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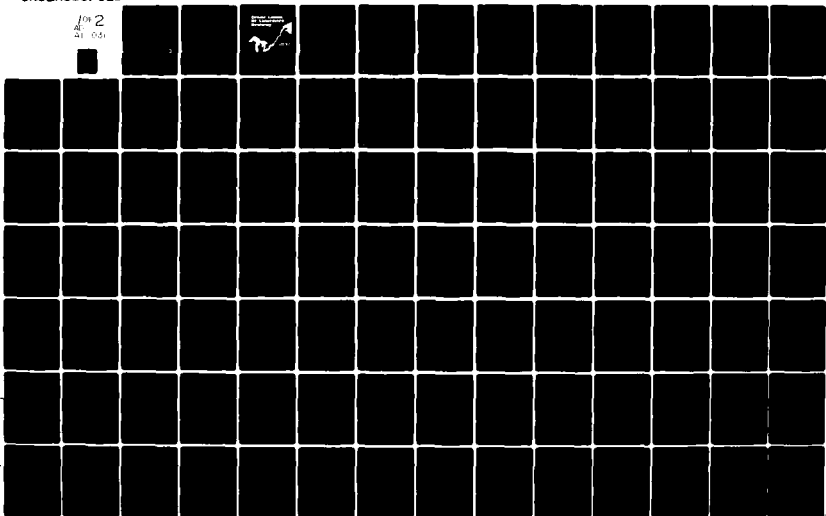
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This report is the documentation of the freight rate data base for an evaluation of NED transportation benefits for GL/SLS navigation improvements. This report provides the Great Lakes total logistics cost and a similar cost for an alternate transportation routing. Additional costs per ton become the basis for estimation of benefits for alleviating future lock capacity constraints.										

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Great Lakes/ St. Lawrence Seaway

**REGIONAL TRANSPORTATION STUDY
FOR
U.S. Army Corps of Engineers**

**ANALYSIS OF
FREIGHT RATES**

BOOZ ALLEN & HAMILTON INC.
IN ASSOCIATION WITH ARCTEC, Inc.
DECEMBER 1981

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GREAT LAKES/ST. LAWRENCE SEAWAY
REGIONAL TRANSPORTATION STUDY

ANALYSIS OF FREIGHT RATES

DECEMBER 1981

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by

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I. INTRODUCTION

The U.S. Army Corps of Engineers is responsible for maintaining navigability in U.S. rivers, waterways, and harbors. The Corps currently maintains a navigation system of 25,000 miles of improved channels and 219 locks and dams connecting large regions of the country. Feasibility analysis and planning that precede lock and channel construction and maintenance are integral components of navigation system projects. The Great Lakes/St. Lawrence Seaway Regional Transportation Study is an element of this planning process.

The objective of the GL/SLS Regional Transportation Study is to develop an up-to-date, working analytical tool for economic analysis of GL/SLS transportation system improvements. The near-term uses of study information are feasibility studies of three Great Lakes navigation system improvements. These studies are the following:

- . The St. Lawrence Additional Locks Study, which will determine the adequacy of the existing locks and channels in the U.S. section of the seaway in light of present and future needs.
- . The Great Lakes Connecting Channels and Harbor Study, which will determine the feasibility of providing navigation channel, harbor and lock improvements to permit transit of vessels up to the maximum size permitted by the possible replacement locks at Sault Ste. Marie.
- . The Great Lakes/St. Lawrence Seaway Navigation Season Extension Study, which considers the feasibility of means of extending the navigation season on the entire system.

The Regional Transportation Study is organized in two phases. Phase I has the following elements:

- . Development of cargo flow forecasts for the Great Lakes system
- . Development of data bases required for the evaluation of national economic development (NED) benefits and costs of navigation system improvements

- . Evaluation of lock system performance and ability to process future cargo flows
- . Evaluation of the performance and economic feasibility of improvements to increase the capacity of the system.

Phase II of the study assesses the regional economic, social, intermodal and energy use impacts of alternative improvements.

This report documents the development of one of the data bases required for the evaluation of the NED benefits of navigation system improvements. This data base is a file of freight rate information. These data are used to determine the additional transportation costs which would be incurred by Great Lakes shippers if the system reached capacity and traffic were forced to use other modes and routes.

II. SUMMARY

A file of freight rate information has been developed for the major commodity movements using the Great Lakes system. Rail, truck, barge, laker and ocean rates were collected in order to identify total transportation costs for current Great Lakes routes and for the least expensive alternative routes.

The remainder of this report contains the following chapters:

- . Methodology for collection of component rates
- . Value of goods in transit
- . Update of the rate file.

The rates are contained in a computer file which was provided under separate cover.

III. METHODOLOGY FOR COLLECTION OF COMPONENT RATES

The collection of component freight rates involved the following steps:

- . Identification of port-to-port shipments from Waterborne Commerce Statistics
- . Estimation of true origin and destination and specific commodity for these shipments
- . Identification of freight rates currently used for these movements
- . Establishment of an alternative route for shipment if the Great Lakes system were at capacity and not available
- . Estimation of freight rates for these alternative routes.

There are several sources of inaccuracy associated with using actual rates at a single point in time to estimate transportation cost savings.* These are as follows:

- . Rates fluctuate over time according to market conditions. At the present time many freight rates have been quite volatile, for example:
 - Since passage of the Staggers Act which changed rail ratemaking requirements, commodity rates for many high-volume coal movements have been replaced by contract rates
 - Laker rates have been depressed, and some ships laid up, because steel and iron ore shipments have decreased significantly
 - Rail and barge grain rates, which are highly seasonal, have been impacted by the Russian grain embargo and the midwestern drought.

* Freight rates for this assignment were collected between the period November 1980 to May 1981.

- Liner rates to Europe were subject to intense competition between conference members and an independent; two carriers have withdrawn from the trade.
- . Rates vary significantly depending on weight minimums, actual volume shipped, specific commodity description, origin and destination. Every attempt was made to identify the rate at which traffic is moving, and to avoid artificial or "paper" rates. However, there is no way to confirm that a rate extracted from a tariff is the rate at which the goods are shipped.
- . Little or no tonnage is currently moving along many of the alternative routes identified for bulk commodities. Rates were estimated for these movements either by railroads directly or by using rates for similar movements. While it is felt that these rates are representative of the rates that would actually be charged, there is no way to validate the rates.

This chapter is organized into sections dealing with the following specific commodities:

- . Iron ore
- . Coal
- . Grain
- . Other bulk commodities
- . Steel and other general cargo.

Each section identifies the general sources for rate quotations, the method for identification of interior origins and destinations, and the definition of alternative routes. The six appendices to this report provide worksheets showing the development of each through rate from component rates, and provide tariff citations for all component rates.

1. IRON ORE

The sources consulted for rates include the following:

- . Skillings Mining Review (rail and lake rates)
- . Bessemer and Lake Erie Railroad (rail rates).

Rates from the Mesabi range are standardized, so differentiation of source was not necessary. While the destination of many ore shipments is waterside, the ore shipped through certain receiving ports is shipped to steel mills located inland. These ports, and the related interior destinations, are shown in Table III-1.

TABLE III-1
Interior Ore Destinations

<u>Receiving Port</u>	<u>Interior Destination</u> (percent of shipments)
Huron	Pittsburgh and Wheeling
Toledo	Middletown (50%) Ashland (50%)
Ashtabula	Pittsburgh (75%) Youngstown (25%)
Conneaut	Pittsburgh (75%) Aliquippa, PA (25%)

Source: U.S. Army Corps of Engineers, GL/SLS Traffic Forecast Study, 1976, (based on the One Percent Rail Waybill Sample).

Alternative routes are as follows:

<u>Current Route</u>	<u>Alternative Route</u>
Lake Michigan destinations from upper lakes	Rail from upper lakes
Other destinations from upper lakes	Labrador ore via coastal ports
Labrador ore via the lakes	Labrador ore via coastal ports

These alternative routes are the next most costly alternative. In most cases alternative routes are presently in use and current rates are realistic.

2. COAL

The sources consulted for rates included the following:

- . Railroads
- . Published rail tariffs
- . Lake carriers
- . Utilities.

Mines were grouped into the following mining areas:

- . Western Pennsylvania
- . Ohio
- . West Virginia
- . Eastern Kentucky
- . Western Kentucky
- . Southern Illinois
- . Montana
- . Wyoming.

Actual movements from specific mines to ports or power plants were identified from FPC Form 423. This form identified origins and destinations for rate requests and provided an indication of the areas providing coal to each port. Weighted mine-to-port rail rates were constructed usually involving the rates from two to five mines.

There are three major flow patterns involving Great Lakes locks:

- . Lake Erie ports to Lake Superior destinations
- . Lake Erie ports to Canadian Lake Ontario destinations
- . Western coal via Duluth-Superior to the St. Clair River.

The alternative route for all three is sourcing from the same mine, and rail to point of consumption. There is currently little coal moving by rail over these routes today, so rates were estimated.

The method for estimating these rates was based on a comparison to Class 100 rates. Railroad rates are determined in two ways: (1) by commodity rates, which are rates quoted for specific commodities and movements, or (2) by grouping commodities into a limited number of groups or classes and prescribing rates on the various classes. A freight classification assigns a "rating" to each article or commodity. The ratings are expressed in relative terms, relative to a base rating called Class 100. A tariff assigns a rate to each "rating" for a specific origin and destination point. The Class 100 rate refers to the rate for all articles assigned to Class 100 moving between the points in question.

The method for estimating rates involved the following steps:

- . Identify rates for current volume movements which are similar in terms of origin, destination and distance

- . Establish the percent of the Class 100 rate for each rate
- . Identify the Class 100 rate for the required movement
- . Use the percent of Class 100 factor to estimate a volume rate.

3. GRAIN

The sources consulted for rates included the following:

- . Drewry's shipping statistics (ocean charter rates)
- . Railroads (ICG, Conrail)
- . Grain merchants (Andersons, Continental, Cargill)
- . Grain Terminals Association
- . Sunflower Seed Exporters Association
- . Minneapolis Grain Exchange
- . Chicago Board of Trade
- . Great Lakes Grain, Inc.
- . Transportation Institute of Fargo, N.D.

Grains usually move from farm to export port in a series of successive elevations. At each elevation the grain loses its identity insofar as export grain cannot be traced with certainty to its ultimate origin. Modal transportation statistics such as Waterborne Commerce Statistics and the Waybill Sample cannot be used to identify interior origins since truck movements are not reported on a comparable basis. Consequently, the following steps were used to identify interior origins:

- . Determine boundary of drawing area and location of major transshipment elevators from port personnel or grain merchants.
- . Associate each major transshipment elevator with a state crop-reporting district. There are usually six to twelve crop-reporting districts per state.
- . Identify crop production levels for each crop-reporting district.* These factors are used to establish relative production weights for each district.

* Reported in unpublished data prepared by the North Central Regional Committee NC-139 on Economic Analysis of the U.S. Grain Exporting System.

- . Establish modal shares (rail, truck, barge) for reporting districts.

Alternative routes included export via Atlantic, Gulf and Pacific coasts and transshipment at the St. Lawrence River. These are currently high-volume routes, so existing rates are reasonable.

4. OTHER BULK COMMODITIES

The sources consulted for rates included the following:

- . Published rail tariffs
- . Railroads
- . Lake carriers
- . Shippers
- . Reported charter fixtures.

It was assumed that origins and destinations were lakeside; no attempt was made to trace flows to interior points. Alternative routes for lakewise movements were assumed to be via rail between the same points. For exports and imports the commodities were routed through New Orleans or Baltimore.

5. STEEL AND OTHER GENERAL CARGO

The sources consulted for rates included the following:

- . Published conference and independent tariffs (ocean rates)
- . Published rail and truck tariffs
- . Water and rail carriers serving Canadian ports
- . Shippers.

The only publicly available source for identifying interior origins and destinations of U.S. foreign trade is "Domestic and International Transportation of U.S. Foreign Trade: 1976." One possible approach to identifying interior origins and destinations is to establish the average length of inland haul, by mode, for general cargo reported by this source. This produced the following:

<u>Direction</u>	<u>Mode</u>	<u>Average Distance</u>
Export	40% rail	300 miles
	60% truck	50 miles
Import	7% rail	300 miles
	93% truck	50 miles

This information was not used for rate requests since the commodity and city are not identified and inappropriate paper rates may result.

The finest level of geographic detail contained in this source is the state.* The four states containing the major general cargo ports--Illinois, Michigan, Ohio and Wisconsin--accounted for 70 percent of general cargo exports and 91 percent of general cargo imports. This information could not be used for rate requests because commodity and city are not identified. Both of these findings, however, indicate that the majority of the cargo originates or terminates near the port.

Table III-2 compares total transportation costs for imported steel which is assumed to be trucked 50 miles from port of entry. The largest city 50 miles from the port was selected as the destination city. This comparison shows that steel can reach these cities via New Orleans or Baltimore at a lower cost than via the Lakes. In spite of this more than 3 million tons of steel was imported through the Lakes in 1978. This indicates that for benefit calculations it is more reasonable to assume that general cargo originates or terminates in the Great Lakes cities. This approach was used to develop the rate comparisons.

The port-to-port forecasts developed in this study were based on Waterborne Commerce Statistics which states only that the origin (of imports) or destination (of exports) is "overseas." Consequently, it was necessary to establish weighting factors for overseas area and commodity. This was done by assuming that the top six ODCs** by weight (e.g., U.K. - Chicago - alcoholic beverages) were representative of all imports through Chicago.*** Weighting factors were then developed for these six tonnages according to import tonnage in 1978.

* Data were collected for production/market areas, typically of SMSA size, but the response rate was so low, and the number of production/market areas in the Great Lakes hinterland was so small, that these data were not useful.

** Origin - destination - commodity.

*** As reported in "U.S. Great Lakes Foreign Trade Statistics," St. Lawrence Seaway Development Corporation.

TABLE III-2

CURRENT
MOVEMENT

- 1 These are the two largest steel ports in the Great Lakes.

1

Feasible alternative routes were evaluated and the route with the lowest total cost was used for the benefit calculation. These routes included shipment via Montreal, Baltimore and New Orleans.

IV. VALUE OF GOODS IN TRANSIT

For purposes of benefit analysis, a measure of the value of goods in transit, or inventory carrying cost, was developed for major commodity groups. The purpose of this analysis was to determine the impact on net benefits from differences in average transit time between Great Lakes routes and the next most expensive route.

Table IV-1 compares average transit times for alternative routes on a commodity basis. The only major commodities for which this difference is expected to be significant are grain, iron ore and general cargo. Table IV-2 establishes an average value per ton for these commodities.

The Great Lakes Cooperative Port Planning Study and other studies have expressed inventory carrying cost in terms of an average daily interest rate (equivalent to 18 percent per year in this analysis) times the value of the commodity. This produces the values shown in Table IV-3. These values were incorporated into the NED benefit analysis by adjusting the rate differential to account for the value of the goods in transit.

TABLE IV-3
Inventory Carrying Cost

<u>Commodity</u>	<u>Value</u>
Steel	18 cents/NT/day
General Cargo	73 cents/NT/day
Iron Ore	1.2 cents/NT/day
Grain	7.5 cents/NT/day

TABLE IV-1
Average Transit Time Comparison

Commodity	Route	Lock System (Times in days)*		Comments
		Soo	Welland SLS	
Grain	GL	2	2	Barge: 15 days; unit train: 7 days, assume 50-50 mix
	ALT	11	11	
Coal	GL	N.A.		
	ALT	N.A.	no diff. N.A.	
Iron Ore	GL	3	5	
	ALT	5	7	
Steel	GL	N.A.	21	Weighted average Via barge: 28 days; via rail 18 days (2 days longer than general cargo). Chicago is only port for which barge is then alternative, and Chicago receives about 33% of steel imports.
	ALT	N.A.	21	
General Cargo	GL	N.A.	31	See Task 1A report. Assumes cargo originates/terminates in port area, average transit time is 24 days and service frequency is 14 days (i.e. average wait is 7 days).
	ALT	N.A.	16	
				See Task 1A report. Assumes average transit time is 12 days and service frequently is 7 days (i.e. average wait is 4 days).

N.A.: volume of this commodity through this lock is not significant.

* Transit times are from origin to destination except for grain, for which time between arrival in port and arrival at overseas destination varies widely and is often influenced by market factors and price speculation. Therefore transit times for grain are from gathering elevator to U.S. port.

TABLE IV-2
Commodity Unit Values

Commodity	Value	Source
Steel	\$375/NT	\$341/NT in 1979 per Metal Market News; adjusted to 1980 assuming 10 percent inflation.
General Cargo	\$1480/NT	\$1222/NT in 1978 for all liner traffic excluding steel on trade routes 32 (GL - UK/Europe) and 34 (GL - UK/Med.) per U.S. Oceanborne Foreign Trade Routes, U.S. Maritime Administration. Adjusted to 1980 assuming 10 percent per year inflation.
Iron Ore	\$25/NT	Vessel delivery in Great Lakes, per U.S. Bureau of Mines, November, 1980.
Grains	\$152/NT	Corn 344 cents/bu. (Chicago) x 39% @ 56 lb/bu. Wheat 404 cents/bu. (Mpls) x 45% @ 60 lb/bu. Soybeans 757 cents/bu. (Chicago) x 16% @ 56 lb/bu. Source: Wall Street Journal, May 1981. Weights are according to GL export tonnage

V. UPDATE OF THE RATE FILE

There are two general types of freight rate increases or decreases:

- . Across-the-board rate changes which may reflect, among other factors, a change in the carrier's overall cost of providing transportation services
- . Selected rate changes which reflect changes in market factors involving specific commodity movements or trade routes.

Across-the-board rate changes which reflect cost changes are usually increases rather than decreases. In collecting sample freight rates, several cases were observed where amendments had been published to increase all rates in the tariff by a flat percentage. It is a common occurrence for a current rail freight rate to be calculated by applying several percentage increases to a comparatively old tariff rate. This experience indicates a general upward trend in freight rates where increases are applied as uniform percentages.

The second general type of rate changes are due to changes in the transportation environment of Great Lakes susceptible cargo. This would include changes to the pattern of commodity flows in the Great Lakes, and transportation service offered by carriers competing for this cargo. Corresponding rate adjustments reflect value-of-service considerations which are present in the rate setting process. Market factors which may be related to rate changes include:

- . Level of competition for specific commodities from other modes or carriers
- . Relative desirability of certain commodities
- . Relocation of commodity production or market centers within the United States
- . Imposition of additional waterway user charges
- . Mergers and/or deregulation of railroads

- . Fuel price increases (which will impact each mode in different ways)
- . Rail line abandonments
- . Construction of new unit train grain elevators
- . Long-term changes in the trade partners and commodities of international commerce
- . Initiation of termination of scheduled overseas all-water services via the Great Lakes.

All of the above factors have occurred at least once within the last 5 years and have had a major impact on freight rates.

One possible method for updating the rate information would involve adjusting the rates according to transportation cost indices. This would not identify changes in rates for specific, large-volume movements which may not behave according to an average or index, and would not produce traceable rates. There is also a good chance that if inflation were the principal factor influencing the indices, the cost differential between a Great Lakes and an alternate route would not change very much. Thus, updating the rates via an index would probably not change NED benefits significantly.

Another alternative would involve collecting a set of new rates, which would reflect across-the-board increases as well as selective market-related changes. The appendices identify the parameters and sources needed to collect new rates and should be used as a guide for this purpose.

APPENDIX A
GENERAL CARGO RATES

GENERAL CARGO

Origin	Destination	Water Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
Italy	Chicago	161	8.19	.26	41.8
W. Germany	Chicago	127	12.1	.30	38.1
UK	Chicago	63	12.2	.14	8.8
UK	Chicago	102	5.5	.07	7.1
UK	Chicago	171	5.6	.13	22.2
UK	Chicago	91	5.1.1	.10	9.1

Total Great Lake Rate = \$127.1/NT

Alternative 1

Origin	Destination	Ocean & Rail Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
Italy to Montreal to Chicago		229	9.1	.26	59.5
W. Germany to Montreal to Chicago		229	9.1	.30	68.7
W. Germany to Montreal to Chicago		229	9.1	.14	32.1
UK to Montreal to Chicago		103	9.14	.07	7.2
UK to Montreal to Chicago		103	9.14	.13	13.4
UK to Montreal to Chicago		103	9.14	.10	10.3

Alternative 1 Rate = \$191.2/NT

Alternative 2

Origin	Destination	Ocean & Rail Rate (\$/NT)	Source	Rail Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
Italy to Baltimore to Chicago		102	12.8	37.05	3.3	.26	36.15
W. Germany to Baltimore to Chicago		345	12.10	37.05	3.3	.30	114.6
W. Germany to Baltimore to Chicago		92	12.9	37.05	3.3	.14	18.07
UK to Baltimore to Chicago		142	8.5	37.05	3.3	.07	12.53
UK to Baltimore to Chicago		207	8.6	37.05	3.3	.13	31.72
UK to Baltimore to Chicago		85	8.1	37.05	3.3	.10	12.21

Alternative 2 Rate = \$225.3/NT

GENERAL CARGO

Origin	Destination	Water Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
UK	Detroit	103	5.1.2	.24	24.7
UK	Detroit	129	5.2	.29	37.4
UK	Detroit	252	5.4	.27	68
W. Germany	Detroit	127	12.6	.20	25.4

Total Great Lakes Rate = \$155.5/NT

Alternative 1

Origin	Destination	Ocean & Rail Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
UK to Montreal to Detroit		108	9.13	.24	25.9
UK to Montreal to Detroit		108	9.13	.29	31.3
UK to Montreal to Detroit		108	9.13	.27	29.2
W. Germany to Montreal to Detroit		203	9.2	.20	40.6

Alternative 1 Rate = \$127/NT

Alternative 2

Origin	Destination	Ocean Rate (\$/NT)	Source	Rail Rate (\$/NT)	Source	Weights	Weighted Rate (\$/NT)
UK to Balt. to Detroit		55	8.1	28.88		.24	27.3
UK to Balt. to Detroit		174	8.2	28.88		.29	58.8
UK to Balt. to Detroit		185	8.3	28.88		.27	51.8
W. Germany to Balt. to Detroit		345	12.10	28.88		.20	74.8

Alternative 2 Rate = \$218.7/

GENERAL CARGO

<u>Origin</u>	<u>Destination</u>	<u>Water Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
Chicago	UK	156	5.9	.43	67
Chicago	UK	171	5.7	.30	51.3
Chicago	France	73	12.7	.27	19.7

Total Great Lakes Rate = \$138.0/NT

Alternative 1

<u>Origin</u>	<u>Destination</u>	<u>Ocean & Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
Chicago to	Montreal to UK	123	9.16	.43	52.9
Chicago to	Montreal to UK	123	9.16	.30	36.9
Chicago to	Montreal to France	250	9.00	.27	67.5

Alternative 1 Rate = \$157.3/NT

Alternative 2

<u>Origin</u>	<u>Destination</u>	<u>Ocean Rate</u> (\$/NT)	<u>Source</u>	<u>Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u>
Chicago to	Baltimore to UK	229	8.11	37.05	3.3	.43	14.4
Chicago to	Baltimore to UK	232	8.8	37.5	3.3	.30	80.7
Chicago to	Baltimore to France	187	12.11	37.5	3.3	.27	60.5

Alternative 2 Rate = \$255.6/NT

GENERAL CARGO

<u>Origin</u>	<u>Destination</u>	<u>Water Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
Turkey	Toledo	183.40	13.1	.76	139.4
W. Germany	Toledo	187.45	13.2	.15	28.1
Brazil	Toledo	147.97	13.3	.09	13.3

Total Great Lakes Rate = \$180.8/NT

Alternative 1

<u>Origin</u>	<u>Destination</u>	<u>Ocean & Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
France	to Montreal to Toledo	236	9.3	.12	28.3
France	to Montreal to Toledo	236	9.3	.18	42.5
UK	to Montreal to Toledo	127	9.21	.012	1.5
W. Germany	to Montreal to Toledo	236	9.3	.68	160.5

Alternative 1 Rate = \$232.8/NT

Alternative 2

<u>Origin</u>	<u>Destination</u>	<u>Ocean Rate</u> (\$/NT)	<u>Source</u>	<u>Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u>
France	to Baltimore to Toledo	283	8.16	27.90	3.1	.12	37.3
France	to Baltimore to Toledo	124	8.17	27.90	3.1	.18	27.3
UK	to Baltimore to Toledo	148	8.4	27.90	3.1	.02	3.5
W. Germany	to Baltimore to Toledo	129	8.17	27.90	3.1	.68	106.8

Alternative 2 Rate = \$174.9/NT

GENERAL CARGO

<u>Origin</u>	<u>Destination</u>	<u>Water Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
---------------	--------------------	------------------------------	---------------	----------------	---------------------------------

Detroit	UK	191	5.3	.14	26.7
Detroit	UK	159	5.8	.68	108.1
Detroit	UK	171	5.7	.18	30.8

Total Great Lakes Rate = \$165.6/NT

Alternative 1

<u>Origin</u>	<u>Destination</u>	<u>Ocean & Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u> (\$/NT)
---------------	--------------------	---	---------------	----------------	---------------------------------

Detroit to	Montreal to UK	128	9.15	.14	17.92
Detroit to	Montreal to UK	128	9.15	.68	87.04
Detroit to	Montreal to UK	128	9.15	.18	23.04

Alternative 1 Rate = \$128 /NT

Alternative 2

<u>Origin</u>	<u>Destination</u>	<u>Ocean Rate</u> (\$/NT)	<u>Source</u>	<u>Rail Rate</u> (\$/NT)	<u>Source</u>	<u>Weights</u>	<u>Weighted Rate</u>
---------------	--------------------	------------------------------	---------------	-----------------------------	---------------	----------------	----------------------

Detroit to	Baltimore to UK	202	8.7	28.88	3.2	.14	32.3
Detroit to	Baltimore to UK	392	8.1	28.88	3.2	.68	286.2
Detroit to	Baltimore to UK	232	8.8	28.88	3.2	.18	47.0

Alternative 2 Rate = \$365.5/NT

RAIL RATES

<u>REF</u>	<u>TARIFF</u>	<u>FROM</u>	<u>TO</u>	<u>PLAN</u>	<u>COMMOD</u>	<u>RATE</u>
3.1	Conrail 7000 Sect. 3	Baltimore	Toledo	Piggyback Plan 2½	FAK	\$27.90/NT (80,000 lb min)
3.2	Conrail 7000 Sect. 3	Baltimore Detroit	Detroit Baltimore	Piggyback Plan 2½	FAK	\$28.88/NT (80,000 lb min)
3.3	Chessie 7000 Sect. 2	Baltimore Chicago	Chicago Baltimore	Piggyback Plan 2½	FAK	\$37.05/NT (80,000 lb min)

CARRIER: Manchester Liners
TARIFF: FNC 19

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE</u>
5.1.2	UK & Eire ports	Clev, Det, Milw	Wines & spirits	\$1025/20FT, house-house, assume 10 NT/20FT
5.2	UK & Eire ports	GL ports	Machinery NOS, elec & non-elec	\$129/NT, W/M, use weight, house-house
5.3	GL ports	UK & Eire ports	Generators	\$191/NT, W/M, use weight, house-house
5.4	UK & Eire ports	GL ports	Refrigerators	\$2615/40FT, house-house, assume 11NT/40 FT, + \$6.60/NT bunker + \$8/NT service charge
5.7	GL ports	UK & Eire ports	Animal by-prod., NOS	\$3115/40FT, house-house, assume 20 NT/40FT + \$6.60/NT bunker + \$8/NT service charge
5.8	GL ports	UK & Eire ports	Foodstuffs, NOS	\$2885/40FT, house-house, assume 20 NT/40FT, + \$6.60/NT bunker + \$8/NT service
5.9	GL ports	UK & Eire ports	Mixed commod, incl. margarine & shortening	\$2820/40FT, house-house, assume 20NT/40FT, + \$6.60/NT bunker + \$8/NT service
5.5	UK & Eire ports	GL ports	Agricultural Equipment	\$95/NT + 6.60/NT bunker
5.6	UK & Eire ports	GL ports	Feed	\$1500/20FT, house-house assume 10NT/40FT + \$14.25/NT service + \$6.60/NT bunker
5.1.1	UK & Eire ports	Chicago	Alcoholic Beverages	\$910/20FT, house-house assume 10NT/20FT, include bunker.

CARRIER: N. Atl. westbound Conf. (IMC 42)

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE</u>
8.1	UK	Baltimore	Alcoholic Beverages	\$ 85/NT (containerized)
8.2	UK	Baltimore	Power generating machines	\$174/NT (not containerized)
8.3	UK	Baltimore	Applicances	\$185/NT (containerized)
8.4	UK	Baltimore	Textile fabrics	\$148/NT (containerized)
8.5	UK	Baltimore	Agric. machines	\$142/NT (not containerized)
8.6	UK	Baltimore	Animal feeds	\$207/NT (containerized)

CARRIER: N. Atl./NK Freight Conf.

Tariff: FMC 3

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE</u>
8.7	Baltimore	UK	Power generating equip.	\$202/NT (containerized)
8.8	Baltimore	UK	Animal oils	\$232/NT (tank container)
8.10	Baltimore	UK	Frozen vegetables	\$392/NT (containerized)
8.11	Baltimore	UK	Margarine & shortening	\$229/NT (tank container)

REF	CARRIER	TARIFF	FROM	TO	COMMOD	RATE
8.16	Continental/N. Atl. Westbound Frt. Conf.	FMC 14	France	Baltimore	Zinc Alloys	\$283/NT (containerized)
8.17	Continental/N. Atl. Westbound Frt. Conf.	FMC 14	France/W. Germany	Baltimore	Automobiles	\$129/NT (not containerized)
8.19	Medit. - USA - GL Westbound Frt Conf.	FMC 11	Italy	Chicago	Alcoholic beverages	\$161/NT (containerized)

CARRIER: Cast Lines

TARIFF: Telephone quotations (door - door rates, not in a published tariff)

REF	FROM	TO	COMMOD	RATE
9.0	Chicago	France	FAK	Equivalent to \$250/NT (containerized, 20 ft)
9.1	Antwerp	Chicago	FAK	Equivalent to \$229/NT (containerized, 20 ft)
9.2	Antwerp	Detroit	FAK	Equivalent to \$203/NT (containerized, 20 ft)
9.3	Antwerp	Toledo	FAK	Equivalent to \$236/NT (containerized, 20 ft)
9.13	U.K.	Detroit	FAK	Equivalent to \$108/NT (containerized, 20 ft)
9.14	U.K.	Chicago	FAK	Equivalent to \$103/NT (containerized, 20 ft)
9.15	Detroit	U.K.	FAK	Equivalent to \$128/NT (containerized, 20 ft)
9.16	Chicago	U.K.	FAK	Equivalent to \$123/NT (containerized, 20 ft)
9.21	U.K.	Toledo	FAK	Equivalent to \$127/NT (containerized, 20 ft)

CARRIER: Federal Atlantic Lakes Lines
TARIFF: FMC 20 (Westbound), FMC 25 (Eastbound)

REF	FROM	TO	COMMOD	RATE
12.1	W. Germany	Chicago	Paper/paperboard	\$127/NT (containerized)
12.2	W. Germany	Chicago	Agricultural machinery	\$ 63/NT (containerized)
12.3	France	Toledo	Zinc Alloys	\$115/NT (containerized)
12.4	France/W. Germany	Toledo	Motor vehicles	\$419/NT (not containerized)
12.6	W. Germany	Detroit	Paper/paperboard	\$127/NT (containerized)
12.7	Chicago	France	Animal Feed	\$ 73/NT (not containerized)

REF	CARRIER	FROM	TO	COMMOD	RATE
12.10	Continental North Atl. Westbound Frt. Conf. (FMC 14)	W. Germany	Baltimore	Paper, paperboard	\$345/NT (contain- erized)
12.11	N. Atl. French Atl. Fut. Conf. (FMC 4)	Baltimore	France	Animal Feed	\$187/NT (contain- erized)
12.5	Manchester Liners (FMC 19)	UK	Toledo	Textiles	\$ 89/NT (contain- erized)
12.8	Continental North Atl. Westbound Frt. Conf. (FMC 13)	Italy	Baltimore	Alcoholic Beverages	\$102/NT (contain- erized)
12.9	Continental North Atlantic Westbound Frt. Conf. (FMC 14)	W. Germany	Baltimore	Agricultural Equip.	\$ 92/NT (contain- erized)

REF	CARRIER	TARIFF	GENERAL CARGO		COMMAND	RATE
			FROM	TO		
13.1	Med/US/GL Westbd. Frt. Conf.	FMC 15	Turkey	Toledo	Zinc ingots	\$183.40/NT (BB)
13.2	Med/US/GL Westbd. Frt. Conf.	FMC 11	W. Germany	Toledo	Aluminum	\$187.45/NT (BB)
13.3	Netumar	(tel. quote)	Brazil	Toledo	Twine	\$147.97/NT (BB)

APPENDIX B
IRON AND STEEL RATES

STEEL PRODUCTS

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>WATER RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe	Detroit	38.09	4.1	1	38.09
GREAT LAKES RATE \$38.09/NT					

Alternative 1

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe to Montreal to Detroit		40.37	4.8	43.44	2.7	1	83.81
Alternative 1 Rate =							\$83.81/NT

Alternative 2

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe to Baltimore to Detroit		34.50	4.4	34.60	7.8	1	69.07
Alternative 2 Rate =							\$69.07/NT

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>WATER RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT	
Japan	Cleveland	73.94	4.6	.41	30.32	
N. Europe	Cleveland	39.46	4.3	.59	23.28	
Great Lakes Rate = \$53.60/NT						
Alternative 1						
<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
Japan to Montreal to Cleveland		83.00	14.4	42.57	.41	51.48
N. Europe to Montreal to Cleveland		40.37	4.8	42.57	.59	48.94
Alternative 1 Rate = \$100.42/NT						
Alternative 2						
<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
Japan to Baltimore to Cleveland		43.99	4.9	29.20	.41	30.01
N. Europe to Baltimore to Cleveland		34.50	4.4	29.20	.59	37.58
Alternative 2 Rate = \$67.59/NT						

B-2

STEEL PRODUCTS

ORIGIN	DESTINATION	WATER RATE \$/NT	SOURCE	WEIGHTS	WEIGHTED RATE \$/NT
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Japan	Chicago	73.94	4.6	.20	14.78
N. Europe	Chicago	39.46	4.3	.80	31.57
Great Lakes Rate \$46.35/NT					

Alternative 1

ORIGIN	DESTINATION	OCEAN RATE \$/NT	SOURCE	RAIL RATE \$/NT	SOURCE	WEIGHTS	WEIGHTED RATE \$/NT
Japan to Montreal to Chicago		83.00	14.4	57.68	2.15	.20	44.73
N. Europe to Montreal to Chicago		40.37	4.8	57.68	2.15	.80	78.44
Alternative 1 Rate = \$123.17/NT							

Alternative 2

ORIGIN	DESTINATION	OCEAN RATE \$/NT	SOURCE	RAIL RATE \$/NT	SOURCE	WEIGHTS	WEIGHTED RATE \$/NT
Japan to Baltimore to Chicago		43.99	4.9	43.80	7.7	.20	17.56
N. Europe to Baltimore to Chicago		34.50	4.4	43.80	7.7	.80	62.64
Alternative 2 Rate = \$80.20/NT							

Alternative 3

ORIGIN	DESTINATION	OCEAN RATE \$/NT	SOURCE	BARGE RATE \$/NT	SOURCE	WEIGHTS	WEIGHTED RATE \$/NT
Japan to Gulf of Chicago		68.61	L.2	11.00		.20	15.92
N. Europe to Gulf of Chicago		48.08	L.1	11.00		.80	47.26
Alternative 3 Rate = \$63.18/NT							

STEEL PRODUCTS

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>WATER RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe	Toledo	39.23	4.2	.62	24.32
Korea	Toledo	73.03	4.5	.38	27.75

Great Lakes Rate \$52.07/NT

Alternative 1

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe to Montreal to Toledo		40.37	4.8	44.48	2.1	.62	52.70
Korea to Montreal to Toledo		83.00	14.4	44.48	2.1	.38	48.30
Alternative 1 Rate = \$101.00/NT							

Alternative 2

<u>ORIGIN</u>	<u>DESTINATION</u>	<u>OCEAN RATE</u> \$/NT	<u>SOURCE</u>	<u>RAIL RATE</u> \$/NT	<u>SOURCE</u>	<u>WEIGHTS</u>	<u>WEIGHTED RATE</u> \$/NT
N. Europe to Baltimore to Toledo		34.50	4.4	36.40	7.9	.62	43.96
Korea to Baltimore to Toledo		43.99	4.9	36.40	7.9	.38	30.55
Alternative 2 Rate = \$74.51/NT							

MODE: Rail
 CARRIER: Canadian Pacific Railway
 SOURCE: Telephone conversation

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>VOLUME</u>	<u>RATE (\$/N.T.)</u>
2.1	Montreal	Toledo	Steel Sheets	80,000 lbs.	\$44.48
2.7	Montreal	Detroit	Steel Sheets	80,000 lbs.	\$43.44
2.15	Montreal	Chicago	Steel Sheets	80,000 lbs.	\$57.68
2.23	Montreal	Cleveland	Steel Sheets	80,000 lbs.	\$42.57

RAIL RATES

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE (\$/N.T.)</u>	<u>VOLUME</u>	<u>TARIFF</u>	<u>ITEM NO.</u>
7.7	Baltimore	Chicago	Steel Sheets	\$43.80	120,000 lb.	TEA 4900 - B	Section B
7.8	Baltimore	Detroit	Steel Sheets	\$34.60	120,000 lb.	TEA 4900 - B	5050
7.9	Baltimore	Toledo	Steel Sheets	\$36.40	120,000 lb.	TEA 4900 - B	5170
7.10	Baltimore	Cleveland	Steel Sheets	\$29.20	120,000 lb.	TEA 4900 - B	5110

CARRIER: Federal Commerce & Navigation

<u>REF</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE (\$/NT)</u>	<u>SOURCE</u>
4.1	Antwerp	Detroit	Steel Sheets	\$38.09	Tariff-FMC 20
4.2	Antwerp	Toledo	Steel Sheets	\$39.23	Tariff-FMC 20
4.3	Antwerp	Clev, Chic.	Steel Sheets	\$39.46	Tariff-FMC 20
4.4	Antwerp	Baltimore	Steel Sheets	\$34.50	Tariff-FMC 20
4.5	Kobe	Del, Toledo	Steel Sheets	\$73.03	Tariff-FMC 12
4.6	Kobe	Clev, Chic.	Steel Sheets	\$73.94	Tariff-FMC 12
4.8	Antwerp	Montreal	Steel Sheets	\$40.37	Telephone conversation
4.9	Kobe	Baltimore	Steel Sheets	\$43.99	Tariff-FMC 22

<u>REF</u>	<u>MODE</u>	<u>CARRIER</u>	<u>FROM</u>	<u>TO</u>	<u>COMMOD</u>	<u>RATE (\$/NT)</u>
14.4	Water	Barber Lines (telephone conversation)	Far East	Montreal	Steel Sheets	\$83.00
L.1	Water	Lykes Lines (telephone conversation)	N. Europe	New Orleans	Steel Sheets	\$48.08
L.2	Water	Lykes Lines (telephone conversation)	Far East	New Orleans	Steel Sheets	\$68.61
B	Barge	Keystone Steel Corporation (telephone conversation)	New Orleans	Chicago	Steel Sheets	\$11.00 (Note: Rate supplied by Keystone is \$9.50/NT, Baton Rouge to Peoria for 1979, so increase by 15% (extra distance) to get Nola- Chi. rate for 1981).

APPENDIX C
IRON ORE RATES

TRUCK SIZE

ORIGIN
road of Cuba

DESTINATION
Chicago

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	D.L.U. (Loading)	K			\$ 4.70	S
		Chicago	H			1.34	S
	D.L.U.	(Discharge + handling)	W			6.38	D.I
			H			1.40	S
						\$ 13.82	

C-1

ACT 1	Mine (Hiesch.)	Chicago	K	16.34	1	\$ 8.17	S
		Chicago	K	17.68	1	8.84	S
						\$ 17.01	

ACT 2

IRAN ORE

ORIGIN
Head of Lake

DESTINATION

Detroit

FROM
Mine
Duluth

TO
Duluth
(Loading)
Detroit
(discharge)
(unloading)

<u>MODE</u>	<u>RATE</u>	<u>WEIGHT</u>	<u>WEIGHTED RATE</u>	<u>SOURCE</u>
R			\$ 4.70	S
			.54	S
W			5.22	D.2
			.17	S
			1.13	S
			<u>\$ 11.76</u>	

C-2

ACT 1 Mesabi

Detroit

\$28.67 S

ACT 2 Mine
Super Isles
Palt

Super Isles
Balt
Detroit
(handling)

\$ 2.60 S
3.24 S
13.48 S
1.11
20.43 S

TRAN ORE

ORIGIN

Head of Lake

FROM

GL ROUTE

Min

Duluth

Tule Lake
Tule Lake

Pesado

ACT 1

ACT 2

Min

Seyt Jiles

Belt

Belt

DESTINATION

Head of Lake

TO

Duluth

loading

Tule Lake

Leakage

in loading

Middle town

Ashland/Pesado

China district

Seyt Jiles

Belt

Ashland

Middle town

(handling)

MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
R			4.70	S
			.34	S
W			5.93	D.3
			.17	S
			1.13	S
R	6.37		3.18	S
R	8.26		4.29	S
			<u>\$ 19.94</u>	

\$ 27.13

\$ 2.60	S
3.24	S
5.52	B
6.04	S
<u>1.11</u>	S
18.51	

IRAN ORE

DESTINATION

Huron

ORIGIN

Head of Lake

FROM	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
Duluth	R			\$ 4.70	S
loading				.54	S
Huron	W			5.93	D.3
docking				.17	S
unloading				1.13	S
Pittsburg / Wheeling	R			6.91	S
				<u>\$ 19.38</u>	

GL ROUTE

FROM

Mine

Duluth

Huron

C-4

ACT 1

Mesabi

Pittsburg / Wheeling

\$ 27.74

ACT 2

Mine

Sept Iles

Belt

Sept Iles

Belt

Pittsburg

handling

2.60

3.24

10.15

1.11

17.10

IRON ORE

ORIGIN

Head of Lake

FROM

Miner

Duluth

GL ROUTE

TO

Duluth
loading

Lorain
discharge
unloading

MODE

R

W

RATE

WEIGHT

WEIGHTED

RATE

SOURCE

S

S

D.B

S

S

4.70

.54

5.93

.17

1.13

\$ 12.47

\$ 27.74

R

Lorain/Clev.

Mesabi

ACT 1

Q 5

S

S

S

\$ 2.00

3.24

1.51

1.11

\$ 2.46

R

W

R

Syr Isles

Pack

Clev.

banding

Miner

Syr Isles

Pack

ACT 2

IRON ORE

ORIGIN

Head of lakes

FIRM

Mine

Duluth

GL ROUTE

TO

Duluth

loading

Clev

deckage-

unloading

MODE

R

W

RATE

WEIGHT

WEIGHTED

RATE

SOURCE

\$ 4.70

.54

5.93

.17

1.13

\$ 17.47

S

S

D.3

S

S

C-6

ACT 1

Mesabi

Clev / Pittsburg

R

\$ 27.74

S

ACT 2

Mine

Super Ties

Balt

Super Ties

Balt

Clev

handling

R

W

R

\$ 2.60

3.24

11.52

1.11

\$ 18.47

S

S

S

S

IRON ORE

ORIGIN		DESTINATION					
Head 1 taken		Concent					
GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
C-7	Mine	Duluth loading	K			\$ 47.5	S
						.84	C
	Duluth	Concent	W			6.27	D-4
		Lockage handling				.17	S
	Concent	Pittsburg	K	7.90	.75	3	S
ACT 1		Atigun pit PA	K	6.37	.25	5.13	B
						1.72	B
						20.42	
	Mesabi	Pittsburg district	K			27.74	S
ACT 2	Mine	Sgt Iles	K			2.60	S
	Sgt Iles	Bait	W			3.24	S
	Bait	Pittsburg	K			12.13	S
		handling				1.11	S
						17.10	

IRAN ORE

ORIGIN DESTINATION

Head (1) Lake.

Ashtabula

FROM

GL ROUTE

Mine

Daluth

Ashtabula
Ashtabula

TO

Daluth
Loading

Ashtabula

Dockage
handling

Pittsburg
Youngstown

18

ACT 1

McSah
McSah

Pittsburg
Youngstown

ACT 2

Mine
Sept Isles
Balt
Balt

Sept Isles
Balt
Pittsburg
Youngstown
handling

MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
R			\$ 4.70	S
			.54	S
W			6.27	D.U
			.17	S
			1.13	S
R	7.90	.74	5.85	B
R	5.94	.26	1.51	B
			<u>\$ 20.20</u>	
R	27.74	.74	20.53	S
R	26.59	.26	6.91	S
			<u>\$ 27.44</u>	
R			\$ 2.60	S
W			3.24	S
R	10.15	.74	7.51	S
R	10.90	.26	2.83	S
			<u>1.44</u>	S
			<u>\$ 17.24</u>	

3210 N 26 N

ORIGIN	DESTINATION	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
Presque Isle	Pennant	R			\$ 1.45	S
Pennant	Presque Isle	R			\$ 1.45	S
Pennant	Lehigh Electric	R			\$ 5.83	D.6
Pennant	Lehigh Electric	R			\$ 1.77	S
Pennant	Pittsburg	R	75.00	.75	5.63	B
Pennant	Pittsburg	R	6.87	.25	1.72	B
					\$ 16.21	
Marquette	Pittsburg	R			\$ 22.84	S
Marquette	Pittsburg	R			\$ 2.60	S
Marquette	Pittsburg	R			\$ 3.24	S
Marquette	Pittsburg	R			\$ 10.15	S
Marquette	Pittsburg	R			\$ 4.75	S

IRON ORE

ORIGIN DESTINATION

Presque Isle

Ashtabula

FROM

TO

MODE

RATE

WEIGHT

WEIGHTED RATE

SOURCE

GL ROUTE

Empire mine
Presque Isle

Presque Isle
Lake Erie p. 173

decharge
handling

Ashtabula

Ashtabula

Pittsburgh

Youngstown

Marquette
"

Pittsburgh

Youngstown

ACT 1

ACT 2

Mine
Sept Isles
Palt
Palt
Palt

Sept Isles

Palt

Pittsburgh

Youngstown
handling

S

D.6

S

S

B

B

S

S

S

S

S

S

S

\$ 1.45

5.93

.17

1.13

7.90

5.25

\$ 15.97

\$ 16.90

5.50

\$ 22.40

\$ 2.60

3.24

7.51

7.88

1.11

\$ 17.20

IRON ORE

ORIGIN

Head of lake

DESTINATION

Buffalo

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	mine	Duluth loading	R		8	4.72	S
	Duluth	Buffalo discharge unloading	W			.54	S
						8.34	D.5
						.17	S
						1.13	S
					8	10.88	

C-11

ACT 1

Mesabi

Buffalo

R

8 29.30

S

ACT 2

Mine

Sept Isles

Bufft/Phil

Sept Isles
Bufft/Phil

Buffalo
handling

R

W

R

4 2.60

3.24

10.90

1.11

8 17.85

S

S

S

S

IRAN DICE

ORIGIN

Can - St. Lawrence

Buffalo

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Prime	Sept Isles	R			\$ 2.36	S
	Sept Isles	Buffalo	W			2.69	S
		dragee + handling				1.30	S
		tolls				.90	S
						<u>\$ 7.25</u>	

C-12

ACT 1

Prime	Sept Isles	R	\$ 2.60	S
Sept Isles	Phil/Balt	W	3.24	S
Phil/Balt	Buffalo	R	10.90	S
	handling		<u>1.11</u>	S
			\$ 17.85	

ACT 2

I 76N OIRE

ORIGIN DESTINATION

Can St Lawrence

Conneaut

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	Sept Isles	R			\$ 2.60	S
	Sept Isles	Conneaut	W			2.69	S
		tolls				1.00	
		discharge handling				1.92	S
	Conneaut	Pittsburgh	R	7.90	75	5.93	S
		Alleganville PA	R	6.77	70	4.74	S
						\$ 15.14	

C-13

ACT 1

Mine	Sept Isles	R				2.60	S
Sept Isles	Balt	W				3.24	S
Balt	Pittsburgh	R				10.15	S
Balt	Alleganville	R				1.11	S
						\$ 17.10	

ACT 2

IRON ORE

ORIGIN DESTINATION

Can. St Lawrence

Cle. / Lorain

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	Sept Iles	R			2.60	S
	Sept Iles	Lorain / Cle	W			2.69	S
		do charge			.17		S
		unloading			1.13		S
		tolls			.90		
					.8	7.49	

C-14

ACT 1	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	Sept Iles	R			2.60	S
	Sept Iles	Balt	W			3.24	S
	Balt	Cle	R			11.52	S
		handling			1.11		S
						18.47	

ACT 2

IRON ORE

ORIGIN

Can - St. Lawrence

Toledo

FROM

GL ROUTE

Mine

Sept Isles

Toledo

Toledo

TO

Sept Isles

Debrant

Lochago

unloading

Middle town

Ashland / Portsmouth

tolls

MODE

R

W

R

R

RATE

6.37

8.52

WEIGHT

WEIGHTED RATE

2.60

2.69

.17

1.13

3.19

4.28

.90

14.96

SOURCE

S

S

S

S

B

B

.

ACT 1

Mine

Sept Isles

Belt

Belt

Sept Isles

Belt

Ashland

Middle town

handling

2.60

3.24

5.52

6.04

1.11

18.51

S

S

B

S

S

ACT 2

IRAN ORE

ORIGIN

DESTINATION

Ch. St. Lawrence

Detroit

FIRM

MODE

RATE

WEIGHT

WEIGHTED

RATE

SOURCE

GL ROUTE

Mine

Seyt Iles

R

\$ 2.60

S

Seyt Iles

Detrait

W

2.69

S

discharge
unloading

.17

S

1.13

S

.90

\$ 7.09

S

C-16

ACT 1

Mine

Seyt Iles

R

\$ 2.60

S

Seyt Iles

Belt

W

3.24

S

Belt

Detrait

R

13.48

S

(handling)

1.11

S

\$ 20.43

ACT 2

IRON ORE

ORIGIN

Can St. Lawrence

DESTINATION

Ashtabula

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	Sept Isles	R			\$ 2.60	
	Sept Isles	Ashtabula	W			2.69	
	Ashtabula	Pittsburgh	R	7.90	.74	5.85	
	Ashtabula	Youngstown	R	5.94	.26	1.54	
		tolls				.90	
						\$ 13.58	

C-17

ACT 1	Mine	Sept Isles	R			\$ 2.60	
	Sept Isles	Balt.	W			3.24	
	Pact	Pittsburgh	R	10.15	.74	7.51	
		Youngstown	R	10.90	.26	2.83	
		handling				1.11	
						\$ 17.30	

ACT 2

IRON ORE

ORIGIN
Can - St. Lawrence

DESTINATION
Chicago, Gary, Burns Harbor

GL ROUTE	FROM	TO	MODE	RATE	WEIGHT	WEIGHTED RATE	SOURCE
	Mine	Sept Isles	R			\$ 2.60	S
	Sept Isles	Chicago Area	W			3.94	C
		decharge + handling				1.40	S
		tolls				.90	S
						<u>\$ 8.84</u>	

C-18

ACT 1

Mine
Sept Isles
Palt

Sept Isles	R		\$ 2.60	S
Palt	W		3.24	S
Chicago	R		16.53	S
handling			<u>1.11</u>	S
			\$ 23.48	

ACT 2

Mesabi

Chicago	R	16.34	.5	\$ 8.16	S
Gary	R	17.63	.5	<u>8.84</u>	S
				\$ 17.00	

IRON ORE RATES

REF SOURCE

S Skillings Mining Review, January 10, 1981

B Bessemer & Lake Erie Railroad, Rates effective Sept. 1, 1980, to include X-375-C

C Based on telephone conversation with Inland Steel in Chicago indicating that rates from Quebec to Chicago are \$1.00 to \$1.50 higher than rates to Lake Erie ports. Rate to Lake Erie is \$2.69 so assume rate to Chicago is \$3.94 (\$1.25 higher)

<u>REF</u>	<u>SOURCE</u>	<u>ORIGIN</u>	<u>DESTINATION</u>	<u>RATE</u> (\$/NT)	<u>SHIPMENT SIZE</u>
D.1	Great Lakes ore carrier	Head of Lakes	Chicago, Gary, Burns Harbor, Indiana Hbr.	\$6.38	28,000 Gross tons
D.2	Great Lakes ore carrier	Head of Lakes	Detroit	\$5.22	28,000 Gross tons
D.3	Great Lakes ore carrier	Head of Lakes	Toledo, Huron, Lorain, Cleveland	\$5.93	28,000 Gross tons
D.4	Great Lakes ore carrier	Head of Lakes	Ashtabula, Conneaut	\$6.27	28,000 Gross tons
D.5	Great Lakes ore carrier	Head of Lakes	Buffalo	\$8.34	22,000 Gross tons
D.6	Great Lakes ore carrier	Presque Isle, Marquette	Chicago area, Detroit, Lake Erie ports	\$5.83	18,000 Gross tons

APPENDIX D

COAL RATES

Coal Rates

Lake Origin Lake Destination 1978 volume
 Conneaut Taconite 81,818

Origin	<u>Component Costs</u>		Cost	weight factor	weighted cost	SOURCE
	Destination	Mode				
current route: Ohio W.V. — Conneaut	Conneaut	R	13.76	1.5	6.85	C-128
	Conneaut	R	14.35	1.5	7.49	C-129
	dock	H	1.21	1.0	1.21	dock operator
	Taconite	W	4.77	1.0	4.77	W-1
	Total weighted cost				<u>20.05</u>	

alternative route 1:

Appalachia

Taconite

R

28.96

1.0

28.96

Arroyo
to Taconite
of 16.1, 16.1

Total weighted cost 28.96

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$

Coal Rates

Lake Origin Lake Destination 1978 volume
 Ashtabula/Conneaut Ashland 37,682

Origin	<u>Component Costs</u>		Weight factor	Weighted cost	<u>SOURCE</u>
	<u>Destination</u>	<u>Mode</u>			
current route: P ₂ P ₂ Conneaut/Ashtabula —	Ashtabula	R	.27	2.44	C-20,103
	Conneaut	R	.73	6.44	C-84
	Ashland	W	1.00	4.77	W-2
	dock	H	1.00	1.22	
	Total weighted cost			14.87	

alternative route 1:

Appalachia	R	27.75	1.0	27.75	16.1, 16.8 average
Total weighted cost				27.75	

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$15.13

Coal Rates

Lake Origin Lake Destination 1978 volume
 Toledo Ashland 150,000

<u>Origin</u>	<u>Component Costs</u>		<u>Cost</u>	<u>weight factor</u>	<u>weighted cost</u>	<u>source</u>
	<u>Destination</u>	<u>Mode</u>				
current route: E. Ky. W.V. Toledo	Toledo	R	11.76	.6	7.06	C-10, 13, 44, 92
	Toledo	R	11.34	.4	4.54	C-5, 108, 115
	Ashland	W	4.27	1.0	4.27	W-5
	doek		1.21	1.0	1.21	dock operators
			Total weighted cost		17.08	
alternative route 1: E. Ky. W.V.	Ashland	R	26.83	.6	16.10	16.1
	Ashland	R	26.83	.4	10.73	16.5
			Total weighted cost		26.83	

Total weighted cost

Difference between current route cost and lowest cost alternative = \$

150,000 x 16.5 = 2,475,000

Coal Rates

Lake Origin Lake Destination 1978 volume
 Calumet Taconite 83101

Origin	<u>Component Costs</u>		Weight factor	Weighted cost	Source
	<u>Destination</u>	<u>Mode</u>			
current route: S. IL. Calumet	Calumet	R	1.0	10.93	c-32,66,85 W-9 dock operations
	Taconite	W	1.0	3.75	
	dock	H	1.0	1.22	
	Total weighted cost			15.90	

alternative route 1:

S. Illinois	Taconite	R			1617
Total weighted cost				20.27	

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$

Coal Rates

Lake Origin Lake Destination 1978 volume

Toledo/Sandusky Duluth, Min. 709,775

<u>Origin</u>	<u>Component Costs</u>	<u>Mode</u>	<u>Cost</u>	<u>weight factor</u>	<u>weighted cost</u>	<u>SOURCE</u>
current route: Toledo/Sandusky E. Ky. Ohio E. Ky	Duluth	W	3.48	1.0	3.48	W-6
	Toledo	R	11.76	.5	5.88	C-10, 13, 44, 92
	Toledo	R	9.84	.2	1.97	C-3, 35, 120
	Sandusky	R	10.69	.3	3.21	C-74, 83, 84, 87
	Docks	H	1.21	1.0	1.21	dock operations
Total weighted cost					15.75	

alternative route 1:

Appalachia	Duluth	R	27.75	1.0	27.75	Ala, 16.5 16.22
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Total weighted cost 27.75

alternative route 2:

Total weighted cost _____

Difference between current route cost and lowest cost alternative = \$14.25

Coal Rates

Lake Origin Lake Destination 1978 volume
 Ashtabula Duluth, Min. 194,918

<u>Origin</u>	<u>Component Costs</u>	<u>Mode</u>	<u>Cost</u>	<u>weight factor</u>	<u>weighted cost</u>	<u>SOURCE</u>
current route: Ohio Penn. Ashtabula + D-6	Ashtabula	R	9.21	0.4	3.68	C-31,104,123
	Ashtabula	R	8.82	0.6	5.29	C-20,103
	Duluth	W	3.50	1.0	3.50	W-10
	docks	H	1.21	1.0	1.21	dock operators
	Total weighted cost				13.68	

alternative route 1:

Appalachia

Duluth	R	28.96	1.0	28.96	16.1 and 16.4 energy
--------	---	-------	-----	-------	----------------------

Total weighted cost 28.96

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$16.32

Coal Rates

Lake Origin Lake Destination 1918 volume
 Toledo Silver Bay/Taconite 465,151

Origin	<u>Component Costs</u>		Weight factor	weighted cost	<u>SOURCE</u>
	Destination	Mode			
current route: E. Ky. W. V. Toledo "	Toledo	R	.5	5.88	C-10,13,44,92
	Toledo	R	.5	5.67	C-5,108,115
	dock	H	1.0	1.21	dock operating
	Silver Bay/Taconite	W	1.0	3.48	W-7
				<u>16.24</u>	
				Total weighted cost	

alternative route 1:
 E. Ky.
 W. V.

Silver Bay/Taconite	R	.5	29.00	29.00	K. H.
"	R	.5	29.04	29.04	16.8x
				<u>28.02</u>	
				Total weighted cost	

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$13.76

Coal Rates

Lake Origin Lake Destination 1978 volume

Toledo/Sandusky Presque Isle/Marquette 546,616

Origin	<u>Component Costs</u>		Weight factor	Weighted cost	<u>SOURCE</u>
	<u>Destination</u>	<u>Mode</u>			
current route: E. Ky E. Ky Toledo/Sandusky	Toledo	R	.36	4.33	C-44
	Sandusky	R	.64	7.17	C-83
	Presque Isle/Marquette docks	W	1.00	2.70	W-8
		H	1.00	1.21	dock operator
	Total weighted cost			15.41	

alternative route 1:

E. Ky Presque Isle/Marquette R 26.00 1.00 26.00 16.24

Total weighted cost 26.00

alternative route 2:

Total weighted cost

TOTAL COSTS

Coal Rates

Lake Origin Lake Destination 1978 volume

Conneaut/Ashtabula Presque Isle/Marquette 196,804

Component Costs

<u>Origin</u>	<u>Destination</u>	<u>Mode</u>	<u>Cost</u>	<u>weight factor</u>	<u>weighted cost</u>	<u>SOURCE</u>
current route: Pennsylvania W.V. Ashtabula/Conneaut	Conneaut	R	9.02	.6	5.41	C-84
	Ashtabula	R	10.93	.4	4.37	C-75, 112
	Presque Isle/Marquette	W	3.15	1.0	3.15	W-3
	docks	H	1.21	1.0	1.21	dock operators
			Total weighted cost		14.14	

D-9

alternative route 1:

E. by Presque Isle/Marquette R 26.00 1.0 26.00 16.2

Total weighted cost
26.00

alternative route 2:

Total weighted cost

Difference between current route cost and lowest cost alternative = \$

Coal Rates

<u>Lake Origin</u>	<u>Lake Destination</u>	<u>1978 Volume</u>			
Superior, Wisc.	St. Clair Mi.	2,542,019 mt			
<u>Origin</u>	<u>Destination</u>	<u>Mode</u>	<u>Cost</u>	<u>wght factor</u>	<u>weighted cost</u>
Montana	Superior, Wi.	R	8.31	1.00	8.31
Superior	docks	H	1.20	1.00	1.20
	St. Clair	W	4.00	1.00	4.00
			Total weighted cost		<u>13.51</u>

C-82
Est.
SS. Co's.

Alternative Route 1:

Montana	St. Clair	R	31.00	1.00	31.00	C-95
			Total weighted cost		<u>31.00</u>	

Coal Rates

1978 Volume

Lake Destination

Hamilton (Int.)

Ashtabula/Conneaut

Component Costs

Weighted Cost

Factor

Cost

Mode

Destination

Origin

Source

Current route:

Ohio
West Virginia
Conneaut

6.88 C-128
7.19 C-129
1.21 dock operator
1.90 W-11
17.18

13.76 0.5
14.38 0.5
1.21 1.0
1.90 1.0

R Ashtab./Conneaut
R Ashtab./Conneaut
H dock
W Hamilton

Alt. route:

Ohio
West Va
Conneaut

6.88 C-128
7.19 C-129
1.21 C-130
22.33

13.76 0.5
14.38 0.5
8.26 1.0

R Ashtab./Conneaut
R Ashtab./Conneaut
R Hamilton

Coal Rail Rates

<u>Consignee/Destination*</u>	<u>Origin</u>	<u>Rate/Int</u>	<u>Volume</u>	<u>Source</u>	<u>Comments</u>
① Consumers' Power, Essexville, Mi.	Egypt Valley mine Belmont city, Oh.	9.57	98-115 cars	Chessie System	Rate cancelled Letter 2/26/81 02/27/80.
② "	"	17.29	single car	"	"
③ Consumers' Power, Toledo *	"	10.47	single car	"	"
④ Detroit Edison, Monroe, Mi.	Federal #2 mine, Marion city, W.V.	15.47	3.5M annual minimum	"	"
⑤ Detroit Edison, Monroe, Toledo *	"	12.29	"	"	"
⑥ "	"	12.03	6000 n.t. trainload	"	"
⑦ Consumers' Power, Essexville, Mi.	Umat mine, Pike city, Ky.	14.50	6000 n.t. trainload	"	"
⑧ Detroit Edison, Monroe, Mi.	Canada #2 mine, Pike city, Ky.	15.47	3.5M annual minimum	"	"
⑨ Detroit Edison, *	"	12.68	"	"	"
⑩ Monroe, Toledo *	"	12.42	6000 n.t. trainload	"	"

N.B. all rate include a 2.2% fuel surcharge unless otherwise noted.
* movements marked by asterisks are mine to port for transshipment to final destination.

Cool Rail Rates cont'd

<u>Consignee/Destination</u>	<u>Origin</u>	<u>Rate/n.t.</u>	<u>Volume</u>	<u>Source</u>	<u>Comments</u>
(11) Detroit Edison, Wyandotte, Mi.	Canada #2 mine, Pike city, Ky.	\$16.38	3.5 M annual minimum	Chessie System Letter 2/26/81	
(12) Detroit Edison, Wyandotte, Toledo *	"	\$12.15	3.5 M annual minimum	"	
(13) "	"	\$11.89	6000 n.t. trainload	"	
(14) Detroit Edison, Cromwell Creek, Detroit	Jenkins Res. plant, same as Letcher city, Ky				
(15) Detroit Edison, Marysville, Mi.	"	\$17.42	3.5 M annual minimum	"	
(16) Detroit Edison, Marysville, Toledo *	"	\$11.64	3.5 M annual minimum	"	
(17) "	"	\$11.38	6000 n.t. trainload	"	
(18) Holland Bd. of Public Works, Holland, Mi.	Hendrix mine, Perry city, Ky.	\$18.94	single car	"	no volume rate
(19) Holland Bd. of P. W., Holland, Toledo *	"	\$12.02	single car	"	"

Coal Rail Rates - cont'd

3

<u>Consignee/Destination</u>	<u>Origin</u>	<u>Rate/n.t.</u>	<u>Volume</u>	<u>Source</u>	<u>Comments</u>
(20) Wisconsin Elect. Power Co., Port Washington, Ashtabula*	Cadogan Prep. plant, Armstrong city, PA.	\$7.99	100K annual minimum	TEA-4214	
(21) Wisconsin Public Service Corp., Green Bay, Ashtabula*	Fox Tipple, Clarion city, PA.	\$7.99	100K annual minimum	TEA-4214	
(22) Niagara Mohawk Power Corp., Huntley plant.	Champion mine, Allegheny city, PA	11.64	7000 n.t. trainload	Conrail Letter 02/27/81	1m 2 origins
(23) "	"	12.53	"	"	3 or more origins
(24) "	"	13.91	4500 n.t. trainload	"	
(25) Niagara-Mohawk Power Corp. Huntley, Ashtabula*	"	11.33	single car	"	no volume rate
(26) Detroit Edison, St. Clair (Belle River)	Georgetown mine, Harrison city, Oh.	7.74	86 car minimum	CR-4765-A	consignee's cars.
(27) Detroit Edison, Harbor Beach, Mi.	"	16.84	7000 n.t. trainload	TEA 42004 4216 rule 1.	
(28) Detroit Edison, Monroe, Mi.	"	7.47	8600 n.t. trainload	CR-4767-A	\$1.49 less in consignee's cars
(29) to Neenah, Wi., closest point to Wisc. Public Serv. Corp, Green Bay	Fox Tipple, Clarion city, PA	26.64		CR-4749-B	would not be applicable to this utility.

Coal Rail Rates cont'd

4

Consignee/Destination	Origin	Rate/n.t.	Volume	Source	Comments
(30) Lake Superior District Power Co., Ashland, Wi.	Montana	21.22		L.S.D.P. Co.	
(31) Consumers Power Co., Essererville, Ashtabula*	Sunnyhill mine, Perry cty., Oh.	6.34	9,750 n.t. trainload	TEA-4222, item 340-B	
(32) Wisc. Electric Power Co., Milwaukee, Chicago*	Delta mine, Williamson cty., IL.	10.44	7000 - 12000 n.t.	WTL-4230	railroad-owned equipment
(33) "	"	9.58	7000 - 12000 n.t.	WTL-4230	shipper or consignee owned equipment
(34) Nor. Mi. Electric Co-op, Advance, Chicago*	Sahara #5+6 mines, Saline cty., IL.	same	as above	"	
(35) Wisc. Electric Power Co., Port Washington, Toledo*	Broken Aro mine, Coshocton cty., Ohio	8.02	100,000 n.t. annual min.	TEA-4214	
(36) Rate to Milwaukee where Wisc. Electric Power Co. is.	Delta mine, Williamson cty., IL.	18.93	single car	CR-4726-A	not applicable to this utility
(37) Rate to Potosky, closest pt. to Nor. Mi. Electric Co-op	Sahara #5+6 mines, Saline cty., IL.	24.23	single car	CR-4726-A	not applicable to this utility
(38) Rate to Milwaukee where Wisc. Electric Power Co. is	Broken Aro mine, Coshocton cty., Ohio	19.94	single car	Conrail Letter 2/27/81	not applicable to this utility

Coal Rail Rates cont'd

<u>Consignee/Destination</u>	<u>orig'n</u>	<u>rate/h.t.</u>	<u>volume</u>	<u>source</u>	<u>comments</u>
(39) Detroit Edison, Detroit area plants	Pelee mine, Martin city, Ky	16.38		Norfolk + Western	
(40) Det. Ed., St. Clair + Marysville	"	17.42		"	
(41) Det. Ed., Harbor Beach	"	19.45		"	
(42) Det. Ed., Monroe	"	15.47		"	
(43) Upper Peninsula Generating Co., Marquette	"	40.39		"	not a realistic rate for volume
(44) Upper Pen. Gen. Co., * Marquette, Toledo *	"	12.02		"	
(45) Detroit Edison, Marysville, St. Clair, Harbor Beach, Toledo *	"	11.98		"	
(46) Det. Ed., Trenton, Detroit, Toledo *	"	12.47		"	
(47) Det. Ed., Monroe, Toledo *	"	12.97		"	

Coal Rail Rates

cont'd

6

<u>Consignee/Destination</u>	<u>origin</u>	<u>rate/ht.</u>	<u>volume</u>	<u>source</u>	<u>comments</u>
(48) Detroit Edison, Monroe, Toledo*	Martini mine, Martin city, Ky	12.42		Norfolk + Western	
(49) Det. Ed., all plants except Monroe, Toledo*	"	10.95		"	
(50) Det. Ed., Harbor Beach	Ramsay mine, Wise city, Va.	20.29		"	
(51) Det. Ed., Monroe	"	16.25		"	
(52) Det. Ed., Detroit, Tranton, Wyandotte	"	17.24		"	
(53) Det. Ed., St. Clair, Harbor Beach	"	18.23		"	
(54) Det. Ed., St. Clair, Harbor Beach, Toledo*	"	11.98		"	
(55) Det. Ed., Monroe, Toledo*	"	11.75		"	
(56) Det. Ed., Tranton, Toledo*	"	11.52		"	
(57) Upper Pen. Gen. Co., Marquette, Toledo*	"	12.62		"	

Coal Rail Rates cont'd 7

Consignee/Destination	origin	rate/n.t.	volume	source	comments
(58) Consumers' Power, Muskegon, Mi.	Colonial mine, Hopkins city, Ky	\$22.09		Louisville + Nashville	
(59) Consumers' Power, Muskegon, Chicago*	"	12.97	1000 n.t.	"	
(60) "	"	11.22	7000 n.t.	"	
(61) "	"	10.89	10,000 n.t.	"	
(62) Wisconsin Elect. Pow. Co., Oak Creek, Wis.	"	14.12	10,000 n.t. trainload	"	
(63) Wisc. Elect. Pow. Co., Oak Creek, Chicago*	rates the same as for Consumers' Power, above.				
(64) Wisc. Public Service Corp., Green Bay, Wis.	Dotiki mine, Webster city, Ky	25.80	any volume	L+N	
(65) Consumers Power Co., Muskegon, Mi.	Burning Star mines, Perry city, IL.	19.84	7,000 lb. min.	Missouri Pacific	
(66) Consumers' Power Co., Muskegon, Chicago*	"	13.05	2500 n.t. minimum	"	
(67) Upper Pen. Gen. Co., Marquette, Mi.	Pewee mine, Martin city, Ky.	41.02		Norfolk + Western	

Coal Rail Rates

cont'd

8

<u>Consignee/Destination</u>	<u>origin</u>	<u>rate/mt.</u>	<u>volume</u>	<u>source</u>	<u>comments</u>
(68) Detroit Edison, Monroe, Mi.	Shannon mine, Clarion co., Pa.	\$ 10.57	8600 n.t. trainload	TEA416, item 260	
(69) Detroit Edison, Monroe, Toledo *	"	9.96	6000 n.t. trainload	CR4769A, item 630	
(70) Detroit Edison, Harbor Beach, Mi.	"	18.18	6000 n.t. trainload	CR47498	
(71) Detroit Edison, Detroit, Mi.	"	10.57		CR4710, item 225	
(72) Detroit Edison, Monroe	Blacksville mine, Monongahia co., W.V.	7.80		Det. Ed.	using utility- owned cars
(73) Detroit Edison, via Toledo *	S.E. Kentucky	11.30	unit train	"	
(74) Detroit Edison, via Sandusky *	Martini mine, Martin co., Ky.	10.71	10000 n.t. trainload	"	
(75) Detroit Edison, via Ashtabula *	Fairmont, W.V.	11.06	6000 n.t. trainload	"	
(76) Detroit Edison, River Rouge	Kentucky and West Virginia	10.21		"	

Coal Rail Rates cont'd

<u>Consignee/Destination</u>	<u>origin</u>	<u>Rate/mt.</u>	<u>volume</u>	<u>source</u>	<u>comments</u>
(77) Wisconsin Pub. Serv. Co., Green Bay, Chicago*	Western Kentucky	10.51		Wi. Public Service Co.	
(78) Wisc. P.S.C., via Ashtabula or Conneaut*	Pennsylvania	7.50		"	
(79) Wisc. Electric Power Co., Milw. + Port Washington, Chicago*	Hopkins city, Ky.	10.96	unit train	Wisc. Electric Power Co.	
(80) Wisc. Electric Power Co., Oak Creek, Wi.	"	7.19	unit train	"	
(81) Upper Peninsula Generating Co., Presque Isle, Superior*	Decker mine, Big Horn city, MT	11.19	500,000 mt. annual min.	B.N. tariff 4178, supp. 16	
(82) Detroit Edison, St. Clair, Superior*	"	8.31	2 million ton annual min.	B.N. tariff 4169	shipper owned equipment
note: Rates (81) and (82) are based on contracts established several years ago. Newly negotiated rates would be closer to \$5.00.					
(83) Upper Peninsula Generating Co., Presque Isle, Sandusky*	Pewee mine, Martin city, Ky.	11.20		Upper Pen. Gen. Co.	
(84) Upper Pen Gen Co., Presque Isle, Conneaut*	average mine in Pennsylvania	9.02		"	

Coal Rail Rates		cont'd	10		
Consignee/Destination	origin	rate/ht.	volume	source	comments
(85) Nor. Mich. Electric Co-ops, Advance, Chicago*	Sagers mines, Saline city, ILL.	\$9.30		Nor. Mi. Elec. Co-op.	
(86) Nor. Mi. Electric Coop, Advance, Sandusky*	Powles mine, Madelin city, Ky	11.20		"	
(87) Consumers' Power Co., plants via Sandusky*	Eastern Ky.	9.66		Consumers Power	
(88) Consumers' Power Co.,* plants via Chicago	Western Ky	10.03		"	
(89) Consumers' Power Co., Essexville, Mi.	Eastern Ky	\$13.51		"	
(90) Commonwealth Edison, Stateline, Hammond, In.	Decker mine, Big Horn city, MT.	\$18.10		Commonwealth Edison	
(91) Commonwealth Edison, Waukegan, IL.	"	\$18.00		"	
(92) Holland Based of Public Works, Holland, Toledo*	Pike country, Ky	\$10.71			

Coal Rail Rates cont'd

11

	Consignee/Destination	Origin	Rate/n.t.	Volume	Source	Comments
(93)	Chicago	Kuehn mine, MT?	26.62		Burlington Northern	
(94)	Chicago	Decker mine, Big Horn city, MT	25.73		"	
(95)	Detroit	"	31.00 est.		"	
(96)	Marquette	"	24.00 est		"	
(97)	Superior	"	21.50		"	
(98)	Commonwealth Edison, Chicago area plants, Havana, IL*	"	16.06	4.5 Mnt. annual min.	"	
(99)	Niagra-Mohawk Power Co, Huntley plant, Tonawanda	Van Tassel, Clearfield city, Pa	11.07	7000 n.t. trainload	Conrail TEA4210	
(100)	"	"	13.43	4500 n.t. trainload	"	
(101)	Niagra-Mohawk Power Co, Huntley, Ashland*	"	12.74	single car	CR4709-A	
(102)	Milwaukee, Wi.	"	21.73	single car		
(103)	Wisconsin Electric Power Co, Valley plant, Milwaukee, Ashland*	"	9.65	170,000 n.t. annual min.	Conrail TEA-4214	

Coal Rail Rates cont'd

12

	Consignee/Destination	Origin	Rate/n.t.	Volume	Source	Comments
(104)	Detroit Edison, Harbor Beach, Ashtabula*	Georgetown mine, Harrison city, Oh.	10.17	6000 n.t., trainload	Conrail	
(105)	Consumers' Power, Essexville, Mi.	"	10.35	98-115 cars	CR 4733A	Shippers/consignee owned cars
(106)	"	"	13.21	"	"	Railroad cars
(107)	Detroit Edison, Monroe	Blacksville #2 mine, Monongalia city, W.V.	15.47	3.5 min annual min.	CR 4749B TEA 4216	
(108)	Detroit Edison, Monroe, Toledo*	"	11.46	6000 n.t., trainload	CR 4709A TEA 4216	
(109)	Detroit Edison, Monroe, Ashtabula*	"	11.30	"	"	
(110)	Port Huron, Mi.	"	17.80	single car	CR 4749B	
(111)	Detroit Edison, St. Clair, Toledo*	"	10.95	6000 n.t., trainload	CR 4709A TEA 4216	
(112)	Det. Ed. St. Clair, Ashtabula*	"	10.80	"	"	
(113)	Detroit Edison, Harbor Beach	"	19.45	single car	"	

Coal Rail Rates cont'd

13

	<u>Consignee/Destination</u>	<u>Origin</u>	<u>Rate/n.t.</u>	<u>Volume</u>	<u>Source</u>	<u>Comments</u>
(114)	Consumers Power, Essexville, Mi.	Blacksville #1 mine, Monongalia Co., W.V.	18.91	single car	CR4749B	
(115)	Consumers' Power, Muskegon, Essexville, Toledo *	"	10.28	6000 n.t. trainload 1.7M annual	TEA 4204	
(116)	Consumers' Power, Essexville, Mi.	Sunnyhill mine, Perry Co., Oh.	9.22	60 car minimum	CR4713B item 225	consignee's cars
(117)	"	"	7.86	"	"	Railroad's cars
(118)	Detroit Edison, St. Clair, Belle River	"	15.47	single car	Conrail	
(119)	"	"	14.74	7000 n.t. trainload	Conrail	
(120)	Det. Ed., St. Clair, Toledo *	"	11.02	6000 n.t.	"	
(121)	Detroit Edison, Harbor Beach	"	16.77	7000 n.t. trainload	TEA 4200, 4216	
(122)	Det. Ed., Harbor Beach, Toledo *	"	11.02	6000 n.t. trainload	"	
(123)	Det. Ed., Harbor Beach, Ashtabula *	"	11.11	"	"	

Coal Rail Rates

	<u>Consignee/Destination*</u>	<u>Origin</u>	<u>Rate/ht.</u>	<u>Volume</u>	<u>Source</u>	<u>Comments</u>
(124)	Head of Lakes	Soot, Ky.	31.68		SFA 4152 ITEM 1450	pr. Climax
(125)	"	Andover, Va.	27.39		SFA 4152 ITEM 26450	"
(126)	"	Page, W. Va.	45.59		NW 4002 ITEM 5135 + WTL 4231 ITEM 6162	"
(127)	"	Bessemer, Pa.	41.06		CR 4749 ITEM 4650 + WTL 4231 ITEM 6162	"
(128)	Taconite, via Conneaut*	Powhattan #5 mine, Powhattan, Ohio	13.77	single car	TEA 4200	
(129)	"	Blacksville #2 mine, Mmongalia cty, W.V.	14.38	"	CR 4749B, ITEM 710	
(130)	Hamilton, Ont	Conneaut	8.26	-		using rate for Altona Pa to Conneaut which is similar distance and same commodity - price on C-84 (\$9.02) and C-78 (\$7.50)

BITUMINOUS COAL (RAIL)

REF	FROM:	TO:	M/W	Class 100	P.T. OF		ITEM
					Class 100	TARIFF	
16.1	Hatfield, KY. (Eastern, KY.)	Duluth, MN.	90% Cpy = 26.83 N.T.	1737	7.7%	NW 4003	1310
16.2		Marquette, MI.	90% Cpy = 25.14 N.T.	1633	-	7.7% of Class 100	
16.3		Two Harbors, MN.	90% Cpy = 27.16 N.T.	1763	-	7.7% of Class 100	
16.4		Taconite, MN.	90% Cpy = 28.04 N.T.	1821	-	7.7% of Class 100	
FROM: Page, W.V.							
16.5		Duluth, MN.	90% Cpy = 26.83 N.T.	1763	7.6%	NW 4003	1310
16.6		Marquette, MI.	90% Cpy = 25.24 N.T.	1661	-	7.6% of Class 100	
16.7		Two Harbors, MN.	90% Cpy = 27.16 N.T.	1787	-	7.6% of Class 100	
16.8		Taconite, MN.	90% Cpy = 28.08 N.T.	1847	-	7.6% of Class 100	
FROM: Andover, VA.							
16.9		Duluth, MN.	90% Cpy = 25.55 N.T.	1823	7%	SFA 1452	26450
16.10		Marquette, MI.	90% Cpy = 24.36 N.T.	1740	-	7% of Class 100	
16.11		Two Harbors, MN.	90% Cpy = 25.92 N.T.	1851	-	7% of Class 100	
16.12		Taconite, MN.	90% Cpy = 26.58 N.T.	1899	-	7% of Class 100	

PCT. OF

M/W	CLASS 100	CLASS 100	TARIFF	ITEM
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FROM: Orient Mine, IL. (Southern, IL.)

TO:

16.13	Rochester, MN.	81000 Tons Annual Volume = 16.31 N.T.	1382	5.9%	WTL 4233	560
16.14	Duluth, MN.	"	1505	-	*5.9% Of Class 100	
16.15	Marquette, MI.	"	1448	-	*5.9% Of Class 100	
16.16	Two Harbors, MN.	"	1554	-	*5.9% Of Class 100	
16.17	Taconite, MN.	"	1107	-	*5.9% Of Class 100	

* - SCALED ON ORIENT MINE TO ROCHESTER RATE

FROM: Madisonville, KY. (Western, KY.)

TO:

16.18	Duluth, MN.	81000 Net) Tons Annual Volume) = 16.31 N.T.	1382	5.9%	WTL 4233	560
16.18A	Rochester, MN.	"	1587	-	*5.9% Of Class 100	

REF	FROM: TO:	M/W	PERCENT OF		TARIFF & ITEM
			CLASS 100	CLASS 100	
16.19	Madisonville, KY. (Western, KY.) Marquette, MI.	" = 17.26 N.T.	1462	-	*5.9% Of Class 100
16.20	Two Harbors, MN.	" = 19.02 N.T.	1112	-	*5.9% Of Class 100
16.21	Taconite, MN.	" = 19.68 N.T.	1667	-	*5.9% Of Class 100

* - SCALED ON MADISONVILLE TO ROCHESTER RATE

D-28

16.22	FROM: Pittsburgh, PA. TO: Duluth, MN.	90% Cpy. = 27.83 N.T.	1718	7.8%	BO 4700 1586
16.23	Marquette, MI.	90% Cpy. = 27.50 N.T.	1763	-	7.8% Of Class 100
16.24	Two Harbors, MN.	90% Cpy. = 27.10 N.T.	1737	-	7.8% Of Class 100
16.25	Taconite, MN.	90% Cpy. = 27.88 N.T.	1787	-	7.8% Of Class 100

Letter Prices for Feed

<u>no.</u>	<u>county</u>	<u>destination</u>	<u>volume (bount)</u>	<u>rate - \$/b.t.</u>
1-1	Lebanon	Tecumseh	10-18	\$ 4.77
1-2		Ashland	10-18	\$ 4.55
1-3		Presque Isle/Marquette	18	3.15
1-4	Superior	St. Ignace	65	4.00
1-5	Toledo	Ashland	10-18	4.27
1-6		Duluth	10-18	3.48
1-7		Silver Bay/Tecumseh	10-18	3.48
1-8		Presque Isle/Marquette	18	2.70
1-9	Calumet	Tecumseh	18	3.75
1-10	Ashland	Duluth	18	3.50
1-11	Duluth	Humboldt	—	1.00

These prices are for feed delivered to the destination named above.
 These prices are for feed only.

APPENDIX E
OTHER BULK RATES

Bulk Commodity Rates

origin	destination	commodity	1978 volume	rates	source
--------	-------------	-----------	-------------	-------	--------

Detroit	No. Spain	Scrap iron- steel	503,817 mt.		
---------	-----------	----------------------	-------------	--	--

Japan
Thailand
Turkey

	No. Spain	weight x rate	=	\$	
	.29	39.46	=	11.44	BC-29
	.31	54.43	=	16.87	"
	.32	58.97	=	18.87	"
	.08	48.08	=	3.85	"
				<u>\$ 51.03</u>	

E-1

Alternatives:

Rail, Detroit to Baltimore
transfer to vessel

ocean freight: N Spain .29 x 30.50 = 8.85

Japan .31 x 37.50 = 11.63

Thailand .32 x 43.25 = 13.84

Turkey .08 x 34.00 = 2.72

\$ 37.04

\$ 57.80

\$ 13.48	BC-34
7.28	BC-12
	BC-30
	"
	"
	"

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>Rates</u>	<u>Source</u>
---------------	--------------------	------------------	--------------------	--------------	---------------

W. Germany	Calumet Indiana Harbor Burns Wtwy. Harbor	COKE	660,113		BC-1
			237,251		
			<u>106,262</u>		
			<u>1,003,636</u>		

Direct rate, W. Germany to Chicago \$35.00

Alternative:

1. Ocean rate, W. Germany to NOLA
 barge rate, NOLA to Chicago
 transfer cost, ship to barge

BC-5	\$31.58
BC-7	6.25
BC-8	<u>3.18</u>
	\$41.01

2. Ocean rate, Japan to NOLA
 barge rate, NOLA to Chicago
 transfer cost, ship to barge

BC-6	\$37.26
BC-7	6.25
BC-8	<u>3.18</u>
	46.69

AD-A111 031

ARCTEC INC COLUMBIA MD

GREAT LAKES/ST. LAWRENCE SEAWAY REGIONAL TRANSPORTATION STUDY: --ETC(U)

DEC 81

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Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
Alpena	Duluth/Superior	cement & clinker	738,674	4.00	BC-13
Alternative:					
		vessel, Alpena to Escanaba		3.50	BC-14
		transfer to rail cars		1.50	BC-15
		rail, Escanaba to Duluth/Superior		20.01	BC-18
				<u>25.01</u>	
		vessel Alpena to Escanaba		3.50	BC-14
		transfer to rail cars		1.50	BC-15
		rail, Escanaba to Marquette		10.63	BC-17
		transfer to vessel		1.25	BC-16
		vessel, Marquette to Dul/Sup		<u>2.50</u>	BC-20
				<u>19.38</u>	

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
W. Germany	Toledo	coke	500,728		
		all "other" dry bulk	538,539		

Direct rate, W. Germany to Toledo \$30.25 BC-3

Alternative:

Ocean rate, W. Germany to Baltimore transfer to rail cars rail rate, Baltimore to Toledo	\$ 20.67	BC-10
	3.23	BC-11
	12.50	BC-33
	<u>\$ 36.40</u>	

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
W. Germany	Detroit	coke	233,609		BC-4
		all "other dry bulk"	240,623		

Direct rate, W. Germany to Detroit \$30.50

Alternative:

Ocean rate, W. Germany to Baltimore \$20.67
 transfer to rail cars 3.23
 Rail rate, Baltimore to Detroit 13.48
\$37.38

BC-10
 BC-11
 BC-34

<u>origin</u>	<u>destination</u>	Bulk Commodity Rates			<u>source</u>
		<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	
W. Germany	Buffalo	coke	227,694		
		all "other dry bulk"	232,238		

Direct rate, W. Germany to Buffalo \$29.50 BC-2

Alternative:

Ocean rate, W. Germany to New York	20.67	BC-9
transfer to rail cars	3.23	BC-11
Rail rate, New York to Buffalo	10.90	BC-32
	<u>34.80</u>	

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
Venezuela	Oswego, NY	OIL	1,013,422		

Niagara Mohawk Power Co. states that the savings in transportation cost via the Seaway was \$.60/bbl. in March 1981. The alternative route is by vessel to Albany, then unit train to Oswego. This saving equates to \$3.47 per short ton.

6c route
alt route

~~\$32.22/NT~~ Bc-37
\$35.69 (see above)

ORIGIN	Destination	Commodity	1978 Volume	Rate	Source
Gulf States	Oswego, NY	Heating oil		\$52.22/NT	OC - 37

Alternative:

Niagra Mohawk Power Co. states that cost savings via the Seaway was ~~\$~~3.47/NT-m March 1981. The alternative was to ship by vessel to Albany, then unit-train to Oswego. Thus this alternative Rate is \$35.69/NT

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
Calcite	Ashland	Limestone	24,374	\$4.71	BC-21
Alternative:					
		vessel, Calcite to Escanaba		3.50	BC-22
		transfer to rail cars		1.50	BC-15
		rail, Escanaba to Ashland		17.00	BC-19
				<u>22.00</u>	
		vessel, Calcite to Escanaba		3.50	BC-22
		transfer to rail cars		1.50	BC-15
		rail, Escanaba to Marquette		10.63	BC-17
		transfer to vessel		1.25	BC-16
		vessel, Marquette to Ashland		<u>2.50</u>	BC-23
				19.38	

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
Calcite	Duluth/Superior	Limestone	858,936	\$4.71	BC-21

Alternative:

vessel, Calcite to Escanaba	3.50	BC-22
transfer to rail cars	1.50	BC-15
Rail, Escanaba to Duluth/Superior	20.01	BC-18
	<u>25.01</u>	

vessel, Calcite to Escanaba	3.50	BC-22
transfer to rail cars	1.50	BC-15
Rail, Escanaba to Marquette	10.63	BC-17
transfer to vessel	1.25	BC-16
vessel, Marquette to Dul/Superior	2.50	BC-20
	<u>19.38</u>	

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>Rates</u>	<u>Source</u>
Iduluth / Superior	Foreign destinations	oats	136,159	\$ 54.72	same as wheat
		Alternative		57.82	"

Bulk Commodity Rates

<u>origin</u>	<u>destination</u>	<u>commodity</u>	<u>1978 volume</u>	<u>rates</u>	<u>source</u>
Indiana Harbor	Duluth/Superior	oil	95,532	7.60	BC-36
Alternative: direct rail, Whiting, In. to Superior					
				28.00	BC-35

Bulk Commodity Rates

#	Commodity	Freight or Other Service Costed	Cost/mt.	Source
BC-1	coke	Direct vessel rate, W. Germany to Chicago	\$35.00	Central Shipping Co., Chicago
BC-2	"	" " Buffalo	\$29.50	"
BC-3	"	" " Toledo	\$30.25	"
BC-4	"	" " Detroit	\$30.50	"
BC-5	"	" " New Orleans	\$31.58	average trip charter rates from Chartering Annual 1980, plus 10% fee inflation
BC-6	"	Direct vessel rate, Japan to New Orleans	\$37.26	"
BC-7	"	Barge rate, New Orleans to Calumet	\$6.25	Ohio River Co., Cincinnati
BC-8	"	Transfer cost, ship to barge	\$3.18	Ryan Walsh Stevedoring Co., Inc., New Orleans
BC-9	"	Ocean rate, W. Germany to New York	\$20.67	average trip charter rates from Chartering Annual 1980, plus 10% fee inflation
BC-10	"	" " W. Germany to Baltimore	\$20.67	"
BC-11	"	Transfer cost, ship to rail cars	\$3.23	International Terminal Operating Co., Baltimore
BC-12	steel scrap	Transfer cost, rail cars to ship	\$7.28	"

Bulk Commodity Rates

#	Commodity	Freight or Other Service Costed	Cost/mt.	Source
BC-13	cement clinker	Lake vessel, Alpena to Duluth/Superior	\$4.00	a Great Lakes vessel operator
BC-14	"	" Alpena to Escanaba	\$3.50	"
BC-15	"	Transfer cost, vessel to rail cars	\$1.50	BAH estimate based on ore transfer cost at L. Erie
BC-16	"	Transfer cost, rail cars to vessel	\$1.25	BAH estimate based on coal dumping costs at L. Erie
BC-17	limestone	rail rate, Escanaba to Marquette	\$10.63	Climax Iron & Steel Corp WTC 2000, Item 4630, 90% CAPACITY
BC-18	"	rail rate, Escanaba to Duluth/Superior	\$20.01	Climax Traffic Corp., WTC 2000, Item 4630, 90% Capacity
BC-19	"	rail rate, Escanaba to Ashland	\$17.00	BAH estimate based on rate to Duluth/Superior
BC-20	cement clinker	Laker rate, Marquette to Duluth/Superior	\$2.50	BAH estimate based on discussions with shipping co.
BC-21	limestone	Laker rate, Calcite to Duluth/Superior	\$4.71	a Great Lakes vessel operator
BC-22	limestone	Laker rate, Calcite to Escanaba	\$3.50	"
BC-23	"	Laker rate, Marquette to Ashland	\$2.50	BAH estimate based on rate to Duluth/Superior
BC-24	coke	rail rate, New York to Buffalo	\$39.10	Climax Traffic Corp. TET 1000, Class 17 1/2, 60,000 lb.

Bulk Commodity Rates

#	Commodity	Freight or other Service Costed	Cost / mt.	Source
BC-25	coke	rail rate, Baltimore to Toledo	\$ 28.37	Clinax Traffic Corp. TET 1009, Cbm 17 1/2, 60,000 lb.
BC-26	"	" Baltimore to Detroit	\$ 29.36	Clinax Traffic Corp.
BC-27	oil	rail rate, Whiting, In. to Duluth/Superior	\$ 11.80	Amoco Oil Co.
BC-29	scrap steel	Direct vessel rate, Detroit to N. Spain Japan Thailand Turkey	\$ 39.46 54.43 58.97 48.08	Kramer & Sons, scrap exporter in Detroit
BC-30	"	Ocean rate, Baltimore to N. Spain Japan Thailand Turkey	\$ 30.50 37.50 43.25 34.00	B&H estimates based on trip charters for scrap in Chartering Annual 1980
BC-31	"	rail rate, Detroit to Baltimore	\$ 29.36	Clinax Traffic Corp.

#	Commod.	Freight or other service	cost/mt.	source	Comment
BC-32	iron ore	rail, Phil to Buffalo	\$ 10.90	Shillings	Similar movement & dist.
BC-33	iron ore	rail, Balt to Cleve (\$11.52) Balt to Det. (13.48) avg. = \$12.50	\$ 12.50	Shillings	" "
BC-34	iron ore	rail, Balt to Detroit	\$ 13.48	"	" "
BC-35	residual oil	rail, Whiting Ind to Superior	28.00	WTZ 2000 ITEM 480	(Chinaux)
BC-36	limestone	water, Celite - Chi = 8.5¢/ton-mi Pt. St. Louis - Chi = 1.06¢/ton-mi avg. is 9.4¢/ton-mi. and Chi - Duluth is 808 miles	7.60	SS Co.	Based on distance
BC-37	oil	Montreal to Oswego, N.Y.	\$2.22/NT		Halco Quote

APPENDIX F
GRAIN RATES

COMMODITY: WHEAT

ORIGIN: DULUTH-SUP

DESTINATION: OVERSEAS

GREAT LAKES ROUTE
INLAND

ORIGIN	DEST	CAD WT	% MODE	TRUCK RATE \$/cwt	RAIL % MODE	RAIL RATE \$/cwt	SOURCE
FARGO, ND	DULUTH	18.7	2.2	90	78	81	D-1
GRAND FORKS, ND		22.0		90		89	D-3
BISMARCK, ND		22.0		160		142	D-4
MINOT, ND		8.0		170		165	D-5
ABERDEEN, SD		7.0		143		111	D-6
GLEN DINE, MONT		14.5		233		194	D-10
BAKER, MONT		7.8		394		182	D-11

\$/cwt 143.6 → \$/NT 28.72 INLAND

WATER ROUTE: DULUTH-OVERSEAS

RATE	SOURCE
139 4/cwt	0-7
130 4/cwt	0-41

GL TOTAL 54.72 \$/NT

LINE HAUL

ALTERNATE ROUTE
INLAND

ORIGIN	DEST	CAD WT	% MODE	TRUCK RATE \$/cwt	RAIL % MODE	RAIL RATE \$/cwt	SOURCE
FARGO, ND	PACIFIC NW PORTS	18.7					
GRAND FORKS, ND		22.0					
BISMARCK, ND		22.0					
MINOT, ND		8.0					
ABERDEEN, SD		7.0					
GLEN DINE, MONT		14.5					
BAKER, MONT		7.8					

\$/cwt 143.6 → \$/NT 28.72 INLAND

\$/NT 26.00 WATER

GL TOTAL 54.72 \$/NT

LINE HAUL

WATER ROUTE:

RATE	SOURCE
15.00 \$/NT	0-11

ALT TOTAL 57.82 \$/NT

\$/cwt 214.1 \$/NT 42.82

COMMODITY: BARLEY + RYE ORIGIN: DULUTH - SUP DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
		% MODE	RATE \$/cwt	% MODE RATE \$/cwt SOURCE
FARGO, ND	DULUTH - SUP	22	90	78 86 D-1
GRAND FORKS, ND	ALL EQUAL		90	93 D-3
BISMARCK, ND			160	150 D-4
MINOT, ND			170	175 D-5
COOKSTON, MINN			75.2	86 D-7
BEMIDJI, MINN			53.7	0

\$/cwt 107.1 ⇒ \$/NT 21.42 INLAND

WATER ROUTE: DULUTH - OVERSEAS

RATE	SOURCE
138 \$/cwt	0-8
129 \$/cwt	0-4 m

GL TOTAL 47.22 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
		% MODE	RATE \$/cwt	% MODE RATE \$/cwt SOURCE
FARGO, ND	MINNEAPOLIS	22	84.5	78 86 D-1
GRAND FORKS, ND	ALL EQUAL		112.4	93 D-3
BISMARCK, ND			153.6	150 D-4
MINOT, ND			172.1	175 D-5
COOKSTON, MINN			75.2	86 D-7
BEMIDJI, MINN			75.9	0

— GATHERING —

— LINE HAUL —

RAIL	RAIL	BARGE
% MODE	RATE \$/cwt	% MODE RATE \$/cwt
100	89	100 89 D-13

\$/cwt 200.5 \$/NT 40.10

WATER ROUTE: NOLA

RATE	SOURCE
13.60 \$/NT	0-6

ALT TOTAL 53.70 \$/NT

COMMODITY: SWEET PEA SEEDS ORIGIN: DULUTH - SUP DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	TRUCK			RAIL		
		CAD	WT	% MODE	RATE \$/cwt	SOURCE	% MODE
VALLEY CITY, ND	DULUTH	ALL			107.4	S	89
MINOT, ND	↓	EQUAL			170	S	89
WAMPETON, ND	↓				84.5	S	89

\$/cwt 132.3 → \$/NT 26.46 INLAND

WATER ROUTE: DULUTH - OVERSEAS

RATE	SOURCE
138 \$/cwt	0-6.78 (avg)
131 \$/cwt	0-9.4, m (avg)

\$/NT 26.20 WATER
GL TOTAL 52.66 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	TRUCK			RAIL		
		CAD	WT	% MODE	RATE \$/cwt	SOURCE	% MODE
VALLEY CITY, ND	MINNEAPOLIS	ALL			105.3	S	89
MINOT, ND	↓	EQUAL			172.9	S	89
WAMPETON, ND	↓				73.7	S	89

— LINE HAUL —

RAIL			BARGE		
% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
100	89	D-13	100	89	D-13

\$/cwt 208.9
\$/NT 41.78

WATER ROUTE: NOLA

RATE	SOURCE
13.60 \$/NT	0-6

ALT TOTAL 55.38 \$/NT

INLAND

ORIGIN: DULUTH-SUP

DESTINATION: BUFFALO

GREEN LAKES ROUTE			TRUCK		RAIL				
AND	ORIGIN	DEST	CRD	% MODE	RATE ¢/CWT	SOURCE	% MODE	RATE ¢/CWT	SOURCE
	FARGO, ND	DULUTH	18.7	32	90	5	78	81	D-1
	GRAND FORKS, ND		22.0		90	5		89	D-3
	BISMARCK, ND		22.0		160	5		142	D-4
	MINOT, ND		8.0		170	5		165	D-5
	ABERDEEN, SD		7.0		143	5		111	D-6
	GLEN DINE, MONT		14.5		233	5		199	D-10
	BAKER, MONT		7.8		394	5		322	D-11

$\frac{\$}{\text{cwt}} \Rightarrow \frac{\$}{\text{NT}}$
 $\frac{143.6}{28.72} \Rightarrow \text{INLAND}$

ROUTE : DULUTH - BUFFALO

	<u>RATE</u>	<u>SOURCE</u>
F-4	4/cwt	0-41
SALTY-TRANSHIP-	45 4/cwt	

GL TOTAL	37.72	\$/NT
----------	-------	-------

ALTERNATE ROUTE

INLAND

[illegible]

SOURCE: AUTEXJATTUNE
IS BOB/CMT MAKE
COSTUM TITAN SHAPING
BOB WITHIN PER
TITANUS

WATER ROUTE:

RATE

Source

3/5

ALT TOTAL

47.72	\$/NT
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$\leftarrow$ $\frac{\$}{\text{cut}}$ 237.1 $\frac{\$}{\text{ct}}$ 47.42

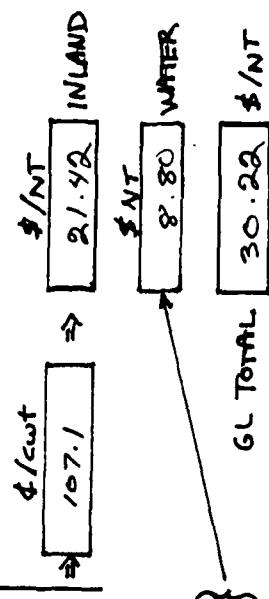
COMMODITY: BARLEY + RYE ORIGIN: DULUTH - SUP DESTINATION: BUFFALO

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK			RAIL		
			% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
FARGO, ND	DULUTH	ALL EQUAL	22	90	S	78	86	D-1
GRAND FORKS, ND				90	S		93	D-3
BISMARCK, ND				160	S		150	D-4
MINOT, ND				170	S		175	D-5
GEORGETOWN, MINN				75.2	S		86	D-7
BEMIDJIE, MINN			100	53.7	S	0	-	-

WATER ROUTE: DULUTH - BUFFALO

RATE	SOURCE
44 \$/cwt	0-4 mi



ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK			RAIL		
			% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
						100	201.1	

SOURCE: ALTERNATIVE IS 50 \$/cwt MORE COSTLY THAN SHIPPING BY WATER PER PILLSBURY

WATER ROUTE:

RATE	SOURCE
40.22 \$/NT	

ORIGIN	DEST	CAD WT	TRUCK			RAIL		
			% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
						100	201.1	

ALT TOTAL 40.22 \$/NT

COMMODITY: CORN ORIGIN: DULUTH - SUP DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	TRUCK				RAIL			
		CAD WT	% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE	
ABERDEEN, SD	DULUTH	3.1	12	143.0	S	88	134	D-6	
CROOKSTON, MINN	↓	1.8	↓	75.2	S	↓	86	D-7	
WILLMAR, MINN	↓	35.1	↓	62.7	S	↓	70	D-8	
FAIRMONT, MINN	↓	60.1	↓	75.2	S	↓	68	D-9	

\$/cwt 70.9 ⇒ \$/NT 14.18 INLAND

WATER ROUTE: DULUTH - OVERSEAS

	RATE	SOURCE
138 \$/cwt	133	0-6
TRANSHIP-	133	0-4d

\$/NT 26.60 WATER
GL TOTAL 40.78 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	TRUCK				RAIL			
		CAD WT	% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE	
ABERDEEN, SD	MINNEAPOLIS	3.1	12	100.2	S	88	134	D-6	
CROOKSTON, MINN	↓	1.8	12	75.2	S	88	86	D-7	
WILLMAR, MINN	↓	35.1	100	36.5	S	0	-	-	
FAIRMONT, MINN	↓	60.1	100	37.9	S	0	-	-	

LINE HAUL

RAIL	% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
	100	89	D-13			

\$/cwt 130.1
\$/NT 26.02

WATER ROUTE: NOLA

RATE	SOURCE
13.60 \$/NT	0-6

ALT TOTAL 39.62 \$/NT

COMMODITY: CORN ORIGIN: CHICAGO DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	% MODE	TRUCK RATE \$/cwt	RAIL % MODE	RAIL RATE \$/cwt	SOURCE
CHAMPAIGN, IL	CHICAGO	15	79	49.8	8	30.9	C-1
DECATUR, IL		16	79	54.0	8	30.9	C-4
DEKALB, IL		12	100	87.5	0	-	C-14
GILMAN, IL		12	79	32	8	30.9	C-7
GIBSON CITY, IL		15		26.5			C-6
HEBARDT, IL		16		46.2			C-8
PONTIAC, IL		12		32			C-10
LANSING, IL		18		32			C-11
GALESBURG, IL		8.6		57.6			C-12
EFFINGHAM, IL		15		62.4			C-13
DIXON, IL		18		42			C-15

WATER ROUTE: CHICAGO - OVERSEAS

ORIGIN	DEST	CAD WT	% MODE	TRUCK RATE \$/cwt	RAIL % MODE	RAIL RATE \$/cwt	SOURCE
CHAMPAIGN, IL	CHICAGO	15	79	49.8	8	30.9	C-1
DECATUR, IL		16	79	54.0	8	30.9	C-4
DEKALB, IL		12	100	87.5	0	-	C-14
GILMAN, IL		12	79	32	8	30.9	C-7
GIBSON CITY, IL		15		26.5			C-6
HEBARDT, IL		16		46.2			C-8
PONTIAC, IL		12		32			C-10
LANSING, IL		18		32			C-11
GALESBURG, IL		8.6		57.6			C-12
EFFINGHAM, IL		15		62.4			C-13
DIXON, IL		18		42			C-15

\$/cwt 41.0 ⇒ \$/NT 8.20 INLAND

\$/NT 26.00 WATER

GL TOTAL 34.20 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	% MODE	TRUCK RATE \$/cwt	RAIL % MODE	RAIL RATE \$/cwt	SOURCE
CHAMPAIGN, IL	PEORIA, IL	15	100	36.5	15	76	C-16
DECATUR, IL	BERNARDSTOWN, IL	16		32			C-17
DEKALB, IL	LANSING, IL	12		36.5			C-27
GILMAN, IL	PEORIA, IL	12		32			C-20
GIBSON CITY, IL	PEORIA, IL	15		36.5			C-19
HEBARDT, IL	PEORIA, IL	16		27.5			C-21
PONTIAC, IL	LANSING, IL	12		87.5			C-23
LANSING, IL	LANSING, IL	18		15			C-24
GALESBURG, IL	BERNARDSTOWN, IL	8.6		87.5			C-25
EFFINGHAM, IL	BERNARDSTOWN, IL	13		36.5			C-26
DIXON, IL	BERNARDSTOWN, IL	18		32			C-28

WATER ROUTE: NOLA

RATE	SOURCE
13.60 \$/NT	0-6

ALT TOTAL 33.58 \$/NT

\$/cwt 99.9 \$/NT 19.98

DESTINATION: OVERSEAS

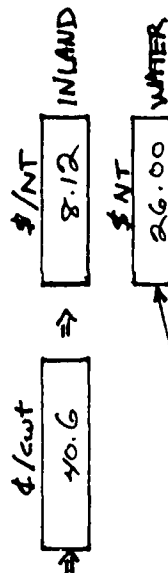
COMMODITY: SOYBEANS ORIGIN: CHICAGO

GREAT LAKES ROUTE

ORIGIN	DEST	TRUCK			RAIL		
		QTY	RATE	SOURCE	QTY	RATE	SOURCE
CAMPAGNO, IL	CHICAGO	15.2	43.8	C-1	21	30.9	C-19
DECATUR, IL		13.2	54.0	C-1	21	30.9	C-19
DEKALB, IL		9.4	27.5	C-19	0	-	-
GILMAN, IL		9.4	32	C-7	21	30.9	C-19
GIBSON CITY, IL		15.2	36.5	C-6			
HEYDOORTH, IL		13.2	46.2	C-8			
POUNCE, IL		9.4	32	C-10			
LASALLE, IL		6.9	57.6	C-11			
GALESBURG, IL		8.0	62.4	C-12			
EFFINGHAM, IL		17.2	92	C-13			
DIXON, IL		6.9	92	C-15			

WATER ROUTE: CHICAGO - OVERSEAS

RATE		SOURCE	
138¢/cwt	0-6		
130¢/cwt	0-5¢		



GL TOTAL 34.12 \$/NT

ALTERNATE ROUTE

INLAND

GATHERING

HAUL

ORIGIN	DEST	CAD	WT	TRUCK			RAIL			BARGE		
				QTY	RATE	SOURCE	QTY	RATE	SOURCE	QTY	RATE	SOURCE
CAMPAGNO, IL	PEORIA, IL	15.2		36.5		C-16	96	75	C-29			
DECATUR, IL	BONESTOWN, IL	13.2		32		C-17						
DEKALB, IL	LASALLE, IL	9.4		36.5		C-27						
GILMAN, IL	PEORIA, IL	9.4		32		C-20						
GIBSON CITY, IL	PEORIA, IL	15.2		36.5		C-19						
HEYDOORTH, IL	PEORIA, IL	13.2		27.5		C-21						
POUNCE, MICH	LASALLE, IL	9.4		27.5		C-23						
LASALLE, IL	LASALLE, IL	6.9		15		C-24						
GALESBURG, IL	BONESTOWN, IL	8.0		27.5		C-25						
EFFINGHAM, IL	BONESTOWN, IL	17.2		36.5		C-26						
DIXON, IL	DANFORTH, IL	6.9		32		C-28						

WATER ROUTE: NOLA

RATE		SOURCE	
13.60 \$/NT	0-6		

ALT TOTAL 34.76 \$/NT

4/cwt 105.8 \$/NT 21.16

COMMODITY: CORN ORIGIN: MILWAUKEE DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK		RAIL	
			% MODE	RATE \$/cwt	% MODE	RATE \$/cwt
MADISON, WI	MILWAUKEE	39	100	38	T	
JANESVILLE, WI		19		38	T	
WAUWATAMA, WI		19		42	T	
FOND DU LAC, WI		27		38	T	
WAUSAU, WI		6		61.2	T	
DES MOINES, IA		3		110	T	

\$/cwt 37.5 ⇒ \$/NT 7.50 INLAND

WATER ROUTE: MILWAUKEE - OVERSEAS

RATE	SOURCE
138 \$/cwt	O-G
128 \$/cwt	O-1A

\$/NT 25.60 WATER

GL TOTAL 33.10 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK		RAIL	
			% MODE	RATE \$/cwt	% MODE	RATE \$/cwt
JANESVILLE, WI	CHICAGO	14	100	58.4	T	
MADISON, WI	PATRICK DUMFRIES	39		58.4	T	
WAUWATAMA, WI	LACROSSE	14		59.6	T	
WAUSAU, WI	MIND/ST PAUL	6		61.2	T	
FOND DU LAC, WI	CHICAGO	24		50.4	T	
DES MOINES, IA	DANVERS	3		56.4	T	

LINE HAUL

RAIL	% MODE	RATE \$/cwt	SOURCE	BARGE	
				% MODE	RATE \$/cwt
				100	75
					89
					89
					89
					75
					75

\$/cwt 126.6 \$/NT 25.32

WATER ROUTE: NOLA

RATE	SOURCE
13.60 \$/NT	O-G

ALT TOTAL 38.92 \$/NT

DESTINATION: OVERSEAS

ORIGIN: TOLEDO

COMMODITY: CORN

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
			% MODE	% MODE
			RATE \$/cwt	RATE \$/cwt
			SOURCE	SOURCE
KALAMAZOO, MICH	TOLEDO	17	100	T-1
ADRIAN, MICH		14.7	44	T-2
LANSING, MICH		22.8	21.5	T-3
PAULINDO, OHIO		22.8	36.5	T-4
NAPOLSON, OHIO		22.8	32.0	T-5
			21.5	

\$/cwt 31.2 ⇒ \$/NT 6.24 INLAND

\$/NT 24.40 WATER

GL TOTAL 30.64 \$/NT

WATER ROUTE: TOLEDO OVERSEAS

RATE	SOURCE
138 \$/cwt	0-6
128 \$/cwt	0-26

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
			% MODE	% MODE
			RATE \$/cwt	RATE \$/cwt
			SOURCE	SOURCE
KALAMAZOO, MICH	TOLEDO	17	100	T-1
ADRIAN, MICH		14.7	44	T-2
LANSING, MICH		22.8	21.5	T-3
PAULINDO, OHIO		22.8	36.5	T-4
NAPOLSON, OHIO		22.8	32.0	T-5
			21.5	

INLAND

ORIGIN	DEST	CAD WT	TRUCK	RAIL
			% MODE	% MODE
			RATE \$/cwt	RATE \$/cwt
			SOURCE	SOURCE
KALAMAZOO, MICH	TOLEDO	17	100	T-1
ADRIAN, MICH		14.7	44	T-2
LANSING, MICH		22.8	21.5	T-3
PAULINDO, OHIO		22.8	36.5	T-4
NAPOLSON, OHIO		22.8	32.0	T-5
			21.5	

\$/cwt 86.5 \$/NT 17.30

ALT TOTAL 34.30 \$/NT

ROUTE: ATL
RATE 1700 \$/NT
SOURCE 0-9

DESTINATION: OVERSEAS

COMMODITY: SOYBEANS ORIGIN: TOLEDO

GREAT LAKES ROUTE

ORIGIN	DEST	CRD WT	TRUCK			RAIL		
			% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
KALAMAZOO, MICH	TOLEDO	1.8	100	44	T-1			
ADRIAN, MICH		9.1		21.5	T-2			
LAGRANGE, MICH		21.2		26.5	T-3			
PAULDING, OHIO		34.0		32.0	T-4			
NAPOLCON, OHIO		34.0		21.5	T-5			

\$/cwt 28.6 ⇒ \$/NT 5.78 INLAND

WATER ROUTE : TOLEDO - OVERSEAS

	RATE	SOURCE
F-11 SALTY- 138 \$/cwt		0-6
TRANSHIP- 122 \$/cwt		0-26

\$/NT 84.40 WATER

GL TOTAL 30.18 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CRD WT	TRUCK			RAIL		
			% MODE	RATE \$/cwt	SOURCE	% MODE	RATE \$/cwt	SOURCE
KALAMAZOO, MICH	TOLEDO	1.8	100	44	T-1			
ADRIAN, MICH		9.1		21.5	T-2			
LAGRANGE, MICH		21.2		26.5	T-3			
PAULDING, OHIO		34.0		32.0	T-4			
NAPOLCON, OHIO		34.0		21.5	T-5			

— LINE HAUL —

RAIL	RAIL	RAIL	RAIL
% MODE	RATE \$/cwt	SOURCE	% MODE
100	55.3	R-2	

BARGE

% MODE

RATE \$/cwt

SOURCE

\$/cwt 83.9

\$/NT 16.78

WATER ROUTE:

RATE	SOURCE
17.00\$/NT	0-9

ALT TOTAL 33.78 \$/NT

COMMODITY: WHEAT ORIGIN: SAGINAW DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
			% MODE RATE \$/cwt SOURCE	% MODE RATE \$/cwt SOURCE
FLINT, MICH	SAGINAW	22.7	100 27.5 SAT	
GRAND RAPIDS, MICH		1.6	43.8	
BRECKENRIDGE, MICH		21.6	27.5	
STANDISH, MICH		21.6	21.5	
CASS CITY, MICH		21.6	21.5	

\$/cwt 21.9 ⇒ \$/NT 4.98 INLAND

WATER ROUTE: SAGINAW OVERSEAS

RATE	SOURCE
139 \$/cwt	0-7
151 \$/cwt	0-3.6

\$/NT 26.20 WATER
GL TOTAL 31.18 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK	RAIL
			% MODE RATE \$/cwt SOURCE	% MODE RATE \$/cwt SOURCE
FLINT, MICH	TOLEDO	22.7	100 39.6 SAT	
GRAND RAPIDS, MICH		1.6	62.4	
BRECKENRIDGE, MICH		21.6	49.8	
STANDISH, MICH		21.6	58.8	
CASS CITY, MICH		21.6	49.8	

— LINE HAUL —

RAIL	RAIL
% MODE RATE \$/cwt SOURCE	% MODE RATE \$/cwt SOURCE
100 54.5 R-1	

\$/cwt 104.1
\$/NT 20.82

WATER ROUTE: ATL

RATE	SOURCE	RAIL HANDLING	ALT TOTAL	\$/NT
17.00 \$/NT	0-11		37.82	

COMMODITY: CORN

ORIGIN: SAGINAW

DESTINATION: OVERSEAS

GREAT LAKES ROUTE

ORIGIN	DEST	CAD WT	TRUCK				RAIL		
			%	RATE	\$/cwt	SOURCE	%	RATE	\$/cwt
FLINT, MICH	SAGINAW	17.7	100	27.85		S+T			
GRAND RAPIDS, MICH		1.7		43.8					
BRECKENRIDGE, MICH		18.6		27.5					
STANDISH, MICH		18.6		21.5					
CASS CITY, MICH		18.6		21.5					

\$/cwt 24.9 ⇒ \$/NT 4.98 INLAND

WATER ROUTE: SAGINAW OVERSEAS

ORIGIN	DEST	CAD WT	RATE	\$/cwt	SOURCE
SALTY-TRANSHIP-		138		4/cwt	0-6
		135		4/cwt	0-3.0

\$/NT 27.00 WATER
GL TOTAL 31.98 \$/NT

ALTERNATE ROUTE

ORIGIN	DEST	CAD WT	TRUCK				RAIL		
			%	RATE	\$/cwt	SOURCE	%	RATE	\$/cwt
FLINT, MICH	TOLEDO	17.7	100	39.6		S+T			
GRAND RAPIDS, MICH		1.7		62.4					
BRECKENRIDGE, MICH		18.6		49.8					
STANDISH, MICH		18.6		58.8					
CASS CITY, MICH		18.6		49.8					

— LINE HAUL —

RAIL	%	RATE	\$/cwt	SOURCE	%	RATE	\$/cwt	SOURCE
	100	54.5		R-1				

\$/cwt 104.4
\$/NT 20.88

WATER ROUTE: ATL

RATE	\$/NT	SOURCE
17.00		0-10

ALT TOTAL 37.88 \$/NT

Summary of Grain Rates

Commodity	Origin	Destination	Rates - \$/n.t.			Comments
			Inland	Transshipped	Safety	Total
wheat	Dul/Sup.	overseas	\$ 28.72	\$ 26.00	—	\$ 54.72
"	"	"	28.72	—	27.80	56.52
"	"	"	42.82	—	15.00	57.82
corn	Dul/Sup.	overseas	14.18	26.60	—	40.78
"	"	"	14.18	—	27.60	41.78
"	"	"	26.02	—	13.60	39.62
barley rye	Dul/Sup.	overseas	21.42	25.80	—	47.22
"	"	"	21.42	—	27.60	49.02
"	"	"	40.10	—	13.60	53.70
sunflower seeds	Dul/Sup.	overseas	24.52	26.20	—	50.72
"	"	"	24.52	—	27.60	52.12
"	"	"	41.78	—	13.60	55.38
barley rye	Dul/Sup.	Buffalo	21.42	8.80	—	30.22
"	"	"	—	—	—	40.22
wheat	Dul/Sup.	Buffalo	28.72	9.00	—	37.72
"	"	"	—	—	—	47.72
corn	Chicago	overseas	8.20	26.00	—	34.20
"	"	"	8.20	—	27.60	35.80
"	"	"	19.98	—	13.60	33.58
soybeans	Chicago	overseas	8.12	26.00	—	34.12
"	"	"	8.12	—	27.60	35.72
"	"	"	21.16	—	13.60	34.76
corn	Toledo	overseas	6.24	24.40	—	30.64
"	"	"	6.24	—	27.60	33.84
"	"	"	17.30	—	17.00	34.30
						Atlantic

<u>Commodity</u>	<u>origin</u>	<u>Destination</u>	<u>Rates - \$/h.t.</u>			<u>Comments</u>
			<u>Inland</u>	<u>Transshipped</u>	<u>Salty</u>	<u>Total</u>
Soybeans	Toledo	overseas	\$5.72	\$24.40	-	\$30.12
"	"	"	5.72	-	\$27.60	33.32
"	"	"	16.80	-	17.00	33.80
corn	Saginaw	overseas	4.98	27.00	-	31.98
"	"	"	4.98	-	27.60	32.58
"	"	"	20.88	-	17.00	37.88
wheat	Saginaw	overseas	4.98	26.20	-	31.18
"	"	"	4.98	-	27.80	32.78
"	"	"	20.82	-	17.00	37.82
corn	Milwaukee	overseas	7.50	25.60	-	33.10
"	"	"	7.50	-	27.60	35.10
"	"	"	25.32	-	13.60	38.92
						Gulf

Referent origin to Chicago	Rate Sheet C	Rail and Truck Rate	Exp#	Export Barge	Truck Rate
mileage	Rate	Exp#	Exp#	Miles to Export Terminal	Rate
C-1 Champaign 120	43.8 \$/100wd	30.9 \$/100wd	C-16	90 (Peroria)	36.5¢
C-2 Colesville	"	"	"	"	"
C-3 Coles	"	"	"	"	"
C-4 Decatur	54	"	"	"	"
C-5 East Peoria	95	"	"	"	"
C-6 Gibson City	75	"	"	"	"
C-7 Gilman	135	"	"	"	"
C-8 Newburgh	95	"	"	"	"
C-9 Paxton	80	"	"	"	"
C-10 Pontiac	80	"	"	"	"
C-11 Lisle	170	"	"	"	"
C-12 Galesburg	195	"	"	"	"
C-13 Effingham	60	"	"	"	"
C-14 Elkhart	120	"	"	"	"
C-15 Dixon	"	"	"	"	"

Referent#
C-29

Barge Rate of 75¢/100wd is from Grain Terminal Association and is 1980 average for points along Illinois River to the Gulf

1. Rail Rates are from Chicago Board of Trade - ICC 605-A, ICC 68, effective 9/1/80.

2. Truck Rates are from major Toledo grain shipper for less than 100 miles.

Over 100 miles Minneapolis Grain Exchange supplied rates - see attached truck rates

3. Barge Rate of 75¢/100wd is average barge rate for 1980. This is from conversation with Grain Terminal Association in Minneapolis, Minn.

✓

Barley to subtle min Pacific

D-1 Fargo, N.D.	86		86		81	81	76	94	79
D-2 Washburn, N.D.									
D-3 Grand Forks, N.D.	93		93		89	89	81	124	102
D-4 Bismark, N.D.	150		150		142	142	111	111	150
D-5 Minot, N.D.	175		175		165	165	124	165	165
D-6 Aberdeen, S.D. (500 mi.)	140		93		124	84	90	122	178
(500 mi.)	134		96		128	93	130	93	153
(mil.)	134		96		111	90	92	90	122
D-7 Crookston, Minn.	86		86		81	81	76	111	94
(was Fargo, N.D. route to Minneapolis)									
D-8 Willmar, Minn.	70		96		66	226	65	(400 mi.) 104	75
D-9 Farmington, Minn.	68				81		81		99
D-10 Glendive, Mon	206		206		194	194	159	212	205
D-11 Baker Mon	193		193		182	182	154	212	249
D-12 Valley City, N.D.									

These Rail Rates are from the Minneapolis Grain Exchange.

D-13 The average wage rate in 1980 from Minneapolis to the Gulf was 89¢/hour, from Grant and Recreation in Minneapolis/St. Paul.

Grain Rates - Great Lakes + Ocean

Cost by Transshipment (\$/cwt.)

Ref.	Port of Origin	Commodity	Lake Rate	St. Lawrence to Great	Total by Transship
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0-1(a)	Milwaukee	corn/beans	43	85	128
0-1(c)	"	wheat	40	85	125
0-1(k)	"	barley/rye	39	85	124
0-2(b)	Toledo	corn/beans	37	85	122
(g)	"	wheat	34	85	119
(l)	"	barley/rye	33	85	118
0-3(c)	Saginaw	corn/beans	50	85	135
(h)	"	wheat	46	85	131
0-4(d)	Duluth	corn/beans	48	85	133
(i)	"	wheat	45	85	130
(m)	"	barley/rye	44	85	129
0-5(e)	Chicago	corn/beans	45	85	130
(j)	"	wheat	41	85	126
		corn/beans	42		
		wheat	43.5		
		barley/rye	41.9		

weighted average = $\left\{ \begin{array}{l} \$9.26/\text{n.t.} \\ 9.59/\text{n.t.} \\ 9.24/\text{n.t.} \end{array} \right.$

Notes:

- Letters or numbers in parentheses are additional references to those in the first column.
- Lake rates were obtained from Great Lakes Grain, Hagerstown, Md and confirmed by GL/SLS terminals. Rates quoted for bushels were converted at 56 lb./bu. for corn and soybeans, 60 lb./bu for wheat. According to Continental Grain, barley is assumed to be about 3/4 lb./cwt less than wheat.
- Ocean rates from the St. Lawrence, Atlantic, Pacific, and Gulf ports are from Drewery's Shipping Statistics and Economics, August + September 1980 issues. Typical vessel sizes were: Atlantic, 25,000 dwt; Pacific, 50,000 dwt; Gulf, 75,000 dwt; St. Lawrence, various.
- The direct ocean rate from Great Lakes ports was derived from Drewery's S.S.F. with a formula from the Andersons' grain dealer.

Rate Sheet "O"

Direct Ocean Rates

Ref.	GL	From Atl.	Gulf	Pac.
0-6	138	85	68	75
0-7	139	85	68	75
0-8	138	85	68	75
0-9	138	85	68	75
	139	85	68	75
	138	85	68	75
0-10	138	85	68	75
0-11	139	85	68	75
	138	85	68	75
	139	85	68	75
	138	85	68	75
	138	85	68	75
	139	85	68	75

Rate Sheet R

REF	Route	Comm	Rate	Tests
R-1	Saginaw to Atl. Coast	all grains	N & W R12 to Balt & Norfolk: 57.45¢/cwt Conrail to Phil: 51.55¢/cwt Avg. 54.5¢/cwt = 810.90/mt	Average 45 trips/yr, 100 cars/train, Railroad agimp.

R-2	Toledo to Atl. Coast	all grains	N & W R12 to Balt & Norfolk: 57.45¢/cwt B & O to Balt: 56.85¢/cwt Conrail to Phil: 51.55¢/cwt Avg 55.3¢/cwt = 11.05/mt	Average 45 trips/yr, 100 cars/train, Railroad agimp.
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F-19

Source: Major grain shipper and GL elevator operator

Source S

Anderson's Grain supplied Truck
Rate Formula From R. Truck Co. These are 1980
Rates from an independent hauler. This hauler
usually dictates the truck rates.

Distance miles	Rate \$/100 weight
20	15
20-40	21.5
40-60	27.5
60-80	32
80-100	36.5

For over 100 use the Minneapolis
Grain Exchange supplied Rates and inflate
by a factor of 1.2.

RATE SHEET "T"

NEW AND HIGHER MINIMUM SCALE OF MINNESOTA INTRASTATE TRUCK RATES FOR GRAIN EFFECTIVE NOVEMBER 12, 1979

Prescribed Minimum Rates on all Grain, including Flaxseed
Rates in Cents per 100 Pounds
Minimum Truckload Weight 40,000 Pounds

MILES	RATE	MILES	RATE	MILES	RATE
1-10	15	181-185	50	356-360	92
11-15	15.5	186-190	51	361-365	93
16-20	16	191-195	52	366-370	94
21-25	16.5	196-200	54	371-375	95.5
26-30	17	201-205	55	376-380	97
31-35	17.5	206-210	56	381-385	98
36-40	19	211-215	57	386-390	99.5
41-45	20	216-220	58	391-395	101
46-50	21	221-225	59.5	396-400	102
51-55	22	226-230	61.5	401-405	103
56-60	23	231-235	63	406-410	104.5
61-65	24	236-240	64	411-415	106
66-70	25	241-245	65	416-420	107
71-75	25	246-250	66	421-425	108
76-80	27	251-255	67	426-430	109
81-85	28	256-260	68	431-435	110
86-90	29	261-265	69	436-440	111
91-95	30	266-270	70	441-445	112
96-100	31	271-275	71	446-450	113
101-105	32	276-280	72	451-455	114
106-110	33	281-285	73	456-460	115
111-115	34	286-290	74	461-465	116
116-120	35	291-295	75	466-470	117
121-125	36.5	296-300	76.5	471-475	118
126-130	37	301-305	78	476-480	119
131-135	38.5	306-310	79	481-485	120
136-140	39	311-315	80	486-490	121
141-145	41.5	316-320	81	491-495	122
146-150	42	321-325	82.5	496-500	123
151-155	44	326-330	84		
156-160	45	331-335	85.5		
161-165	46	336-340	87		
166-170	47	341-345	88		
171-175	48	346-350	89		
176-180	49	351-355	90.5		

K. R. Tolonen
Director of Transportation
May 6, 1980

MINNEAPOLIS GRAIN EXCHANGE

END

DATE
FILMED

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