700	
surface track 58.0 miles @ 500.00	29,000	
install 400 switch ties @ 20.00	8,000	
change out rail 30 @ 35.00	1,050	
change out angle bars 250 @ 20.00	5,000	
signal work (4 signals)	2,500	
crossing work 1528 ft. @ 10.00	15,280	
work train service 30 days @ 200.00	7,000	
raise bridges 164 spans	11,000	382,030

MATERIAL

ties new 34,400 @ 18.00	619,000	
switch ties 29 M.B.M. @ 700.00	20,300	
spikes 600 kgs @ 60.00	36,000	
rail anchors 58,000 @ 0.78	45,240	
angle bars usa 250 @ 4.50	1,125	
rail usa 1,170′ @ 3.75	4,388	
signal material	2,000	
crossing plank 290 @ 40.00	11,600	
boat spikes ($^{1}/_{2}$x12) 2,000 @ 0.85	1,700	
tie plates (7x10 $^{1}/_{2}$) usa 2,000 @ 1.50	3,000	
track bolts 12 kgs @ 150.00	1,800	
nut locks 1,200 @ 0.31	372	
misc. track & switch material	7,000	
bridge material	2,750	756,475

(Year No. 4 continued)

OTHER

ballast 580 cars @ 70 Tons = 40,600 Tons @ 5.00	203,000	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 580 cars @ 250.00	145,000	
rental of equipment	115,000	
expenses	7,000	
work train fuel	4,500	
fuel & lube	18,000	
machinery repairs	11,500	
small tools & supplies	5,500	
engineering supervision & accounting	43,000	
black top	3,500	607,000

ADDITIVES

Labor 40% of 382,030	152,812	
Material 5% of 756,475	37,824	
Contingencies 10% of 1,936,141	193,614	384,250

Total Estimated Cost - Year No.4 **$2,129,755**

YEAR NO. 5

Estimated Cost To Rehabilitate Track
To Class 3
Norfolk to Neligh
M.P. 84.0 to M.P. 115.7
31.7 Miles
&
Stuart to Bassett
M.P. 182.7 to M.P. 205.9
23.2 Miles

LABOR

unload and distribute ties 18,500 @ 2.00	37,000	
install ties 18,500 @ 5.00	92,500	
clean up old ties 18,500 @ 1.00	18,500	
install rail anchors 31,500 @ 0.35	11,025	
unload ballast 500 cars @ 15.00	7,500	
surface track 54.9 miles @ 500.00	27,450	
install 300 switch ties @ 20.00	6,000	
change out rail 16 @ 35.00	560	
change out angle bars 130 @ 20.00	2,600	
signal work (7 signals)	2,800	
crossing work 1388 ft. @ 10.00	13,880	
work train service 25 days @ 200.00	5,000	
raise bridges 226 spans	15,000	239,815

MATERIAL

ties new 18,500 @ 18.00	333,000	
switch ties 22 M.B.M. @ 700.00	15,400	
spikes 350 kgs @ 60.00	21,000	
rail anchors 31,500 @ 0.78	24,570	
angle bars usa 130 @ 4.50	585	
rail usa 741′ @ 3.75	2,779	
signal material	3,500	
crossing plank 260 @ 40.00	10,400	
boat spikes ($^1/_2$x12) 1,800 @ 0.85	1,530	
tie plates (7x10 $^1/_2$) usa 1,000 @ 1.50	1,500	
track bolts 7 kgs @ 150.00	1,050	
nut locks 1,000 @ 0.31	310	
misc. track & switch material	4,500	
bridge material	3,750	423,874

(Year No. 5 Continued)

OTHER

ballast 500 cars @ 70 Tons = 40,600 Tons @ 5.00	175,000	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 500 cars @ 250.00	125,000	
rental of equipment	90,000	
expenses	8,500	
work train fuel	3,750	
fuel & lube	15,000	
machinery repairs	7,000	
small tools & supplies	3,500	
engineering supervision & accounting	25,000	
black top	4,500	508,250

ADDITIVES

Labor 40% of 239,815	95,926	
Material 5% of 423,874	21,194	
Contingencies 10% of 1,289,059	128,906	246,026

Total Estimated Cost - Year No.5 **$1,417,965**

5-Year Rehabilitation Totals

Year #1			
	Track	2,713,860	
	Bridges	370,500	3,084,360
Year #2			
	Track	2,384,259	
	Bridges	372,000	2,756,259
Year #3			
	Track	2,729,011	
	Bridges	267,500	2,996,511
Year #4			
	Track		2,129,755
Year #5			
	Track		1,417,965
Total Estimated Cost to Rehabilitate			$12,384,850

The above numbers are stated in current dollars. Assuming a 5% general inflation rate, rehabilitation totals would actually appear as follows:

Year #1	$ 3,084,360
Year #2	$ 2,894,072
Year #3	$ 3,303,653
Year #4	$ 2,465,457
Year #5	$ 1,723,545
Estimated Total	$13,471,087

Current Slow Orders
Norfolk to Chadron

M. P. 84.0 to 84.9	30 M.P.H.
M. P. 84.9	10 M.P.H.
M. P. 84.9 to 100.0	30 M.P.H.
M. P. 100.0 to 101.0	10 M.P.H.
M. P. 101.0 to 102.0	30 M.P.H.
M. P. 102.0 to 121.7	25 M.P.H.
M. P. 121.7	10 M.P.H.
M. P. 121.7 to 129.5	25 M.P.H.
M. P. 129.5 to 134.75	10 M.P.H.
M. P. 134.75 to 139.0	25 M.P.H.
M. P. 139.0 to 160.75	10 M.P.H.
M. P. 160.75 to 172.75	25 M.P.H.
M. P. 172.75 to 174.5	10 M.P.H.
M. P. 174.5 to 179.0	30 M.P.H.
M. P. 179.0 to 181.75	10 M.P.H.
M. P. 181.75 to 188.0	30 M.P.H.
M. P. 188.0 to 203.2	40 M.P.H.
M. P. 203.2 to 205.9	30 M.P.H.
M. P. 205.9 to 213.6	10 M.P.H.
M. P. 213.6 to 215.1	25 M.P.H.
M. P. 215.1	5 M.P.H.
M. P. 215.1 to 223.0	25 M.P.H.
M. P. 223.0 to 224.5	30 M.P.H.
M. P. 224.5 to 232.5	10 M.P.H.
M. P. 232.5 to 233.1	30 M.P.H.
M. P. 233.1 to 241.0	25 M.P.H.
M. P. 241.0 to 252.6	10 M.P.H.
M. P. 252.6 to 269.0	25 M.P.H.
M. P. 269.0 to 274.5	10 M.P.H.
M. P. 274.5 to 291.0	20 M.P.H.
M. P. 291.0 to 295.25	10 M.P.H.
M. P. 295.25 to 303.3	25 M.P.H.
M. P. 303.3 to 318.5	30 M.P.H.
M. P. 318.5 to 328.0	25 M.P.H.
M. P. 328.0 to 328.25	10 M.P.H.
M. P. 328.25 to 330.5	25 M.P.H.
M. P. 330.5 to 330.75	10 M.P.H.
M. P. 330.75 to 334.0	25 M.P.H.
M. P. 334.0 to 335.0	10 M.P.H.
M. P. 335.0 to 345.5	25 M.P.H.
M. P. 345.5 to 348.3	10 M.P.H.
M. P. 348.3 to 351.0	25 M.P.H.
M. P. 351.0 to 357.0	10 M.P.H.
M. P. 357.0 to 359.0	25 M.P.H.
M. P. 359.0 to 360.5	10 M.P.H.
M. P. 360.5 to 363.3	25 M.P.H.
M. P. 363.3 to 375.2	30 M.P.H.
M. P. 375.2	10 M.P.H.
M. P. 375.2 to 375.5	30 M.P.H.
M. P. 375.5 to 401.1	25 M.P.H.
M. P. 401.1 to 404.5	30 M.P.H.

Summary

81.35	miles @	10 miles per hour
16.50	miles @	20 miles per hour
144.10	miles @	25 miles per hour
64.05	miles @	30 miles per hour
15.20	miles @	40 miles per hour

Slow Orders after Rehabilitation
Norfolk to Chadron

After Year #1

M.P. 84.0 to 84.9 .... 35 M.P.H.
M.P. 84.9 .... 10 M.P.H. Bridge
M.P. 85.0 to 121.7 ... 35 M.P.H.
M.P. 121.7 .... 10 M.P.H. Bridge
M.P. 121.8 to 182.7 ... 35 M.P.H.
M.P. 182.7 to 205.9 ... 40 M.P.H.

(The remainder will be the same as present orders)

After Year #2

M.P. 84.0 to 205.9 ... Same as Above
M.P. 205.9 to 215.1 ... 35 M.P.H.
M.P. 215.1 .... 5 M.P.H. Bridge
M.P. 215.2 to 266.5 ... 30 M.P.H.
M.P. 266.5 to 266.8 ... 10 M.P.H. Bridge
M.P. 266.8 to 275.0 ... 30 M.P.H.

(The remainder will be the same as present orders)

After Year #3

M.P. 84.0 to 275.0 ... Same as Above
M.P. 275.0 to 345.0 ... 30 M.P.H.

(The remainder will be the same as present orders)

After Year #4

M.P. 84.0 to 345.0 ... Same as Above
M.P. 345.0 to 403.0 ... 30 M.P.H.

Note:
If the Railroad purchases a tamper as soon as possible in the first year, employes a qualified operator, several critical 10 mph slow orders can be removed west of M.P. 205.0.

Estimated Cost of Capital Program Work
After Rehabilitation Work Has Been Completed

LABOR

unload and distribute ties 24,000 @ 2.00	48,000	
install ties 24,,000 @ 5.00	120,000	
clean up old ties 24,000 @ 1.00	24,000	
install CWR 2 Mi. @ 4,000	8,000	
install rail anchors 42,000 @ 0.35	14,700	
unload ballast 640 car loads @ 15.00	9,600	
surface track 64 Mi. @ 500.00	32,000	
signal work	5,000	
crossing work	9,600	
work train service 34 days @ 200.00	6,800	
raise bridges	15,000	292,700

MATERIAL

ties new 24,000 @ 18.00	432,000	
spikes 530 kgs @ 60.00	31,800	
rail anchors 42,000 @ 0.78	32,760	
rail 112# CWR 21,120 ft. 394.24 N.T. @ 305.00	120,243	
Boutet welds 30 @ 100.00	3,000	
turnouts 4 @ 8,000.00	32,000	
signal material	800	
crossing material	16,000	
tie plates 12,800 @ 2.10	26,880	
misc. track & switch material	8,000	
bridge material	3,500	706,983

OTHER

ballast 640 cars @ 70 Tons = 44,800 Tons @ 5.00	224,000	
rental of ballast cars 40 x 3 mo. @ 425 per mo.	51,000	
freight on ballast 640 cars @ 250.00	160,000	
rental of rail train equipment	7,300	
freight on rail train	9,625	
equipment rental	100,000	
equipment repairs	9,000	
expenses	8,000	
fuel & lube	15,500	
small tools & supplies	4,500	
work train fuel	5,100	
engineering supervision & accounting	20,000	614,025

(Cost for Capital Continued)

ADDITIVES

labor 40% of 292,700	117,080	
material 5% of 706,983	35,349	
contingencies 10% of 1,766,137	176,614	329,043
Total Estimated Cost Per Year		$1,942,751

Salvage

rail 9035 usa 8,000 ft. @ 3.75	30,000	
rail 9035 scrap 38.4 N.T. @ 103.00	3,955	
rail 10035 usa 9,000 ft. @ 3.75	33,750	
rail 10035 scrap 26 N.T. @ 103.00	2,678	
tie plates 7 x 91/4 usa 9,600 @ 0.95	9,120	
tie plates scrap 15.6 N.T. @ 107.00	1,669	
angle bars 9035 usa 350 @ 3.50	1,225	
angle bars 10035 usa 350 @ 3.50	1,225	
angle bars scrap 6.4 N.T. @ 107.00	685	
O.T.M. scrap 50 N.T. less 50% = 25 N.T. @ 107.00	2,675	86,982
Less Salvage		(86,982)
Total Cost		**$1,855,769**

Maintenance Per Year To Class 3 Standards
Norfolk to Chadron
M.P. 84.0 to M.P. 403.0
317.5 Miles

Labor

Roadmaster	(1) @ $30,000 per yr.	30,000	
Track Inspector	(1) @ $24,000 per yr.	24,000	
Track Foreman	(3) @ $9.00 per hour	55,728	
Bridge Foreman	(1) @ $9.00 per hour	18,576	
Machine Operators	Jan.-Dec. (3) @ $8.00 per hr.	49,536	
Machine Operator	May -Oct. (1) @ $8.00 per hr.	8,256	
Trackmen	Jan.-Dec. (3) @ $6.10 per hr.	37,771	
Trackmen	May -Oct. (3) @ $6.00 per hr.	18,576	
Bridgeman	Jan.-Dec. (1) @ $6.50 per hr.	13,416	
Bridgeman	May -Oct. (1) @ $6.50 per hr.	6,708	
Signalman	(1) @$12.00 per hr.	24,768	
Overtime		6,000	293,335

Material

Ties M.T.	800	@ 18.00	14,500	
Ties S.T.	200	@ 15.00	3,000	
Rail	7800	@ 3.75	29,250	
Angle Bars	600	@ 4.50	2,700	
Tie Plates	200	@ 1.50	300	
Bolts	30 kgs	@150.00	4,500	
Spikes	30 kgs	@ 60.00	1,800	
Ballast	700 ton	@ 5.00	3,500	
Fencing			15,000	
Bridge Matl.			35,000	
Signal Matl.			6,000	
Misc. O.T.M.			8,000	
Misc. Bridge Matl.			5,000	128,450

(Maintenance Continued)

Other

Heat	1,800	
Electrical	2,800	
Telephone	800	
Fuel	25,000	
Small Tools & Supplies	8,000	
Ballast Car Rental	1,350	
Freight on Ballast	2,500	
Rental of Company Trucks & Cranes	60,000	
Equipment Repairs	9,000	111,250

Additives

Labor 40% of 293,35	117,334	
Material 5% of 128,450	6,422	123,756
Total Estimated Cost Per Year		$656,791

Note: After rehabilitation the Railroad should have a capital tie, ballast, rail anchor and surfacing program consisting of:

64 Miles
* 24,000 Ties
30,000 Anchors
640 Cars of Ballast
1-2 Miles Rail

The Railroad should also consider a welded rail program of two to five miles per year.

* Estimates were made by using 6x8 #1 New Ties. New ties should last for approximately forty years with the tonnage estimated.

Trucks & Tools Required
to
Maintain Bridges & Signals

1 -HyRail Pick-up-Roadmaster
1 -HyRail Pick-up-Track Inspector
3 -HyRail Pick-up-Section Crews
1 -HyRail Pick-up-Signal
    Maintainer
1 -HyRail 2-Ton -Bridge Crew
6 -Push Cars
1 -Mobile HyRail Crane
    Dirt Bucket
    Rail Tongs
    Timber Tongs
    Tie Bucket
1 -Boom Truck
    Rail Tongs
    Timber Tongs
    Tie Bucket
1 -Tamper
    (automatic with liner)
1 -Ballast Regulator
3 -Rail Saws
3 -Track Drills
4 -Rail Expanders
4 -Cutting Torches
3 -Chain Saws
6 -Chain Hoists
7 -Track Gauge
7 -Track Levels
5 -Sledge Hammers
8 -Tie Tongs
2 -Timber Carriers
6 -Tamping Picks
3 -Four (4) Ball Spike Puller
8 -Sand Shovel
6 -Rail Tongs
3 -Timber Tongs (2 man)
16 -Track Jacks
18 -Track Shovels
11 -Claw Bars
11 -Lining Bars
15 -Spike Mauls
11 -Railroad Picks
12 -Snow & Switch Broom
8 -1" Wrench Rachet Action
3 -1 $^{1}/_{8}$" Wrench Single End Track
3 -1 $^{1}/_{4}$" Wrench Single End Track
3 -1 $^{3}/_{8}$" Wrench Single End Track
2 -Adze
3 -Rail Forks
4 -Brush Hooks
1 -Rail Bender
2 -Generators (1 Bridge & 1
    Signal)
1 -Compressor
1 -Jack Hammer
1 -Electrical Drill
1 -Skill Saw
1 -Drill (Signal)
1 -Grinder (Signal)
1 -4' Fence Post Jack
1 -Cable Locator
1 -Volt Meter
1 -Set Climbing Hooks
5 -Sets of Small Tools
1 -Set of Ladders
1 -Set of Scaffolding
2 -50 Ton Hydraulic Jack
2 -100 Ton Hydraulic Jack

Salvage
Main Track
Norfolk to Chadron
M.P. 84.0 to M.P. 403.0
(317.5 Miles)

Rail

112# CWR usa	241,992 ft.=	4517.18	N.T. @ 260.00	1,174,467	
112# CWR scrap	3,000 ft.=	56.00	N.T. @ 103.00	5,768	
112# Jtd usa	134,920 ft.=	2518.51	N.T. @ 260.00	654,812	
112# Jtd scrap	5,000 ft.=	93.33	N.T. @ 103.00	9,613	
100# usa	1,917 ft.=	31,964.8	N.T. @ 160.00	5,114,368	
100# scrap	21.456 ft.=	357.6	N.T. @ 103.00	36,833	
90# usa	920,000 ft.=	13,800.0	N.T. @ 160.00	2,208,000	
90# scrap	108,544 ft.=	1,628.16	N.T. @ 103.00	167.700	9,371,561

Angle Bars

112# usa	6,000 @ 4.10			24,600	
112# scrap	1,176 x 35 =	20.58	Ton @ 107.00	2,202	
10035# usa	85,000 @ 3.50			297,500	
10035# scrap	16,890 x 28.8 =	243.22	Ton @ 107.00	26,025	
10030# usa	1,500 @ 3.50			5,250	
10030# scrap	1,398 x 28.8 =	20.13	Ton @ 107.00	2,154	
9035# usa	30,000 @ 3.50			105,000	
9035# scrap	16,030 x 28.8 =	230.83	Ton @ 107.00	24,699	
9030# usa	5,200 @ 3.50			18,200	
9030# scrap	1,516 x 25.15=	19.06	Ton @ 107.00	2,039	507,669

Tie Plates

7x9 1/4 usa	1,589,400 @ 0.95			1,509,930	
7x9 1/4 scrap	176,600 x 9.75 =	860.93	N.T. @ 107.00	92,120	
7x10 usa	16,200 @ 0.97			15,714	
7x10 scrap	1,800 x 10.5 =	9.45	N.T. @ 107.00	1,011	
7x10 1/2 usa	14,400 @ 1.00			14,400	
7x10 1/2 scrap	1,600 x 11.10 =	8.88	N.T. @ 107.00	950	
7 1/2x11 usa	80,560 @ 1.10			88,616	
7 1/2x11 scrap	4,240 x 13.0 =	27.56	N.T. @ 107.00	2,949	
7 1/2x11 D.S. usa	148,480 @ 2.10			311,808	2,037,498

(Salvage Continued)

Rail

112# usa 259,896 @ 0.25	64,974	
Misc. scrap 739,462 less 50% = 418 N.T. @ 107.00	44,726	109,700

Bolts, Spikes, Etc.

2,065 N.T. less 50% = 1032.5 N.T. @ 107.00		110,478

Ties

usable 149,032 @ 5.00		745,160

Bridge Material

Timber	15,700	
Steel (credit included in cost of removal)	0	15,700

Signal

24 @ 1,000.00		24,000

Total Salvage Main Track	12,921,766
Less Freight	647,000
	$12,274,766

Salvage
Side Tracks
Norfolk to Chadron
M.P. 84.0 to M.P. 403.0
(317.5 Miles)

Rail

115# scrap	1,500 ft.	=	28.75	N.T.	@ 103.00	2,961	
112# scrap	3,000 ft.	=	56.0	N.T.	@ 103.00	5,768	
100# scrap	23,600 ft.	=	393.33	N.T.	@ 103.00	40,513	
90# scrap	203,140 ft.	=	3,047.10	N.T.	@ 103.00	313,851	
80# scrap	35,000 ft.	=	466.67	N.T.	@ 103.00	48,067	
72# scrap	40,000 ft.	=	480.00	N.T.	@ 103.00	49,440	460,600

Angle Bars

232.0 N.T.	@ 107.00	24,824

Tie Plates

630 N.T.	@ 107.00	67,410

Turnouts

Usable	15	@ 1,250.00	18,750	
Scrap	122	= 183 N.T. @ 103.00	18,849	37,599

Misc. Other Track Material

68 N.T.	@ 107.00	7,276

Total Salvage Side Tracks	597,709
Less Freight	29,800
	$567,909

Salvage Value & State's Interest in Segment Between Stuart and Long Pine

Net Salvage
M.P. 182.7 to M.P. 205.9
(23.2 Miles)
(Welded Section)

Salvage

115# CWR scrap 1,500 ft.=	28.75 N.T.	@ 103.00	2,961	
112# CWR usa 241,992 ft.=	4517.18 N.T.	@ 305.00	1,377,740	
112# CWR scrap 3,000 ft.=	56.00 N.T.	@ 103.00	5,768	
115# Angle Bars 100 =	2.6 N.T.	@ 107.00	278	
Tie plates 7 1/2 x 11 D.S. usa	148,480	@ 2.10	311,808	
Tie plates scrap 5.6 N.T.		@ 107.00	599	
112# Rail anchors usa 148,480		@ 0.25	37,120	
Turnouts 5 @ 2,000.00			10,000	
O.T.M. scrap 128 N.T. Less 50% = 64 N.T.		@ 107.00	6,848	
Ties usa 10,170 @ 5.00			50,850	1,803,972

Cost of Removal

23.2 miles of track @ 8,900.00	206,480	
Turnouts 5 @ 800.0	4,000	
Additional cost for CWR 23.2 Mi. @ 8,460.00 per Mi.	196,272	406,752

Net Salvage Value **$1,397,220**

Breakdown On Cost Of Removing CWR Per Track Mile:

Railrack cars 34 @ $400.00 per car, per month; to pick-up 10 miles per Mo.	1,360
Wench car 1 @ $1,000 per month; 10 Miles per month	100
Work train 4 days per mile @ 500.00; 10 Miles per month	2,000
Labor 10 men for 5 days @ 640.00 per gang day	3,200
Equipment rental	1,800
Total	**$8,460**

Estimated Cost to Remove Facilities
from
Norfolk to Chadron
M.P. 84.0 to M.P. 403.0
(317.5 Miles)

Main Track		
317.5 Miles @ 8,900.00	2,825,750	
Side Track		
29.0 Miles @ 8,900.00	258,100	
Crossings		
458 @ 200.00 (average)	91,600	
Signals		
24 @ 1,000.00	24,000	
Bridges		
Pile bridge spans 1,130 @ 200.00	226,000	
Steel spans:		25,000
Bridge No. 147		
Bridge No. 211	20,000	
Bridge No. 410	50,000	
Bridge No. 478	50,000	
14 other spans @ 3,500.00	49,000	420,000
Total Cost of Removal		**$3,619,450**

Net Liquidation Value
Norfolk to Chadron
M.P. 84.0 to M.P. 403.0
(317.5 Miles)

Salvage		
Main Track	12,274,766	
Side Track	567,909	12,842,675
Cost of Removal		
Main Track	3,361,350	
Side Track	258,100	3,619,450
Total Liquidation Value		**$9,223,225**

February 18, 1991

ADDENDUM C-SHORT LINE RAILROAD OPERATING DETAIL

TO

PRELIMINARY ANALYSIS OF CNW'S NEBRASKA RAIL LINES

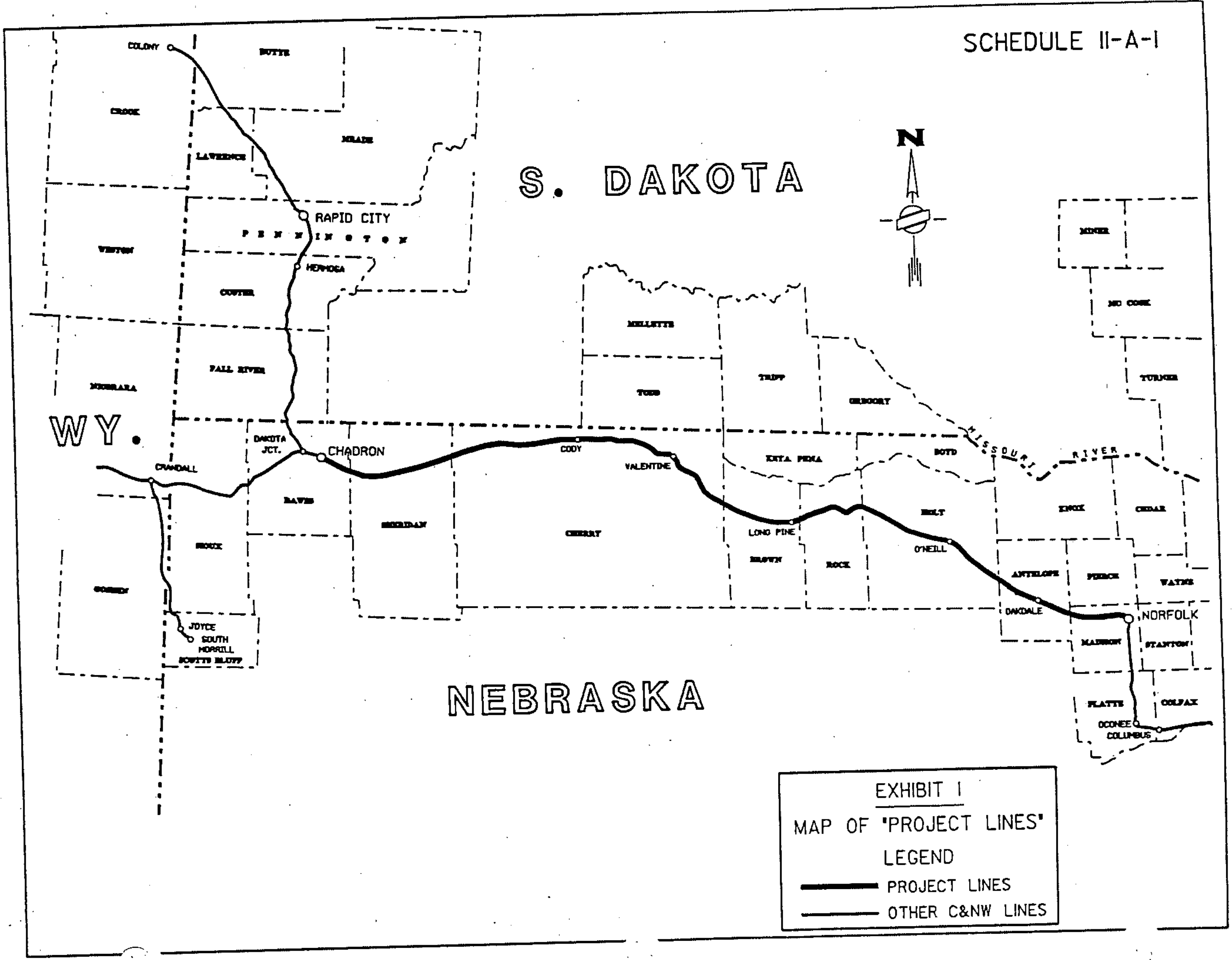
IMPACT OF ABANDONMENT

FEASIBILITY OF CONTINUED OPERATION AS AN INDEPENDENT SHORT LINE RAILROAD

FOR THE NEBRASKA DEPARTMENT OF ROADS

Prepared by:

Transportation Operations, Inc.
595 Forest Avenue, Suite 6B
Plymouth, Michigan 48170



SCHEDULE II-A-1
S. DAKOTA
NEBRASKA
WY.
N
COLONY
BUTTE
CROOK
LAWRENCE
MEADE
RAPID CITY
PENNINGTON
WESTON
HERMOSA
CUSTER
FALL RIVER
NIOBRARA
DAKOTA JCT.
CHADRON
CRANDALL
DAWES
SHERIDAN
SIOUX
GOSHEN
JOYCE
SOUTH MORRILL
SCOTTS BLUFF
CODY
VALENTINE
CHERRY
MELLETTE
TODD
TRIPP
GREGORY
KEYA PAHA
BOYD
MISSOURI RIVER
LONG PINE
BROWN
ROCK
HOLT
O'NEILL
KNOX
CEDAR
ANTELOPE
PIERCE
WAYNE
OAKDALE
NORFOLK
MADISON
STANTON
PLATTE
COLFAX
OCONEE
COLUMBUS
MINER
MC COOK
TURNER
EXHIBIT I
MAP OF "PROJECT LINES"
LEGEND
PROJECT LINES
OTHER C&NW LINES

OPERATIONS SUMMARY

CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY
WESTERN LINE SEGMENTS
NORFOLK TO CHADRON

LINES INCLUDED IN PROJECT:

The project covers the potential sale of 317.5 miles and the granting of 11.9 miles of trackage rights on the Western Division between Norfolk and Chadron, Nebraska. The proposal does not include the sale of C&NW properties in Chadron or Norfolk.

The line segments included in the project are the following:

Subdivision	**From - To**	**Mileage**
Norfolk	Norfolk - Long Pine	129.6
Long Pine	Long Pine - Chadron	187.9

The entire project is main track, no branch lines junction with the main track. The rail weights are basically as follows:

90# or less - 31.75%
100# to 110# - 57.83%
112# or more - 10.42%

See Schedule for more specific rail weight breakdowns.

The Norfolk and Long Pine Subdivisions are both rated at 263,000 pounds. The two subdivisions are single track and are non-signal operation territory. Train movements are governed by Direct Traffic Control System Rules (radio dispatching), except where superseded by interlocking signals or interlocking rules. The maximum operating speeds are limited to 49 mph by laws that govern train operations in railroad non-signal territory. As standard practice for both economy and safety on the C&NW system, rail sections of 100 lb. or less are operated upon at reduced speeds. The entire line is predominately operated at 25 and 30 mph with some heavier rail sections on the Norfolk Subdivision operated at 49 mph. A summary of slow orders is contained herein (Schedule II-C).

There is a physical connection to the Burlington Northern Railroad at O'Neill, Nebraska and interchange of traffic is performed between the 2 railroads at that location. Other physical connections on this line would be to C&NW at Norfolk and Chadron.

WESTERN LINE SEGMENTS

EASEMENTS

NORFOLK TO CHADRON

There are no major income producing easements on the entire route except typical small pieces of property.

The C&NW will retain the sole and exclusive right to use and grant fiber optic, or the like, leases, licenses and easements.

WESTERN LINE SEGMENTS

SUBDIVISIONS BY ROUTE MILES

NORFOLK TO CHADRON AND DAKOTA JUNCTION TO COLONY

Main Line:

SUBDIVISION	Sell Mile Post From	Sell Mile Post To	Trackage Rights Mile Post From	Trackage Rights Mile Post To	Route Miles* Total Sell	Route Miles* Total Trackage Rights
NORFOLK						
Norfolk to Long Pine	84.0	213.6	80.5	84.0	129.6	3.5
LONG PINE						
Long Pine to Chadron	213.6	403.0	403.0	411.4	187.92	8.4
TOTAL MAIN LINE					317.52	
Branch Line: None						
TOTAL					317.52	11.9

* Route miles may not agree with mile post miles because of irregular feet per mile adjustments.

WESTERN LINE SEGMENTS

BREAKDOWN OF RAIL SECTIONS BY SUBDIVISION

NORFOLK TO CHADRON

SUBDIVISION	RAIL SECTION 72#	80#	90#	90# CWR	100# CWR	100#	110#	110# CWR	112#	112# CWR	115#	115# CWR	TOTAL
Norfolk													
Miles	—	—	59.85	—	—	48.95	—	—	0.30	20.5	—	—	129.6
Percent	—	—	46.18	—	—	37.77	—	—	0.23	15.82	—	—	100.0
Long Pine													
Miles N/C	—	—	40.95	—	—	134.67	—	—	12.3	—	—	—	187.9
Percent	—	—	21.79	—	—	71.66	—	—	6.55	—	—	—	100.0
TOTALS													
Miles	—	—	100.8	—	—	183.62	—	—	12.6	20.55	—	—	317.5
Percent	—	—	31.75	—	—	57.83	—	—	3.97	6.45	—	—	100.0

TRAFFIC SUMMARY

CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY

ANALYSIS OF WESTERN LINE SEGMENTS,
NORFOLK TO CHADRON AND DAKOTA JUNCTION TO COLONY

The analysis covers 317.52 miles of C&NW main and branch line between Norfolk, NE and Chadron, NE. The stations of Chadron and Norfolk, NE are not included in this sale.

I. Assumptions

A. The study assumes that, while the limits of the project lines will be just west of Norfolk as well as just east of Chadron, physical interchange will be made at Chadron and Norfolk with trackage rights being granted to enable the purchaser to reach those points.

B. The traffic is based upon the traffic moved in 1987 and 1988.

SLOW ORDERS - AS OF THE FINAL WEEK OF AUGUST, 1989

CHADRON (M.P. 403.0) - LONG PINE (M.P. 213.6)

SLOW ORDERS

MILEPOST	M.P.H.
401.1 - 375.5	25
363.3 - 360.5	25
360.5 - 359.0	10
359.0 - 348.3	25
348.3 - 345.5	10
345.5 - 335.0	25
335.0 - 334.0	10
334.0 - 318.5	25
303.3 - 292.0	25
292.0 - 268.4	10
268.4 - 263.5	25
263.5 - 252.6	25
252.6 - 241.0	10
241.0 - 233.1	25
223.0 - 213.6	25

TIMETABLE RESTRICTIONS

MILEPOST	M.P.H.
411.4	10
411.4 - 406.3	30

MAXIMUM 30 MPH

SLOW ORDERS - AS OF THE FINAL WEEK OF AUGUST, 1989

LONG PINE (M.P. 213.6) - NORFOLK (M.P. 84.0)

SLOW ORDERS

MILEPOST	M.P.H.
213.6 - 205.9	10
203.2 - 202.75	30
193.6 - 193.25	30
181.75 - 179.0	10
174.5 - 171.0	10
171.0 - 166.25	25*
166.25 - 165.25	10
165.25 - 160.75	25
160.75 - 151.0	10
140.0 - 102.0	25

TIMETABLE RESTRICTIONS

MILEPOST	M.P.H.
213.6 - 203.2	30
188.0 - 81.8	30
121.7	10
84.9	10

MAXIMUM 49 MPH

GENERAL ORDERS

MILEPOST	M.P.H.
167.75 - 167.25	10*

* GENERAL ORDER SUPERSEDES ABOVE SLOW ORDER FOR TERRITORY

TRAIN TONNAGE RATING CALCULATOR

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	4	0	224	124	12.0	11.5	10.7	9.2
TNGE RTNG	100	87	51	87				
			5280	9196	12.0	11.5	10.7	9.2

CONSIST 4 ENGS 0 LDS 100 MTYS 100 TOT 8700 TRAILING TONS - Stall Pt. at MP 293.05

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	214.60	LONG PINE	0.0	0			
191.90	406.50	CHADRON	704.5	2285	0.5	0.8	4.8

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	194.6	11.91	22.85	3.81	16.3	2175

pcTpc v5.70: (3-Piece Truck) Completed on 12/18/90 at 15:39 with Speed Range ONE
CN/EL Resistances: R0 = 13836; R1 = 5518; R2 = 33840; Grade Comp at 0.04 per degree

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING-- MIN 124X	INCREMENTAL------- DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	214.60	LONG PINE	25	0.0	0.0	0.0						
8.40	223.00	AINSWORTH	25	25.0	148.5	34.5		8.40	148.5	34.5	17.7	14.6
13.40	228.00	SANDRIDGE	10	10.0	206.0	59.2		5.00	57.5	24.7	11.5	12.1
17.00	231.60	JOHNSTOWN	10	10.0	232.8	80.8		3.60	26.8	21.6	7.4	10.0
29.10	243.70	WOOD LAKE	10	10.0	366.6	127.4		12.10	133.8	46.6	11.1	15.6
47.40	262.00	THACHER	25	25.0	465.6	207.5		18.30	99.0	80.1	5.4	13.7
54.40	269.00	VALENTINE	25	0.0	510.2	225.0		7.00	44.6	17.5	6.4	23.9
54.45	269.05		10	7.3	518.2	226.1						
60.95	275.55		20	11.7	584.2	265.2						
66.20	280.80	CROOKSTON	20	0.0	648.3	281.1		11.80	138.0	56.1	11.7	12.6
76.90	291.50	KILGORE	10	10.0	862.7	318.0		10.70	214.4	36.9	20.0	17.4
78.35	292.95		10	9.9	898.4	326.7	2 XXX					
78.45	293.05		10	9.9	902.8	327.3	4 XXX					
78.85	293.45		10	9.5	920.5	329.8	14 XXX					
78.90	293.50		10	9.4	922.8	330.1	16 XXX					
78.95	293.55		10	9.5	925.1	330.4	17 XXX					
83.15	297.75		25	11.8	1029.5	352.9						
83.25	297.85		25	11.2	1033.3	353.4	1 XX					
85.20	299.80	NENZEL	25	25.0	1063.0	359.3		8.30	200.3	41.2	24.1	12.1
92.90	307.50	CODY	30	30.0	1120.2	377.0		7.70	57.2	17.8	7.4	26.0
106.20	320.80	ELI	25	25.0	1262.7	405.8		13.30	142.5	28.7	10.7	27.8
117.40	332.00	MERRIMAN	25	0.0	1366.3	442.4		11.20	103.6	36.7	9.3	18.3
131.50	346.10	IRWIN	10	10.0	1576.5	489.4		14.10	210.2	47.0	14.9	18.0
145.30	359.90	GORDON	10	0.0	1766.5	564.7		13.80	190.0	75.3	13.8	11.0
153.40	368.00	CLINTON	30	0.0	1928.1	593.5		8.10	161.6	28.8	20.0	16.9
160.10	374.70	RUSHVILLE	30	0.0	2032.5	613.4		6.70	104.4	19.9	15.6	20.2
171.90	386.50	HAY SPRGS	25	0.0	2174.0	647.6		11.80	141.4	34.2	12.0	20.7
172.00	386.60		25	11.4	2183.5	648.9						
181.00	395.60	BORDEAUX	25	25.0	2258.2	672.5		9.10	84.3	24.8	9.3	22.0
191.90	406.50	CHADRON	10	0.0	2284.8	704.5		10.90	26.5	32.1	2.4	20.4

TRAIN TONNAGE RATING CALCULATOR

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	3	0	168	124	12.0	11.5	10.7	9.2
TNGE RTNG	50	113	49	113				
			2640	6022	12.0	11.5	10.7	9.2

CONSIST 3 ENGS 0 LDS 50 MTYS 50 TOT 5650 TRAILING TONS - Stall Pt. at MP 295.10

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	214.60	LONG PINE	0.0	0			
191.90	406.50	CHADRON	671.7	1557	0.0	0.0	1.6

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	139.0	8.11	31.13	3.63	17.1	1883

pcTpc v5.70: (3-Piece Truck) Completed on 12/18/90 at 15:46 with Speed Range ONE
CN/EL Resistances: R0 = 7852; R1 = 3613; R2 = 17280; Grade Comp at 0.04 per degree

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING— MIN 124X	INCREMENTAL DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	214.60	LONG PINE	25	0.0	0.0	0.0						
1.05	215.65		25	6.5	13.2	9.1						
8.40	223.00	AINSWORTH	25	25.0	93.9	28.8		8.40	93.9	28.8	11.2	17.5
13.40	228.00	SANDRIDGE	10	10.0	132.4	53.3		5.00	38.5	24.5	7.7	12.3
17.00	231.60	JOHNSTOWN	10	10.0	151.3	74.9		3.60	18.9	21.6	5.3	10.0
29.10	243.70	WOOD LAKE	10	10.0	245.4	119.6		12.10	94.1	44.7	7.8	16.2
47.40	262.00	THACHER	25	25.0	314.5	197.9		18.30	69.1	78.3	3.8	14.0
54.40	269.00	VALENTINE	25	0.0	348.5	215.4		7.00	34.0	17.5	4.9	24.1
54.45	269.05		10	8.0	354.2	216.4						
66.20	280.80	CROOKSTON	20	0.0	436.6	269.5		11.80	88.1	54.2	7.5	13.1
76.90	291.50	KILGORE	10	10.0	573.7	305.1		10.70	137.1	35.5	12.8	18.1
80.50	295.10		10	9.4	641.4	326.7	2 XXX					
80.65	295.25		10	10.0	646.5	327.6	5 XXX					
81.20	295.80		25	11.0	651.1	330.9	1 XX					
85.20	299.80	NENZEL	25	25.0	706.7	343.3		8.30	133.0	38.2	16.0	13.0
92.90	307.50	CODY	30	30.0	747.9	360.8		7.70	41.1	17.5	5.3	26.4
106.20	320.80	ELI	25	25.0	850.5	389.7		13.30	102.6	28.9	7.7	27.6
114.15	328.75		25	10.5	893.7	411.6						
116.65	331.25		25	10.4	917.0	420.9						
117.40	332.00	MERRIMAN	25	0.0	926.9	423.5		11.20	76.5	33.8	6.8	19.9
131.50	346.10	IRWIN	10	10.0	1064.8	468.0		14.10	137.9	44.6	9.8	19.0
145.30	359.90	GORDON	10	0.0	1201.9	539.3		13.80	137.1	71.3	9.9	11.6
153.40	368.00	CLINTON	30	0.0	1313.7	565.0		8.10	111.7	25.7	13.8	18.9
160.10	374.70	RUSHVILLE	30	0.0	1378.0	583.0		6.70	64.3	18.0	9.6	22.3
171.90	386.50	HAY SPRGS	25	0.0	1482.4	615.5		11.80	104.3	32.5	8.8	21.8
172.00	386.60		25	11.5	1489.6	616.9						
181.00	395.60	BORDEAUX	25	25.0	1537.6	639.9		9.10	55.2	24.4	6.1	22.4
191.90	406.50	CHADRON	10	0.0	1556.7	671.7		10.90	19.0	31.8	1.7	20.5

TRAIN TONNAGE RATING CALCULATOR

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	3	0	168	124	12.0	11.5	10.7	9.2
TNGE RTNG	50	122	49	122				
			2640	6472	12.0	11.5	10.7	9.2

CONSIST 3 ENGS 0 LDS 50 MTYS 50 TOT 6100 TRAILING TONS - Stall Pt. at MP 398.00

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	406.50	CHADRON	0.0	0			
191.90	214.60	LONG PINE	675.3	1176	1.3	1.0	4.4

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	104.5	6.13	23.52	5.19	17.1	2033

pcTpc v5.70: (3-Piece Truck) Completed on 12/18/90 at 15:55 with Speed Range ONE
CN/EL Resistances: R0 = 8122; R1 = 3883; R2 = 17280; Grade Comp at 0.04 per degree

---

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING-- MIN	124X	INCREMENTAL------- DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	406.50	CHADRON	10	0.0	0.0	0.0							
2.55	403.95		30	11.0	27.3	16.0							
8.25	398.25		25	12.0	127.0	34.5							
8.30	398.20		25	11.7	128.4	34.8	0	X					
8.50	398.00		25	10.4	134.2	35.9	3	XXX					
8.95	397.55		25	9.3	149.4	38.7	14	XXX					
9.00	397.50		25	9.3	151.2	39.0	16	XXX					
9.10	397.40		25	10.0	154.5	39.7	18	XXX					
10.55	395.95		25	11.6	186.0	45.5	0	X					
10.60	395.90		25	11.6	187.4	45.7	1	X					
10.90	395.60	BORDEAUX	25	15.1	194.8	47.1			10.90	194.8	47.1	17.9	13.9
20.00	386.50	HAY SPRGS	25	0.0	317.3	75.1			9.10	122.5	28.0	13.5	19.5
31.80	374.70	RUSHVILLE	30	0.0	379.1	106.3			11.80	61.8	31.2	5.2	22.7
31.85	374.65		30	8.3	384.6	107.3							
38.50	368.00	CLINTON	30	0.0	445.7	123.0			6.70	66.5	16.7	9.9	24.1
38.55	367.95		30	9.3	450.6	123.9							
46.60	359.90	GORDON	10	0.0	476.2	142.2			8.10	30.6	19.2	3.8	25.3
60.40	346.10	IRWIN	10	10.0	570.0	213.6			13.80	93.8	71.4	6.8	11.6
74.50	332.00	MERRIMAN	25	0.0	615.3	257.7			14.10	45.3	44.2	3.2	19.2
74.55	331.95		25	8.9	620.4	258.7							
85.70	320.80	ELI	25	25.0	680.7	291.9			11.20	65.4	34.2	5.8	19.7
99.00	307.50	CODY	30	30.0	747.6	320.1			13.30	66.9	28.2	5.0	28.3
106.70	299.80	NENZEL	25	25.0	794.4	337.0			7.70	46.7	16.9	6.1	27.3
115.00	291.50	KILGORE	10	10.0	826.8	370.4			8.30	32.4	33.4	3.9	14.9
125.70	280.80	CROOKSTON	20	0.0	849.5	405.7			10.70	22.7	35.3	2.1	18.2
137.50	269.00	VALENTINE	10	0.0	898.4	458.5			11.80	49.0	52.8	4.1	13.4
137.55	268.95		25	8.3	903.9	459.5							
144.50	262.00	THACHER	25	25.0	990.2	482.0			7.00	91.8	23.5	13.1	17.9
162.80	243.70	WOOD LAKE	10	10.0	1071.5	557.9			18.30	81.3	75.9	4.4	14.5
174.90	231.60	JOHNSTOWN	10	10.0	1122.2	602.3			12.10	50.7	44.4	4.2	16.4
178.50	228.00	SANDRIDGE	10	10.0	1138.0	623.9			3.60	15.8	21.6	4.4	10.0
183.50	223.00	AINSWORTH	30	25.0	1160.5	650.3			5.00	22.5	26.4	4.5	11.4
191.90	214.60	LONG PINE	25	0.0	1175.9	675.3			8.40	15.5	25.0	1.8	20.2

TRAIN TONNAGE RATING CALCULATOR

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	4	0	224	124	12.0	11.5	10.7	9.2
TNGE RTNG .	100	227	51	227				
			5280	23196	12.0	11.5	10.7	9.2

CONSIST 4 ENGS 0 LDS 100 MTYS 100 TOT 22700 TRAILING TONS - Stall Pt. at MP 206.35

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	81.80	NORFOLK	0.0	0			
131.80	213.60	LONG PINE	529.2	2445	0.0	0.0	3.4

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	277.2	18.55	24.45	9.28	14.9	5675

pcTpc v5.70: (3-Piece Truck) Completed on 12/18/90 at 16:08 with Speed Range ONE
CN/EL Resistances: R0 = 22236; R1 = 13918; R2 = 33840; Grade Comp at 0.04 per degree

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING-- MIN 124X	INCREMENTAL------- DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	81.80	NORFOLK	30	0.0	0.0	0.0						
0.50	82.30	NORFOLK UP	30	15.7	28.3	3.9		0.50	28.3	3.9	56.6	7.6
9.40	91.20	BATTLE CRK	30	18.7	219.9	35.2		8.90	191.5	31.2	21.5	17.1
16.60	98.40	MEADOW GRO	30	27.2	361.8	54.9		7.20	141.9	19.8	19.7	21.9
21.90	103.70	TILDEN	25	19.0	468.3	77.4		5.30	106.5	22.4	20.1	14.2
28.80	110.60	OAKDALE	25	21.8	577.5	94.9		6.90	109.2	17.6	15.8	23.6
34.20	116.00	NELIGH	25	19.5	663.0	109.2		5.40	85.5	14.2	15.8	22.8
41.05	122.85		25	11.4	771.9	131.0						
43.10	124.90	CLEARWATER	25	18.9	829.5	139.0		8.90	166.5	29.8	18.7	17.9
53.30	135.10	EWING	25	10.0	990.8	184.7		10.20	161.3	45.7	15.8	13.4
54.00	135.80		25	10.6	1005.3	188.9						
66.00	147.80	INMAN	10	10.0	1194.6	252.1		12.70	203.8	67.4	16.0	11.3
73.70	155.50	O'NEILL BN	10	10.0	1325.4	298.3		7.70	130.9	46.2	17.0	10.0
73.80	155.60	O'NEILL	10	10.0	1326.6	298.9		0.10	1.1	0.6	11.3	10.0
82.00	163.80	EMMET	25	21.9	1476.6	342.8		8.20	150.0	43.8	18.3	11.2
91.80	173.60	ATKINSON	10	10.0	1662.3	372.6		9.80	185.7	29.8	19.0	19.7
101.40	183.20	STUART	30	14.6	1817.1	418.9		9.60	154.8	46.4	16.1	12.4
111.50	193.30	NEWPORT	40	20.4	2023.9	447.7		10.10	206.8	28.8	20.5	21.0
122.70	204.50	BASSETT	30	20.9	2255.6	480.0		11.20	231.7	32.3	20.7	20.8
124.55	206.35		10	9.7	2286.3	485.7	2 XXX					
124.90	206.70		10	9.5	2302.4	487.9	11 XXX					
131.80	213.60	LONG PINE	10	0.0	2445.2	529.2		9.10	189.6	49.2	20.8	11.1

TRAIN TONNAGE RATING CALCULATOR

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	4	0	224	124	12.0	11.5	10.7	9.2
TNGE RTNG	100	227	51	227				
			5280	23196	12.0	11.5	10.7	9.2

CONSIST 4 ENGS 0 LDS 100 MTYS 100 TOT 22700 TRAILING TONS - Stall Pt. at MP 206.35

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	81.80	NORFOLK	0.0	0			
131.80	213.60	LONG PINE	557.2	2631	0.0	0.0	3.4

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	283.3	19.96	26.31	8.63	14.2	5675

pcTpc v5.70: (3-Piece Truck) Completed on 12/18/90 at 16:26 with Speed Range ONE
CN/EL Resistances: R0 = 22236; R1 = 13918; R2 = 33840; Grade Comp at 0.04 per degree

---

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING-- MIN 124X	INCREMENTAL------- DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	81.80	NORFOLK	30	0.0	0.0	0.0						
0.50	82.30	NORFOLK UP	30	15.7	28.3	3.9		0.50	28.3	3.9	56.6	7.6
9.40	91.20	BATTLE CRK	30	0.0	211.9	35.1		8.90	183.5	31.1	20.6	17.2
9.50	91.30		30	6.4	227.6	37.3						
9.65	91.45		30	9.9	235.5	38.4						
9.75	91.55		30	11.7	239.5	38.9						
16.60	98.40	MEADOW GRO	30	27.1	386.7	59.4		7.20	174.8	24.3	24.3	17.7
21.90	103.70	TILDEN	25	19.0	493.3	81.9		5.30	106.6	22.5	20.1	14.2
28.80	110.60	OAKDALE	25	0.0	595.4	99.7		6.90	102.1	17.8	14.8	23.2
34.20	116.00	NELIGH	25	0.0	718.2	118.8		5.40	122.8	19.1	22.7	17.0
34.35	116.15		25	5.7	742.9	122.2						
34.40	116.20		25	6.6	746.4	122.7						
34.60	116.40		25	9.7	757.1	124.2						
41.05	122.85		25	11.4	872.6	146.5						
43.10	124.90	CLEARWATER	25	18.9	930.2	154.5		8.90	212.0	35.7	23.8	14.9
53.30	135.10	EWING	25	10.0	1091.5	200.2		10.20	161.3	45.7	15.8	13.4
54.00	135.80		25	10.6	1106.1	204.4						
66.00	147.80	INMAN	10	10.0	1295.3	267.6		12.70	203.8	67.4	16.0	11.3
73.70	155.50	O'NEILL	10	9.4	1425.5	313.7		7.70	130.2	46.1	16.9	10.0
73.80	155.60	O'NEILL BN	10	0.0	1425.6	314.0		0.10	0.1	0.3	0.6	23.6
73.95	155.75		10	8.4	1443.3	316.4						
82.00	163.80	EMMET	25	0.0	1576.6	357.9		8.20	151.1	43.9	18.4	11.2
82.05	163.85		25	4.6	1588.2	359.5						
91.80	173.60	ATKINSON	10	10.0	1801.5	393.1		9.80	224.8	35.3	22.9	16.7
101.40	183.20	STUART	30	14.6	1956.3	439.5		9.60	154.8	46.4	16.1	12.4
111.50	193.30	NEWPORT	40	20.4	2163.1	468.3		10.10	206.8	28.8	20.5	21.0
122.70	204.50	BASSETT	30	0.0	2387.2	500.7		11.20	224.1	32.4	20.0	20.8
122.80	204.60		30	3.6	2413.1	504.3						
123.00	204.80		30	6.9	2429.8	506.6						
124.55	206.35		10	9.7	2472.4	513.7	2 XXX					
124.90	206.70		10	9.5	2488.5	516.0	11 XXX					
131.80	213.60	LONG PINE	10	0.0	2631.3	557.2		9.10	244.1	56.6	26.8	9.7

SAMPLE TRAIN LONG PINE TO NORFOLK

TRAIN NAME - - NONE

	NUMBER	NET TONS PER CAR	LENGTH (FEET)	GROSS TONS	ENGINE RATING IN MPH CONTINUOUS	ONE HOUR	1/2 HOUR	1/4 HOUR
GP-9	3	0	168	124	12.0	11.5	10.7	9.2
GRAIN	66	100	55	133				
MISC	33	0	53	30				
			5547	10140	12.0	11.5	10.7	9.2

CONSIST 3 ENGS 66 LDS 33 MTYS 99 TOT 9768 TRAILING TONS

DIST	MPost		TIME	FUEL	ENGINE RATING TIMES (MINUTES)		
0.00	213.60	LONG PINE	0.0	0			
131.80	81.80	NORFOLK	483.0	502	0.0	0.0	0.0

AVERAGES:	GAL/HOUR	GAL/MILE	GAL/CAR	TONS/GAL	MILES/HOUR	TONS/UNIT
	62.4	3.81	5.07	19.45	16.4	3256

pcTpc v5.70: (3-Piece Truck) Completed on 12/19/90 at 11:51 with Speed Range ONE
CN/EL Resistances: R0 = 14243; R1 = 6084; R2 = 33156; Grade Comp at 0.04 per degree

---

DIST	MPst	STATION	SPLM	SPD	FUEL	TIME	RATING-- MIN 124X	INCREMENTAL DIST	FUEL	TIME	GAL/ MILE	MILE /HR
0.00	213.60	LONG PINE	10	0.0	0.0	0.0						
0.01	213.59		10	2.9	3.7	0.7						
9.10	204.50	BASSETT	30	0.0	38.4	54.6		9.10	38.4	54.6	4.2	10.0
9.20	204.40		30	9.9	46.5	56.1						
20.30	193.30	NEWPORT	40	40.0	96.2	75.3		11.20	57.8	20.7	5.2	32.5
30.40	183.20	STUART	30	30.0	105.5	92.9		10.10	9.3	17.6	0.9	34.4
40.00	173.60	ATKINSON	10	10.0	142.4	131.4		9.60	36.8	38.5	3.8	15.0
49.80	163.80	EMMET	25	0.0	166.5	162.6		9.80	24.2	31.2	2.5	18.8
58.00	155.60	O'NEILL BN	10	0.0	203.4	201.3		8.20	36.8	38.7	4.5	12.7
58.10	155.50	O'NEILL	10	10.0	211.0	202.7		0.10	7.6	1.4	76.2	4.2
65.80	147.80	INMAN	10	10.0	231.1	248.9		7.70	20.1	46.2	2.6	10.0
78.50	135.10	EWING	25	25.0	270.4	315.5		12.70	39.2	66.6	3.1	11.4
88.70	124.90	CLEARWATER	25	25.0	306.5	363.4		10.20	36.2	47.9	3.5	12.8
97.60	116.00	NELIGH	25	0.0	335.2	389.6		8.90	28.7	26.2	3.2	20.4
97.63	115.97		25	5.7	340.1	390.5						
103.00	110.60	OAKDALE	25	0.0	363.4	403.3		5.40	28.2	13.8	5.2	23.5
103.05	110.55		25	6.9	369.6	404.5						
109.90	103.70	TILDEN	25	25.0	401.3	421.9		6.90	38.0	18.6	5.5	22.3
114.70	98.90		30	11.4	411.0	440.2						
115.20	98.40	MEADOW GRO	30	22.1	420.3	441.9		5.30	18.9	19.9	3.6	15.9
122.40	91.20	BATTLE CRK	30	0.0	445.4	456.8		7.20	25.1	14.9	3.5	29.0
131.30	82.30	NORFOLK UP	20	20.0	501.8	481.9		8.90	56.5	25.0	6.3	21.3
131.80	81.80	NORFOLK	30	0.0	502.3	483.0		0.50	0.5	1.1	1.0	26.5

COSTNB5 07-Feb-91 NORFOLK-CHADRON-CRAWFORD CNW LINES CLIENT ABC SELLING LINE CNW

BASE CASE TRAFFIC-WITH 65% OF CLASS ONE LABOR EXPENSE AND REDUCED CREWS-SEE SENSITIVITIES

BASE CASE-1989 ACTUAL TRAFFIC-DIMINISHED TRAFFIC LEVEL

EXECUTIVE SUMMARY

	TRACK SEGMENT	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PER CAR	PERCENT OF TOTAL	0 0
	ROUTE MILES	133.1	217.4	0	0	0	0	0	350.5		-	
		38%	62%	0%	0%	0%	0%	0%	100%			
REVENUE CARS HANDLED	ORIGINATED ON LINE	1242	1550	0	0	0	0	0	2792		63%	
	TERMINATED ON LINE	336	1298	0	0	0	0	0	1634		37%	
	TOTAL ORIG & TERM	1578	2848	0	0	0	0	0	4426		100%	
	CARS PER MILE ORIG & TER	12	13	0	0	0	0	0	13			
	PCT. OF TOTAL	36%	64%	0%	0%	0%	0%	0%	100%			
	CNW SWG/OVERHEAD TRAFFIC	0	0	0	0	0	0	0	0		0%	
	OTHER TRAFFIC HANDLED	0	0	0	0	0	0	0	0		0%	
	TOTAL REVENUE CARS	1578	2848	0	0	0	0	0	4426		100%	
	TOTAL REV CARS PER MILE	12	13	ERR	ERR	ERR	ERR	ERR	13			
	PCT. OF TOTAL	36%	64%	0%	0%	0%	0%	0%	100%			
REVENUE	ORIGINATED TRAFFIC	$502,306	$1,059,052	$0	$0	$0	$0	$0	$1,561,358	$559	70%	
	TERMINATED TRAFFIC	$78,053	$388,984	$0	$0	$0	$0	$0	$467,037	$286	21%	
	SWG/OVERHEAD TRAFFIC	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	
	OTHER TRAFFIC HANDLED	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%	
	TRACKAGE RIGHTS RECEIVAB	$0	$0	$0	$0	$0	$0	$0	$0		0%	
	ALL OTHER REVENUE	$39,932	$80,501	$0	$0	$0	$0	$80,000	$200,433		9%	
	TOTAL REVENUES	$620,291	$1,528,537	$0	$0	$0	$0	$80,000	$2,228,828	$504	100%	
	% OF TOTAL REVENUE	28%	69%	0%	0%	0%	0%	4%	100%			
	REVENUE PER CAR-O&T	$368	$508	$0	$0	$0	$0	$0	$458			
	REVENUE PER CAR OH	$0	$0	ERR	$0	$0	$0	$0	ERR			
	REVENUE PER CAR-TOTAL	$393	$537	$0	$0	$0	$0	$0	$504			
EXPENSES	EXPENSES-PRE-DEBT & DEPR	$1,897,716	$2,952,310	$0	$0	$0	$0	$0	$4,850,026			
	OPERATING COST PER CAR	$1,203	$1,037	$0	$0	$0	$0	$0	$1,096			
	OPERATING INCOME PER CAR	($810)	($500)	$0	$0	$0	$0	$0	($592)			
	TOTAL PRE TAX EXPENSES	$2,605,018	$3,524,505	$0	$0	$0	$0	$0	$6,129,523			
	% OF TOTAL EXPENSES	42%	58%	0%	0%	0%	0%	0%	100%			
	TOTAL PRE-TAX INCOME	($1,984,727)	($1,995,968)	$0	$0	$0	$0	$0	($3,900,695)			
	PRE-TAX COST PER CAR	$1,651	$1,238	ERR	$0	$0	$0	$0	$1,385			
	PRE-TAX INCOME PER CAR	($1,258)	($701)	$0	$0	$0	$0	$0	($881)			

::

TRACK SEGMENT	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PERCENT OF TOTAL
SEGMENT MILES									
MILES PURCHASED-INCL. BRANCH LINES	129.6	196.3	0.0	0.0	0.0	0.0	0.0	325.9	93.0%
MILES TRACKAGE RIGHTS-NORFOLK	3.5	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.0%
MILES TRACKAGE RIGHTS-DAKOTA JCT TO CRAWFORD	0.0	21.1	0.0	0.0	0.0	0.0	0.0	21.1	6.0%
MILES TRACKAGE RIGHTS-C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
MILES TRACKAGE RIGHTS D	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
MILES TRACKAGE RIGHTS E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
TOTAL MILES	133.1	217.4	0.0	0.0	0.0	0.0	0.0	350.5	100.0%
PERCENT OF TOTAL	38%	62%	0%	0%	0%	0%	0%	100%	
TRAFFIC VOLUMES - CARLOADS									
TRAFFIC ORIGINATED							0	0	0.0%
AUTOMOTIVE	0	0	0	0	0	0	0	0	0.0%
AGRICULTURAL	1,242	1,550	0	0	0	0	0	2,792	100.0%
CHEMICAL	0	0	0	0	0	0	0	0	0.0%
FOOD/CONSUMER	0	0	0	0	0	0	0	0	0.0%
METALS	0	0	0	0	0	0	0	0	0.0%
MINERALS	0	0	0	0	0	0	0	0	0.0%
PAPER & LUMBER	0	0	0	0	0	0	0	0	0.0%
FERTILIZER	0	0	0	0	0	0	0	0	0.0%
MISCELLANEOUS	0	0	0	0	0	0	0	0	0.0%
COAL, COKE & IRON ORE	0	0	0	0	0	0	0	0	0.0%
TOTAL ORIGINATED CARLOADS	1,242	1,550	0	0	0	0	0	2,792	100.0%
ORIGINATED CARLOADS PER MILE OPERATED	9	7	0	0	0	0	0	8	
PERCENT OF TOTAL	44%	56%	0%	0%	0%	0%	0%	100%	
TRAFFIC TERMINATED							0	0	0.0%
AUTOMOTIVE	0	0	0	0	0	0	0	0	0.0%
AGRICULTURAL	0	0	0	0	0	0	0	0	0.0%
CHEMICAL	0	0	0	0	0	0	0	0	0.0%
FOOD/CONSUMER	0	0	0	0	0	0	0	0	0.0%
METALS	0	0	0	0	0	0	0	0	0.0%
MINERALS	0	0	0	0	0	0	0	0	0.0%
PAPER & LUMBER	0	0	0	0	0	0	0	0	0.0%
FERTILIZER	0	0	0	0	0	0	0	0	0.0%
MISCELLANEOUS	336	1,298	0	0	0	0	0	1,634	100.0%
COAL, COKE & IRON ORE	0	0	0	0	0	0	0	0	0.0%
TOTAL TERMINATED CARLOADS	336	1,298	0	0	0	0	0	1,634	100.0%
TERMINATED CARLOADS PER MILE OPERATED	3	6	0	0	0	0	0	5	
PERCENT OF TOTAL	21%	79%	0%	0%	0%	0%	0%	100%	
TOTAL CARLOADS ORIGINATED & TERMINATED	1,578	2,848	0	0	0	0	0	4,426	
TOTAL CARLOADS PER MILE OPERATED	12	13	0	0	0	0	0	13	
PERCENT OF TOTAL	36%	64%	0%	0%	0%	0%	0%	100%	
GRAND TOTAL CARLOADS ORIG. & TERM.	1,578	2,848	0	0	0	0	0	4,426	100.0%

SENSITIVITY FACTORS

LABOR RATES	65.00%
ARBITRARIES	0.00%
TRAFFIC RATE	100.00%
REVENUE GROW	100.00%
CONTRACT ALL	0.00%

CARLOADS AND REVENUE FOR OVERHEAD TRAFFIC		NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PERCENT OF TOTAL
SWG/OVERHEAD CARS	LOADS	0	0	0	0	0	0	0	0	0.0%
PER DIEM/CAR	$0.00 EMPTIES	0	0	0	0	0	0	0	0	0.0%
OVERHEAD CARS	LOADS	0	0	0	0	0	0	0	0	0.0%
PER DIEM/CAR	$0.00 EMPTIES	0	0	0	0	0	0	0	0	0.0%
OVERHEAD CARS	LOADS	0	0	0	0	0	0	0	0	0.0%
PER DIEM/CAR	$0.00 EMPTIES	0	0	0	0	0	0	0	0	0.0%
OVERHEAD LOADS		0	0	0	0	0	0	0	0	0.0%
OVERHEAD EMPTIES		0	0	0	0	0	0	0	0	0.0%
OVERHEAD CARS		0	0	0	0	0	0	0	0	0.0%
GRAND TOTAL REVENUE CARLOADS AND OVERHEAD CAR		1,578	2,848	0	0	0	0	0	4,426	100.0%
TOTAL CARLOADS PER MILE OPERATED		12	13	0	0	0	0	0	13	
PERCENT OF TOTAL		36%	64%	0%	0%	0%	0%	0%	100%	
REVENUE										
SWITCHING REVENUE PER CAR	LOADS	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00		
	EMPTIES	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00		
SWG/OVERHEAD REV.	LOADS	$0	$0	$0	$0	$0	$0	$0	$0	
MILES	0 EMPTIES	$0	$0	$0	$0	$0	$0	$0	$0	
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	
OVERHEAD REV.	LOADS	$0	$0	$0	$0	$0	$0	$0	$0	
	EMPTIES	$0	$0	$0	$0	$0	$0	$0	$0	
MILES	0									
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	
OVERHEAD REV.	LOADS	$0	$0	$0	$0	$0	$0	$0	$0	
MILES	0 EMPTIES	$0	$0	$0	$0	$0	$0	$0	$0	
	TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	
TOTAL REVENUE	LOADS	$0	$0	$0	$0	$0	$0	$0	$0	
	EMPTIES	$0	$0	$0	$0	$0	$0	$0	$0	
SWG/OVERHEAD REVENUES		$0	$0	$0	$0	$0	$0	$0	$0	
TRACKAGE RIGHTS RECEIVABLE										
ESTIMATED ANNUAL CARS		0	0	0	0	0	0	0	0	
TRACK MILES		0	0	0	0	0	0	0		
TRACKAGE RIGHTS RATE PER CAR MILE		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00		
TOTAL ESTIMATED REVENUES		$0	$0	$0	$0	$0	$0	$0	$0	
TOTAL ESTIMATED CAR HIRE FOR OVERHEAD TRAFFIC		$0	$0	$0	$0	$0	$0	$0	$0	

REVENUES	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PERCENT OF TOTAL
TRAFFIC ORIGINATED							$0	$0	0.0%
AUTOMOTIVE	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
AGRICULTURAL	$502,306	$1,059,052	$0	$0	$0	$0	$0	$1,561,358	100.0%
CHEMICAL	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
FOOD/CONSUMER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
METALS	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
MINERALS	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
PAPER & LUMBER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
FERTILIZER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
MISCELLANEOUS	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
COAL, COKE & IRON ORE	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
TOTAL ORIGINATED	$502,306	$1,059,052	$0	$0	$0	$0	$0	$1,561,358	100.0%
ORIGINATED REVENUE PER MILE OPERATED	$3,774	$4,871	$0	$0	$0	$0	$0	$4,455	
PERCENT OF TOTAL	32%	68%	0%	0%	0%	0%	0%	100%	
TRAFFIC TERMINATED							$0	$0	0.0%
AUTOMOTIVE	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
AGRICULTURAL	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
CHEMICAL	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
FOOD/CONSUMER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
METALS	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
MINERALS	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
PAPER & LUMBER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
FERTILIZER	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
MISCELLANEOUS	$78,053	$388,984	$0	$0	$0	$0	$0	$467,037	100.0%
COAL, COKE & IRON ORE	$0	$0	$0	$0	$0	$0	$0	$0	0.0%
TOTAL TERMINATED	$78,053	$388,984	$0	$0	$0	$0	$0	$467,037	100.0%
TERMINATED REVENUE PER MILE OPERATED	$586	$1,789	$0	$0	$0	$0	$0	$1,332	
PERCENT OF TOTAL	17%	83%	0%	0%	0%	0%	0%	100%	
TOTAL REVENUES ORIGINATED & TERMINATED TRAFFI	$580,359	$1,448,036	$0	$0	$0	$0	$0	$2,028,395	
TOTAL REVENUE (ORIG+TERM) PER MILE OPERATED	$4,360	$6,661	$0	$0	$0	$0	$0	$5,787	
PERCENTAGE OF TOTAL	29%	71%	0%	0%	0%	0%	0%	100%	
REVENUE FOR OVERHEAD TRAFFIC	$0	$0	$0	$0	$0	$0	$0	$0	
TOTAL CARLOAD REVENUE	$580,359	$1,448,036	$0	$0	$0	$0	$0	$2,028,395	
TOTAL CARLOAD REVENUE PER MILE OPERATED	$4,360	$6,661	$0	$0	$0	$0	$0	$5,787	
PERCENT OF TOTAL	29%	71%	0%	0%	0%	0%	0%	100%	

TOI

COST / REVENUE MODEL
FOR
THE CNW NORTHERN LINE

REVENUES PER CAR	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS
TRAFFIC ORIGINATED			$0	$0	$0	$0	$0	
AUTOMOTIVE								
AGRICULTURAL	$404	$683						$559
CHEMICAL								
FOOD/CONSUMER								
METALS								
MINERALS								
PAPER & LUMBER								
FERILIZER								
MISCELLANEOUS								
COAL, COKE & IRON ORE								
TOTAL ORIGINATED	$404	$683	$0	$0	$0	$0	$0	$559
TRAFFIC TERMINATED			$0	$0	$0	$0	$0	
AUTOMOTIVE								
AGRICULTURAL								
CHEMICAL								
FOOD/CONSUMER								
METALS								
MINERALS								
PAPER & LUMBER								
FERTILIZER								
MISCELLANEOUS	$232	$300						$286
COAL, COKE & IRON ORE								
TOTAL TERMINATED	$232	$300	$0	$0	$0	$0	$0	$286
AVERAGE REVENUE PER CAR ORIG. & TERM.	$368	$508	$0	$0	$0	$0	$0	$458
AVERAGE REVENUE PER CAR OVERHEAD	$0	$0	$0	$0	$0	$0	$0	$0
OTHER REVENUES								
SWITCHING	$0	$0	$0	$0	$0	$0	$0	$0
DEMURRAGE	$30,438	$15,374	$0	$0	$0	$0	$0	$45,812
PER DIEM RECEIVABLE	$0	$0	$0	$0	$0	$0	$0	$0
TRACKAGE RIGHTS REC.	$0	$0	$0	$0	$0	$0	$0	$0
REAL ESTATE REVENUES	$9,494	$15,506	$0	$0	$0	$0	$0	$25,000
CONTRACT ALLOWANCES	$0	$0	$0	$0	$0	$0	$0	$0
MISC. REVENUES	$0	$49,621	$0	$0	$0	$0	$80,000	$129,621
TOTAL OTHER REVENUES	$39,932	$80,501	$0	$0	$0	$0	$80,000	$200,433
GRAND TOTAL REVENUES	$620,291	$1,528,537	$0	$0	$0	$0	$80,000	$2,228,828
GR. TOT. REV. PER CAR	$393	$537	$0	$0	$0	$0	$0	$504
PERCENTAGE OF TOTAL	28%	69%	0%	0%	0%	0%	4%	100%

STATEMENT OF PROJECTED REVENUES	GROWTH RATE	REV. INCREASES	BASE YEAR	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
TRAFFIC ORIGINATED	0.00%	5.25%	$0									
AUTOMOTIVE	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AGRICULTURAL	5.00%	5.25%	$1,561,358	$1,721,367	$1,897,774	$2,092,259	$2,306,675	$2,543,064	$2,803,679	$3,091,002	$3,407,770	$3,757,001
CHEMICAL	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FOOD/CONSUMER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
METALS	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MINERALS	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PAPER & LUMBER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FERTILIZER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISCELLANEOUS	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
COAL, COKE & IRON ORE	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ORIGINATED	10.25%	5.25%	$1,561,358	$1,721,367	$1,897,774	$2,092,259	$2,306,675	$2,543,064	$2,803,679	$3,091,002	$3,407,770	$3,757,001
TRAFFIC TERMINATED	0.00%	5.25%	$0									
AUTOMOTIVE	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AGRICULTURAL	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CHEMICAL	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FOOD/CONSUMER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
METALS	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MINERALS	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PAPER & LUMBER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FERTILIZER	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISCELLANEOUS	5.00%	5.25%	$467,037	$514,899	$567,666	$625,841	$689,978	$760,687	$838,643	$924,588	$1,019,340	$1,123,803
COAL, COKE & IRON ORE	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL TERMINATED	10.25%	5.25%	$467,037	$514,899	$567,666	$625,841	$689,978	$760,687	$838,643	$924,588	$1,019,340	$1,123,803
OVERHEAD TRAFFIC	0.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL TRAFFIC	10.25%	5.25%	$2,028,395	$2,236,266	$2,465,440	$2,718,100	$2,996,653	$3,303,752	$3,642,322	$4,015,590	$4,427,110	$4,880,803
OTHER REVENUES												
SWITCHING	1.00%	5.25%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
DEMURRAGE	-5.00%		$45,812	$43,521	$41,345	$39,278	$37,314	$35,449	$33,676	$31,992	$30,393	$28,873
PER DIEM RECEIVABLE	0.00%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TRACKAGE RIGHTS REC.	0.00%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
REAL ESTATE REVENUES	10.00%		$25,000	$27,500	$30,250	$33,275	$36,603	$40,263	$44,289	$48,718	$53,590	$58,949
CONTRACT ALLOWANCES	0.00%		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MISC. REVENUES	0.00%		$129,621	$69,621	$69,621	$69,621	$69,621	$54,621	$54,621	$54,621	$54,621	$54,621
TOTAL OTHER REVENUES	-29.83%		$200,433	$140,642	$141,216	$142,174	$143,537	$130,332	$132,586	$135,331	$138,603	$142,442
GRAND TOTAL REVENUES	6.64%		$2,228,828	$2,376,908	$2,606,656	$2,860,274	$3,140,190	$3,434,084	$3,774,908	$4,150,921	$4,565,713	$5,023,245

TRAIN EXPENSES		NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PCT. OF TOTAL	COST PER CAR HANDLED
ANNUAL CREW EXPENSE (PAGE 13)		$35,036	$35,036	$0	$0	$0	$0	$0	$70,072	1.44%	$15.83
CLERICAL EXPENSE (PAGE 12)		$0	$0	$0	$0	$0	0	$131,618	$131,618	2.71%	$29.74
DISPATCHING (PAGE 12)		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
PROPORTION OF HEADQUARTER EXPENSE		$46,926	$84,692	$0	$0	$0	$0	$0	$0		$0.00
CAR CLEANING		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
EQUIPMENT UPGRADING & REPAIRS		$0	$0	$0	$0	$0	$0	$0	$0		
CAR DEPARTMENT (NET EXPENSES INCL. UPGRDG & R		$7,101	$12,816	$0	$0	$0	$0	$0	$19,917	0.41%	$4.50
LOCOMOTIVE FUEL (PAGE 14)		$87,318	$87,318	$0	$0	$0	$0	$0	$174,636	3.60%	$39.46
LOCOMOTIVE REPAIRS & MAINT		$38,848	$38,848	$0	$0	$0	$0	$0	$77,695	1.60%	$17.55
CAB/EOT/RADIO/CELLULAR PHONE		$2,372	$2,372	$0	$0	$0	$0	$0	$4,744	0.10%	$1.07
LOCOMOTIVE INSPECTION		$9,821	$9,821	$0	$0	$0	$0	$0	$19,642	0.40%	$4.44
LOCOMOTIVE INTEREST/LEASE EXPENSE		$35,866	$35,866	$0	$0	$0	$0	$0	$71,732	1.48%	$16.21
FREIGHT TRAIN SUPPLIES	% OF CREW EXP	$175	$175	$0	$0	$0	$0	$0	$350	0.01%	$0.08
YARD & STATION SUPPLIES	% OF CREW EXP	$526	$526	$0	$0	$0	$0	$0	$1,051	0.02%	$0.24
TRAVEL EXPENSES	% OF CREW EXP	$105	$105	$0	$0	$0	$0	$0	$210	0.00%	$0.05
EQUIPMENT RENTAL	% OF CREW EXP	$1,752	$1,752	$0	$0	$0	$0	$0	$3,504	0.07%	$0.79
FURNITURE & EQUIPMENT	% OF CREW EXP	$350	$350	$0	$0	$0	$0	$0	$701	0.01%	$0.16
STATIONRY & PRINTING	% OF CREW EXP	$701	$701	$0	$0	$0	$0	$0	$1,401	0.03%	$0.32
POSTAGE	% OF CREW EXP	$175	$175	$0	$0	$0	$0	$0	$350	0.01%	$0.08
PUBLISHING & SUBSCRIPTIONS	% OF CREW EXP	$35	$35	$0	$0	$0	$0	$0	$70	0.00%	$0.02
TELEPHONE & UTILITIES	% OF CREW EXP	$2,629	$2,628	$0	$0	$0	$0	$0	$5,255	0.11%	$1.19
MOTOR VEHICLES	% OF CREW EXP	$876	$876	$0	$0	$0	$0	$0	$1,752	0.04%	$0.40
TAXI-MEALS-LODGING	LAYOVER M.DAYS X $25	$2,500	$2,500	$0	$0	$0	$0	$0	$5,000	0.10%	$1.13
SAFETY & CASUALTY	% OF CREW EXP	$1,752	$1,752	$0	$0	$0	$0	$0	$3,504	0.07%	$0.79
JT. FACILITIES & INTERLOCKINGS	EST.-ACT. N/A	$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
BUILDING LEASES & RENTALS	ESTIMATED	$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
GENERAL AND EMPLOYEE CLAIMS	% OF CREW EXP	$1,752	$1,752	$0	$0	$0	$0	$0	$3,504	0.07%	$0.79
FRT CLAIMS	$0.50 PER CAR	$789	$1,424	$0	$0	$0	$0	$0	$2,213	0.05%	$0.50
INSURANCE	12.5% OF S.T. WAGES	$28,748	$46,956	$0	$0	$0	$0	$0	$75,704	1.56%	$17.10
DERAILMENTS	$7.50 CREW/HOUR	$9,000	$9,000	$0	$0	$0	$0	$0	$18,000	0.37%	$4.07
MILES TRACKAGE RIGHTS-NORFOLK		$2,204	$3,768	$0	$0	$0	$0	$0	$5,972	0.12%	$1.35
MILES TRACKAGE RIGHTS-DAKOTA JCT TO CRAWFORD		$116	$2,524	$0	$0	$0	$0	$0	$2,640	0.05%	$0.60
MILES TRACKAGE RIGHTS-C		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
MILES TRACKAGE RIGHTS D		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
MILES TRACKAGE RIGHTS E		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
OPERATING TAXES	$200 PER MILE	$25,920	$39,260	$0	$0	$0	$0	$0	$65,180	1.34%	$14.73
CAR HIRE EXPENSE	10 DAYS @$15	$179,505	$230,610	$0	$0	$0	$0	$0	$410,115	8.46%	$92.66
PRIVATE CAR MILES	$.32 CAR MILE	$20,932	$191,164	$0	$0	$0	$0	$0	$212,096	4.37%	$47.92
CAR ACCOUNTING & INFORMATION SYS	@$2.50PER CA	$3,945	$7,120	$0	$0	$0	$0	$0	$11,065	0.23%	$2.50
ARBITRARY & GREIVANCE PAYMENTS	% OF CREW EXP	$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
CONTINGENCIES	5%	$27,389	$42,596	$0	$0	$0	$0	$0	$69,985	1.44%	$15.81
TOTAL TRAIN EXPENSES		$575,160	$894,517	$0	$0	$0	$0	$0	$1,469,677	30.30%	$332.06

OTHER EXPENSES		NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PCT. OF TOTAL	COST PER CAR HANDLED
ENGRG EXPENSE-MAT'L-% OF LABOR	125%	$177,513	$268,871	$0	$0	$0	$0	$0	$446,384	9.20%	$100.85
ENGRG EXPENSE-LABOR		$142,010	$215,097	$0	$0	$0	$0	$0	$357,107	7.36%	$80.68
ENGRG EXPENSE-CONTRACTORS-PER MILE		$5,850	$5,850	$0	$0	$0	$0	$0	$3,900		
ENGRG EXPENSE-CONTRACTORS		$758,160	$1,148,355	$0	$0	$0	$0	$0	$1,906,515	39.31%	$430.75
ENGRG EXPENSE-EQUIPMENT % OF LAB	40%	$56,804	$86,039	$0	$0	$0	$0	$0	$142,843	2.95%	$32.27
PROPORTION OF HEADQUARTER EXPENSE		$0	$0	$0	$0	$0	$0	$0	$0		$0.00
TOTAL ENGINEERING EXPENSE		$1,134,487	$1,718,362	$0	$0	$0	$0		$2,852,849	58.82%	$644.57
ENGINEERING EXPENSE PER MILE		$8,754	$8,754						$8,754		
AREA MANAGERS		0.00	0.00	0.00	0.00	0.00	0.00	7	7		
COST OF AREA MANAGERS		$0	$0	$0	$0	$0	$0	$0	$0	0.00%	$0.00
PROPORTION OF HEADQUARTER MANAGEMENT		$87,350	$157,650	$0	$0	$0	$0	$245,000	$245,000	5.05%	$55.35
HDQRTR FRINGES @	45%	$39,307	$70,943	$0	$0	$0	$0	$110,250	$110,250	2.27%	$24.91
TOTAL COST OF MANAGERS		$126,657	$228,593	$0	$0	$0	$0	$355,250	$355,250		$80.26
OTHER ADMINISTRATIVE EXPENSE		$61,412	$110,838	$0	$0	$0	$0	$172,250	$172,250	3.55%	$38.92
TOTAL ALL OPERATING EXPENSES		$1,897,716	$2,952,310	$0	$0	$0	$0		$4,850,026	100.00%	$1,095.80
PCT. OF TOTAL OPERATING EXPENSES		39%	61%	0%	0%	0%	0%	0%	100%		
OPERATING COST PER CAR		$1,203	$1,037						$1,096		
TOTAL REVENUES PER CAR		$393	$537						$504		
OPERATING INCOME PER CAR (LOSS)		($810)	($500)	$0	$0	$0	$0	$0	($592)		
REVENUE PER OPERATING MILE		$4,660	$7,031						$6,359		
COST PER OPERATING MILE		$14,258	$13,580						$13,837		
INCOME PER OPERATING MILE (LOSS)		($9,597)	($6,549)	$0	$0	$0	$0	$0	($7,478)		
NET OPERATING INCOME (LOSS)		($1,277,426)	($1,423,773)	$0	$0	$0	$0	$0	($2,621,198)		
DEPRECIATION-LOCOMOTIVES 1ST YEAR		$62,500	$62,500	$0	$0	$0	$0	$0	$125,000		$28.24
DEPRECIATION-ENGINEERING EQUIPMENT		$17,206	$26,061	$0	$0	$0	$0	$0	$43,267		$9.78
DEPRECIATION-OTHER EQUIPMENT		$0	$0	$0	$0	$0	$0	$0	$0		$0.00
DEPRECIATION-BUILDINGS & SHOPS		$0	$0	$0	$0	$0	$0	$0	$0		
DEPRECIATION-PROPERTY		$414,720	$157,040	$0	$0	$0	$0	$0	$571,760		$129.18
TOTAL DEPRECIATION		$494,426	$245,601	$0	$0	$0	$0	$0	$740,027		$167.20
CAPITAL SPENDING % OF NET INCOME	10%	$0	$0	$0	$0	$0	$0	$0	$0		$0.00
DEBT SERVICE											$0.00
RAILROAD		$111,563	$168,980	$0	$0	$0	$0	$0	$280,543		$63.39
OPERATING CAPITAL		$101,313	$157,614	$0	$0	$0	$0	$0	$258,927		$58.50
EQUIPMENT		$0	$0	$0	$0	$0	$0	$0	$0		$0.00
PRE-TAX ANNUAL COSTS		$2,605,018	$3,524,505	$0	$0	$0	$0	$0	$6,129,523		
PRE-TAX COST PER CAR		$1,651	$1,238	$0	$0	$0	$0	$0	$1,385		
PRE-TAX NET EARNINGS		($1,984,727)	($1,995,968)	$0	$0	$0	$0	$0	($3,900,695)		
PRE-TAX NET EARNINGS PER CAR		($1,258)	($701)	$0	$0	$0	$0	$0	($881)		
PRE-TAX NET EARNINGS PER OPERATING MILE		($14,912)	($9,181)						($11,129)		
PRE-TAX OPERATING RATIO		420%	231%					0%	275%		

CAPITAL ACCOUNTS			NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	TOTALS	PCT. OF TOTAL	COST PER CAR HANDLED
WORKING CAPITAL												
OPERATING CAPITAL REQUIRED		$970,005	$379,543	$590,462	$0	$0	$0	$0	$0	$970,005		
DEBT SERVICE	Interest	12.00%	$101,313	$157,614	$0	$0	$0	$0	$0	$258,927		$58.50
	Years	5										
PERCENT OF ANNUALIZED EXPENSE		20%										
LOAN TO PURCHASE RAILROAD												
PURCHASE PRICE PER MILE			$20,000	$20,000	$0	$0	$0	$0	$0	$20,000		
PURCHASE PRICE	Interest	12.00%	$2,592,000	$3,926,000	$0	$0	$0	$0	$0	$6,518,000		
DEBT SERVICE	Years	10	$111,563	$168,980	$0	$0	$0	$0	$0	$280,543		$63.39
	Percent Financed	25%										
CAPITAL STOCK TO BE SOLD		$5,743,988										
LOAN TO REHAB RAILROAD												
REHAB EXPENSE PER MILE			$3,500	$3,500	$0	$0	$0	$0	$0	$0		
REHAB EXPENSE	Interest	12.00%	$453,600	$687,050	$0	$0	$0	$0	$0	$1,140,650		
DEBT SERVICE	Years	3	$45,198	$68,460	$0	$0	$0	$0	$0	$113,658		
	Percent Financed	25%										
LOAN TO PURCHASE EQUIPMENT (CARS)												
EQUIPMENT PURCHASE												
TOTAL COST	Interest	0.00%	$0	$0	$0	$0	$0	$0	$0	$0		
DEBT SERVICE	Years	1	$0	$0	$0	$0	$0	$0	$0	$0		$0.00
LOCOMOTIVE PURCHASE												
FOUR AXLE	Unit Cost	$125,000	No. Units	5	Total Cost	$625,000						
TOTAL COST	Interest	12.00%										
DEBT SERVICE	Years	7	$35,866	$35,866	$0	$0	$0	$0	$0	$132,395		
LEASE COST PER UNIT		$0	$0	$0	$0	$0	$0	$0	$0	$0		
SIX AXLE	Unit Cost	$0	No. Units	0	Total Cost	$0						
TOTAL COST	Interest	0.00%										
DEBT SERVICE	Years	0	$0	$0	$0	$0	$0	$0	$0	ERR		
LEASE COST PER UNIT		$100,000	$0	$0	$0	$0		$0	$0	$0		
TOTAL LOCO DEBT SERVICE			$35,866	$35,866	$0	$0	$0	$0	$0	ERR		ERR
TOTAL LOCO LEASE			$0	$0	$0	$0	$0	$0	$0	$0		$0.00

	FOUR AXLE	SIX AXLE	TOTAL
PREDICTED LIFE OF LOCOMOTIVE	10	10	
RESIDUAL VALUE	$30,000	$30,000	
FIRST YEAR DEPRECIATION	$125,000	$0	$125,000
DOUBLE DECLINING BALANCE METHOD			

EQUIPMENT DEPRECIATED STRAIGHT LINE OVER TWENTY YEARS WITH ONE HALF VALUE AS RESIDUAL

PRO FORMA INCOME STATEMENT	EST. RATE	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR	SIXTH YEAR	SEVENTH YEAR	EIGHTH YEAR	NINTH YEAR	TENTH YEAR
OPERATING REVENUES											
FREIGHT		$2,028,395	$2,236,266	$2,465,440	$2,718,100	$2,996,653	$3,303,752	$3,642,322	$4,015,590	$4,427,110	$4,880,803
OTHER OPERATING REVENUES		$45,812	$43,521	$41,345	$39,278	$37,314	$35,449	$33,676	$31,992	$30,393	$28,873
TOTAL REVENUES		$2,074,207	$2,279,788	$2,506,786	$2,757,378	$3,033,967	$3,339,200	$3,675,998	$4,047,582	$4,457,503	$4,909,676
OPERATING EXPENSES											
TRANSPORTATION	EST. RATE										
FUEL	7.20%	$174,636	$187,210	$200,689	$215,138	$230,628	$247,234	$265,035	$284,117	$304,573	$326,503
OTHER TRANSPORTATION	4.50%	$479,101	$500,660	$523,190	$546,734	$571,337	$597,047	$623,914	$651,990	$681,330	$711,989
WAY AND STRUCTURES	5.50%	$2,852,849	$3,009,755	$3,175,292	$3,349,933	$3,534,179	$3,728,559	$3,933,630	$4,149,979	$4,378,228	$4,619,031
EQUIPMENT	4.00%	$121,998	$126,878	$131,953	$137,231	$142,720	$148,429	$154,366	$160,541	$166,963	$173,641
CAR HIRE & MLG. EXP.	5.00%	$622,211	$653,321	$685,987	$720,287	$756,301	$794,116	$833,822	$875,513	$919,289	$965,253
DEPRECIATION		$740,027	$715,027	$695,027	$679,027	$666,227	$655,987	$647,795	$641,242	$635,999	$631,805
GEN'L AND ADMIN.	4.50%	$527,500	$551,238	$576,043	$601,965	$629,054	$657,361	$686,942	$717,855	$750,158	$783,915
TOTAL OPER. EXPENSES	5.25%	$5,518,321	$5,744,089	$5,988,181	$6,250,315	$6,530,446	$6,828,733	$7,145,504	$7,481,237	$7,836,539	$8,212,137
NET REVENUE FROM RAILWAY OPERATIONS		($3,444,114)	($3,464,302)	($3,481,396)	($3,492,937)	($3,496,479)	($3,489,533)	($3,469,505)	($3,433,654)	($3,379,037)	($3,302,460)
OTHER INCOME		$154,621	$97,121	$99,871	$102,896	$106,223	$94,883	$98,910	$103,338	$108,210	$113,569
INCOME BEFORE DEBT SERVICE		($3,289,494)	($3,367,181)	($3,381,525)	($3,390,041)	($3,390,256)	($3,394,649)	($3,370,596)	($3,330,316)	($3,270,826)	($3,188,891)
RAILROAD DEBT INTEREST		$190,713	$179,323	$166,474	$151,998	$135,699	$117,323	$96,647	$73,306	$47,019	$17,422
RAILROAD REHABILITATION		$29,699	$19,049	$7,058	$0	$0	$0	$0	$0	$0	$0
WORKING CAPITAL DEBT INTEREST		$108,283	$89,200	$67,658	$43,396	$16,079	$0	$0	$0	$0	$0
LOCOMOTIVE INTEREST		$71,732	$64,040	$55,368	$45,610	$34,595	$22,189	$8,222	$0	$0	$0
EQUIPMENT DEBT INTEREST		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INCOME (LOSS)		($3,689,921)	($3,718,793)	($3,678,083)	($3,631,046)	($3,576,629)	($3,534,162)	($3,475,465)	($3,403,622)	($3,317,845)	($3,206,313)
PRE-TAX PROFIT SHARING		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PRE-TAX INCOME		($3,689,921)	($3,718,793)	($3,678,083)	($3,631,046)	($3,576,629)	($3,534,162)	($3,475,465)	($3,403,622)	($3,317,845)	($3,206,313)
INCOME TAX (FEDERAL)		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TAX (ST/PROV) % OF PRETAX INCOME	5%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NET INCOME		($3,690,313)	($3,719,185)	($3,678,475)	($3,631,438)	($3,577,021)	($3,534,554)	($3,475,857)	($3,404,014)	($3,318,237)	($3,206,705)

PRO FORMA CASH FLOW STATEMENT

SOURCES OF WORKING CAPITAL		FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FIFTH YEAR	SIXTH YEAR	SEVENTH YEAR	EIGHTH YEAR	NINTH YEAR	TENTH YEAR
OPERATING REVENUES											
FREIGHT		$2,028,395	$2,236,266	$2,465,440	$2,718,100	$2,996,653	$3,303,752	$3,642,322	$4,015,590	$4,427,110	$4,880,803
OTHER OPERATING REVENUES		$45,812	$43,521	$41,345	$39,278	$37,314	$35,449	$33,676	$31,992	$30,393	$28,873
OTHER INCOME		$154,621	$97,121	$99,871	$102,896	$106,223	$94,883	$98,910	$103,338	$108,210	$113,569
DEBT											
RAILROAD		$1,629,500	$0	$0	$0	$0	$0	$0	$0	$0	$0
REHABILITATION		$1,140,650	$0	$0	$0	$0	$0	$0	$0	$0	$0
WORKING CAPITAL		$970,005	$0	$0	$0	$0	$0	$0	$0	$0	$0
LOCOMOTIVE		$625,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
EQUIPMENT		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SALE OF STOCK		$5,743,988	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER SOURCES		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL SOURCES		$12,337,970	$2,376,908	$2,606,656	$2,860,274	$3,140,190	$3,434,084	$3,774,908	$4,150,921	$4,565,713	$5,023,245
USES OF WORKING CAPITAL											
OPERATING EXPENSES	EST.										
TRANSPORTATION	INFLATION RATE										
FUEL	7.20%	$174,636	$187,210	$200,689	$215,138	$230,628	$247,234	$265,035	$284,117	$304,573	$326,503
OTHER TRANSPORTATION	4.50%	$479,101	$500,660	$523,190	$546,734	$571,337	$597,047	$623,914	$651,990	$681,330	$711,989
WAY AND STRUCTURES	5.50%	$2,852,849	$3,009,755	$3,175,292	$3,349,933	$3,534,179	$3,728,559	$3,933,630	$4,149,979	$4,378,228	$4,619,031
EQUIPMENT	4.00%	$121,998	$126,878	$131,953	$137,231	$142,720	$148,429	$154,366	$160,541	$166,963	$173,641
CAR HIRE & MLG. EXP.	5.00%	$622,211	$653,321	$685,987	$720,287	$756,301	$794,116	$833,822	$875,513	$919,289	$965,253
GEN'L AND ADMIN.	4.50%	$527,500	$551,238	$576,043	$601,965	$629,054	$657,361	$686,942	$717,855	$750,158	$783,915
TOTAL OPER. EXPENSES	5.25%	$4,778,294	$5,029,062	$5,293,154	$5,571,288	$5,864,219	$6,172,746	$6,497,708	$6,839,995	$7,200,540	$7,580,332
DEBT SERVICE											
RAILROAD		$280,543	$280,543	$280,543	$280,543	$280,543	$280,543	$280,543	$280,543	$280,543	$280,543
REHABILITATION		$113,658	$113,658	$113,658	$113,658	$113,658	$113,658	$113,658	$113,658	$113,658	$113,658
WORKING CAPITAL		$258,927	$258,927	$258,927	$258,927	$258,927	$0	$0	$0	$0	$0
LOCOMOTIVES		$132,395	$132,395	$132,395	$132,395	$132,395	$132,395	$132,395	$0	$0	$0
EQUIPMENT		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER USES											
PURCHASE RAILROAD		$6,518,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
REHABILITATION		$1,140,650	$0	$0	$0	$0	$0	$0	$0	$0	$0
PURCHASE LOCOMOTIVE		$625,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
PURCHASE EQUIPMENT		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CAPITAL SPENDING % OF NET INCOME	10%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PROFIT SHARING		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INCOME TAX (NOT INCLUDING TAX LOSS CARRY FORW		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL USES		$13,847,467	$5,814,585	$6,078,677	$6,356,811	$6,649,742	$6,699,342	$7,024,305	$7,234,196	$7,594,741	$7,974,533
NET INCREASE (DECREASE) IN WORKING CAPITAL		($1,509,497)	($3,437,677)	($3,472,021)	($3,496,537)	($3,509,552)	($3,265,258)	($3,249,397)	($3,083,275)	($3,029,028)	($2,951,287)
CASH FLOWS	($5,743,988)	($7,253,484)	($3,437,677)	($3,472,021)	($3,496,537)	($3,509,552)	($3,265,258)	($3,249,397)	($3,003,275)	($3,029,028)	($2,951,287)

CONTRACT EMPLOYEES REQUIRED

DIST/DEPARTMENT		MILES	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	EXTRA BOARDS	TOTALS
TRAINMEN			0.4	0.4	0.0	0.0	0.0	0.0	0	0	1
ENGINEERS			0.4	0.4	0.0	0.0	0.0	0.0	0	1	2
CLERKS			0.0	0.0	0.0	0.0	0.0	0.0	4	1	5
DISPATCHERS			0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
SIGNALMEN	PER	317	0.4	0.6	0.0	0.0	0.0	0.0	0	0	1
TRACKMEN	PER	25	5.2	7.9	0.0	0.0	0.0	0.0	0	0	13
MECHANICAL-LOCO	PER	2.5	0.0	0.0	0.0	0.0	0.0	0.0	2	0	2
MECHANICAL-CAR	PER	10000	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0	0
			0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
			0.0	0.0	0.0	0.0	0.0	0.0	0	0	0
TOTAL EMPLOYEES			7	10	0	0	0	0	6	2	24
PERCENT OF TOTAL			27%	39%	0%	0%	0%	0%	25%	10%	100%

PAY RATES	NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HEADQUARTERS /SYSTEM	HDQTRS/SYS	AVERAGE	WAGE SCALE % OF CLASS ONE RATES
TRAINMEN	$9.04	$9.04	$9.04	$9.04	$9.04	-$9.04	$9.04	$9.04	$9.04	65%
ENGINEERS	$10.32	$10.32	$10.32	$10.32	$10.32	$10.32	$10.32	$10.32	$10.32	65%
CLERKS	$8.61	$8.61	$8.61	$8.61	$8.61	$8.61	$8.61	$8.61	$8.61	65%
DISPATCHERS	$11.60	$11.60	$11.60	$11.60	$11.60	$11.60	$11.60	$11.60	$11.60	65%
SIGNALMEN	$12.07	$12.07	$12.07	$12.07	$12.07	$12.07	$12.07	$12.07	$12.07	85%
TRACKMEN	$7.92	$7.92	$7.92	$7.92	$7.92	$7.92	$7.92	$7.92	$7.92	65%
MECHANICAL-LOCO	$9.76	$9.76	$9.76	$9.76	$9.76	$9.76	$9.76	$9.76	$9.76	65%
MECHANICAL-CAR	$9.24	$9.24	$9.24	$9.24	$9.24	$9.24	$9.24	$9.24	$9.24	65%
AVERAGE	$9.82	$9.82	$9.82	$9.82	$9.82	$9.82	$9.82	$9.82	$9.82	

NON-OPERATING EMPLOYEE EXPENSES		NORFOLK SUBDIVISION	LONG PINE SUBDIVISION					HDQTRS/SYS	EXA. BD.	TOTALS
CLERKS-STRAIGHT TIME		$0	$0	$0	$0	$0	$0	$68,848	$17,212	$86,060
CLERKS-OVERTIME (7.5%)		$0	$0	$0	$0	$0	$0	$7,745	$1,936	$9,682
CLRK-FRINGES ON ST %	40%	$0	$0	$0	$0	$0	$0	$27,539	$6,885	$34,424
CLRK-FRINGES ON OT %	15%	$0	$0	$0	$0	$0	$0	$1,162	$290	$1,452
CLERKS-TOTAL EXPENSE		$0	$0	$0	$0	$0	$0	$105,294	$26,324	$131,618
DISPATCHERS-STRAIGHT TIME		$0	$0	$0	$0	$0	$0	$0	$0	$0
DISPATCHERS-OVERTIME (2.5%)		$0	$0	$0	$0	$0	$0	$0	$0	$0
DSPR-FRINGES ON ST %	40%	$0	$0	$0	$0	$0	$0	$0	$0	$0
DSPR-FRINGES ON OT %	15%	$0	$0	$0	$0	$0	$0	$0	$0	$0
DISPATCHERS-TOTAL EXPENSE		$0	$0	$0	$0	$0	$0	$0	$0	$0
SIGNALMEN-STRAIGHT TIME		$9,869	$14,949	$0	$0	$0	$0	$0	$0	$24,818
SIGNALMEN-OVERTIME (.15%)		$2,221	$3,363	$0	$0	$0	$0	$0	$0	$5,584
SIGL-FRINGES ON ST %	40%	$3,948	$5,979	$0	$0	$0	$0	$0	$0	$9,927
SIGL-FRINGES ON OT %	15%	$333	$505	$0	$0	$0	$0	$0	$0	$838
SIGNALMEN TOTAL EXPENSE		$16,371	$24,796	$0	$0	$0	$0	$0	$0	$41,166
TRACKMEN-STRAIGHT TIME		$82,151	$124,431	$0	$0	$0	$0	$0	$0	$206,581
TRACKMEN-OVERTIME (7.5%)		$9,242	$13,998	$0	$0	$0	$0	$0	$0	$23,240
TRCK-FRINGES ON ST %	40%	$32,860	$49,772	$0	$0	$0	$0	$0	$0	$82,633
TRCK-FRINGES ON OT %	15%	$1,386	$2,100	$0	$0	$0	$0	$0	$0	$3,486
TRACKMEN-TOTAL EXPENSE		$125,639	$190,301	$0	$0	$0	$0	$0	$0	$315,941
MECHANICAL-STRAIGHT TIME		$2,917	$5,265	$0	$0	$0	$0	$20	$4,000	$12,202
MECHANICAL-OVERTIME (7.5%)		$328	$592	$0	$0	$0	$0	$2	$450	$1,373
MECH-FRINGES ON ST %	40%	$1,167	$2,106	$0	$0	$0	$0	$8	$1,600	$4,881
MECH-FRINGES ON OT %	15%	$49	$89	$0	$0	$0	$0	$0	$68	$206
MECHANICAL-TOTAL EXPENSE		$4,461	$8,052	$0	$0	$0	$0	$30	$6,118	$18,661
TOTAL-STRAIGHT TIME		$94,937	$144,644	$0	$0	$0	$0	$68,868	$21,212	$329,661
TOTAL-OVERTIME		$11,791	$17,954	$0	$0	$0	$0	$7,748	$2,386	$39,879
TOTAL-FRINGES ON ST. TIME		$37,975	$57,858	$0	$0	$0	$0	$27,547	$8,485	$131,864
TOTAL-FRINGES ON OVERTIME		$1,769	$2,693	$0	$0	$0	$0	$1,162	$358	$5,982
TOTAL-HOURLY WAGE EXPENSE		$146,471	$223,149	$0	$0	$0	$0	$105,324	$32,441	$507,386
PERCENT OF TOTAL		29%	44%	0%	0%	0%	0%	21%	6%	100%

TOTAL EMPLOYEE EXPENSE (INCLUDES MANAGERS)

STRAIGHT TIME	$605,632
OVERTIME	$63,107
FRINGES ON STRAIGHT TIME	$254,503
FRINGES ON OVERTIME	$9,466
TOTAL	$932,708

TRAIN CREW COSTS

WEEKS PER YEAR RAILROAD OPERATES 50
TRAIN CREW FRINGES ON STRAIGHT-TIME PERCENT 40%
TRAIN CREW FRINGES ON OVER-TIME PERCENT 15%

DISTRICT	CREWS	WEEKLY CREW STS	CREW HOURS	CREW HOURS PER WEEK	WKLY STRT TIME HOURS	WEEKLY O.T. HOURS	ANNUAL CREW HRS	TRAIN CRW SIZE	STRAIGHT TIME CREW EXPENSE	OVERTIME CREW EXP.	STRT. TIME FRINGES	OVERTIME FRINGES	TOTAL CREW EXPENSE
NORFOLK	THROUGH ROAD	2.0	12	24	16	8	1,200	2	$15,486	$11,614	$6,194	$1,742	$35,036
SUBDIVISION		0.0	0	0	0	0	0	2	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		2.0	12	24	16	8	1,200	2.0	$15,486	$11,614	$6,194	$1,742	$35,036
LONG PINE		0.0	0	0	0	0	0	2	$0	$0	$0	$0	$0
SUBDIVISION	THROUGH ROAD	2.0	12	24	16	8	1,200	2	$15,486	$11,614	$6,194	$1,742	$35,036
		0.0	0	0	0	0	0	2	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		2.0	12	24	16	8	1,200	2.0	$15,486	$11,614	$6,194	$1,742	$35,036
		0.0	0	0	0	0	0	2	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		0.0	0	0	0	0	0	0.0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		0.0	0	0	0	0	0	0.0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		0.0	0	0	0	0	0	0.0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
		0.0	0	0	0	0	0	0	$0	$0	$0	$0	$0
SUBTOTAL		0.0	0	0	0	0	0	0.0	$0	$0	$0	$0	$0
TOTAL ALL DISTRICTS		4.0	12	48	32	16	2,400	2.0	$30,971	$23,228	$12,388	$3,484	$70,072

LOCOMOTIVE EXPENSE		NUMBER OF LOCOMOTIVES REQ. FOUR-AXLE	SIX-AXLE	ANN. LOCO. HOURS	FUEL EXPENSE	LOCOMOTIVE REPAIRS	CABOOSE/ EOT/RADIO EXPENSE	LOCO. INSPECTION	TOTAL LOCOMOTIVE OPR. EXP.	LOCOMOTIVE LEASE AND/OR INTEREST EXPENSE FOUR-AXLE	SIX-AXLE	TOTAL
NORFOLK	THROUGH ROAD	3	0	3,960	$87,318	$38,848	$2,372	$9,821	$138,358	$35,866		$35,866
SUBDIVISION		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		3	0	3,960	$87,318	$38,848	$2,372	$9,821	$138,358	$35,866	$0	$35,866
LONG PINE		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBDIVISION	THROUGH ROAD	3	0	3,960	$87,318	$38,848	$2,372	$9,821	$138,358	$35,866		$35,866
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		0	0	3,960	$87,318	$38,848	$2,372	$9,821	$138,358	$35,866	$0	$35,866
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		0	0	0	$0	$0	$0	$0	$0	$0	$0	$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		0	0	0	$0	$0	$0	$0	$0	$0	$0	$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		0	0	0	$0	$0	$0	$0	$0	$0	$0	$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
		0	0	0	$0	$0	$0	$0	$0	$0		$0
SUBTOTAL		0	0	0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL ALL DISTRICTS		3	0	7,920	$174,636	$77,695	$4,744	$19,642	$276,717	$71,732	$0	$71,732
LOCOMOTIVE MAINTENANCE FACTOR		20%	20%									
TOTAL LOCOMOTIVES NEEDED		5	0									

FUEL PRICE PER U. S. GALLON $1.05 UNITED STATES PROJECTS ONLY 1st yr int 4 axle 71731.879721
FUEL PRICE PER LITRE/CDN $0.50 CANADIAN PROJECTS ONLY 6 axle 0
CANADIAN PRICE PER U. S. GALLON $1.89
1.05

MANAGEMENT AND ADMINISTRATIVE EXPENSES

	NUMBER	SALARY
SECRETARY	1	$15,000
ROAD FOREMAN/TRAINMASTER	1	$35,000
CHIEF MECHANICAL OFFICER	1	$35,000
TRACK SUPERVISORS	1	$25,000
GENERAL MANAGER	1	$55,000
BUSINESS MANAGER	1	$45,000
CHIEF ENGINEER	1	$35,000
TOTAL HEADQUARTERS MANAGEMENT	7	$245,000
LEGAL FEES		$15,000
GENERAL MANAGEMENT CONTRACT		$115,000
ACCOUNTING & AUDITING		$10,000
MGMT EXPENSE ACCTS. 5% OF HDQTRS MGMT		$12,250
PROGRAMMING & COMPUTER SUPPORT		$10,000
MISC. OUTSIDE CONTRACTORS		$10,000
TOTAL OTHER ADMINISTRATIVE EXPENSE		$172,250

DETAILED SUMMARY OF REVENUES / TRACKAGE	MAIN LINE TRACK MILES	1987 CARLOADS ORIG	1987 CARLOADS TERM	1988 CARLOADS ORIG	1988 CARLOADS TERM	ESTIMATED 1989 CARLOADS ORIG	ESTIMATED 1989 CARLOADS TERM	FIRST 12 MONTHS 1989 CARLOADS ORIG	FIRST 12 MONTHS 1989 CARLOADS TERM	1989 VERSUS 1988 ORIG	1989 VERSUS 1988 TERM	CNW REVENUES ORIG	CNW REVENUES TERM
NORFOLK	131.80	793	189	984	274	1,742	336	1,742	336	77%	23%	ERR	ERR
LONG PINE	217.40	1,181	592	1,963	769	1,550	1,298	1,550	1,298	-21%	69%	ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			$0	$0
TOTAL	349.20	1,974	781	2,947	1,043	3,292	1,634	3,292	1,634	12%	57%	ERR	ERR
			2755		3990		4926				23%	TOTAL	ERR

NORFOLK SUBDIVISION	MILES	1987 ORIG	1987 TERM	1988 ORIG	1988 TERM	EST. 1989 ORIG	EST. 1989 TERM	FIRST 12 MONTHS 1989 ORIG	FIRST 12 MONTHS 1989 TERM	1989 VS 1988 ORIG	1989 VS 1988 TERM	CNW REVENUES ORIG	CNW REVENUES TERM
NORFOLK	0.00	0	0	0	0	0	0	0	0			ERR	ERR
NORFOLK UNION PACIFIC	0.50	0	0	0	0	0	0	0	0			ERR	ERR
BATTLE CREEK	9.40	1	6	3	17	3	27	3	27	0%	59%	ERR	ERR
MEADOW GROVE	16.60	0	0	9	8	0	9	0	9	-100%	13%	ERR	ERR
TILDEN	21.90	0	29	1	27	0	37	0	37	-100%	37%	ERR	ERR
OAKDALE	28.80	0	31	20	24	511	18	511	18	2455%	-25%	ERR	ERR
NELIGH	34.20	1	10	0	7	10	11	10	11		57%	ERR	ERR
CLEARWATER	43.10	0	6	0	12	0	35	0	35		192%	ERR	ERR
EWING	53.30	0	3	0	2	0	2	0	2		0%	ERR	ERR
INMAN	66.00	0	0	0	0	0	0	0	0			ERR	ERR
O'NEILL	73.80	1	3	0	11	3	16	3	16		45%	ERR	ERR
O'NEILL BN	73.80	0	0	0	0	0	0	0	0			ERR	ERR
EMMET	82.00	0	27	0	70	0	99	0	99		41%	ERR	ERR
ATKINSON	91.80	3	5	0	9	0	6	0	6		-33%	ERR	ERR
STUART	101.40	0	6	0	2	0	2	0	2		0%	ERR	ERR
NEWPORT	111.50	0	0	1	2	1	0	1	0	0%	-100%	ERR	ERR
BASSETT	122.70	1	34	0	71	0	58	0	58		-18%	ERR	ERR
LONG PINE	131.80	786	29	950	12	1,214	16	1,214	16	28%	33%	ERR	ERR
JUNCTION MILE POLE 0													
SUB-TOTAL	131.80	793	189	984	274	1,742	336	1,742	336	77%	23%	ERR	ERR
			982		1258		2078				65%		
AVG PER MONTH		66	16	82	23	145	28						
AVG PER WEEK		16	4	20	5	35	7						
AVG PER DAY (5)		3	1	4	1	7	1						

DETAILED SUMMARY OF REVENUES

TRACKAGE	MAIN LINE TRACK MILES	1987 CARLOADS ORIG	1987 CARLOADS TERM	1988 CARLOADS ORIG	1988 CARLOADS TERM	ESTIMATED 1989 CARLOADS ORIG	ESTIMATED 1989 CARLOADS TERM	FIRST 12 MONTHS 1989 CARLOADS ORIG	FIRST 12 MONTHS 1989 CARLOADS TERM	1989 VERSUS 1988 ORIG	1989 VERSUS 1988 TERM	CNW REVENUES ORIG	CNW REVENUES TERM
LONG PINE SUBDIVISION													
LONG PINE	0.00	0	0	0	0	0	0	0	0			ERR	ERR
AINSWORTH	8.40	0	26	0	30	0	78	0	78		160%	ERR	ERR
SANDRIDGE	13.40	0	0	0	0	0	0	0	0			ERR	ERR
JOHNSTOWN	19.00	0	0	0	0	0	0	0	0			ERR	ERR
WOOD LAKE	29.10	0	0	0	0	0	0	0	0			ERR	ERR
THACHER	47.40	0	0	0	0	0	0	0	0			ERR	ERR
VALENTINE	54.40	8	41	1	24	12	38	12	38	1100%	58%	ERR	ERR
CROOKSTON	65.70	26	16	110	17	13	936	13	936	-88%	5406%	ERR	ERR
KILGORE	76.40	0	0	0	0	0	0	0	0			ERR	ERR
NENZEL	84.70	0	0	0	0	0	1	0	1			ERR	ERR
CODY	92.40	7	0	1	0	8	0	8	0	700%		ERR	ERR
ELI	105.70	0	0	0	0	0	0	0	0			ERR	ERR
MERRIMAN	116.90	265	197	560	677	532	219	532	219	-5%	-68%	ERR	ERR
IRWIN	131.00	0	0	0	0	0	0	0	0			ERR	ERR
GORDON	144.80	449	312	554	21	447	14	447	14	-19%	-33%	ERR	ERR
CLINTON	152.90	77	0	185	0	128	1	128	1	-31%		ERR	ERR
RUSHVILLE	159.60	175	0	273	0	208	0	208	0	-24%		ERR	ERR
HAY SPRINGS	171.40	174	0	279	0	152	0	152	0	-46%		ERR	ERR
BORDEAUX	180.50	0	0	0	0	0	0	0	0			ERR	ERR
CHADRON	191.20	0	0	0	0	50	11	50	11			ERR	ERR
DAKOTA JCT	196.30	0	0	0	0	0	0	0	0			ERR	ERR
WHITNEY	206.70	0	0	0	0	0	0	0	0			ERR	ERR
CRAWFORD CNW	217.40	0	0	0	0	0	0	0	0			ERR	ERR
CRAWFORD BN	217.40	0	0	0	0	0	0	0	0			ERR	ERR
JUNCTION MILE POLE	-131.8												
SUB-TOTAL	217.40	1,181	592	1,963	769	1,550	1,298	1,550	1,298	-21%	69%	ERR	ERR
			1773		2732		2848				4%		
AVG PER MONTH		98	49	164	64	129	108						
AVG PER WEEK		24	12	39	15	31	26						
AVG PER DAY (5)		5	2	8	3	6	5						

DETAILED SUMMARY OF REVENUES	MAIN LINE TRACK	1987 CARLOADS		1988 CARLOADS		ESTIMATED 1989 CARLOADS		FIRST 12 MONTHS 1989 CARLOADS		1989 VERSUS 1988		CNW REVENUES	
TRACKAGE	MILES	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM
STATIONS													
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
JUNCTION MILE POLE	0												
SUB-TOTAL	0.00	0	0	0	0	0	0	0	0	0%	0%	ERR	ERR
AVG PER MONTH		0	0	0	0	0	0						
AVG PER WEEK		0	0	0	0	0	0						
AVG PER DAY (5)		0	0	0	0	0	0						
STATIONS													
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
JUNCTION MILE POLE	0												
SUB-TOTAL	0.00	0	0	0	0	0	0	0	0			ERR	ERR
AVG PER MONTH		0	0	0	0	0	0						
AVG PER WEEK		0	0	0	0	0	0						
AVG PER DAY (5)		0	0	0	0	0	0						
STATIONS													
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
	0.00	0	0	0	0	0	0	0	0			ERR	ERR
JUNCTION MILE POLE	0												
SUB-TOTAL	0.00	0	0	0	0	0	0	0	0	0%	0%	ERR	ERR
AVG PER MONTH		0	0	0	0	0	0						
AVG PER WEEK		0	0	0	0	0	0						
AVG PER DAY (5)		0	0	0	0	0	0						

DETAILED SUMMARY OF REVENUES	MAIN LINE TRACK	1987 CARLOADS		1988 CARLOADS		ESTIMATED 1989 CARLOADS		FIRST 12 MONTHS 1989 CARLOADS		1989 VERSUS 1988		CNW REVENUES	
TRACKAGE	MILES	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM	ORIG	TERM

STATIONS													
	0.00	0	0	0	0	0	0	0	0			$0	$0
	0.00	0	0	0	0	0	0	0	0			$0	$0
JUNCTION MILE POLE 0													
SUB-TOTAL	0.00	0	0	0	0	0	0	0	0	0%	0%	$0	$0
AVG PER MONTH		0	0	0	0	0	0						
AVG PER WEEK		0	0	0	0	0	0						
AVG PER DAY (5)		0	0	0	0	0	0						
GRAND TOTAL ALL SUBDIVISIONS	349.20	1,974	781	2,947	1,043	3,292	1,634	3,292	1,634	12%	57%	ERR	ERR
AVG PER MONTH		165	65	246	87	274	136						
AVG PER WEEK		39	16	59	21	66	33						
AVG PER DAY (5)		8	3	12	4	13	7						

DETAILED SUMMARY OF TRACKAGE	ESTIMATED ABC REVENUES ORIG	ESTIMATED ABC REVENUES TERM	ABC REVENUES PER CAR ORIG	ABC REVENUES PER CAR TERM	PRIVATE CAR MILEAGE COST	CAR HIRE COST	DEMURRAGE REVENUE	REV. CARS PER MILE	REVENUE PER MILE	MILES FROM JCT	PERCENT PRIVATE EQUIPMENT	PERCENT RAILROAD EQUIPMENT	ABC PERCENT CLASS 1 REVENUE	ABC REVENUE DOLLARS PER CAR
NORFOLK	$726,506	$78,053	$417	$232	$21,436	$100,302	$36,338	16	$6,104	59	20%	80%	ERR	$387
LONG PINE	$1,291,552	$388,984	$833	$300	$191,164	$138,366	$15,374	13	$7,730	244	46%	54%	ERR	$590
	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
	$0	$0	$0	$0	$0	$0	$0				0%	100%		
TOTAL	$2,018,058	$467,037	$613	$286	$212,600	$238,668	$51,712	14	$7,117	151	35%	65%	ERR	$504
	TOTAL $2,485,095													
NORFOLK SUBDIVISION														
NORFOLK	$0	$0			$0	$0	$0			0	0%	100%	0%	
NORFOLK UNION PACIFI	$0	$0			$0	$0	$0			1	0%	100%	0%	
BATTLE CREEK	$450	$1,215	$150	$45	$170	$252	$42			9	86%	14%	0%	$56
MEADOW GROVE	$0	$450		$50	$99	$27	$0			17	95%	5%	0%	$50
TILDEN	$0	$3,589		$97	$539	$111	$19			22	95%	5%	0%	$97
OAKDALE	$102,200	$1,242	$200	$69	$860	$29,181	$6,040			29	8%	92%	0%	$196
NELIGH	$2,200	$1,430	$220	$130	$262	$603	$101			34	52%	48%	0%	$173
CLEARWATER	$0	$6,335		$181	$1,003	$105	$0			43	95%	5%	0%	$181
EWING	$0	$340		$170	$71	$6	$1			53	95%	5%	0%	$170
INMAN	$0	$0			$0	$0	$0			66	0%	100%	0%	
O'NEILL	$900	$3,040	$300	$190	$793	$219	$37			74	81%	19%	0%	$207
O'NEILL BN	$0	$0			$0	$0	$0			74	0%	100%	0%	
EMMET	$0	$23,760		$240	$5,398	$297	$50			82	95%	5%	0%	$240
ATKINSON	$0	$1,800		$300	$366	$18	$3			92	95%	5%	0%	$300
STUART	$0	$640		$320	$135	$6	$1			101	95%	5%	0%	$320
NEWPORT	$402	$0	$402		$4	$57	$10			112	5%	95%	0%	$402
BASSETT	$0	$27,492		$474	$4,733	$174	$29			123	95%	5%	0%	$474
LONG PINE	$620,354	$6,720	$511	$420	$7,003	$69,246	$30,007			132	6%	94%	0%	$510
JUNCTION MILE POLE														
SUB-TOTAL	$726,506	$78,053	$417	$232	$21,436	$100,302	$36,338	16	$6,104	59	20%	80%	ERR	$387
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														

DETAILED SUMMARY OF / TRACKAGE	ESTIMATED ABC REVENUES ORIG	ESTIMATED ABC REVENUES TERM	ABC REVENUES PER CAR ORIG	ABC REVENUES PER CAR TERM	PRIVATE CAR MILEAGE COST	CAR HIRE COST	DEMURRAGE REVENUE	REV. CARS PER MILE	REVENUE PER MILE	MILES FROM JCT	PERCENT PRIVATE EQUIPMENT	PERCENT RAILROAD EQUIPMENT	ABC PERCENT CLASS 1 REVENUE	ABC REVENUE DOLLARS PER CAR
LONG PINE SUBDIVISION														
LONG PINE	$0	$0			$0	$0	$0			132	0%	100%	0%	
AINSWORTH	$0	$45,630		$585	$7,272	$351	$39			140	95%	5%	0%	$585
SANDRIDGE	$0	$0			$0	$0	$0			145	0%	100%	0%	
JOHNSTOWN	$0	$0			$0	$0	$0			151	0%	100%	0%	
WODD LAKE	$0	$0			$0	$0	$0			161	0%	100%	0%	
THACHER	$0	$0			$0	$0	$0			179	0%	100%	0%	
VALENTINE	$7,188	$14,744	$599	$388	$4,783	$1,197	$133			186	73%	27%	0%	$439
CROOKSTON	$8,138	$263,016	$626	$281	$123,022	$5,324	$592			198	94%	6%	0%	$286
KILGORE	$0	$0			$0	$0	$0			208	0%	100%	0%	
NENZEL	$0	$869		$869	$144	$5	$1			217	95%	5%	0%	$869
CODY	$5,520	$0	$690		$63	$684	$76			224	5%	95%	0%	$690
ELI	$0	$0			$0	$0	$0			238	0%	100%	0%	
MERRIMAN	$429,324	$44,238	$807	$202	$40,850	$46,472	$5,164			249	31%	69%	0%	$631
IRWIN	$0	$0			$0	$0	$0			263	0%	100%	0%	
GORDON	$386,208	$10,178	$864	$727	$6,903	$38,282	$4,254			277	8%	92%	0%	$860
CLINTON	$128,640	$750	$1,005	$750	$1,465	$10,949	$1,217			285	6%	94%	0%	$1,003
RUSHVILLE	$136,656	$0	$657		$2,121	$17,784	$1,976			291	5%	95%	0%	$657
HAY SPRINGS	$138,928	$0	$914		$1,613	$12,996	$1,444			303	5%	95%	0%	$914
BORDEAUX	$0	$0			$0	$0	$0			312	0%	100%	0%	
CHADRON	$50,950	$9,559	$1,019	$869	$2,928	$4,325	$481			323	21%	79%	0%	$992
DAKOTA JCT	$0	$0			$0	$0	$0			328	0%	100%	0%	
WHITNEY	$0	$0			$0	$0	$0			339	0%	100%	0%	
CRAWFORD CNW	$0	$0			$0	$0	$0			349	0%	100%	0%	
CRAWFORD BN	$0	$0			$0	$0	$0			349	0%	100%	0%	
JUNCTION MILE POLE														
SUB-TOTAL	$1,291,552	$388,984	$833	$300	$191,164	$138,366	$15,374	13	$7,730	244	46%	54%	ERR	$590
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														

DETAILED SUMMARY OF TRACKAGE	ESTIMATED ABC REVENUES ORIG	ESTIMATED ABC REVENUES TERM	ABC REVENUES PER CAR ORIG	ABC REVENUES PER CAR TERM	PRIVATE CAR MILEAGE COST	CAR HIRE COST	DEMURRAGE REVENUE	REV. CARS PER MILE	REVENUE PER MILE	MILES FROM JCT	PERCENT PRIVATE EQUIPMENT	PERCENT RAILROAD EQUIPMENT	ABC PERCENT CLASS 1 REVENUE	ABC REVENUE DOLLARS PER CAR
STATIONS														
	$0	$0			$0	$0	$0			0	0%	100%	0%	
	$0	$0			$0	$0	$0			0	0%	100%	0%	
JUNCTION MILE POLE														
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														
STATIONS														
	$0	$0			$0	$0	$0			0	0%	100%	0%	
	$0	$0			$0	$0	$0			0	0%	100%	0%	
JUNCTION MILE POLE														
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														
STATIONS														
	$0	$0			$0	$0	$0			0	0%	100%	0%	
	$0	$0			$0	$0	$0			0	0%	100%	0%	
JUNCTION MILE POLE														
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0			0	0%	100%	ERR	
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														

DETAILED SUMMARY OF TRACKAGE	ESTIMATED ABC REVENUES ORIG	ESTIMATED ABC REVENUES TERM	ABC REVENUES PER CAR ORIG	ABC REVENUES PER CAR TERM	PRIVATE CAR MILEAGE COST	CAR HIRE COST	DEMURRAGE REVENUE	REV. CARS PER MILE	REVENUE PER MILE	MILES FROM JCT	PERCENT PRIVATE EQUIPMENT	PERCENT RAILROAD EQUIPMENT	ABC PERCENT CLASS 1 REVENUE	ABC REVENUE DOLLARS PER CAR
STATIONS														
	$0	$0			$0	$0	$0			0	0%	100%	0%	
	$0	$0			$0	$0	$0			0	0%	100%	0%	
JUNCTION MILE POLE														
SUB-TOTAL	$0	$0	$0	$0	0	$0	$0				0%	100%		
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														
GRAND TOTAL ALL SUBD	$2,018,058	$467,037	$613	$286	$212,600	$238,668	$51,712	$14	$7,117		35%	65%	ERR	$504
AVG PER MONTH														
AVG PER WEEK														
AVG PER DAY (5)														

DETAILED SUMMARY OF TRACKAGE	CARLOADS ORIGIN AUTOMOTIVE	CARLOADS ORIGIN AGRICULTURAL	CARLOADS ORIGIN CHEMICAL	CARLOADS ORIGIN FOOD/CONSUME	CARLOADS ORIGIN METALS	CARLOADS ORIGIN MINERALS	CARLOADS ORIGIN PAPER/LBR	CARLOADS ORIGIN FERTILIZER	CARLOADS ORIGIN MISCELLANEOU	CARLOADS ORIGIN COAL/COKE/IRON ORE	CARLOADS ORIGIN TOTAL
NORFOLK	0	1,742	0	0	0	0	0	0	0	0	1,742
LONG PINE	0	1,550	0	0	0	0	0	0	0	0	1,550
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	3,292	0	0	0	0	0	0	0	0	3,292

NORFOLK SUBDIVISION

NORFOLK	0	0	0	0	0	0	0	0	0	0	0
NORFOLK UNION PACIFI	0	0	0	0	0	0	0	0	0	0	0
BATTLE CREEK	0	3	0	0	0	0	0	0	0	0	3
MEADOW GROVE	0	0	0	0	0	0	0	0	0	0	0
TILDEN	0	0	0	0	0	0	0	0	0	0	0
OAKDALE	0	511	0	0	0	0	0	0	0	0	511
NELIGH	0	10	0	0	0	0	0	0	0	0	10
CLEARWATER	0	0	0	0	0	0	0	0	0	0	0
EWING	0	0	0	0	0	0	0	0	0	0	0
INMAN	0	0	0	0	0	0	0	0	0	0	0
O'NEILL	0	3	0	0	0	0	0	0	0	0	3
O'NEILL BN	0	0	0	0	0	0	0	0	0	0	0
EMMET	0	0	0	0	0	0	0	0	0	0	0
ATKINSON	0	0	0	0	0	0	0	0	0	0	0
STUART	0	0	0	0	0	0	0	0	0	0	0
NEWPORT	0	1	0	0	0	0	0	0	0	0	1
BASSETT	0	0	0	0	0	0	0	0	0	0	0
LONG PINE	0	1214	0	0	0	0	0	0	0	0	1214
JUNCTION MILE POLE											
SUB-TOTAL	0	1742	0	0	0	0	0	0	0	0	1742
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	CARLOADS ORIGIN AUTOMOTIVE	CARLOADS ORIGIN AGRICULTURAL	CARLOADS ORIGIN CHEMICAL	CARLOADS ORIGIN FOOD/CONSUME	CARLOADS ORIGIN METALS	CARLOADS ORIGIN MINERALS	CARLOADS ORIGIN PAPER/LBR	CARLOADS ORIGIN FERTILIZER	CARLOADS ORIGIN MISCELLANEOU	CARLOADS ORIGIN COAL/COKE/IRON ORE	CARLOADS ORIGIN TOTAL
LONG PINE SUBDIVISION											
LONG PINE	0	0	0	0	0	0	0	0	0	0	0
AINSWORTH	0	0	0	0	0	0	0	0	0	0	0
SANDRIDGE	0	0	0	0	0	0	0	0	0	0	0
JOHNSTOWN	0	0	0	0	0	0	0	0	0	0	0
WOOD LAKE	0	0	0	0	0	0	0	0	0	0	0
THACHER	0	0	0	0	0	0	0	0	0	0	0
VALENTINE	0	12	0	0	0	0	0	0	0	0	12
CROOKSTON	0	13	0	0	0	0	0	0	0	0	13
KILGORE	0	0	0	0	0	0	0	0	0	0	0
NENZEL	0	0	0	0	0	0	0	0	0	0	0
CODY	0	8	0	0	0	0	0	0	0	0	8
ELI	0	0	0	0	0	0	0	0	0	0	0
MERRIMAN	0	532	0	0	0	0	0	0	0	0	532
IRWIN	0	0	0	0	0	0	0	0	0	0	0
GORDON	0	447	0	0	0	0	0	0	0	0	447
CLINTON	0	128	0	0	0	0	0	0	0	0	128
RUSHVILLE	0	208	0	0	0	0	0	0	0	0	208
HAY SPRINGS	0	152	0	0	0	0	0	0	0	0	152
BORDEAUX	0	0	0	0	0	0	0	0	0	0	0
CHADRON	0	50	0	0	0	0	0	0	0	0	50
DAKOTA JCT	0	0	0	0	0	0	0	0	0	0	0
WHITNEY	0	0	0	0	0	0	0	0	0	0	0
CRAWFORD CNW	0	0	0	0	0	0	0	0	0	0	0
CRAWFORD BN	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	1,550	0	0	0	0	0	0	0	0	1,550
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	CARLOADS ORIGIN AUTOMOTIVE	CARLOADS ORIGIN AGRICULTURAL	CARLOADS ORIGIN CHEMICAL	CARLOADS ORIGIN FOOD/CONSUME	CARLOADS ORIGIN METALS	CARLOADS ORIGIN MINERALS	CARLOADS ORIGIN PAPER/LBR	CARLOADS ORIGIN FERTILIZER	CARLOADS ORIGIN MISCELLANEOU	CARLOADS ORIGIN COAL/COKE/IRON ORE	CARLOADS ORIGIN TOTAL
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0

DETAILED SUMMARY OF TRACKAGE	CARLOADS TERMINATION AUTOMOTIVE	CARLOADS TERMINATION AGRICULTURAL	CARLOADS TERMINATION CHEMICAL	CARLOADS TERMINATION FOOD/CONSUME	CARLOADS TERMINATION METALS	CARLOADS TERMINATION MINERALS	CARLOADS TERMINATION PAPER/LBR	CARLOADS TERMINATION FERTILIZER	CARLOADS TERMINATION MISCELLANEOU	CARLOADS TERMINATION COAL/COKE/IRON ORE	CARLOADS TERMINATION TOTAL
NORFOLK	0	0	0	0	0	0	0	0	336	0	336
LONG PINE	0	0	0	0	0	0	0	0	1,298	0	1,298
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	1,634	0	1,634

NORFOLK SUBDIVISION

NORFOLK	0	0	0	0	0	0	0	0	0	0	0
NORFOLK UNION PACIFI	0	0	0	0	0	0	0	0	0	0	0
BATTLE CREEK	0	0	0	0	0	0	0	0	27	0	27
MEADOW GROVE	0	0	0	0	0	0	0	0	9	0	9
TILDEN	0	0	0	0	0	0	0	0	37	0	37
OAKDALE	0	0	0	0	0	0	0	0	18	0	18
NELIGH	0	0	0	0	0	0	0	0	11	0	11
CLEARWATER	0	0	0	0	0	0	0	0	35	0	35
EWING	0	0	0	0	0	0	0	0	2	0	2
INMAN	0	0	0	0	0	0	0	0	0	0	0
O'NEILL	0	0	0	0	0	0	0	0	16	0	16
O'NEILL BN	0	0	0	0	0	0	0	0	0	0	0
EMMET	0	0	0	0	0	0	0	0	99	0	99
ATKINSON	0	0	0	0	0	0	0	0	6	0	6
STUART	0	0	0	0	0	0	0	0	2	0	2
NEWPORT	0	0	0	0	0	0	0	0	0	0	0
BASSETT	0	0	0	0	0	0	0	0	58	0	58
LONG PINE	0	0	0	0	0	0	0	0	16	0	16
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	336	0	336
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF

TRACKAGE	CARLOADS TERMINATION AUTOMOTIVE	CARLOADS TERMINATION AGRICULTURAL	CARLOADS TERMINATION CHEMICAL	CARLOADS TERMINATION FOOD/CONSUME	CARLOADS TERMINATION METALS	CARLOADS TERMINATION MINERALS	CARLOADS TERMINATION PAPER/LBR	CARLOADS TERMINATION FERTILIZER	CARLOADS TERMINATION MISCELLANEOU	CARLOADS TERMINATION COAL/COKE/IRON ORE	CARLOADS TERMINATION TOTAL
LONG PINE SUBDIVISION											
LONG PINE	0	0	0	0	0	0	0	0	0	0	0
AINSWORTH	0	0	0	0	0	0	0	0	78	0	78
SANDRIDGE	0	0	0	0	0	0	0	0	0	0	0
JOHNSTOWN	0	0	0	0	0	0	0	0	0	0	0
WOOD LAKE	0	0	0	0	0	0	0	0	0	0	0
THACHER	0	0	0	0	0	0	0	0	0	0	0
VALENTINE	0	0	0	0	0	0	0	0	38	0	38
CROOKSTON	0	0	0	0	0	0	0	0	936	0	936
KILGORE	0	0	0	0	0	0	0	0	0	0	0
NENZEL	0	0	0	0	0	0	0	0	1	0	1
CODY	0	0	0	0	0	0	0	0	0	0	0
ELI	0	0	0	0	0	0	0	0	0	0	0
MERRIMAN	0	0	0	0	0	0	0	0	219	0	219
IRWIN	0	0	0	0	0	0	0	0	0	0	0
GORDON	0	0	0	0	0	0	0	0	14	0	14
CLINTON	0	0	0	0	0	0	0	0	1	0	1
RUSHVILLE	0	0	0	0	0	0	0	0	0	0	0
HAY SPRINGS	0	0	0	0	0	0	0	0	0	0	0
BORDEAUX	0	0	0	0	0	0	0	0	0	0	0
CHADRON	0	0	0	0	0	0	0	0	11	0	11
DAKOTA JCT	0	0	0	0	0	0	0	0	0	0	0
WHITNEY	0	0	0	0	0	0	0	0	0	0	0
CRAWFORD CNW	0	0	0	0	0	0	0	0	0	0	0
CRAWFORD BN	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	1,298	0	1,298
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	CARLOADS TERMINATION AUTOMOTIVE	CARLOADS TERMINATION AGRICULTURAL	CARLOADS TERMINATION CHEMICAL	CARLOADS TERMINATION FOOD/CONSUME	CARLOADS TERMINATION METALS	CARLOADS TERMINATION MINERALS	CARLOADS TERMINATION PAPER/LBR	CARLOADS TERMINATION FERTILIZER	CARLOADS TERMINATION MISCELLANEOU	CARLOADS TERMINATION COAL/COKE/IRON ORE	CARLOADS TERMINATION TOTAL
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
JUNCTION MILE POLE											
SUB-TOTAL	0	0	0	0	0	0	0	0	0	0	0

DETAILED SUMMARY OF TRACKAGE	REVENUES ORIGIN AUTOMOTIVE	REVENUES ORIGIN AGRICULTURAL	REVENUES ORIGIN CHEMICAL	REVENUES ORIGIN FOOD/CONSUME	REVENUES ORIGIN METALS	REVENUES ORIGIN MINERALS	REVENUES ORIGIN PAPER/LBR	REVENUES ORIGIN FERTILIZER	REVENUES ORIGIN MISCELLANEOU	REVENUES ORIGIN COAL/COKE/IRON ORE	REVENUES ORIGIN TOTAL
NORFOLK	$0	$726,506	$0	$0	$0	$0	$0	$0	$0	$0	$726,506
LONG PINE	$0	$1,291,552	$0	$0	$0	$0	$0	$0	$0	$0	$1,291,552
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	$0	$2,018,058	$0	$0	$0	$0	$0	$0	$0	$0	$2,018,058

NORFOLK SUBDIVISION

NORFOLK	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NORFOLK UNION PACIFI	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BATTLE CREEK	$0	$450	$0	$0	$0	$0	$0	$0	$0	$0	$450
MEADOW GROVE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TILDEN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OAKDALE	$0	$102,200	$0	$0	$0	$0	$0	$0	$0	$0	$102,200
NELIGH	$0	$2,200	$0	$0	$0	$0	$0	$0	$0	$0	$2,200
CLEARWATER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EWING	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
INMAN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O'NEILL	$0	$900	$0	$0	$0	$0	$0	$0	$0	$0	$900
O'NEILL BN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EMMET	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ATKINSON	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
STUART	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NEWPORT	$0	$402	$0	$0	$0	$0	$0	$0	$0	$0	$402
BASSETT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LONG PINE	$0	$620,354	$0	$0	$0	$0	$0	$0	$0	$0	$620,354
JUNCTION MILE POLE											
SUB-TOTAL	$0	$726,506	$0	$0	$0	$0	$0	$0	$0	$0	$726,506
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	REVENUES ORIGIN AUTOMOTIVE	REVENUES ORIGIN AGRICULTURAL	REVENUES ORIGIN CHEMICAL	REVENUES ORIGIN FOOD/CONSUME	REVENUES ORIGIN METALS	REVENUES ORIGIN MINERALS	REVENUES ORIGIN PAPER/LBR	REVENUES ORIGIN FERTILIZER	REVENUES ORIGIN MISCELLANEOU	REVENUES ORIGIN COAL/COKE/IRON ORE	REVENUES ORIGIN TOTAL
LONG PINE SUBDIVISION											
LONG PINE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AINSWORTH	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SANDRIDGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JOHNSTOWN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
WOOD LAKE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
THACHER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VALENTINE	$0	$7,188	$0	$0	$0	$0	$0	$0	$0	$0	$7,188
CROOKSTON	$0	$8,138	$0	$0	$0	$0	$0	$0	$0	$0	$8,138
KILGORE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NENZEL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CODY	$0	$5,520	$0	$0	$0	$0	$0	$0	$0	$0	$5,520
ELI	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MERRIMAN	$0	$429,324	$0	$0	$0	$0	$0	$0	$0	$0	$429,324
IRWIN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
GORDON	$0	$386,208	$0	$0	$0	$0	$0	$0	$0	$0	$386,208
CLINTON	$0	$128,640	$0	$0	$0	$0	$0	$0	$0	$0	$128,640
RUSHVILLE	$0	$136,656	$0	$0	$0	$0	$0	$0	$0	$0	$136,656
HAY SPRINGS	$0	$138,928	$0	$0	$0	$0	$0	$0	$0	$0	$138,928
BORDEAUX	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CHADRON	$0	$50,950	$0	$0	$0	$0	$0	$0	$0	$0	$50,950
DAKOTA JCT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
WHITNEY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CRAWFORD CNW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CRAWFORD BN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$1,291,552	$0	$0	$0	$0	$0	$0	$0	$0	$1,291,552
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	REVENUES ORIGIN AUTOMOTIVE	REVENUES ORIGIN AGRICULTURAL	REVENUES ORIGIN CHEMICAL	REVENUES ORIGIN FOOD/CONSUME	REVENUES ORIGIN METALS	REVENUES ORIGIN MINERALS	REVENUES ORIGIN PAPER/LBR	REVENUES ORIGIN FERTILIZER	REVENUES ORIGIN MISCELLANEOU	REVENUES ORIGIN COAL/COKE/IRON ORE	REVENUES ORIGIN TOTAL
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0-	$0	$0	$0	$0	$0	$0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

DETAILED SUMMARY OF TRACKAGE	REVENUES TERMINATION AUTOMOTIVE	REVENUES TERMINATION AGRICULTURAL	REVENUES TERMINATION CHEMICAL	REVENUES TERMINATION FOOD/CONSUME	REVENUES TERMINATION METALS	REVENUES TERMINATION MINERALS	REVENUES TERMINATION PAPER/LBR	REVENUES TERMINATION FERTILIZER	REVENUES TERMINATION MISCELLANEOU	REVENUES TERMINATION COAL/COKE/IRON ORE	REVENUES TERMINATION TOTAL
NORFOLK	$0	$0	$0	$0	$0	$0	$0	$0	$78,053	$0	$78,053
LONG PINE	$0	$0	$0	$0	$0	$0	$0	$0	$388,984	$0	$388,984
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$467,037	$0	$467,037

NORFOLK SUBDIVISION											
NORFOLK	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NORFOLK UNION PACIFI	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BATTLE CREEK	$0	$0	$0	$0	$0	$0	$0	$0	$1,215	$0	$1,215
MEADOW GROVE	$0	$0	$0	$0	$0	$0	$0	$0	$450	$0	$450
TILDEN	$0	$0	$0	$0	$0	$0	$0	$0	$3,589	$0	$3,589
OAKDALE	$0	$0	$0	$0	$0	$0	$0	$0	$1,242	$0	$1,242
NELIGH	$0	$0	$0	$0	$0	$0	$0	$0	$1,430	$0	$1,430
CLEARWATER	$0	$0	$0	$0	$0	$0	$0	$0	$6,335	$0	$6,335
EWING	$0	$0	$0	$0	$0	$0	$0	$0	$340	$0	$340
INMAN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
O'NEILL	$0	$0	$0	$0	$0	$0	$0	$0	$3,040	$0	$3,040
O'NEILL BN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EMMET	$0	$0	$0	$0	$0	$0	$0	$0	$23,760	$0	$23,760
ATKINSON	$0	$0	$0	$0	$0	$0	$0	$0	$1,800	$0	$1,800
STUART	$0	$0	$0	$0	$0	$0	$0	$0	$640	$0	$640
NEWPORT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BASSETT	$0	$0	$0	$0	$0	$0	$0	$0	$27,492	$0	$27,492
LONG PINE	$0	$0	$0	$0	$0	$0	$0	$0	$6,720	$0	$6,720
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$78,053	$0	$78,053
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	REVENUES TERMINATION AUTOMOTIVE	REVENUES TERMINATION AGRICULTURAL	REVENUES TERMINATION CHEMICAL	REVENUES TERMINATION FOOD/CONSUME	REVENUES TERMINATION METALS	REVENUES TERMINATION MINERALS	REVENUES TERMINATION PAPER/LBR	REVENUES TERMINATION FERTILIZER	REVENUES TERMINATION MISCELLANEOU	REVENUES TERMINATION COAL/COKE/IRON ORE	REVENUES TERMINATION TOTAL
LONG PINE SUBDIVISION											
LONG PINE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AINSWORTH	$0	$0	$0	$0	$0	$0	$0	$0	$45,630	$0	$45,630
SANDRIDGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JOHNSTOWN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
WOOD LAKE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
THACHER	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VALENTINE	$0	$0	$0	$0	$0	$0	$0	$0	$14,744	$0	$14,744
CROOKSTON	$0	$0	$0	$0	$0	$0	$0	$0	$263,016	$0	$263,016
KILGORE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NENZEL	$0	$0	$0	$0	$0	$0	$0	$0	$869	$0	$869
CODY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ELI	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
MERRIMAN	$0	$0	$0	$0	$0	$0	$0	$0	$44,238	$0	$44,238
IRWIN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
GORDON	$0	$0	$0	$0	$0	$0	$0	$0	$10,178	$0	$10,178
CLINTON	$0	$0	$0	$0	$0	$0	$0	$0	$750	$0	$750
RUSHVILLE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HAY SPRINGS	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BORDEAUX	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CHADRON	$0	$0	$0	$0	$0	$0	$0	$0	$9,559	$0	$9,559
DAKOTA JCT	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
WHITNEY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CRAWFORD CNW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CRAWFORD BN	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$388,984	$0	$388,984
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											

DETAILED SUMMARY OF TRACKAGE	REVENUES TERMINATION AUTOMOTIVE	REVENUES TERMINATION AGRICULTURAL	REVENUES TERMINATION CHEMICAL	REVENUES TERMINATION FOOD/CONSUME	REVENUES TERMINATION METALS	REVENUES TERMINATION MINERALS	REVENUES TERMINATION PAPER/LBR	REVENUES TERMINATION FERTILIZER	REVENUES TERMINATION MISCELLANEOU	REVENUES TERMINATION COAL/COKE/IRON ORE	REVENUES TERMINATION TOTAL
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AVG PER MONTH											
AVG PER WEEK											
AVG PER DAY (5)											
STATIONS											
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
JUNCTION MILE POLE											
SUB-TOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

February 18, 1991

ADDENDUM D-DETAIL ON HAZARDOUS MATERIALS INFORMATION

TO

PRELIMINARY ANALYSIS OF CNW'S NEBRASKA RAIL LINES

IMPACT OF ABANDONMENT

FEASIBILITY OF CONTINUED OPERATION AS AN INDEPENDENT SHORT LINE RAILROAD

FOR THE NEBRASKA DEPARTMENT OF ROADS

Prepared by:

Transportation Operations, Inc.
595 Forest Avenue, Suite 6B
Plymouth, Michigan 48170

U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

January 3, 1980

Mr. B. F. Collins
Transportation Operations Inc.
595 Forest Ave. Suite 6B
Plymouth, MI 48170

Dear Mr. Collins:

Enclosed is the information you requested from the Department of Transportation's Hazardous Materials Information System (HMIS).

This response was prepared by Wilson Hill Associates, Inc. who maintains the HMIS under contract with the Research and Special Programs Administration. Should you have any questions regarding this data or require further information, please contact Ronald Duych of Wilson Hill on (202) 366-4555 or write me at the following address:

U. S. Department of Transportation
Research & Special Programs Administration
Office of Hazardous Materials
Planning and Analysis, DHM-63
400 7th Street, S.W.
Washington, D.C. 20590

Sincerely,

Sadie Willoughby

Sadie Willoughby
Information Systems Manager
Office of Hazardous Materials
Planning and Analysis

Enclosure

143

12/06/1990

U.S. DEPARTMENT OF TRANSPORTATION
HAZARDOUS MATERIALS RELEASES
(BY YEAR AND MODE)

INCIDENTS BY MODE AND INCIDENT YEAR

MODE	1980	1981*	1982	1983	1984	1985	1986	1987	1988	1989	TOTAL
AIR	224	158	95	66	102	114	120	163	172	187	1401
HIGHWAY	14161	8658	5663	4871	4507	4751	4615	4952	4900	5990	63068
RAILWAY	1271	1138	830	868	996	843	855	886	1018	1186	9891
WATER	34	8	8	12	8	7	7	15	16	11	126
FREIGHT FORWARDER	2	3	6	1	145	298	150	118	78	127	928
OTHER	29	60	1	1	6	6	12	1	1	2	119
TOTALS	15721	10025	6603	5819	5764	6019	5759	6135	6185	7503	75533

DEATHS BY MODE AND INCIDENT YEAR

MODE	1980	1981*	1982	1983	1984	1985	1986	1987	1988	1989	TOTAL
AIR	0	0	0	0	0	0	0	0	0	0	0
HIGHWAY	17	25	13	8	6	8	16	10	19	8	130
RAILWAY	2	0	0	0	0	0	0	0	0	0	2
WATER	0	0	0	0	1	0	0	0	0	0	1
FREIGHT FORWARDER	0	0	0	0	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0	0	0	0	0
TOTALS	19	25	13	8	7	8	16	10	19	8	133

INJURIES BY MODE AND INCIDENT YEAR

MODE	1980	1981*	1982	1983	1984	1985	1986	1987	1988	1989	TOTAL
AIR	8	7	0	3	15	4	12	26	6	54	135
HIGHWAY	493	395	88	118	147	195	229	247	129	214	2255
RAILWAY	121	222	36	68	76	53	59	25	36	36	732
WATER	1	1	1	0	18	0	2	8	0	7	38
FREIGHT FORWARDER	1	0	0	0	3	1	12	25	0	15	57
OTHER	2	16	0	0	0	0	2	0	0	0	20
TOTALS	626	641	125	189	259	253	316	331	171	326	3237

DAMAGES BY MODE AND INCIDENT YEAR

MODE	1980	1981*	1982	1983	1984	1985	1986	1987	1988	1989	TOTAL
AIR	12285	6560	26826	52525	770956	12299	62813	13779	562176	104936	1625155
HIGHWAY	7340376	14172078	11381624	9253755	11118351	12689492	13106727	15648693	18472190	15044078	128227364
RAILWAY	2952458	3632150	4331465	2559130	3353339	10273671	3077825	7554815	2432476	10264577	50431906
WATER	505408	53045	30000	76088	509029	3242	53500	99930	74262	39900	1444404
FREIGHT FORWARDER	100	6500	35	300	14011	13918	102117	51126	15009	37655	240771
OTHER	34560	38010	200	16500	975	515	3385	50	2700	2600	99495
TOTALS	10845187	17908343	15770150	11958298	15766661	22993137	16406367	23368393	21558813	25493746	182069095

* EFFECTIVE JANUARY 1, 1981, THE REPORTING REQUIREMENTS WERE CHANGED TO EXCLUDE INCIDENTS INVOLVING CONSUMER COMMODITIES, WET ELECTRIC STORAGE BATTERIES, OR PAINT, ENAMEL, LACQUER, STAIN, SHELLAC, ETC., IN PACKAGINGS OF 5 GALLONS OR SMALLER UNLESS THE INCIDENT RESULTS IN DEATH, INJURY OR PROPERTY DAMAGE OVER $50,000; THE MATERIAL IS BEING TRANSPORTED BY AIR; OR THE MATERIAL IS CLASSIFIED AS A HAZARDOUS WASTE.

Exhibit 1

Incident Statistics by Mode and Reporting Year

Mode	1982	1983	1984	1985	1986	1987	1988	1989 *	Total
Incidents by Mode									
Air	95	66	102	114	120	163	172	187	1,019
Highway	5,662	4,872	4,508	4,752	4,614	4,952	4,904	5,977	40,241
Railway	830	868	996	842	855	886	1,019	1,178	7,474
Water	8	12	8	7	7	15	16	10	83
Freight Forwarder	6	1	145	298	150	118	78	127	923
Other	1	1	6	6	12	1	1	2	30
TOTALS	6,602	5,820	5,765	6,019	5,758	6,135	6,190	7,481	49,770
Deaths by Mode									
Air	0	0	0	0	0	0	0	0	0
Highway	13	8	6	8	16	10	19	8	88
Railway	0	0	0	0	0	0	0	0	0
Water	0	0	1	0	0	0	0	0	1
Freight Forwarder	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0
TOTALS	13	8	7	8	16	10	19	8	89
Injuries by Mode									
Air	0	3	15	4	12	26	6	54	120
Highway	88	118	147	195	229	247	127	205	1,356
Railway	36	68	76	53	59	25	36	36	389
Water	1	0	18	0	2	8	0	7	36
Freight Forwarder	0	0	3	1	12	25	0	15	56
Other	0	0	0	0	2	0	0	0	2
TOTALS	125	189	259	253	316	331	169	317	1,959
Damages by Mode									
Air	26,826	52,525	770,956	12,299	62,813	13,779	562,176	105,011	1,606,385
Highway	11,381,564	9,253,755	11,118,351	12,689,492	13,106,727	15,648,693	18,551,864	15,320,205	107,070,651
Railway	4,331,465	2,559,130	3,353,339	10,273,671	3,077,825	7,554,815	2,432,476	10,265,206	43,847,927
Water	30,000	76,088	509,029	3,242	53,500	99,930	74,262	39,900	885,951
Freight Forwarder	35	300	14,011	13,918	102,117	51,126	15,009	37,655	234,171
Other	200	16,500	975	515	3,385	50	2,700	2,600	26,925
TOTALS	15,770,090	11,958,298	15,766,661	22,993,137	16,406,367	23,368,393	21,638,487	25,770,577	153,672,010

* Preliminary data as of February 27, 1990

Exhibit 2

Hazardous Materials Summary by State - 1989*

All Modes

State	Incidents	Injuries Major	Injuries Minor	Deaths	Damages
Alabama	123	1	0	1	$ 1,935,830
Alaska	20	0	1	0	783,620
Arizona	66	0	0	0	358,116
Arkansas	102	0	4	0	150,727
California	435	4	55	4	1,335,219
Colorado	136	0	12	0	201,504
Connecticut	75	0	2	0	41,906
Deleware	18	0	1	0	152,535
Dist. of Columbia	16	0	0	0	2,942
Florida	224	1	2	0	555,498
Georgia	226	1	18	0	421,091
Hawaii	2	0	0	0	0
Idaho	23	0	1	0	304,515
Illinois	724	1	12	0	1,398,947
Indiana	218	2	3	0	197,011
Iowa	136	0	1	0	126,856
Kansas	151	0	7	0	229,299
Kentucky	121	1	2	0	49,948
Louisiana	151	0	9	0	303,450
Maine	27	0	1	0	33,657
Maryland	84	0	2	0	561,714
Massachusetts	105	1	17	0	430,866
Michigan	216	3	5	0	50,901
Minnesota	176	0	8	0	296,344
Mississippi	93	1	1	0	53,418
Missouri	145	0	5	0	208,359
Montana	13	0	0	0	$ 7,187,271
Nebraska	38	0	0	0	18,584
Nevada	54	0	0	0	190,763
New Hampshire	14	0	0	0	26,757
New Jersey	207	2	11	0	841,897
New Mexico	55	0	1	0	34,780
New York	250	0	14	0	466,482
North Carolina	277	0	3	0	360,538
North Dakota	8	2	0	0	220,011
Ohio	573	1	24	0	556,086
Oklahoma	61	1	2	0	119,999
Oregon	51	0	2	0	110,412
Pennslyvania	621	0	3	0	1,079,771
Rhode Island	9	0	0	0	21,051
South Carolina	77	0	0	0	473,862
South Dakota	7	0	0	0	5,155
Tennessee	239	1	10	0	364,263
Texas	481	7	28	2	636,738
Utah	80	0	0	0	196,270
Vermont	14	1	0	0	61,848
Virginia	99	0	4	1	309,323
Washington	122	2	1	0	270,992
West Virginia	39	0	0	0	806,353
Wisconsin	225	2	7	0	561,466
Wyoming	37	0	3	0	550,635
**Other	16	0	0	0	114,997
TOTAL	7,481	35	282	8	$25,770,577

*Preliminary data as of February 27, 1990.

**Incidents by U.S. carriers that occurred in Puerto Rico, territorial possessions or foreign countries.

Exhibit 3

Incidents and Damages by Hazard Class - 1989 *

	Reported Number of Incidents	Rank	Percent of Reported Incidents	Amount of Damages	Rank by Damages	Percent of Total Damages	Number of Incidents Involving Damages
Corrosive Material	2,927	1	39.1	$ 2,274,418	4	8.8	2,193
Flammable Liquid	2,824	2	37.7	8,709,093	1	33.8	2,243
Combustible Liquid	536	3	7.2	4,936,160	3	19.2	383
Poison Liquid or Solid, Class B	236	4	3.2	326,062	9	1.3	181
Non Flammable Compressed Gas	213	5	2.8	348,227	8	1.4	113
Oxidizer	197	6	2.6	6,265,797	2	24.3	159
Other Regulated Material, Class A	181	7	2.4	571,938	7	2.2	125
Flammable Compressed Gas	136	8	1.8	1,403,964	5	5.4	59
Other Regulated Material, Class E	124	9	1.7	569,226	6	2.2	86
Organic Peroxide	45	10	0.6	71,457	12	0.3	42
Flammable Solid	39	11	0.5	24,031	15	< .1	24
Other Regulated Material, Class B	17	12	0.2	24,525	14	< .1	11
Other Regulated Material, Class C	16	13	0.2	14,350	16	< .1	9
Radioactive Material	14	14	0.2	30,230	13	0.1	7
Poison Gas or Liquid, Class A	11	15	0.1	11,461	17	< .1	8
Explosives, Class C	5	16	< .1	5,525	18	< .1	3
Blasting Agent	4	17	< .1	104,650	10	0.4	4
Other Regulated Material, Class D	3	18	< .1	3	21	< .1	1
Irritating Material	2	19	< .1	210	20	< .1	2
Explosives, Class A	2	19	< .1	78,500	11	0.3	2
Explosives, Class B	1	21	< .1	750	19	< .1	1
Etiological Agent	0	22	0	0	22	0	0
TOTAL	**7,533		***100.3	$25,770,577		100.	5,656

Legend: Due to rounding percentage of all figures may not add up across columns.
* Preliminary data as of February 27, 1990.
** Due to incidents involving multiple hazard classes, incident totals in Exhibit 3 may not agree with corresponding entries in the other exhibits.
*** Calculation of percentage figures based on 7,841 incidents.

Exhibit 4

Injuries by Hazard Class*-1989**

Hazard Class	Number of Injuries	Percent of Injuries	Major Injuries ***	Minor Injuries	Number of Incidents with Injuries
Corrosive Material	124	39.1	15	109	73
Flammable Liquid	110	34.7	7	103	38
Poison Liquid or Solid, Class B	28	8.8	3	25	14
Nonflammable Compressed Gas	15	4.7	5	10	11
Oxidizer	14	4.4	0	14	7
Other Regulated Material, Class A	11	3.5	0	11	4
Flammable Compressed Gas	8	2.5	3	5	8
Combustible Liquid	2	.6	1	1	2
Flammable Solid	2	.6	0	2	2
Other Regulated Material, Class B	1	.3	0	1	1
Other Regulated Material, Class C	1	.3	1	0	1
Other Regulated Material, Class E	1	.3	0	1	1
TOTAL	317	99.8%	35	282	162

Legend: All % figures rounded to nearest .1%.

* No reports received for other hazard classes.

** Preliminary data as of February 27, 1990.

*** Major injuries are those requiring hospitalization, or involving 2nd or 3rd degree burns, or resulting in injury-related loss of time at work of one or more days, such as would be caused by inhalation of strong irritating vapors. All other injuries are considered minor.

Exhibit 5

Fatalities by Hazardous Material and Class - 1989 *

Hazardous Material	Hazard Class	Number of Deaths
Gasoline	Flammable Liquid	6
Aviation Fuel	Combustible Liquid	1
Hydrogen Peroxide	Oxidizer	1
	TOTAL	8

Exhibit 6

Incident Cause by Mode - 1989 *

	Air	Highway	Rail	Other**	Total	Percent of all Incidents
Human Error	130	4,259	445	97	4,931	65.9
Package Failure	37	1,259	640	36	1,972	26.4
Vehicle Accident/Derailments	1	266	60	2	329	4.4
Other	19	193	33	4	249	3.3
TOTAL	187	5,977	1,178	139	7,481	
Percent of Incidents by Mode	2.5	79.7	15.7	1.9		

* Preliminary data as of February 27, 1990.

** Includes water and freight forwarder.

Exhibit 7

Incidents by Top 50 Hazardous Materials - 1989 *

Rank	Hazardous Material	Hazard Class	Incidents	Percent of Total Incidents
1	Corrosive liquid n.o.s	Corrosive material	515	6.9
2	Flammable liquid n.o.s	Flammable liquid	459	6.1
3	Compound cleaning liquid	Corrosive material	421	5.6
4	Hydrochloric acid	Corrosive material	393	5.3
5	Gasoline	Flammable liquid	354	4.7
6	Sulfuric acid	Corrosive material	316	4.2
7	Fuel oil no. 1,2,4,5,6	Combustible liquid	284	3.8
8	Resin solution	Flammable liquid	228	3.0
9	Sodium hydroxide liquid	Corrosive material	214	2.9
10	Paint	Flammable liquid	196	2.6
11	Phosphoric acid	Corrosive material	135	1.8
12	Methyl alcohol	Flammable liquid	125	1.7
13	Adhesive	Flammable liquid	121	1.6
14	Ink	Flammable liquid	109	1.5
15	Alkaline liquid n.o.s	Corrosive material	103	1.4
16	Potassium hydroxide liquid	Corrosive material	94	1.3
17	Ammonium hydroxide 12-44%	Corrosive material	84	1.1
17	Ethyl alcohol	Flammable liquid	84	1.1
17	Liquefied petroleum gas	Flammable gas	84	1.1
20	Isopropanol	Flammable liquid	79	1.1
21	Combustible liquid n.o.s.	Combustible liquid	73	1.0
21	Poisonous liquid n.o.s	Poison B	73	1.0
23	Hazardous substance n.o.s	ORM-E	72	1.0
24	Ammonia anhydrous	Nonflammable gas	64	0.9
25	Compound cleaning liquid	Flammable liquid	59	0.8
25	Petroleum naphtha	Combustible liquid	59	0.8
27	Toluene	Flammable liquid	58	0.8
27	Xylene (xylol)	Flammable liquid	58	0.8
29	Paint related material	Flammable liquid	54	0.7
30	Hypochlorite solution >7%	Corrosive material	53	0.7
31	Acetone	Flammable liquid	51	0.7
31	Hazardous waste n.o.s.	ORM-E	51	0.7
33	Petroleum naphtha	Flammable liquid	47	0.6
34	Coating solution	Flammable liquid	44	0.6
35	Corrosive solid n.o.s.	Corrosive material	39	0.5
36	Extract liquid flavoring	Flammable liquid	38	0.5
37	Styrene monomer inhibited	Flammable liquid	37	0.5
38	Acetic acid aqueous	Corrosive material	36	0.5
39	Denatured alcohol	Flammable liquid	34	0.5
40	Cement	Flammable liquid	32	0.4
40	Hydrogen peroxide 40-52%	Oxidizer	32	0.4
42	Alcohol n.o.s.	Flammable liquid	31	0.4
42	Flammable liquid corrosive	Flammable liquid	31	0.4
42	Methyl methacrylate inhib	Flammable liquid	31	0.4
42	Nitric acid (over 40%)	Oxidizer	31	0.4
46	Tetrachloroethylene	ORM-A	30	0.4
47	Ferric chloride solution	Corrosive material	28	0.4
47	Fuel oil	Combustible liquid	28	0.4
49	Carbon dioxide	Nonflammable gas	27	0.4
50	Acetonitrile	Flammable liquid	25	0.3
50	Acid liquid n.o.s.	Corrosive material	25	0.3
50	Compound rust preventing	Corrosive material	25	0.3
50	Battery fluid acid	Corrosive material	25	0.3
	TOTAL		5,799	77.5

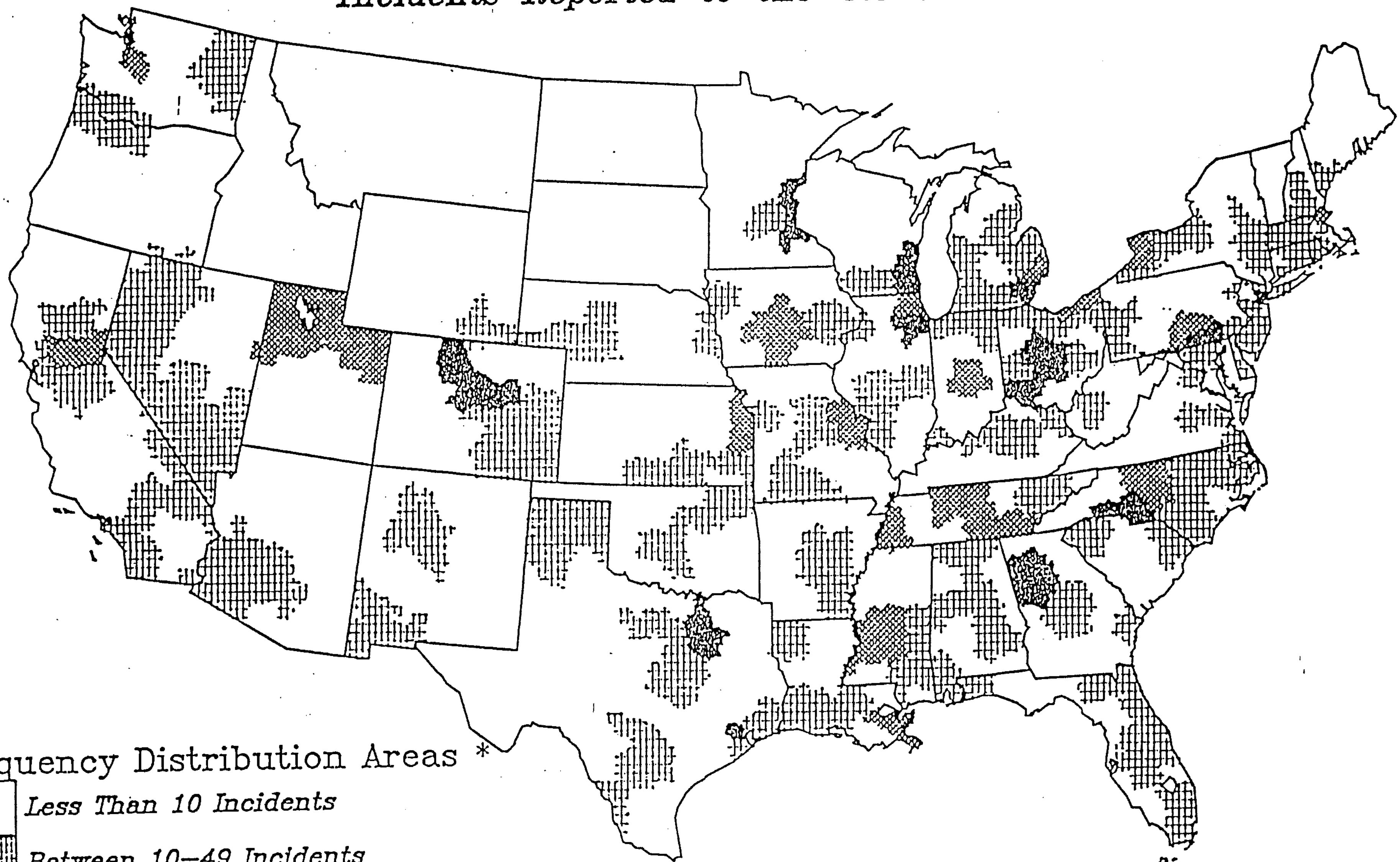
Note: Percentage figures based on 7,481 incidents reported in 1989.

* Preli--ary data as of February 27, 1990

Map 1

TRANSPORTATION INCIDENTS INVOLVING HAZARDOUS MATERIALS, 1989

Incidents Reported to the U.S. DOT



Frequency Distribution Areas *

Less Than 10 Incidents

Between 10–49 Incidents

Between 50–100 Incidents

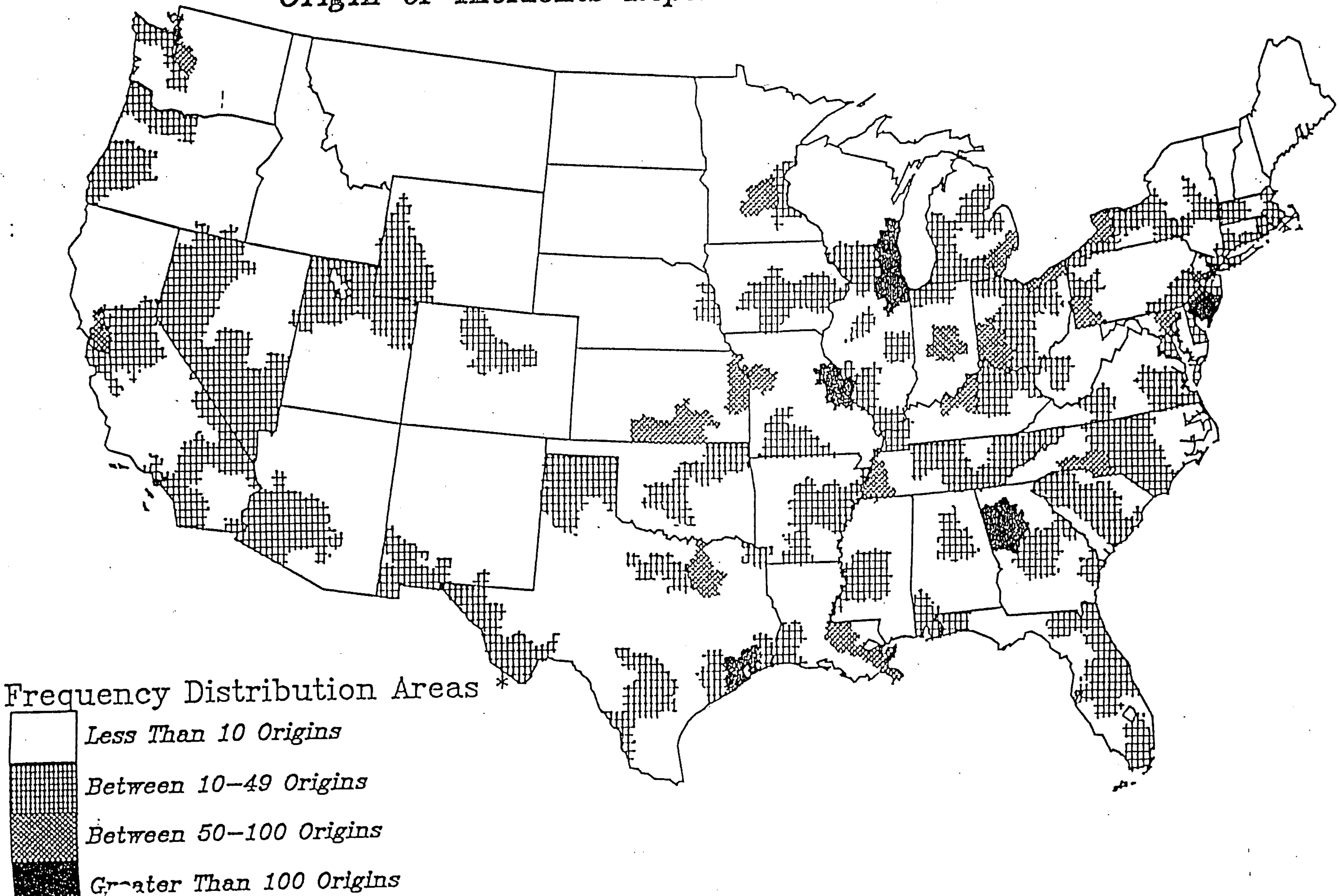
Gr‑‑ter Than 100 Incidents

* Areas shown on this map are based on Three–Digit Zip Cod‑ ‑undries.

Map 2

TRANSPORTATION INCIDENTS INVOLVING HAZARDOUS MATERIALS, 1989

Origin of Incidents Reported to the U.S. DOT

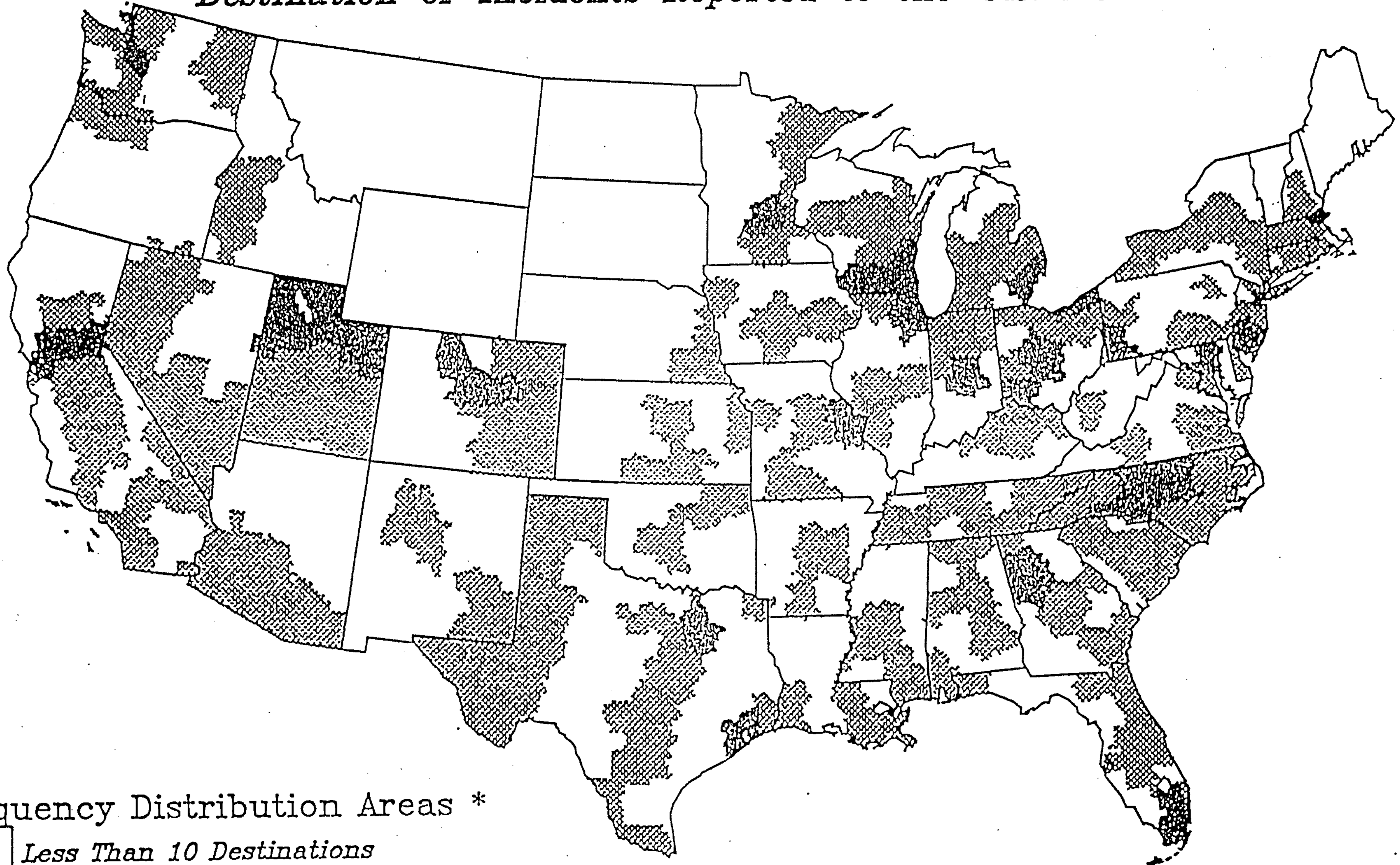


..reas shown on this map are based on Three–Digit Zip Cod oundries.

Map 3

TRANSPORTATION INCIDENTS INVOLVING HAZARDOUS MATERIALS, 1989

Destination of Incidents Reported to the U.S. DOT



Frequency Distribution Areas *

Less Than 10 Destinations

Between 10–49 Destinations

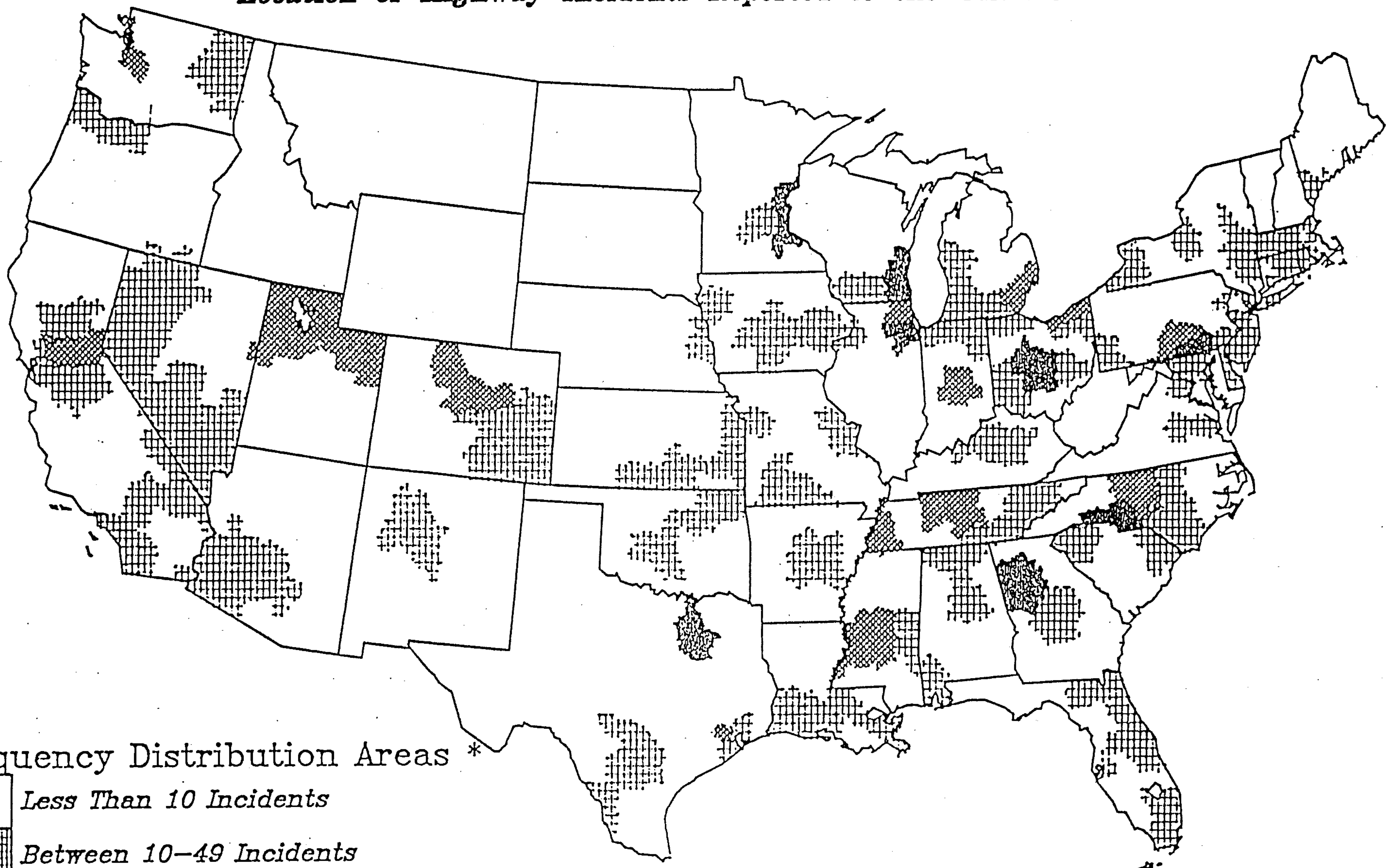
Greater Than 50 Destinations

* Areas shown on this map are based on Three–Digit Zip Code boundries.

Map 4

TRANSPORTATION INCIDENTS INVOLVING HAZARDOUS MATERIALS, 1989

Location of Highway Incidents Reported to the U.S. DOT



Frequency Distribution Areas *

Less Than 10 Incidents

Between 10–49 Incidents

Between 50–100 Incidents

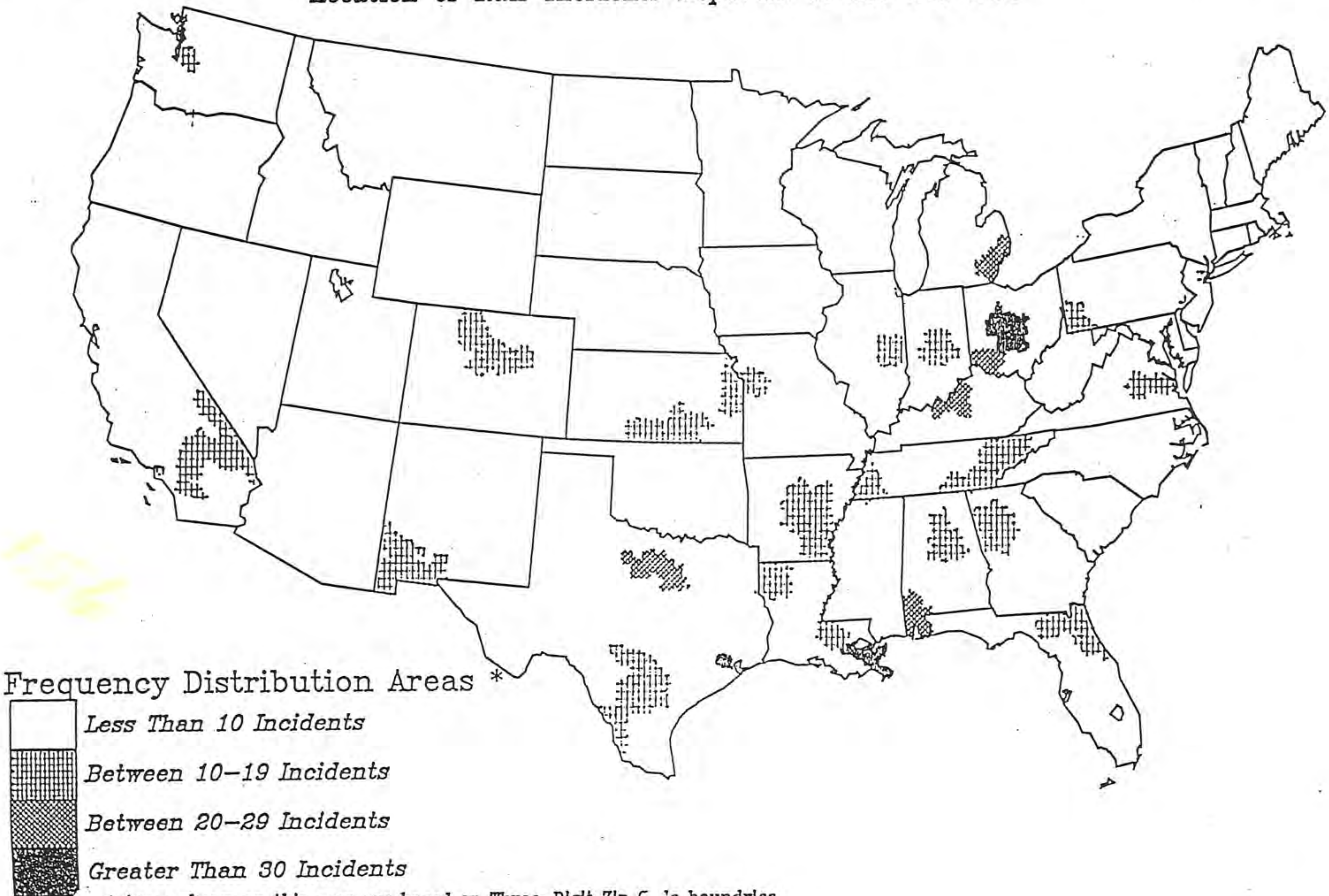
Greater Than 100 Incidents

* Areas shown on this map are based on Three-Digit Zip C boundries.

Map 5

TRANSPORTATION INCIDENTS INVOLVING HAZARDOUS MATERIALS, 1989

Location of Rail Incidents Reported to the U.S. DOT



* Areas shown on this map are based on Three–Digit Zip C 'e boundries.

HAZARDOUS MATERIALS INCIDENT REPORT (HAZREP) GUIDE

JANUARY 1990

SECTION HEADINGS

CARRIER	: Carrier's Name
INCIDENT LOCATION	: City and State of the Incident
DATE	: Incident Date
COMMODITY NAME	: Proper Shipping Name of Commodity
CLASS	: Hazard Class of the Commodity
MJ-INJ-MN	: Injuries; MJ-Major, MN-Minor
DEAD	: Deaths
RESULTS	: Result from the Incident
DAMAGES	: Damages rounded to the nearest dollar amount
SHIPPER	: Shipper's Name
SHIPMENT ORIGIN	: City and State of Shipment's Origin
MODE	: Mode of Transportation
D	: '*' Indicates Vehicular Accident/Derailment
E	: '#' Indicates Evacuation
CONT-1	: Inner (Main) Container
CONT-2	: Outer (Secondary) Container
CAPACITY	: Capacity of Inner Container
SHIPD	: Number of Inner Containers Shipped
FAILD	: Number of Inner Containers Failed
AMT RELEASE	: Amount of Material Released
REPORT #	: DOT Assigned Number

MULTIPLE REPORT CODES

MULTIPLE CODE	DESCRIPTION
A	A report number appearing once in the database with an A code, indicates an incident involving a single shipper, commodity, container type and size, and container manufacturer.
B	A report number appearing several times with codes B thru U, indicates an incident involving more than one shipper, commodity, container type or size, or container manufacturer.
V	Limited quantities of hazardous materials for which a packaging exception is listed in section 172.101, col. 5(a).
W	Any hazardous material released from a hose during the normal course of loading or unloading of a tank vehicle after the internal valve has been closed and the hose has been disconnected.
X	Shipments of flammable liquids in packagings of 5 gallons or less capacity (does not include limited quantities).
Y	Shipments of electric storage batteries.
Z	Any report which does not appear to meet the reporting criteria as outlined in section 171.16.

NOTE: Codes V thru Z were added to the incident report database in January 1977.

DataBase	Attribute
HAZMAT.DMS	MTPL

RESULT CODES

CODE	DESCRIPTION
S	SPILLAGE
F	FIRE
E	EXPLOSION
D	ENVIRONMENTAL DAMAGE
W	MATERIAL ENTERED WATERWAY/SEWER
V	VAPOR (GAS) DISPERSION
O	OTHER
N	NONE

TRANSPORTATION MODE CODES

CODE ABBREVIATION	MODE OF TRANSPORTATION
AIR	AIR
H-H	HIGHWAY (FOR HIRE)
H-P	HIGHWAY (PRIVATE)
R	RAILWAY
W	WATER
OTH	OTHER

HAZARD CLASS CODES

CLASS ABBREVIATION	HAZARD CLASS	DEFINITION (CFR 49)
ORM-A	OTHER REGULATED MATERIAL, CLASS A	173.500(a)1
ORM-B	OTHER REGULATED MATERIAL, CLASS B	173.500(a)2
ORM-C	OTHER REGULATED MATERIAL, CLASS C	173.500(a)3
ORM-D	OTHER REGULATED MATERIAL, CLASS D	173.500(a)4
ORM-E	OTHER REGULATED MATERIAL, CLASS E	173.500(a)5
ORG PER	ORGANIC PEROXIDE	173.151(a)
BLAST A	BLASTING AGENT	173.114A(a)
COMB L	COMBUSTIBLE LIQUID	173.115(b)
F. L.	FLAMMABLE LIQUID	173.115(a)
F. S.	FLAMMABLE SOLID	173.150
OXIDIZR	OXIDIZER	173.151
NONF. G.	NONFLAMMABLE COMPRESSED GAS	173.300(a)
F. G.	FLAMMABLE COMPRESSED GAS	173.300(b)
POIS A	POISON GAS OR LIQUID, CLASS A	173.326
POIS B	POISON LIQUID OR SOLID, CLASS B	173.343
IRR	IRRITATING MATERIAL	173.381
R.A.M.	RADIOACTIVE MATERIAL	173.389
EXPL. A.	EXPLOSIVES, CLASS A	173.53
EXPL. B.	EXPLOSIVES, CLASS B	173.88
EXPL. C.	EXPLOSIVES, CLASS C	173.100
ETIO. A.	ETIOLOGICAL AGENT	173.386
COR	CORROSIVE MATERIAL	173.240

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
103	YES	TANK CAR	NON-PRESSURE
03A	YES	TANK CAR	NON-PRESSURE
103AALW	YES	TANK CAR	NON-PRESSURE
103AL	YES	TANK CAR	NON-PRESSURE
103ALW	YES	TANK CAR	NON-PRESSURE
103ANW	YES	TANK CAR	NON-PRESSURE
103AW	YES	TANK CAR	NON-PRESSURE
103B	YES	TANK CAR	NON-PRESSURE
103BW	YES	TANK CAR	NON-PRESSURE
103C	YES	TANK CAR	NON-PRESSURE
103CAL	YES	TANK CAR	NON-PRESSURE
103CW	YES	TANK CAR	NON-PRESSURE
103DW	YES	TANK CAR	NON-PRESSURE
103EW	YES	TANK CAR	NON-PRESSURE
103W	YES	TANK CAR	NON-PRESSURE
104	YES	TANK CAR	NON-PRESSURE
104A	YES	TANK CAR	NON-PRESSURE
104AW	YES	TANK CAR	NON-PRESSURE
104W	YES	TANK CAR	NON-PRESSURE
105	YES	TANK CAR	PRESSURE
105A	YES	TANK CAR	PRESSURE
105AALW	YES	TANK CAR	PRESSURE
105AF	YES	TANK CAR	PRESSURE
105AW	YES	TANK CAR	PRESSURE
106A	YES	TANK CAR	MULTI-UNIT
106ANCI	YES	TANK CAR	MULTI-UNIT
06AW	YES	TANK CAR	MULTI-UNIT
06AX	YES	TANK CAR	MULTI-UNIT
107A	YES	TANK CAR	HIGH PRESSURE
109AALW	YES	TANK CAR	PRESSURE
109AW	YES	TANK CAR	PRESSURE
10A	---	BARREL/KEG WOOD	WOODEN BARRELS AND KEGS (TIGHT)
10B	---	BARREL/KEG WOOD	WOODEN BARRELS AND KEGS (TIGHT)
10C	---	BARREL/KEG WOOD	WOODEN BARRELS AND KEGS (TIGHT)
110A	YES	TANK CAR	MULTI-UNIT
110AW	YES	TANK CAR	MULTI-UNIT
111A	YES	TANK CAR	NON-PRESSURE
111AALW	YES	TANK CAR	NON-PRESSURE
111AF	YES	TANK CAR	NON-PRESSURE
111AW	YES	TANK CAR	NON-PRESSURE
112A	YES	TANK CAR	PRESSURE
112AF	YES	TANK CAR	PRESSURE
112AW	YES	TANK CAR	PRESSURE
112J	YES	TANK CAR	PRESSURE
112JW	YES	TANK CAR	PRESSURE
112S	YES	TANK CAR	PRESSURE
112SW	YES	TANK CAR	PRESSURE
112T	YES	TANK CAR	PRESSURE
113A175W	YES	TANK CAR CRYO	LIQUIFIED HYDROGEN
113A60W	YES	TANK CAR CRYO	LIQUIFIED HYDROGEN
113AW	YES	TANK CAR	LIQUIFIED HYDROGEN
113C120W	YES	TANK CAR CRYO	LIQUIFIED HYDROGEN
3CW	YES	TANK CAR	LIQUIFIED HYDROGEN
113DW	YES	TANK CAR	LIQUIFIED HYDROGEN
114A	YES	TANK CAR	PRESSURE
114AW	YES	TANK CAR	PRESSURE

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
114CW	YES	TANK CAR	PRESSURE
14J	YES	TANK CAR	PRESSURE
114JW	YES	TANK CAR	PRESSURE
114S	YES	TANK CAR	PRESSURE
114SW	YES	TANK CAR	PRESSURE
114T	YES	TANK CAR	PRESSURE
115AALW	YES	TANK CAR	NON-PRESSURE
115AW	YES	TANK CAR	NON-PRESSURE
11A	---	BARREL/KEG WOOD	WOODEN BARRELS AND KEGS (SLACK)
11B	---	BARREL/KEG WOOD	WOODEN BARRELS AND KEGS (SLACK)
12A	---	BOX FIBER	BOXES NRC
12B	---	BOX FIBER	BOXES
12C	---	BOX FIBER	BOXES
12D	---	BOX FIBER	BOXES
12E	---	BOX FIBER	BOXES
12H	---	BOX FIBER	BOXES
12P	---	BOX FIBER	BOXES NRC
12R	---	BOX FIBER	PAPER FACED EXPANDED POLYSTRENE NRC
13	---	KEG METAL	METAL KEGS
13A	---	DRUM METAL	METAL DRUMS
14	---	BOX WOOD	NAILED
15A	---	BOX WOOD	NAILED
15B	---	BOX WOOD	NAILED
15C	---	BOX WOOD	NAILED
15D	---	BOX WOOD	NAILED
15E	---	BOX WOOD	FIBERBOARD LINED
15L	---	BOX WOOD	BOXES
15M	---	BOX WOOD	METAL LINED
15P	---	BOX WOOD	GLUED PLYWOOD OR WOODEN BOX
15X	---	BOX WOOD	WOODEN BOXES FOR TWO FIVE-GALLON CANS
16A	---	BOX WOOD	PLYWOOD OR WOODEN BOXES, WIREBOUND
16B	---	BOX WOOD	WOODEN BOXES, WIREBOUND
16D	---	BOX WOOD	WOODEN WIREBOUND OVERWRAP
17C	---	DRUM METAL	STEEL STC RHA
17E	---	DRUM METAL	STEEL STC RHNA
17E/17H	---	DRUM METAL	RECONDITIONED 17E (CLOSED HEAD), CONVERTED TO 17H (OPEN HEAD) STC RHR
17F	---	DRUM METAL	STEEL STC RHNA
17H	---	DRUM METAL	STEEL STC RHR
17X	---	DRUM METAL	STEEL BARRELS OR DRUMS STC RHNA
18B	---	BOX WOOD	WOODEN KITS
19A	---	BOX WOOD	WOODEN BOXES, PLYWOOD, CLEATED
19B	---	BOX WOOD	WOODEN BOXES, PLYWOOD, NAILED
1A	---	CARBOY	BOXED
1B	---	CARBOY	BOXED LEAD
1C	---	CARBOY	IN KEGS
1D	---	CARBOY	BOXED GLASS
1E	---	CARBOY	GLASS, IN PLYWOOD DRUMS
1EX	---	CARBOY	GLASS, IN PLYWOOD DRUMS STC
1H	---	CARBOY	POLYETHYLENE, IN METAL CRATES
1K	---	CARBOY	GLASS, CUSHIONED WITH EXPANDABLE POLYSTYRENE IN WOODEN WIREBOUND BOX
	---	CARBOY	GLASS WITH EXPANDED POLYSTYRENE OVERPACK
1X	---	CARBOY	BOXED, 5 TO 6 1/2 GALLONS FOR EXPORT ONLY STC
20PF	---	RAM CONTAINER	PHENOLIC-FOAM INSULATED, METAL OVERPACK
20WC	---	RAM CONTAINER	WOODEN PROTECTIVE JACKET

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
21C	---	DRUM NON-METAL	FIBER DRUM
1P	---	DRUM NON-METAL	FIBER DRUM OVERPACK FOR INSIDE PLASTIC CONTAINER
21PF	---	RAM CONTAINER	FIRE AND SHOCK RESISTANT, PHENOLIC-FOAM INSULATED, METAL OVERPACK
21WC	---	RAM CONTAINER	WOODEN PROTECTIVE OVERPACK
22A	---	DRUM NON-METAL	WOODEN DRUMS, PLYWOOD
22B	---	DRUM NON-METAL	WOODEN DRUMS, PLYWOOD
22C	---	DRUM NON-METAL	PLYWOOD DRUM FOR PLASTIC INSIDE CONTAINER
23F	---	BOX FIBER	FIBERBOARD BOXES
23G	---	BOX FIBER	SPECIAL CYLINDRICAL FIBERBOARD BOX FOR HIGH EXPLOSIVES
23H	---	BOX FIBER	FIBERBOARD BOXES
25	YES	TANK	STEEL CYLINDER, SEAMLESS, MAXIMUM SIZE 120 POUNDS WATER CAPACITY
26	YES	TANK	STEEL CYLINDER, SEAMLESS, MAXIMUM SIZE 220 POUNDS WATER CAPACITY
28	---	CARBOY	METAL-JACKETED
28A	---	CARBOY	METAL-JACKETED
29	---	TUBE	MAILING TUBE
2A	---	INSIDE CONTAIN	INSIDE CONTAINER METAL CANS, PAILS AND KITS
2C	---	INSIDE CONTAIN	CORRUGATED FIBERBOARD CARTONS
2D	---	INSIDE CONTAIN	DUPLEX PAPER BAGS
2E	---	INSIDE CONTAIN	POLYETHYLENE BOTTLE
2F	---	INSIDE CONTAIN	METAL CONTAINERS AND LINERS
2G	---	INSIDE CONTAIN	FIBER CANS AND BOXES
2J	---	INSIDE CONTAIN	WATERPROOF PAPER BAGS FOR LININGS
2K	---	INSIDE CONTAIN	PAPER BAGS FOR LININGS
2L	---	INSIDE CONTAIN	LINING FOR BOXES
2M	---	INSIDE CONTAIN	WATERPROOF PAPER LINING
2N	---	INSIDE CONTAIN	METAL CANS
2P	---	INSIDE CONTAIN	NON-REFILLABLE METAL CONTAINERS
2Q	---	INSIDE CONTAIN	NON-REFILLABLE METAL CONTAINERS
2R	---	INSIDE CONTAIN	METAL TUBES FOR RADIOACTIVE MATERIALS
2S	---	INSIDE CONTAIN	POLYETHYLENE CONTAINERS RHNA
2SL	---	INSIDE CONTAIN	POLYETHYLENE CONTAINERS RHNA
2T	---	INSIDE CONTAIN	POLYETHYLENE CONTAINERS
2TL	---	INSIDE CONTAIN	POLYETHYLENE CONTAINERS
2U	---	INSIDE CONTAIN	POLYETHYLENE CONTAINERS OVER ONE GALLON CAPACITY RHNA
3	---	CYLINDER	STEEL CYLINDER, SEAMLESS
31	---	JUG	JUGS IN TUBS
32A	---	BOX METAL	METAL CASES, RIVETED OR LOCK-SEAMED
32B	---	BOX METAL	METAL CASES, WELDED OR RIVETED
32C	---	BOX METAL	METAL TRUNKS
32D	---	BOX METAL	METAL BOXES
33	YES	TANK	STEEL CYLINDER, SEAMLESS, MAXIMUM SIZE 120 POUNDS WATER CAPACITY
33A	---	OTHER	POLYSTYRENE CASES
34	---	DRUM NON-METAL	REUSABLE MOLDED POLYETHYLENE CONTAINER WITHOUT OVERPACK RHNA
34B	---	CARBOY	ALUMINUM CARBOYS
35	---	DRUM NON-METAL	NON-REUSABLE MOLDED POLYETHYLENE DRUM FOR USE WITHOUT OVERPACK RHR
36A	---	BAG CLOTH	LINED CLOTH (TRIPLEX)
36B	---	BAG CLOTH	BURLAP, LINED
36C	---	BAG CLOTH	BURLAP, PAPER LINED
37A	---	DRUM METAL	DRUMS STC RHR
37B	---	DRUM METAL	DRUMS STC RHNA
37C	---	DRUM METAL	DRUMS NRC RHR

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
37D	---	DRUM METAL	DRUMS NRC RHNA
7K	---	DRUM METAL	DRUMS STC RHA
37M	---	DRUM METAL	STEEL OVERPACK FOR INSIDE PLASTIC CONTAINER NRC
37P	---	DRUM METAL	STEEL DRUMS WITH POLYETHYLENE LINER
38	YES	TANK	STEEL CYLINDER, SEAMLESS, MINIMUM SIZE 5 POUNDS WATER CAPACIT
39	---	CYLINDER	NON-REUSABLE (NON-REFILLABLE) CYLINDERS NRC
3A	YES	CYLINDER BULK	SEAMLESS STEEL
3A480X	---	CYLINDER	SEAMLESS STEEL
3AA	---	CYLINDER	SEAMLESS STEEL, MADE OF DEFINITELY PRESCRIBED STEELS
3AAX	YES	CYLINDER TRL	SEAMLESS STEEL, MADE OF DEFINITELY PRESCRIBED STEELS OVER 100(POUNDS WATER VOLUME
3AX	YES	CYLINDER TRL	SEAMLESS STEEL, OVER 1000 POUNDS WATER VOLUME
3B	---	CYLINDER	SEAMLESS STEEL
3BN	---	CYLINDER	SEAMLESS NICKEL
3C	---	CYLINDER	SEAMLESS STEEL
3D	---	CYLINDER	SEAMLESS STEEL
3E	---	CYLINDER	SEAMLESS STEEL
3HT	---	CYLINDER	INSIDE CONTAINERS, SEAMLESS STEEL FOR A/C USE
3T	---	CYLINDER	SEAMLESS STEEL
4	---	CYLINDER	FORGE WELDED STEEL
40	---	CYLINDER	NON-REFILLABLE METAL CONTAINERS
41	---	CYLINDER	NON-REFILLABLE METAL CONTAINERS
42	---	DRUM METAL	ALUMINUM DRUM
42B	---	DRUM METAL	DRUMS
42C	---	DRUM METAL	BARRELS OR DRUMS
42D	---	DRUM METAL	DRUMS
2E	---	DRUM METAL	DRUMS STC
.2F	---	DRUM METAL	BARRELS OR DRUMS RHR
42G	---	DRUM METAL	DRUMS
42H	---	DRUM METAL	DRUMS RHNA
43A	---	DRUM NON-METAL	RUBBER DRUMS
44B	---	BAG PAPER	PAPER BAGS
44C	---	BAG PAPER	PAPER BAGS
44D	---	BAG PAPER	PAPER BAGS
44E	---	BAG PAPER	PAPER BAGS
44P	---	BAG PLASTIC	ALL PLASTIC BAG
45B	---	BAG CLOTH	BAGS, CLOTH AND PAPER, LINED
4A	---	CYLINDER	FORGED WELDED STEEL
4AA480	---	CYLINDER	WELDED STEEL
4B	---	CYLINDER	WELDED AND BRAZED STEEL
4B240ET	---	CYLINDER	WELDED AND BRAZED
4B240FLW	---	CYLINDER	WELDED OR WELDED AND BRAZED
4B240X	---	CYLINDER	CYLINDER WITHOUT LONGITUDINAL SEAM FOR PRESSURES OF 150 TO 500 POUNDS PSI
4BA	---	CYLINDER	WELDED OR BRAZED STEEL, MADE OF DEFINITELY PRESCRIBED STEELS
4BW	---	CYLINDER	WELDED STEEL
4C	---	CYLINDER	WELDED AND BRAZED STEEL
4D	---	CYLINDER	INSIDE CONTAINERS, WELDED STEEL
4DA	---	CYLINDER	INSIDE CONTAINERS, WELDED STEEL FOR A/C USE
4DS	---	CYLINDER	INSIDE CONTAINERS, WELDED STAINLESS STEEL
4E	---	CYLINDER	WELDED ALUMINUM
4L	---	CYLINDER	WELDED, INSULATED
	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
50	YES	TANK	STEEL PORTABLE TANK
51	YES	TANK	STEEL
51X	YES	TANK	STEEL PORTABLE TANK

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
52	YES	TANK	ALUMINUM OR MAGNESIUM PORTABLE TANK
3	YES	TANK	CYLINDRICAL ALUMINUM PORTABLE TANK
55	---	RAM CONTAINER	METAL ENCASED, URANIUM OR LEAD SHIELDED CONTAINER FOR RADIOACTIVE MATERIALS
56	YES	TANK	METAL
57	YES	TANK	METAL
5A	---	DRUM METAL	STEEL BARRELS OR DRUMS RHNA
5B	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
5C	---	DRUM METAL	STEEL BARRELS OR DRUMS RHNA
5D	---	DRUM METAL	STEEL BARRELS OR DRUMS, LINED RHA
5F	---	DRUM METAL	STEEL DRUM RHNA
5H	---	DRUM METAL	STEEL BARRELS OR DRUMS, LEAD LINED RHNA
5K	---	DRUM METAL	NICKEL BARRELS OR DRUMS RHNA
5L	---	DRUM METAL	STEEL BARRELS OR DRUMS RHNA
5M	---	DRUM METAL	MONEL DRUMS
5P	---	DRUM METAL	LAGGED STEEL DRUMS RHNA
5X	---	DRUM METAL	STEEL DRUMS, ALUMINUM LINED RHNA
60	YES	TANK	STEEL
6A	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
6B	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
6C	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
6D	---	DRUM METAL	CYLINDRICAL STEEL OVERPACK, STRAIGHT SIDED, FOR INSIDE PLASTIC CONTAINERS
6J	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
6K	---	DRUM METAL	STEEL BARRELS OR DRUMS RHA
6L	---	RAM CONTAINER	METAL PACKAGING
[illegible]	---	RAM CONTAINER	METAL PACKAGING
[illegible]	---	RAM CONTAINER	GENERAL PACKAGING, FOR TYPE A RADIOACTIVE MATERIALS
8	---	CYLINDER	STEEL FOR ACETYLENE
8AL	---	CYLINDER	STEEL FOR ACETYLENE
9	---	CYLINDER	NON-REFILLABLE METAL CONTAINERS
BAG CLTH	---	BAG CLOTH	CLOTH OR BURLAP BAG (CONT1 FOR SOLID MATERIALS)
BAG PLS	---	BAG PLASTIC	PLASTIC BAG (CONT1 FOR SOLID MATERIALS)
BAG PPR	---	BAG PAPER	PAPER BAG (CONT1 FOR SOLID MATERIALS)
BARGE	YES	OTHER	BARGE (USE ONLY IF SPILL OCCURRED DURING LOADING OR UNLOADING
BARREL	---	BARREL/KEG WOOD	WOODEN BARREL (CONT1 FOR SOLID MATERIALS)
BATTERY	---	INSIDE CONTAIN	CONTAINER FOR ACID SPILLED FROM BATTERY
BE-27	YES	CYLINDER BULK	CYLINDER, 150 TO 2000 POUNDS WATER VOLUME FOR RAIL TRANSPORT ONLY
BIN PORT	YES	OTHER	PORTABLE BIN (CONT1 FOR SOLID MATERIALS)
BLANK	---	OTHER	REPORTER LEFT CONTAINER BLANK
BOTL	---	BOTTLE	BOTTLE, PLASTIC OR GLASS NOT SPECIFIED, CAPACITY 2 GALLONS OR LESS
BOTL GLS	---	BOTTLE	GLASS BOTTLE, CAPACITY 2 GALLONS OR LESS
BOTL PLS	---	BOTTLE	PLASTIC BOTTLE, CAPACITY 2 GALLONS OR LESS
BOX	---	BOX	BOX, WOOD OR FIBERBOARD NOT SPECIFIED
BOX FBR	---	BOX FIBER	FIBERBOARD BOX OR CARTON
BOX MTL	---	BOX METAL	METAL BOX
BOX WOOD	---	BOX WOOD	WOODEN BOX
CAGE	---	OTHER	CAGE MADE OF WOODEN FRAME WITH WIRE COVER (CONT2 ONLY)
CAN	---	CAN	CAN, OTHER THAN METAL OR ALUMINUM
CAN AERO	---	CAN	AEROSOL CAN (CONTENTS UNDER PRESSURE)
[illegible] ALUM	---	CAN	ALUMINUM CAN
CAN FBR	---	CAN	FIBERBOARD CAN
CAN MTL	---	CAN	METAL CAN, CAPACITY 7 GALLONS OR LESS

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
CARBOY	---	CARBOY	CARBOY, OTHER THAN GLASS OR PLASTIC OR MATERIAL UNSPECIFIED, CAPACITY 5 GALLONS OR MORE
CARBOY G	---	CARBOY	GLASS CARBOY, CAPACITY 5 GALLONS OR MORE
CARBOY P	---	CARBOY	PLASTIC CARBOY, CAPACITY 5 GALLONS OR MORE
CARTON P	---	CONTAINER	PLASTIC CARTON OR BOX (CONT2 PRIMARILY)
CONT	---	CONTAINER	CONTAINER, NO DESCRIPTION GIVEN (DO NOT USE IF AT ALL POSSIBLE)
CONT GLS	---	INSIDE CONTAIN	GLASS CONTAINER, NO CAPACITY OR DESCRIPTION GIVEN
CONT LD	---	RAM CONTAINER	LEAD CONTAINER USED AS SHIELDING FOR INNER CONTAINER OF RADIOACTIVE MATERIALS
CONT PLS	---	INSIDE CONTAIN	PLASTIC CONTAINER, NO CAPACITY OR DESCRIPTION GIVEN
CONT STY	---	OTHER	MOLDED STYROFOAM OVERPACK FOR BOTTLES, JUGS OR CARBOYS
CYL	---	CYLINDER	CYLINDER, A PRESSURE VESSEL FOR COMPRESSED GASES
CYL MTL	---	OTHER	CYLINDRICAL METAL CONTAINER, NOT FOR COMPRESSED GASES (i.e., NOT A PRESSURE VESSEL)
DRUM	---	DRUM	DRUM - FIBER, METAL OR PLASTIC, NOT SPECIFIED
DRUM FBR	---	DRUM NON-METAL	FIBER DRUM, CONT1 FOR SOLIDS, CONT2 FOR LIQUIDS
DRUM MTL	---	DRUM METAL	METAL DRUM
DRUM PLS	---	DRUM NON-METAL	PLASTIC DRUM
DRUM RBR	---	DRUM NON-METAL	RUBBER DRUM
FLASK ST	---	OTHER	STEEL OR IRON FLASK FOR THE SHIPMENT OF MERCURY
HOPPER R	YES	HOPPER	RAIL HOPPER CAR FOR SOLID MATERIALS ONLY
HOPPER T	YES	HOPPER	HIGHWAY HOPPER TRAILER FOR SOLID MATERIALS ONLY
ICC-27	YES	CYLINDER BULK	CYLINDER, 1700 POUNDS WATER VOLUME FOR RAIL TRANSPORT ONLY
IM101	YES	TANK INTERMODAL	CARGO TANK
IM102	YES	TANK INTERMODAL	CARGO TANK
JAR	---	JAR	JAR, GLASS, PLASTIC OR EARTHENWARE, NOT SPECIFIED
JAR GLS	---	JAR	GLASS JAR
JAR PLS	---	JAR	PLASTIC JAR
JUG	---	JUG	JUG, GLASS OR PLASTIC, NOT SPECIFIED, CAPACITY MORE THAN 2 GALLONS AND LESS THAN 5 GALLONS
JUG GLS	---	JUG	GLASS JUG, CAPACITY MORE THAN 2 GALLONS AND LESS THAN 5 GALLONS
JUG PLS	---	JUG	PLASTIC JUG, CAPACITY MORE THAN 2 GALLONS AND LESS THAN 5 GALLONS
KEG MTL	---	KEG METAL	METAL KEG
KEG WOOD	---	BARREL/KEG WOOD	WOODEN KEG
LINR PLS	---	INSIDE CONTAIN	PLASTIC LINER FOR FIBER DRUMS AND BOXES OR METAL DRUMS CONTAINING LIQUIDS
LUGGAGE	---	OTHER	PASSENGER LUGGAGE ON BUS OR AIRCRAFT
MC200	---	OTHER	FOR LIQUID NITROGLYCERIN OR DIETHYLENE GLYCOL DINITRATE
MC201	---	OTHER	CONTAINER FOR BLASTING CAPS
MC300	YES	TANK	CARGO TANK
MC301	YES	TANK	CARGO TANK
MC302	YES	TANK	CARGO TANK
MC303	YES	TANK	CARGO TANK
MC304	YES	TANK	CARGO TANK
MC305	YES	TANK	CARGO TANK
MC306	YES	TANK	CARGO TANK
MC307	YES	TANK	CARGO TANK
MC310	YES	TANK	CARGO TANK
MC311	YES	TANK	CARGO TANK
MC312	YES	TANK	CARGO TANK
MC330	YES	TANK	CARGO TANK
MC331	YES	TANK	CARGO TANK
MC338	YES	TANK CRYO	CARGO TANK FOR CRYOGENIC LIQUIDS

CONTAINER ABBREVIATIONS AND SPECIFICATION NUMBERS

ABBR. OR SPEC NO.	BULK	TYPE	CONTAINER DESCRIPTION
NONE	---	OTHER	USED ON BATTERY REPORTS WHEN REPORTER STATED NO PACKAGING USED
AIL	---	PAIL	PAIL, OPEN HEAD, CAPACITY 10 GALLONS OR LESS
PAIL MTL	---	DRUM METAL	METAL PAIL, OPEN HEAD, CAPACITY 10 GALLONS OR LESS
PAIL PLS	---	DRUM NON-METAL	PLASTIC PAIL, OPEN HEAD, CAPACITY 10 GALLONS OR LESS
PALLET	---	OTHER	PALLET, USED ONLY FOR BATTERY REPORTS WHEN NO OTHER CONTAINER GIVEN
TANK	YES	TANK	NON-PORTABLE TANK
TANK CAR	YES	TANK CAR	RAILROAD TANK CAR
TANK PRT	YES	TANK	PORTABLE TANK
TANK RBR	YES	TANK	PORTABLE RUBBER TANK
TANK STG	YES	TANK	STORAGE TANK
TANK TRK	YES	TANK	TANK TRUCK, TANK MOUNTED ON TRUCK CHASSIS
TANK TRL	YES	TANK	TANK TRAILER, SEMI-TRAILER OR FULL TRAILER (TWO AXLES)
TUBE	---	TUBE	SQUEEZE TUBE
TUBE FBR	---	TUBE	FIBER TUBE
TUBE GLS	---	TUBE	GLASS TUBE
TUBE MAL	---	TUBE	MAILING TUBE, FIBERBOARD
TYPE A	---	RAM CONTAINER	TYPE A CONTAINER FOR RADIOACTIVE MATERIALS
TYPE B	YES	RAM CONTAINER	TYPE B CONTAINER FOR RADIOACTIVE MATERIALS (INCLUDES SMALL PACKAGES THRU LARGE CASKS)

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA RAIL INCIDENTS 1985-1989 BY ICITY

CARRIER SHIPPER	INCIDENT LOCATION SHIPMENT ORIGIN	DATE MODE D E	COMMODITY NAME & CONT-1	 CONT-2	 CAPACITY	CLASS	MJ-INJ-MN SHIPD	 FAILD	DEAD AMT	RESULTS RELEASE	$DAMAGES REPORT #
UNION PACIFIC RAILROAD CO STAUFFER CHEMICAL CO	ALEXANDRIA, NE CHICAGO HEIGHTS, IL	3/ 3/88 R *	PHOSPHORUS WH/YLDRY 111AW	 NONE	 113784.00 LBS	F. S.	0 1	0 1	0	S 1.00 LBS	$0 88040216A
BURLINGTON NORTHERN RR CO AMOCO CHEMICAL CORP	ALLIANCE, NE OMAHA, NE	7/12/86 R *	FUEL OIL TANK CAR	 NONE	 13500.00 GAL	COMB L	0 1	0 1	0	S 27.50 GAL	$0 86070288A
BURLINGTON NORTHERN RR CO AMOCO CHEMICAL CORP	ALLIANCE, NE OMAHA, NE	7/12/86 R *	FUEL OIL TANK CAR	 NONE	 13500.00 GAL	COMB L	0 1	0 1	0	S 27.50 GAL	$0 86070288B
BURLINGTON NORTHERN RR CO COLORADO REFINING CO	ALLIANCE, NE COMMERCE CITY, CO	1/18/89 R	FUEL OIL 1,2,4,5,6 111AW	 NONE	 25633.00 GAL	COMB L	0 1	0 1	0	S 1500.00 GAL	$700 89030005A
BURLINGTON NORTHERN RR CO NORTHEFERTIL	BEATRICE, NE ECKLEY, CO	9/22/87 R	AMMONIA ANHYDROUS 105	 NONE	 4541.79 CFT	NONF.G.	0 1	0 1	0	S 1.34 CFT	$0 87100308A
BURLINGTON NORTHERN RR CO STAFFO COU FLO	BEATRICE, NE HUDSON, KS	9/22/87 R	AMMONIA ANHYDROUS 105	 NONE	 4555.43 CFT	NONF.G.	0 1	0 1	0	S 1.34 CFT	$0 87100308B
UNION PACIFIC RAILROAD CO FREEPORT CHEMICAL CO	BUDA, NE UNCLE SAM, LA	2/12/86 R	PHOSPHORIC ACID 111AW	 NONE	 14792.00 GAL	COR	0 1	1 1	0	S 5.00 GAL	$0 86030080A
UNION PACIFIC RAILROAD CO UNION CARBIDE CORP	COLUMBUS, NE EAST CHICAGO, IN	3/21/87 R	OXYGEN PRESS LIQUID TANK CAR	 NONE	 19750.00 GAL	NONF.G.	0 1	0 1	0	S 5.00 GAL	$0 87040022A
UNION PACIFIC RAILROAD CO AMAX HOMESTAKE	FAIRBURY, NE BUICK, MO	2/27/86 R	SULFURIC ACID 111AW	 NONE	 13640.00 GAL	COR	0 1	0 1	0	S 5.00 GAL	$0 86030145A
UNION PACIFIC RAILROAD CO GLACIER AMMONIA	GERING, NE DRYWOOD, AB, CANADA, ZZ	4/17/89 R	AMMONIA ANHYDROUS TANK CAR	 NONE	 4548.19 CFT	NONF.G.	0 1	0 1	0	S 0.13 CFT	$25 90010124A
UNION PACIFIC RAILROAD CO ADL-1 LTD	HASTINGS, NE HASTINGS, NE	4/21/85 R	ETHYL ALCOHOL 111AW	 NONE	 29889.00 GAL	F. L.	0 1	0 1	0	S 10.00 GAL	$0 85050104A
UNION PACIFIC RAILROAD CO NOT REPORTED BY CARRIER	HENDERSON, NE UNKNOWN, XX	2/ 8/85 R	CHLOROBENZENE 105	 NONE	 0.00	F. L.	0 1	0 1	0	S 5.00 GAL	$100 85070001A
BURLINGTON NORTHERN RR CO FARMLAND INDUSTRIES INC	LINCOLN, NE GREEN BAY, FL	4/ 2/87 R	PHOSPHORIC ACID 111AW	 NONE	 20000.00 GAL	COR	0 1	0 1	0	S 1.00 GAL	$5 87040308A
BURLINGTON NORTHERN RR CO FARMLAND INDUSTRIES INC	LINCOLN, NE GRANT, NE	8/16/87 R	PHOSPHORIC ACID 111AW	 NONE	 0.00	COR	0 1	0 1	0	S 1.00 GAL	$0 87090362A
BURLINGTON NORTHERN RR CO BURLINGTON NORTHERN RR CO	NATICK, NE LINCOLN, NE	4/27/85 R *	FUEL OIL 1,2,4,5,6 103W	 NONE	 19108.00 GAL	COMB L	0 1	0 1	0	S 0.00	$1442 85050396A
BURLINGTON NORTHERN RR CO FARMLAND INDUSTRIES INC	NATICK, NE LAWRENCE, KS	4/27/85 R *	AMMON NITR MIX FERT HOPPER R	 NONE	 200000.00 LBS	OXIDIZR	0 1	0 1	0	S 100.00 LBS	$1700 85050396B

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA RAIL INCIDENTS 1985-1989 BY ICITY

CARRIER	INCIDENT LOCATION	DATE	COMMODITY NAME	&		CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
SHIPPER	SHIPMENT ORIGIN	MODE D E	CONT-1	CONT-2	CAPACITY		SHIPD	FAILD	AMT	RELEASE	REPORT #
BURLINGTON NORTHERN RR CO	NATICK, NE	4/27/85	AMMON NITR MIX FERT			OXIDIZR	0	0	0	S	$1700
FARMLAND INDUSTRIES INC	LAWRENCE, KS	R *	HOPPER R	NONE	200000.00	LBS	1	1	100.00	LBS	85050396C
BURLINGTON NORTHERN RR CO	NATICK, NE	4/27/85	AMMON NITR MIX FERT			OXIDIZR	0	0	0	S	$1700
COMINCO AMERICAN INC	LINCOLN, NE	R *	HOPPER R	NONE	200000.00	LBS	1	1	100.00	LBS	85050396D
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	5/ 9/85	AMMONIA ANHYDROUS			NONF.G.	0	0	0	S	$0
FARMLAND INDUSTRIES INC	SERGEANT BLUFF, IA	R	TANK CAR	NONE	0.00		1	1	0.12	GAL	85060278A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	4/25/88	AMMONIA ANHYDROUS			NONF.G.	0	0	0	S	$250
ARCADIAN CORP	LA PLATTE, NE	R	105AW	NONE	272672.00	LBS	1	1	40.00	LBS	88050479A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	4/25/88	CORR LIQ N.O.S.			COR	0	0	0	S	$100
WESTERN ZIRCONIUM	OGDEN, UT	R	111AW	NONE	20429.00	GAL	1	1	5.00	GAL	88060533A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	11/ 4/88	RESIN SOLUTION			F. L.	0	0	0	S	$250
WESTVACO CORP	DE RIDDER, LA	R	111AW	NONE	20768.00	GAL	1	1	5.00	GAL	89020468A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	4/18/89	CORROSIVE LIQUID N.			COR	0	0	0	SV	$0
FRONTIER OIL & REFINING CO	CHEYENNE, WY	R	111AW	NONE	20711.00	GAL	1	1	10.00	GAL	90010125A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	5/ 9/89	DENATURED ALCOHOL			F. L.	0	0	0	S	$150
HIGH PLAINS CORP	WICHITA, KS	R	111AW	NONE	30011.00	GAL	1	1	100.00	GAL	90010137A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	7/ 7/89	LIQUEFIED PETROLEUM			F. G.	0	0	0	S	$50
COASTAL STATES MARKETING	SINCLAIR, WY	R	112JW	NONE	4559.02	CFT	1	1	0.13	CFT	90010168A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	7/18/85	HYDROCHLORIC ACID			COR	0	0	0	S	$35
CLIMAX CHEMICAL CO.	HOBBS, NM	R	111AW	NONE	20357.00	GAL	1	1	5.00	GAL	90010172A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	9/11/89	CORROSIVE LIQUID N.			COR	0	0	0	S	$7500
ROADWAY EXPRESS INC	KANSAS CITY, KS	R	LINR PLS	37M	55.00	GAL	15	7	100.00	GAL	90010075A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	12/ 3/89	STYRENE MONOMER INH			F. L.	0	0	0	S	$50
ARCO CHEM CO	CHANNELVIEW, TX	R	111AW	NONE	23527.00	GAL	1	1	1.00	GAL	90010261A
ROADWAY EXPRESS INC	NORTH PLATTE, NE	12/ 6/89	PHOSPHORIC ACID			COR	0	0	0	S	$850
U S GOVT - DEFENSE DEPOT	MEMPHIS, TN	R	PAIL PLS	NONE	15.00	GAL	71	71	5.00	GAL	90010011A
UNION PACIFIC RAILROAD CO	NORTH PLATTE, NE	12/ 6/89	PHOSPHORIC ACID			COR	0	0	0	S	$3500
ROADWAY EXPRESS INC	KANSAS CITY, KS	R	34	NONE	15.00	GAL	71	25	5.00	GAL	90010260A
BURLINGTON NORTHERN RR CO	OMAHA, NE	4/12/85	ETHYL ALCOHOL			F. L.	0	0	0	S	$5
ADC LTD	HAMBURG, IA	R	111AW	NONE	30149.00	GAL	1	1	0.00		85100483A
BURLINGTON NORTHERN RR CO	OMAHA, NE	7/30/85	CO2 LIQUIFIED			NONF.G.	0	0	0	SV	$0
LIQUID CARBONICS CORP	DODGE CITY, KS	R	105AW	NONE	18424.00	GAL	1	1	0.00		85080455A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA RAIL INCIDENTS 1985-1989 BY ICITY

CARRIER	INCIDENT LOCATION	DATE	COMMODITY NAME		&	CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
SHIPPER	SHIPMENT ORIGIN	MODE D E	CONT-1	CONT-2	CAPACITY		SHIPD	FAILD		AMT RELEASE	REPORT #
UNION PACIFIC RAILROAD CO	OMAHA, NE	2/25/86	PHOSPHORIC ACID			COR	0	0	0	S	$0
FMC CORP	LAWRENCE, KS	R	111AW	NONE	12600.00 GAL		1	1		0.00	86030331A
UNION PACIFIC RAILROAD CO	OMAHA, NE	3/ 5/86	SULFURIC ACID			COR	0	0	0	S	$0
ASARCO INC	HAYDEN, AZ	R	111AW	NONE	13607.00 GAL		1	1		0.00	86030330A
UNION PACIFIC RAILROAD CO	OMAHA, NE	5/23/87	ISOPROPANOL			F. L.	0	0	0	S	$0
EXXON CHEMICAL CO	NORTH BATON ROUGE, LA	R	104	NONE	10142.00 GAL		1	1		25.00 GAL	87060006A
UNION PACIFIC RAILROAD COMPANY	OMAHA, NE	6/14/87	SULFURIC ACID			COR	0	0	0	S	$0
ASARCO	MAGMA, AZ	R	111AW	NONE	13649.00 GAL		1	1		5.00 GAL	87060618A
BURLINGTON NORTHERN RR CO	OMAHA, NE	6/23/87	SULFURIC ACID			COR	0	0	0	S	$0
ASARCO INC	MAGMA, AZ	R	111AW	NONE	0.00		1	1		0.00	87090364A
BURLINGTON NORTHERN RR CO	OMAHA, NE	4/11/89	SULFURIC ACID			COR	0	0	0	S	$0
KENNECOTT COPPER CORP	BINGHAM CANYON, UT	R	111AW	NONE	13978.00 GAL		1	1		0.50 GAL	89060514A
BURLINGTON NORTHERN RR CO	OMAHA, NE	10/13/89	DENATURED ALCOHOL			F. L.	0	0	0	S	$0
ADC LTD	HASTINGS, NE	R	111AW	NONE	29290.00 GAL		1	1		5.00 GAL	89100704A
BURLINGTON NORTHERN RR CO	OMAHA, NE	10/17/89	SULFURIC ACID			COR	0	0	0	S	$0
KENNECOTT COPPER CORP	MAGNA, UT	R	111AW	NONE	13955.00 GAL		1	1		2.00 GAL	89100702A
UNION PACIFIC RAILROAD CO	ROSCOE, NE	5/19/85	BERYLLIUM COMPOUNDS			POIS B	0	0	0	S	$0
BUSH WELLMAN INC	DELTA, UT	R *	DRUM MTL	NONE	375.00 LBS		300	3		1.00 LBS	85060162A
UNION PACIFIC RAILROAD CO	SIDNEY, NE	6/30/88	AMMONIA ANHYDROUS			NONF.G.	0	0	0	S	$150
CEPEX INC	HOAG, NE	R	112JW	NONE	4508.77 CFT		1	1		1.34 CFT	88090045A
ATCHISON TOPEKA & SANTA FE RY	SUPERIOR, NE	7/ 4/86	AMMONIA ANHYDROUS			NONF.G.	0	0	0	S	$0
FARMLAND INDUSTRIES INC	LAWRENCE, KS	R	TANK CAR	NONE	0.00		1	1		5.00 GAL	86080087A

JAN-11-1991

43 RECORDS FOUND

38 INCIDENTS

	TOTAL	INCIDENTS DUE TO VEHICULAR ACCIDENTS/DERAILMENTS	PERCENTAGE DUE TO VEHICULAR ACCIDENTS/DERAILMENTS
NUMBER OF INCIDENTS:	38	4	10.53
INJURIES			
MAJOR:	0	0	0.00
MINOR:	1	0	0.00
DEATHS:	0	0	0.00
DAMAGES:	20,262	6,542	32.29
EVACUATIONS:	0	0	0.00

```
                          EEEEE  N   N  DDDD       OOO  FFFFF          FFFFF  III  L     EEEEE
                          E      N   N  D   D     O   O F              F       I   L     E        0000000000000   XXXXXXXXXX
XXXXXXXXXX  000000000000  E      NN  N  D   D     O   O F              F       I   L     E        0000000000000   XXXXXXXXXX
XXXXXXXXXX  000000000000  EEEE   N N N  D   D     O   O FFFF           FFFF    I   L     EEEE     0000000000000   XXXXXXXXXX
XXXXXXXXXX  000000000000  E      N  NN  D   D     O   O F              F       I   L     E
                          E      N   N  D   D     O   O F              F       I   L     E
                          EEEEE  N   N  DDDD       OOO  F              F      III  LLLLL EEEEE

                                                  RRRR   OOO  N   N
                                                  R   R O   O N   N
                                                  R   R O   O NN  N
                                                  RRRR  O   O N N N
                                                  R R   O   O N  NN
                                                  R  R  O   O N   N
                                                  R   R  OOO  N   N

                    H   H  AAA  ZZZZZ RRRR  EEEEE PPPP      RRRR  PPPP  TTTTT  ;;   999   333
                    H   H A   A     Z R   R E     P   P     R   R P   P   T    ;;  9   9 3   3
                    H   H A   A    Z  R   R E     P   P     R   R P   P   T         9   9     3
                    HHHHH A   A   Z   RRRR  EEEE  PPPP      RRRR  PPPP    T    ;;   9999    3
                    H   H AAAAA  Z    R R   E     P         R R   P       T    ;;      9     3
                    H   H A   A Z     R  R  E     P     ..  R  R  P       T     ;      9 3   3
                    H   H A   A ZZZZZ R   R EEEEE P     ..  R   R P       T     ;    999   333
```

Qualifiers: /BURST /FEED /FLAG /FORM=DEFAULT /LENGTH=66 /LIBRARY=SYS$LIBRARY:SYSDEVCTL.TLB /TRAILER /WIDTH=132 /WRAP

File _DUB2:[RON]HAZREP.RPT;93 (3937,6,0), last revised on 11-JAN-1991 15:50, is a 30 block sequential file owned by UIC [C,RON].
The records are variable length with implied (CR) carriage control. The longest record is 132 bytes.

Job HAZREP (841) queued to DC1 on 11-JAN-1991 15:52 by user RON, UIC [C,RON], under account E at priority 100, completed on printer
_TXA6: on 11-JAN-1991 15:52 from queue DC1.

```
               0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000    XXXXXXXXXX
XXXXXXXXXX     0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000    XXXXXXXXXX
XXXXXXXXXX     00000000000000000000000  Digital Equipment Corporation - VAX/VMS Version V5.0-2  00000000000000000000000    XXXXXXXXXX
XXXXXXXXXX     0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000

         1         2         3         4         5         6         7         8         9         0         1         2         3
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
```

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER	INCIDENT LOCATION	DATE	COMMODITY NAME &			CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
SHIPPER	SHIPMENT ORIGIN	MODE D E	CONT-1	CONT-2	CAPACITY		SHIPD	FAILD		AMT RELEASE	REPORT #
COMMAND SYSTEMS INC	ALDA, NE	8/ 2/86	CORR LIQ N.O.S.			COR	0	1	0	S	$600
PENNWALT CORP	WYANDOTTE, MI	H-H	17E	NONE	55.00 GAL		10	1		30.00 GAL	86080305A
WHEELER TRANSPORT SERV	BELLEVUE, NE	10/17/86	GASOLINE including			F. L.	0	0	0	S	$100
TOTAL PETROLEUM CO	OMAHA, NE	H-H	MC306	NONE	0.00		1	1		30.00 GAL	86100395A
CONSOLIDATED FRGHTWYS CORP DEL	BLAINE, NE	5/26/85	ADHESIVE			F. L.	0	0	0	S	$30
GATES ENGINEERING DIV SCM CORP	WILMINGTON, DE	H-H	PAIL MTL	NONE	5.00 GAL		6	1		5.00 GAL	85060166X
CONSOLIDATED FRGHTWYS CORP DEL	BLAINE, NE	5/29/85	ETHYL MERCAPTAN			F. L.	0	0	0	S	$0
EASTMAN KODAK CO	ROCHESTER, NY	H-H	CONT GLS 12B		0.12 GAL		144	1		0.12 GAL	85060167X
FARMLAND INDUSTRIES INC	BRIDGEPORT, NE	9/29/88	FUEL OIL 1,2,4,5,6			COMB L	0	0	0	S	$2000
KANEB PIPELINE	NORTH PLATTE, NE	H-H	TANK TRL	NONE	0.00		1	1		1900.00 GAL	88100327A
WYNNE TRANSPORT SERVICE INC	CHENEY, NE	4/17/88	ASPHALT CUT BACK F			F. L.	0	0	0	SFE	$8000
KOCH MATERIALS CO	PINE BEND, MN	H-H	TANK TRK	NONE	0.00		1	1		5332.00 GAL	88040370A
BEELINE MOTOR FREIGHT	COZAD, NE	10/25/85	ALKA COR LIQ N.O.S.			COR	0	0	0	S	$0
NATIONAL CHEMSEARCH CORP	IRVING, TX	H-H	DRUM MTL	NONE	55.00 GAL		1	1		1.00 GAL	85110050A
MIDWEST COAST TRANSPORT INC	COZAD, NE	6/10/86	HYDROGEN PEROX40-52			OXIDIZR	0	0	0	S	$0
FMC CORP	BEDFORD PARK, IL	H-H	DRUM MTL	NONE	55.00 GAL		15	1		1.00 GAL	86060446A
WYNNE TRANSPORT SERVICE INC	CRETE, NE	6/22/88	AMMON HYDROXIDE <45			COR	0	0	0	S	$0
ARCADIAN CORP	LA PLATTE, NE	H-H	TANK TRL	NONE	0.00		1	1		50.00 GAL	88070057A
YELLOW FREIGHT SYSTEM INC	DONIPHAN, NE	8/19/87	FLAM LIQUIDS N.O.S.			F. L.	0	0	0	S	$300
DU PONT E I DE NEMOURS & CO	KANSAS CITY, MO	H-H	17E	NONE	55.00 GAL		4	1		55.00 GAL	87090200A
WYNNE TRANSPORT SERVICE INC	FIRTH, NE	6/13/88	GASOLINE including			F. L.	0	0	0	S	$100
FARMLAND INDUSTRIES INC	LINCOLN, NE	H-H	TANK TRK	NONE	8000.00 GAL		1	1		20.00 GAL	88060391A
HUNT J B TRANSPORT INC	FREMONT, NE	3/ 1/89	ORM A NOS			ORM-A	0	0	0	S	$0
DOW CHEMICAL CO	MIDLAND, MI	H-H	DRUM MTL	NONE	55.00 GAL		12	1		2.00 GAL	89030255A
YELLOW FREIGHT SYSTEM INC	GERING, NE	1/16/89	PAINT RELATED MAT			F. L.	0	0	0	S	$170
SUPERIOR SOLVENTS & CHEM	SPRINGFIELD, MO	H-H	DRUM MTL	NONE	55.00 GAL		29	1		20.00 GAL	89020136A
CONSOLIDATED FRGHTWYS CORP DEL	GOTHENBURG, NE	12/12/87	ORM A NOS			ORM-A	0	0	0	S	$6000
TURCO PRODUCTS DIV PUREX CORP	MARION, OH	H-H	DRUM MTL	NONE	440.00 LBS		3	3		80.00 LBS	87120367A
BEE LINE EXPRESS INC	GRAND ISLAND, NE	5/ 3/85	HYDROCHLORIC ACID			COR	0	0	0	S	$500
MC KESSON CHEMICAL CO	OMAHA, NE	H-H	DRUM PLS	NONE	55.00 GAL		8	8		1.00 GAL	85050179A
RISS INTERNATIONAL CORP	GRAND ISLAND, NE	9/20/86	COMP CLEANING LIQ F			F. L.	0	0	0	S	$1500
CALGON CORP	ST LOUIS, MO	H-H	17E	NONE	55.00 GAL		66	6		20.00 GAL	86100050A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION	DATE	COMMODITY NAME	&	CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
	SHIPMENT ORIGIN	MODE D E	CONT-1	CONT-2	CAPACITY	SHIPD	FAILD	AMT	RELEASE	REPORT #
SCHNEIDER NATIONAL INC	GREENWOOD, NE	8/ 8/86	CORR LIQ N.O.S.		COR	0	0	0	S	$385
U S GOVT - ARMY	LATHROP, CA	H-H	DRUM MTL	NONE	5.00 GAL	5	1	2.00	GAL	86090088A
MATLACK INC	GREENWOOD, NE	6/ 7/89	CORROSIVE LIQUID N.		COR	0	0	0	S	$75
DUPONT CHEM	ANTIOCH, CA	H-H *	MC307	NONE	6589.00 GAL	1	1	0.06	GAL	89060410A
MARATHON INC	GURLEY, NE	2/ 6/86	CRUDE OIL PETROLEUM		F. L.	0	0	0	S	$12500
MARATHON INC	CHEYENNE COUNTY, NE	H-P *	MC306	NONE	4000.00 GAL	1	1	1470.00	GAL	86020281A
MC LEAN TRUCKING COMPANY	KEARNEY, NE	5/28/85	FORMIC ACID		COR	0	0	0	S	$0
AMERICAN SCIENTIFIC PRODUCTS	MCGAW PARK, IL	H-H	BOTL PLS	NONE	0.12 GAL	12	1	0.06	GAL	85060064A
YELLOW FREIGHT SYSTEM INC	KEARNEY, NE	12/18/85	ALKA COR LIQ N.O.S.		COR	0	0	0	S	$500
DIVERSIFIED TECHNOLOGY	DETROIT, MI	H-H	17E	NONE	55.00 GAL	4	1	35.00	GAL	86010214A
YELLOW FREIGHT SYSTEM INC	KEARNEY, NE	6/ 4/87	COMP CLEANING LIQ C		COR	0	0	0	S	$210
CASH WA DIST CO	KEARNEY, NE	H-H	JUG PLS	NONE	5.00 GAL	215	2	3.00	GAL	87070011A
YELLOW FREIGHT SYSTEM INC	KEARNEY, NE	5/23/88	DICHLORVOS		POIS B	0	0	0	S	$165
KAW VALLEY INC	LEAVENWORTH, KS	H-H	34	NONE	5.00 GAL	36	1	0.06	GAL	88060244A
YELLOW FREIGHT SYSTEM INC	KEARNEY, NE	8/ 8/88	HAZARD SUBST L/S		ORM-E	0	0	0	S	$250
PRENTISS DRUG & CHEMICAL CO	SANDERSVILLE, GA	H-H	BAG PPR	NONE	50.00 LBS	40	4	30.00	LBS	88080475A
YELLOW FREIGHT SYSTEM INC	KEARNEY, NE	11/15/88	ACID LIQUID N.O.S.		COR	0	0	0	S	$135
GREAT WESTERN CHEMICAL CO	DENVER, CO	H-H	DRUM PLS	NONE	55.00 GAL	1	1	0.14	GAL	88120103A
HUNT J B TRANSPORT INC	KIMBALL, NE	4/ 4/87	PAINT RELATED MAT		F. L.	0	0	0	S	$1000
DU PONT E I DE NEMOURS & CO	FORT MADISON, IA	H-H	DRUM MTL	NONE	55.00 GAL	40	3	10.00	GAL	87040250A
FARMLAND INDUSTRIES INC	KIMBALL, NE	1/20/89	GASOLINE including		F. L.	0	0	0	S	$2000
FRONTIER OIL & REFINING CO	SIDNEY, NE	H-H	TANK TRL	NONE	0.00	1	1	560.00	GAL	89020216A
CONSOLIDATED FREIGHTWAYS	LEXINGTON, NE	5/16/86	COAL TAR DYE LIQ		COR	0	0	0	S	$70
MOBAY CHEMICAL CO	SIMPSONVILLE, SC	H-H	2U	21P	30.00 GAL	10	1	1.00	GAL	86050397A
WHEELER TRANSPORT SERV	LINCOLN, NE	3/29/85	GASOLINE including		F. L.	0	0	0	S	$50
SABER OIL	LINCOLN, NE	H-H	MC306	NONE	8000.00 GAL	1	1	50.00	GAL	85040315A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	5/ 9/85	PAINT FL		F. L.	0	0	0	S	$100
VALSPAR CORP	EAST MOLINE, IL	H-H	17E	NONE	55.00 GAL	10	1	0.03	GAL	85050410A
SINCLAIR MARKETING INC	LINCOLN, NE	5/16/85	GASOLINE including		F. L.	0	0	0	S	$6000
SINCLAIR MARKETING INC	LINCOLN, NE	H-P *	MC306	NONE	9200.00 GAL	1	1	425.00	GAL	85060015A
CONSOLIDATED FREIGHTWAYS	LINCOLN, NE	8/28/85	PAINT or PAINT REL		COR	0	0	0	S	$0
OWENS-ILLINOIS INC	VALDOSTA, GA	H-H	DRUM MTL	NONE	55.00 GAL	6	1	1.00	GAL	85090117A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER	INCIDENT LOCATION	DATE	COMMODITY NAME &		CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
SHIPPER	SHIPMENT ORIGIN	MODE D E	CONT-1	CONT-2	CAPACITY	SHIPD	FAILD	AMT	RELEASE	REPORT #
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	8/30/85	ACID LIQUID N.O.S.		COR	0	0	0	S	$100
MAC DERMID INC	FERNDALE, MI	H-H	34	NONE	5.00 GAL	4	1	0.02	GAL	85090422A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	9/11/85	COMP CLEANING LIQ C		COR	0	0	0	S	$100
DELTA FOREMOST CHEMICAL CORP	MEMPHIS, TN	H-H	DRUM MTL	NONE	30.00 GAL	1	1	0.12	GAL	85100046A
JONES TRUCK LINES INC	LINCOLN, NE	10/23/85	CORR LIQ N.O.S.		COR	0	0	0	S	$0
CELANESE CORP	LOUISVILLE, KY	H-H	PAIL MTL	NONE	5.00 GAL	1	1	0.12	GAL	85110119A
JONES TRUCK LINES INC	LINCOLN, NE	12/17/85	COMP CLEANING LIQ C		COR	0	1	0	S	$75
DU BOIS CHEMICAL CO	DALLAS, TX	H-H	37M	NONE	55.00 GAL	1	1	10.00	GAL	86010133A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	4/15/86	RESIN SOLUTION		F. L.	0	0	0	S	$175
REICHHOLD CHEMICALS INC	ELIZABETH, NJ	H-H	17E	NONE	55.00 GAL	3	1	0.25	GAL	86050208A
IDEAL TRUCK LINES INC	LINCOLN, NE	5/30/86	BATTERY FLUID ACID		COR	0	0	0	S	$10
CASE J I CO	KANSAS CITY, KS	H-H	BAG PLS	12B	5.00 GAL	1	1	0.05	GAL	86070061A
WHEELER TRANSPORT SERV	LINCOLN, NE	11/ 6/86	GASOLINE including		F. L.	0	0	0	S	$16000
WILLIAMS PIPELINE CO INC	OMAHA, NE	H-H *	MC306	NONE	2500.00 GAL	1	1	1616.00	GAL	86110326A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	1/29/87	COMP CLEANING LIQ C		COR	0	0	0	S	$150
U S CHEMICAL CORP	WATERTOWN, WI	H-H	JUG PLS	BOX FBR	1.00 GAL	80	1	1.00	GAL	87030410A
HOLMES FREIGHT LINES INC	LINCOLN, NE	7/27/87	CORR LIQ N.O.S.		COR	0	0	0	S	$500
NALCO CHEMICAL CO	NAPERVILLE, IL	H-H	17E	NONE	55.00 GAL	4	1	30.00	GAL	87070615A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	1/ 2/88	FLAMMABLE LIQUID CR		F. L.	0	0	0	S	$210
WESTERN WATER PROOFING	MINNEAPOLIS, MN	H-H	17E	NONE	55.00 GAL	22	1	10.00	GAL	88010239A
WHEELER TRANSPORT SERV	LINCOLN, NE	2/ 5/88	GASOLINE including		F. L.	0	0	0	S	$100
FOREMOST PETROLEUM CO	LINCOLN, NE	H-H	TANK TRL	NONE	0.00	1	1	80.00	GAL	88020159A
CONSOLIDATED FREIGHTWAYS	LINCOLN, NE	4/19/88	HYDROFLUOROBORIC AC		COR	0	0	0	S	$0
ORCHEM INC	CINCINNATI, OH	H-H	34	NONE	55.00 GAL	16	1	10.00	GAL	88050105A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	8/19/88	RESIN SOLUTION		F. L.	0	0	0	S	$180
ASHLAND CHEMICAL CO	BROOK PARK, OH	H-H	17E	NONE	55.00 GAL	9	1	0.01	GAL	88090293A
YELLOW FREIGHT SYSTEM INC	LINCOLN, NE	9/15/88	COMP CLEANING LIQ C		COR	0	0	0	S	$135
SERVICE MASTER CO	CAIRO, IL	H-H	BOTL PLS	12B	1.00 GAL	20	2	0.50	GAL	88100034A
HOLMES FREIGHT LINES INC	LINCOLN, NE	10/19/88	SULFURIC ACID		COR	0	0	0	S	$300
CHEMTECH INDUSTRIES INC	KANSAS CITY, MO	H-H #	DRUM PLS	NONE	55.00 GAL	2	1	15.00	GAL	88100583A
CONSOLIDATED FREIGHTWAYS	LINCOLN, NE	6/19/89	FLAMMABLE LIQUID N.		F. L.	0	0	0	S	$0
CALLAWAY CHEM CO	COLUMBUS, GA	H-H	17E	NONE	55.00 GAL	40	1	5.00	GAL	89060610A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION / SHIPMENT ORIGIN	DATE / MODE D E	COMMODITY NAME / CONT-1	& / CONT-2	CAPACITY	CLASS	MJ-INJ-MN / SHIPD	DEAD / FAILD	RESULTS / AMT RELEASE	$DAMAGES / REPORT #
MARATHON OIL CO	MCCOOK, NE	8/ 5/85	CRUDE OIL	PETROLEUM		F. L.	0	0	0 S	$40065
MARATHON OIL CO	HITCHCOCK COUNTY, NE	H-P *	MC306	NONE	5000.00 GAL		1	1	3980.00 GAL	85080440A
WYNNE TRANSPORT SERVICE INC	MCCOOK, NE	7/ 9/88	GASOLINE	including		F. L.	0	0	0 S	$500
PETROFINA	UNKNOWN, XX	H-H	TANK TRK	NONE	0.00		1	1	182.00 GAL	88070519A
MATLACK INC	MCCOOK, NE	6/23/89	HAZARDOUS	SUBSTANCE		ORM-E	0	0	0 S	$50
PENNWALT CORP	BRYAN, TX	H-H	MC307	NONE	6500.00 GAL		1	1	3.00 GAL	89060658A
HATCH W S CO	MINDEN, NE	6/ 5/85	RESIN	SOLUTION		F. L.	0	0	0 S	$80000
ASHLAND CHEMICAL CO	LOS ANGELES, CA	H-H *	MC306	NONE	7935.00 GAL		1	1	10.00 GAL	85060262A
MONKEM CO INC	NEBRASKA CITY, NE	10/20/89	POISONOUS	LIQUID N.		POIS B	0	0	0 S	$500
I C I AMERICA INC	WILMINGTON, DE	H-H	17C	NONE	5.00 GAL		32	3	1.50 GAL	89100694A
WHEELER TRANSPORT SERV	NORFOLK, NE	2/ 4/88	FUEL OIL	1,2,4,5,6		COMB L	0	0	0 S	$900
ASHLAND OIL CO	NORFOLK, NE	H-H	TANK TRK	NONE	0.00		1	1	50.00 GAL	88020160A
PRIME INC	NORTH PLATTE, NE	4/20/87	PAINT	DRIER FL		F. L.	0	0	0 S	$0
SHERWIN-WILLIAMS CO	CHICAGO, IL	H-H	17E/17H	NONE	55.00 GAL		10	1	10.00 GAL	87050255A
J T TRANSPORT INC	NORTH PLATTE, NE	4/28/87	GASOLINE	including		F. L.	0	0	0 S	$0
R & C PETROLEUM	NORTH PLATTE, NE	H-H	TANK TRL	NONE	2100.00 GAL		5	1	2100.00 GAL	87050122A
ROADWAY EXPRESS INC	NORTH PLATTE, NE	9/11/89	CORROSIVE	LIQUID N.		COR	0	0	0 S	$10
PENNWALT CORP	TULSA, OK	H-H	DRUM MTL	NONE	55.00 GAL		15	7	150.00 GAL	89090524A
CONSOLIDATED FREIGHTWAYS	OGALLALA, NE	12/ 5/89	FLAMMABLE	LIQUID N.		F. L.	0	0	0 S	$1199
MOBAY COATINGS DIV	PITTSBURGH, PA	H-H	DRUM MTL	NONE	14.63 GAL		1	1	14.63 GAL	89120249A
JONES TRUCK LINES INC	OMAHA, NE	1/ 9/85	SULFURIC	ACID		COR	0	0	0 S	$0
BESTERN WESTERN CARR	ANAHEIM, CA	H-H	JUG PLS	12B	1.00 GAL		4	1	0.75 GAL	86010244A
JONES TRUCK LINES INC	OMAHA, NE	1/16/85	RESIN	SOLUTION		F. L.	0	0	0 S	$0
COOK PAINT & VARNISH CO	KANSAS CITY, MO	H-H	17E	NONE	55.00 GAL		1	1	0.06 GAL	85010346A
ABF FREIGHT SYSTEM INC	OMAHA, NE	1/30/85	FLAM SOLIDS	N.O.S.		F. S.	0	0	0 S	$22
GSL IND	TEXARKANA, TX	H-H	CAN MTL	NONE	40.00 LBS		50	1	0.00	85040487A
RYDER TRUCK LINES INC	OMAHA, NE	2/18/85	FLAM LIQUIDS	N.O.S.		F. L.	0	0	0 S	$0
MARTON METALCRAFT CO	CEDAR CITY, UT	H-H	PAIL MTL	NONE	6.56 GAL		12	5	0.00	85020412A
BN TRANSPORT INC	OMAHA, NE	2/22/85	FLAM LIQUIDS	N.O.S.		F. L.	0	0	0 S	$0
UNION CARBIDE CORP	SALT LAKE CITY, UT	H-H	17E	NONE	55.00 GAL		23	1	20.00 GAL	85030124A
RYDER TRUCK LINES INC	OMAHA, NE	3/ 8/85	TETRACHLOROETHYLENE			ORM-A	0	0	0 S	$150
A T & T TECHNOLOGIES	DENVER, CO	H-H	DRUM MTL	NONE	55.00 GAL		30	1	35.00 GAL	85040034A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER	INCIDENT LOCATION	DATE	COMMODITY NAME &	CLASS	MJ-INJ-MN		DEAD	RESULTS	$DAMAGES
SHIPPER	SHIPMENT ORIGIN	MODE D E	CONT-1 CONT-2	CAPACITY	SHIPD	FAILD	AMT	RELEASE	REPORT #
RYDER TRUCK LINES INC	OMAHA, NE	3/25/85	HYDROCHLORIC ACID	COR	0	0	0	S	$50
CONTINENTAL MANUFACTURING CO	ST LOUIS, MO	H-H	JAR PLS BOX FBR	1.00 GAL	100	1		1.00 GAL	85040116A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	4/13/85	CORR SOLID N.O.S.	COR	0	0	0	S	$125
SOUTHLAND FOOD LABS	DALLAS, TX	H-H	BOTL PLS BOX FBR	1.00 GAL	24	2		2.00 GAL	85050404A
AMERICAN FREIGHT SYSTEM INC	OMAHA, NE	4/20/85	COMP RUST REMOVER	COR	0	0	0	S	$360
U S GOVT - GSA	KANSAS CITY, MO	H-H	DRUM MTL NONE	55.00 GAL	6	1		10.00 GAL	85050170A
ABF FREIGHT SYSTEM INC	OMAHA, NE	5/28/85	COMP CLEANING LIQ F	F. L.	0	0	0	S	$20
AUTO MILES WAREHOUSE INC	MINNEAPOLIS, MN	H-H	CONT BOX FBR	0.00	1	1		0.00	85070069X
RYDER TRUCK LINES INC	OMAHA, NE	7/ 1/85	PHOSPHORIC ACID	COR	0	0	0	S	$200
CARNATION	VAN NUYS, CA	H-H	DRUM PLS NONE	55.00 GAL	1	1		55.00 GAL	85070160A
NATIONAL TRANSPORTATION INC	OMAHA, NE	7/27/85	COAL TAR DYE LIQ	COR	0	0	0	S	$100
BASF WYANDOTTE CORP	RENSSELAER, NY	H-H	DRUM FBR NONE	30.00 GAL	18	4		0.50 GAL	85080032A
ABF FREIGHT SYSTEM INC	OMAHA, NE	8/ 1/85	COMP CLEANING LIQ C	COR	0	0	0	S	$10
HAZARD EXPRESS	HAZARD, KY	H-H	DRUM MTL NONE	55.00 GAL	1	1		1.00 GAL	85080466A
NATIONAL TRANSPORTATION INC	OMAHA, NE	8/14/85	ALKA COR LIQ N.O.S.	COR	0	0	0	S	$5
ECONOMICS LABORATORY INC	JOLIET, IL	H-H	DRUM PLS NONE	50.00 GAL	12	1		0.06 GAL	85080304A
NATIONAL TRANSPORTATION INC	OMAHA, NE	8/14/85	ACID LIQUID N.O.S.	COR	0	0	0	S	$5
ECONOMICS LABORATORY INC	JOLIET, IL	H-H	DRUM PLS NONE	53.00 GAL	1	1		0.06 GAL	85080304B
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	8/26/85	COAL TAR DYE LIQ	COR	0	0	0	S	$14000
AMERICAN CYANAMID CO	MARIETTA, OH	H-H	2U 21F	30.00 GAL	19	1		28.00 GAL	85090417A
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	8/26/85	COAL TAR DYE LIQ	COR	0	0	0	S	$14000
AMERICAN CYANAMID CO	MARIETTA, OH	H-H	2E BOX FBR	1.00 GAL	72	4		4.00 GAL	85090417B
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	9/ 9/85	COMP CLEANING LIQ C	COR	0	0	0	S	$120
BIO-LAB INC	CONYERS, GA	H-H	BOTL PLS BOX FBR	1.00 GAL	10	1		1.00 GAL	85110071A
IDEAL TRUCK LINES INC	OMAHA, NE	9/24/85	XYLENE (XYLOL)	F. L.	0	0	0	S	$80
CURTIN MATHESON SCIENTIFIC	KANSAS CITY, MO	H-H	PAIL NONE	5.00 GAL	2	2		10.00 GAL	85100077X
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	9/25/85	TOLUENE	F. L.	0	0	0	S	$20
DOW CORNING CORP	GREENSBORO, NC	H-H	DRUM FBR NONE	50.00 GAL	5	1		1.00 GAL	85100222A
ANR FREIGHT SYSTEM	OMAHA, NE	12/ 4/85	HYDROCHLORIC ACID	COR	0	0	0	S	$0
ALLEN PRODUCTS CORP	CRETE, NE	H-H	DRUM PLS NONE	35.00 GAL	45	5		0.25 GAL	85120379A
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	1/17/86	SODIUM HYDROXIDE LQ	COR	0	0	0	S	$200
KING OF ALL MFG	FLINT, MI	H-H	JUG PLS 12B	1.00 GAL	8	8		0.25 GAL	86010403A

OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION / SHIPMENT ORIGIN	DATE / MODE D E	COMMODITY NAME & / CONT-1	CONT-2	CLASS / CAPACITY	MJ-INJ-MN / SHIPD	FAILD	DEAD / AMT	RESULTS / RELEASE	$DAMAGES / REPORT #
ROGERS CARTAGE CO	OMAHA, NE	2/11/86	TRIETHYLAMINE		F. L.	0	0	0	S	$0
PENNWALT CORP	WYANDOTTE, MI	H-H	MC306	NONE	48720.00 GAL	1	1		0.25 GAL	86030322A
RYDER TRUCK LINES INC	OMAHA, NE	2/17/86	CHROMIC ACID SOLUT		COR	0	0	0	S	$0
SPERRY RAND CORPORATION	SALT LAKE CITY, UT	H-H	CARBOY G	NONE	32.38 GAL	18	2		15.00 GAL	86020305A
UNITED PARCEL SERVICE INC	OMAHA, NE	4/14/86	SULFURIC ACID		COR	0	0	0	S	$100
MANTEK INC	IRVING, TX	H-H	BOTL PLS	BOX FBR	0.25 GAL	4	1		0.12 GAL	86050159A
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	5/27/86	ADHESIVE		F. L.	0	0	0	S	$50
HURON RUBBER CO	PORT HURON, MI	H-H	37C	NONE	5.00 GAL	20	1		3.00 GAL	86060131X
ABF FREIGHT SYSTEM INC	OMAHA, NE	6/10/86	HYDROCHLORIC ACID		COR	0	0	0	S	$15
HUMCO LABORATORY INC	TEXARKANA, TX	H-H	BOTL PLS	BOX FBR	0.12 GAL	9	1		0.00	86070231A
ABF FREIGHT SYSTEM INC	OMAHA, NE	6/16/86	HYDROCHLORIC ACID		COR	0	0	0	S	$15
HUMCO LABORATORY INC	TEXARKANA, TX	H-H	BOTL PLS	BOX FBR	0.12 GAL	36	1		0.12 GAL	86070233A
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	7/13/86	PAINT RELATED MAT		F. L.	0	0	0	S	$10
RUST-OLEUM CORP	HAGERSTOWN, MD	H-H	17E	NONE	30.00 GAL	2	1		1.00 GAL	86080202A
UNITED PARCEL SERVICE INC	OMAHA, NE	7/16/86	AMMON HYDROXIDE <45		COR	0	0	0	S	$100
SMITH C D CO	ST JOSEPH, MO	H-H	BOTL PLS	BOX FBR	1.00 GAL	1	1		0.12 GAL	86080520A
H & W MOTOR EXPRESS CO	OMAHA, NE	7/29/86	CORR LIQ N.O.S.		COR	0	0	0	S	$150
MOGUL CORP	ELGIN, IL	H-H	17E	NONE	55.00 GAL	4	1		2.00 GAL	86080306A
ANR FREIGHT SYSTEM	OMAHA, NE	8/ 7/86	COMP CL LIQ W/PHOS		COR	0	0	0	S	$25
NATIONAL CHEMICAL CO	WINONA, MN	H-H	BOTL PLS	BOX FBR	1.00 GAL	5	2		1.00 GAL	86080430A
ABF FREIGHT SYSTEM INC	OMAHA, NE	9/10/86	HYDROCHLORIC ACID		COR	0	0	0	S	$15
HUMCO LABORATORY INC	TEXARKANA, TX	H-H	JUG PLS	BOX FBR	1.00 GAL	44	1		0.12 GAL	86110035A
UNITED PARCEL SERVICE INC	OMAHA, NE	10/27/86	FLAM LIQUIDS N.O.S.		F. L.	0	0	0	S	$50
RUKO	GRIMES, IA	H-H	PAIL PLS	BOX FBR	5.00 GAL	1	1		0.00	86110153X
ABF FREIGHT SYSTEM INC	OMAHA, NE	11/18/86	ACETONE		F. L.	0	0	0	S	$20
HUMCO LABORATORY INC	TEXARKANA, TX	H-H	CAN ALUM 12B		1.00 GAL	36	1		1.00 GAL	86120376X
JONES TRUCK LINES INC	OMAHA, NE	12/ 5/86	RESIN SOLUTION		F. L.	0	0	0	S	$0
COOK PAINT & VARNISH CO	NORTH KANSAS CITY, MO	H-H	PAIL PLS	NONE	5.00 GAL	5	1		5.00 GAL	86120300X
JONES TRUCK LINES INC	OMAHA, NE	12/10/86	ADHESIVE		F. L.	0	0	0	S	$0
MINNESOTA MINING & MFG CO	DALLAS, TX	H-H	PAIL MTL	NONE	5.00 GAL	33	1		5.00 GAL	86120394X
NEBRASKA IOWA SUPPLY CO INC	OMAHA, NE	12/23/86	FUEL OIL 1,2,4,5,6		COMB L	0	0	0	S	$2000
AMERICAN OIL CO (AMOCO)	COUNCIL BLUFFS, IA	H-H *	TANK TRL	NONE	9000.00 GAL	1	1		5.00 GAL	87010413A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION / SHIPMENT ORIGIN	DATE / MODE D E	COMMODITY NAME & / CONT-1	CONT-2	CLASS / CAPACITY	MJ-INJ / SHIPD	MN / FAILD	DEAD / AMT RELEASE	RESULTS	$DAMAGES / REPORT #
PACIFIC INTERMOUNTAIN EXPRESS	OMAHA, NE	2/ 2/87	CORR LIQ N.O.S.		COR	0	0	0	S	$100
ELECTRO CHEMICAL CORP	HAYWARD, CA	H-H	DRUM PLS	NONE	55.00 GAL	5	4	2.00 GAL		87020397A
CROUSE CARTAGE COMPANY	OMAHA, NE	2/10/87	CORR LIQ N.O.S.		COR	0	0	0	S	$40
COGAN AND O'BRIEN	CHICAGO, IL	H-H	JUG PLS	BOX FBR	1.25 GAL	18	1	1.25 GAL		87020401A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	3/20/87	FLAM LIQUIDS N.O.S.		F. L.	0	0	0	S	$125
DYNATRON BONDO	ATLANTA, GA	H-H	PAIL PLS	NONE	2.00 GAL	75	1	0.12 GAL		87040149X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	3/27/87	SULFURIC ACID		COR	0	0	0	S	$165
U S GOVT - DEFENSE DEPOT	RICHMOND, VA	H-H	BOTL PLS	BOX FBR	1.00 GAL	24	1	0.07 GAL		87060325A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	3/31/87	NITRIC ACID >40%		OXIDIZR	0	0	0	S	$135
MALLINCKRODT CHEMICAL WORKS	PARIS, KY	H-H	BOTL GLS	BOX FBR	0.12 GAL	60	1	0.12 GAL		87040452A
NORTHWEST TRANSPORT SERVICE	OMAHA, NE	4/ 8/87	INK		F. L.	0	0	0	S	$3770
SUN CHEMICAL CORP	NORTHLAKE, IL	H-H	17E	NONE	55.00 GAL	27	1	55.00 GAL		87040512A
NORTHWEST TRANSPORT SERVICE	OMAHA, NE	4/ 8/87	INK		F. L.	0	0	0	S	$3770
SUN CHEMICAL CORP	NORTHLAKE, IL	H-H	5B	NONE	55.00 GAL	27	1	55.00 GAL		87040512B
NORTHWEST TRANSPORT SERVICE	OMAHA, NE	4/ 8/87	INK		F. L.	0	0	0	S	$1510
SUN CHEMICAL CORP	NORTHLAKE, IL	H-H	17H	NONE	55.00 GAL	27	1	55.00 GAL		87040512C
CONSOLIDATED FREIGHTWAYS	OMAHA, NE	6/ 3/87	CHLOROBENZENE		F. L.	0	0	0	S	$0
AMERICAN CYANAMID CO	SOUTH RIVER, MO	H-H	17E	NONE	30.00 GAL	20	1	5.00 GAL		87060355A
HYMAN FREIGHTWAYS INC	OMAHA, NE	7/ 9/87	SODIUM HYDROXID DRY		COR	0	0	0	S	$0
HEATBATH CORP	CHICAGO, IL	H-H	DRUM FBR	NONE	420.00 LBS	8	1	300.00 LBS		87070301A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	7/20/87	COMP CLEANING LIQ C		COR	0	0	0	S	$150
NATIONAL CHEMICAL CO	WINONA, MN	H-H	BOTL PLS	BOX FBR	0.23 GAL	240	12	0.12 GAL		87090309A
PACIFIC INTERMOUNTAIN EXPRESS	OMAHA, NE	8/ 8/87	CHROMIC ACID SOLUT		COR	0	0	0	S	$200
SPERRY UNISYS CORP	SALT LAKE CITY, UT	H-H	CARBOY G	NONE	37.50 GAL	25	1	13.00 GAL		87090038A
UNITED PARCEL SERVICE INC	OMAHA, NE	8/10/87	HYDROCHLORIC ACID		COR	0	0	0	S	$160
AGRI SALES INC	CERESCO, NE	H-H	BOTL PLS	BOX FBR	8.00 GAL	2	2	8.00 GAL		87090105A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	8/10/87	CORR LIQ N.O.S.		COR	0	0	0	S	$140
SELBY BATTERSBYR & CO	PHILADELPHIA, PA	H-H	CAN MTL	12B	0.25 GAL	5	2	0.50 GAL		87090315A
CONSOLIDATED FRGHTWYS CORP DEL	OMAHA, NE	11/ 3/87	POISONOUS SOL NOS B		POIS B	0	0	0	S	$50
BARIUM & CHEMICALS INC	STEUBENVILLE, OH	H-H	44B	NONE	50.00 LBS	40	3	20.00 LBS		87110352A
CHURCHILL TRUCK LINES INC	OMAHA, NE	1/18/88	CALCIUM CARBIDE		F. S.	0	0	0	S	$0
ELKEM AMERICAN CARBIDE	PRYOR, OK	H-H	DRUM MTL	NONE	440.00 LBS	10	1	220.00 LBS		88020041A

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF HAZARDOUS MATERIALS TRANSPORTATION
HAZARDOUS MATERIALS INFORMATION SYSTEM

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION / SHIPMENT ORIGIN	DATE / MODE D E	COMMODITY NAME & / CONT-1	CONT-2	CLASS / CAPACITY	MJ-INJ-MN / SHIPD	FAILD	DEAD / AMT	RESULTS / RELEASE	$DAMAGES / REPORT #
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	2/ 9/88	COMP CLEANING LIQ F		F. L.	0	0	0	S	$145
VARN PRODS CO INC	ADDISON, IL	H-H	37B	NONE	5.00 GAL	12	1		4.00 GAL	88020453X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	6/29/88	COMP CLEANING LIQ F		F. L.	0	0	0	S	$150
ROGERSOL INC	CHICAGO, IL	H-H	37A	NONE	5.00 GAL	11	2		10.00 GAL	88070279X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	8/ 9/88	ADHESIVE		F. L.	0	0	0	S	$130
H & H OIL CO	BRIGHTON, MI	H-H	CAN MTL	BOX FBR	0.12 GAL	8	1		0.12 GAL	88080636X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	8/30/88	ORGANIC PHOSPHATEMD		POIS B	0	0	0	S	$135
CENEX/LOL AGRONOMY CO	RENVILLE, MN	H-H	BAG PPR	NONE	50.00 LBS	60	1		5.00 LBS	88090347A
WYNNE TRANSPORT SERVICE INC	OMAHA, NE	12/16/88	FUEL OIL 1,2,4,5,6		COMB L	0	0	0	S	$2500
CONTINENTAL OIL CO	OMAHA, NE	H-H	TANK TRL	NONE	0.00	1	1		700.00 GAL	89010024A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	1/11/89	POISONOUS LIQ NOS B		POIS B	0	0	0	S	$145
TECHNICON INSTRUMENTS CORP	TUSTIN, CA	H-H	BOTL PLS	12B	1.00 GAL	24	1		1.00 GAL	89010292A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	2/20/89	PAINT DRIER FL		F. L.	0	0	0	S	$185
FORREST PAINT	EUGENE, OR	H-H	17H	NONE	55.00 GAL	6	1		0.50 GAL	89030362A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	2/24/89	PAINT DRIER FL		F. L.	0	0	0	S	$185
FORREST PAINT	EUGENE, OR	H-H	DRUM MTL	NONE	55.00 GAL	6	1		0.12 GAL	89030299A
ROADWAY PACKAGE SYSTEM INC	OMAHA, NE	5/10/89	COMP CLEANING LIQ C		COR	0	0	0	S	$5
CALGON VESTAL LABS	ST LOUIS, MO	H-H	2E	12B	0.50 GAL	6	2		0.05 GAL	89050463A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	7/ 5/89	FLAMMABLE LIQUID N.		F. L.	0	0	0	S	$145
REXAIR INC	CLINTON, MD	H-H	BOX FBR	JUG PLS	4.00 GAL	18	2		2.00 GAL	89080597X
ROADWAY PACKAGE SYSTEM INC	OMAHA, NE	7/ 6/89	ACETONE		F. L.	0	0	0	S	$100
FISHER SCIENTIFIC CO	ST LOUIS, MO	H-H	2E	12A	1.00 GAL	1	1		0.60 GAL	89080020X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	7/17/89	FLAMMABLE LIQUID CO		F. L.	0	0	0	S	$140
RELIANCE UNIVERSAL INC	CLINTON, MS	H-H	JUG PLS	BOX FBR	1.00 GAL	72	1		0.50 GAL	89090151X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	8/22/89	CORROSIVE LIQUID N.		COR	0	0	0	S	$165
SOUTHERN BIOLOGICAL	MCKENZIE, TN	H-H	BOTL GLS	BOX FBR	1.00 GAL	10	2		1.50 GAL	89100193A
BARTON SOLVENTS CO	OMAHA, NE	8/30/89	XYLENE (XYLOL)		F. L.	0	0	0	S	$600
BARTON SOLVENTS CO	COUNCIL BLUFFS, IA	H-P	MC306	NONE	3145.00 GAL	1	1		82.00 GAL	89070334A
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	9/11/89	FLAMMABLE LIQUID CO		F. L.	0	0	0	S	$145
RELIANCE UNIVERSAL INC	CLINTON, MS	H-H	BOTL PLS	BOX FBR	1.00 GAL	144	4		2.00 GAL	89100572X
YELLOW FREIGHT SYSTEM INC	OMAHA, NE	9/14/89	COATING SOLUTION		F. L.	0	0	0	S	$165
FOSROC-PRECO	PLAINVIEW, NY	H-H	37C	NONE	5.00 GAL	1	1		0.25 GAL	89100609X

NEBRASKA HIGHWAY INCIDENTS 1985-1989 BY ICITY

CARRIER / SHIPPER	INCIDENT LOCATION / SHIPMENT ORIGIN	DATE / MODE D E	COMMODITY NAME & / CONT-1 CONT-2	CLASS / CAPACITY	MJ-INJ-MN / SHIPD	FAILD	DEAD / AMT	RESULTS / RELEASE	$DAMAGES / REPORT #
YELLOW FREIGHT SYSTEM INC RELIANCE UNIVERSAL INC	OMAHA, NE CLINTON, MS	9/18/89 H-H	FLAMMABLE LIQUID CO BOTL PLS BOX FBR	F. L. 1.00 GAL	0 144	0 3	0	S 2.00 GAL	$165 89100622X
ROADWAY PACKAGE SYSTEM INC CALGON VESTAL LABS	OMAHA, NE ST LOUIS, MO	10/16/89 H-H	ALKALINE LIQUID N.O 37B NONE	COR 5.00 GAL	0 1	0 1	0	S 5.00 GAL	$100 89110132A
ROADWAY PACKAGE SYSTEM INC AMREP INC	OMAHA, NE CARTERSVILLE, GA	10/25/89 H-H	SULFURIC ACID BOTL PLS 12B	COR 0.25 GAL	0 12	0 2	0	S 0.13 GAL	$100 89110388A
YELLOW FREIGHT SYSTEM INC CANBERRA CORP	OMAHA, NE TOLEDO, OH	11/15/89 H-H	COMPOUND CLEANING L BOTL PLS BOX FBR	COR 1.00 GAL	0 1002	0 1	0	S 1.00 GAL	$200 90010029A
JOHNSTONS FUEL LINERS INC VALLEY SERVICE CENTER	OSHKOSH, NE LEWELLEN, NE	11/25/88 H-H	GASOLINE including TANK TRL NONE	F. L. 0.00	0 1	0 1	0	S 300.00 GAL	$1318 88120483A
UNITED PARCEL SERVICE INC IMPERIAL ROOF SYSTEMS	RALSTON, NE WEST UNION, IA	10/ 8/86 H-H	ADHESIVE DRUM MTL NONE	F. L. 10.00 GAL	0 1	0 1	0	S 0.01 GAL	$50 86100424A
WYNNE TRANSPORT SERVICE INC TEXACO INC	RALSTON, NE OMAHA, NE	1/17/89 H-H	GASOLINE including TANK TRK NONE	F. L. 0.00	0 1	0 1	0	S 30.00 GAL	$0 89010408A
NEBRASKA TRANSPORT CO INC NILES CHEMICAL PAINT CO INC	SCOTTSBLUFF, NE NILES, MI	6/29/85 H-H	PAINT FL DRUM MTL NONE	F. L. 55.00 GAL	0 25	0 1	0	S 32.00 GAL	$432 85070286A
FARMLAND INDUSTRIES INC FRONTIER OIL & REFINING CO	SCOTTSBLUFF, NE SIDNEY, NE	5/10/88 H-H	FUEL OIL TANK TRL NONE	COMB L 0.00	0 1	0 1	0	S 150.00 GAL	$200 88060013A
YELLOW FREIGHT SYSTEM INC TRANS CLEVELAND WHSE	SEWARD, NE CLEVELAND, OH	8/ 9/85 H-H	RESIN SOLUTION 17E NONE	F. L. 55.00 GAL	0 4	0 1	0	S 2.00 GAL	$150 85080491A
WHEELER TRANSPORT SERV HARCROS CHEMICAL	SEWARD, NE OMAHA, NE	2/21/89 H-H	SULFURIC ACID MC312 NONE	COR 1890.00 GAL	0 1	0 1	0	S 65.00 GAL	$25 89020465A
RYDER TRUCK LINES INC ECONOMICS LABORATORY INC	SPARKS, NE SAN JOSE, CA	5/25/85 H-H	ALKA COR LIQ N.O.S. DRUM NONE	COR 55.00 GAL	0 26	0 2	0	S 10.00 GAL	$50 85060071A
MATADOR SERVICE INC GEMINI CORP-SILVER FARMS LEASE	TRENTON, NE WICHITA, KS	6/ 7/85 H-H *	CRUDE OIL PETROLEUM MC306 NONE	F. L. 4500.00 GAL	0 1	0 1	0	S 1050.00 GAL	$30000 85070103A
MATADOR PIPELINES INC MATADOR PIPELINES INC	UNKNOWN, NE OBERLIN, KS	6/ 7/85 H-P *	CRUDE OIL PETROLEUM TANK TRL NONE	F. L. 0.00	0 1	0 1	0	S 1050.00 GAL	$300 85060430A
FARMLAND INDUSTRIES INC NATIONAL COOP REFINING ASSO	WAVERLY, NE COUNCIL BLUFFS, IA	6/13/87 H-H	GASOLINE including TANK TRL NONE	F. L. 0.00	0 1	0 1	0	S 25.00 GAL	$525 87070513A

JAN-11-1991

143 RECORDS FOUND

139 INCIDENTS

	TOTAL	INCIDENTS DUE TO VEHICULAR ACCIDENTS/DERAILMENTS	PERCENTAGE DUE TO VEHICULAR ACCIDENTS/DERAILMENTS
NUMBER OF INCIDENTS:	139	9	6.47
INJURIES			
MAJOR:	0	0	0.00
MINOR:	2	0	0.00
DEATHS:	0	0	0.00
DAMAGES:	264,986	186,940	70.55
EVACUATIONS:	1	0	0.00