BOTTLENECKS AND OPPORTUNITIES IN THE GRAIN SUPPLY CHAIN

NOVEMBER 23, 2004

Presented by:
The University of Manitoba Transport Institute
Western Transportation Advisory Council (WESTAC)
Canadian Transportation Research Forum (CTRF)

Conference Sponsors:
Manitoba Transportation & Government Services
Agricore United
Aikins, MacAulay & Thorvaldson LLP
Canadian Pacific Railway
Railway Association of Canada
Canadian Wheat Board
RailRunner N.A. Inc.
Western Economic Diversification Canada
Canadian Grain Commission
BOTTLENECKS AND OPPORTUNITIES IN THE GRAIN SUPPLY CHAIN

“FIELDS ON WHEELS”

Proceedings of the 9th Annual Agribusiness Logistics Conference
Held at Winnipeg, MB
Tuesday, November 23, 2004

Edited by
Dr. Barry E. Prentice, Doug Duncan, and Christy Sokol


Transport Institute, University of Manitoba
www.umti.ca

Cover Photo Credits:
RailCars crossing freeway by CPR
Containership in ice by St. Lawrence Seaway Management Corporation
Containers with city skyline by FELLFAB
Trucks at Manitoba/U.S. border by Connie van Rosmalen
FOREWORD

9th Fields on Wheels

120 delegates convened at the Hotel Fort Garry on November 23 for the 9th Annual Fields on Wheels conference. The theme for the conference was Bottlenecks and Opportunities in the Grain Supply Chain.

Dr. Barry Prentice, Director of the Transport Institute started the morning session by providing an overview of the types of bottlenecks that can occur in the grain supply chain. The framework he provided started with 3 major types of bottlenecks; infrastructure, regulatory, and supply chain dysfunctions. Within infrastructure there are two subclasses. Chronic bottlenecks are infrastructure bottlenecks that are ongoing, for example, underinvestment in rail bed. Temporary infrastructure bottlenecks are shorter duration problems. An example is inclement weather shutting down a highway. Regulatory bottlenecks can also be split into two classifications, direct and indirect. An example of a direct regulatory bottleneck is increased border security. An indirect regulatory bottleneck is restriction on the use of international containers within Canada (or cabotage rules). Supply chain dysfunctions are more sublime, including labour work rules, competing corporate agendas, and technology incompatibilities.

Richard Corfe of the St. Lawrence Seaway Management Corporation and Doug Welsh of Canadian Pacific Railway followed with presentations about bottlenecks and opportunities for their organizations. Richard Corfe described five ongoing bottlenecks for freight on the Seaway; winter closure, lock size, channel depth, age and related maintenance issues, and port capacity. In the face of these pressures the Seaway has an aggressive plan to manage its assets and to expand service. Opportunities they have exploited include improvements to allow operation further into winter conditions, using better technologies to allow larger ships into the system, and long-term maintenance plans.

Doug Welsh described the CPR’s network as shrinking and creaking, largely due to the age of the road infrastructure, much of which was constructed prior to 1915. Bottlenecks have been avoided to date through increased train capacity, which has grown more than 4 times since the 1950’s. This growth has been due to improvements such as higher horsepower locomotives that have allowed trains to become larger. The day of reckoning, however, is near, as the ability to increase train capacity to offset the aged infrastructure is nearly exhausted. The remedy in the long run will be more resources committed to the rail and rail bed infrastructure. Railways are constrained in pursuing needed investments due to a number of issues including input taxes and open rail access. The opportunity to increase network capacity depends on continued favourable economic prospects, the ability to obtain suitable rates of returns on the investment, and regulatory stability over the short and long term.
Disposition of the Government of Canada owned grain hopper car fleet provided for a lively discussion to end the morning session. Sinclair Harrison presented an overview of the problem and the Farmer Railcar Coalition’s (FRCC) proposed solution. Overall there are about 12,000 cars owned by the Government of Canada. The option preferred by the FRCC is to take ownership of the cars and then lease them at minimal lease rates for grain transportation. The advantages, according to the FRCC, would be lower maintenance costs, and no direct effect on farm freight rates. Through this approach the FRCC would seize opportunities to better maintain the fleet using wheel impact load detector information. It would also repair leaking gates and improve the quality of hatch covers. Better maintenance would improve the safety of the fleet and protect the integrity of Canadian grain. The FRCC would also use this opportunity to set aside funds for future replacement of the fleet. Members of the roundtable, which included Judie Dyck of the Saskatchewan Canola Growers Association, Ian McCreary of the Canadian Wheat Board, and Wade Sobkowich of the Western Grain Elevator Association, generally agreed there were opportunities to improve maintenance of the fleet. There was a dichotomy in opinions related to the FRCC plan. A key issue with the proposal was the cost of acquiring the fleet from the federal government, and if it were acquired at below market cost what the impact would be on trade relations with the U.S. Another important issue was whether the cars could be leased and better maintained without an increase to freight rates for farmers.

The morning session was capped with luncheon speaker the Honourable Ron Lemieux, Minister of Transportation and Government Services for the Province of Manitoba. Mr. Lemieux provided an overview of grain transportation related policy issues for Manitoba, and the co-operative working relationship that has been established with his federal counterpart.

The afternoon session on regulatory bottlenecks started with a presentation by April Taylor of the Transportation Services Branch of the United States Department of Agriculture. April focused on information related to containerized grain shipments in the U.S. While only 2% of grain in the U.S. is shipped in containers significant effort is being spent collecting data with respect to this increasingly important method of grain shipment. She also pointed out that freight rates for grain in containers versus bulk shipments have converged recently, and may in fact be below those of bulk in some cases.

This session also included a detailed description of cabotage issues with respect to container traffic in Canada and the U.S. Erica Vido of Ipsos Reid described research that she conducted as a graduate student that showed the problems arising from the different container cabotage rules in the U.S. and in Canada. With a more liberal customs regime for international containers in the U.S., there is greater potential for containers to move inland and become available for grain shipments. While not the sole restriction on container availability on the Prairies, the stricter cabotage
regime in Canada is an impediment to further expansion of this mode. Discussants from the floor were supportive of the outcomes of the research and curious as to when the opportunity of liberalizing regulations in Canada would occur.

The final session, chaired by Dr. Ed Tyrchniewicz, Head of the Department of Supply Chain Management at the I.H. Asper School of Business, focused on three innovative products that can be used to improve the efficiency of the grain supply chain. Charles Foskett of RailRunner North America presented RailRunner’s solution to simplifying short haul container movement. The RailRunner system employs a specialized container trailer connected to an intermediate and transition system of bogie wheels so that containers can be used directly on rail. Designed for short haul movements of between 300 and 600 kilometres, producers or processors could directly load the container and use RailRunner instead of a flat deck railcar to move the containers to consolidation points for eventual movement to customers. The advantage would be reduced handling of the product, lowering costs. As well as this approach enhances identity preservation of the product.

FELLFAB presented its solution to reduced packaging, lower product contamination, and reduced labour costs when using containers for grain shipment. As described by William Logan, the FELLFAB liner for containers can be complimented with FELLFAB’s RFID technology, a microchip system that can be embedded with the container shipment, tracking a variety of information useful in assuring identity preservation, including location of production, location loaded, and real time transit position.

The final presenter of the afternoon was Dory Tuvim, who described a new approach to handling containers on farms. Using the container traveler system, containers can be used directly in the field for loading grain. This eliminates handling at the farmyard or other storage sites. In addition to the reduction in supply chain handling costs, this system also better preserves the identity of the grain.

The days proceeding ended with Dennis Apedaile presenting a well-rounded review of the variety of topics and debates covered during the day.
# TABLE OF CONTENTS

Foreword ........................................................................................................ i
Table of Contents ........................................................................................ iv

Welcome and Opening Remarks ...................................................................... 1

**Session 1: Bottlenecks Forms, Causes and Impacts: A Conceptual Framework**

Dr Barry E. Prentice, Director,  
Transport Institute, University of Manitoba .................................................. 1

**Session 2: Chronic Infrastructure Bottlenecks**

Moderator- Gord Tufts,  
Manitoba Department of Transportation and Government Services .......... 8
Richard Corfe, President & CEO,  
St. Lawrence Seaway Management Corporation ............................................. 8
Doug Welsh, Executive Director Strategy, Business Planning and Development,  
Canadian Pacific Railway ........................................................................ 18

**Session 3: Seasonal Infrastructure**

Moderator- Paul Earl, I.H. Asper School of Business,  
University of Manitoba .................................................................................. 35
Sinclair Harrison, President,  
Farmer Railcar Coalition .............................................................................. 35
Ian McCreary, Board Member,  
Canadian Wheat Board ................................................................................. 40
Judie Dyck, Executive Director,  
Saskatchewan Canola Growers Association .................................................. 42
Wade Sobkowich, Executive Director,  
Western Grain Elevator Association .............................................................. 45

**Luncheon Address**

Hon. Ron Lemieux, Minister of Transportation and Government Services,  
Province of Manitoba .................................................................................... 52
Session 4: Regulatory Bottlenecks

Moderator- Doug Duncan, Transport Institute,
University of Manitoba .................................................................56
April Taylor, Economist, Transportation Services Branch,
United States Department of Agriculture ..........................................56
Erica Vido, Research Manager, Agribusiness, Food and Animal Health,
Ipsos-Reid ....................................................................................64

Session 5: Supply Chain Bottlenecks

Moderator- Dr. Ed Tyrchniewicz, I.H. Asper School of Business,
University of Manitoba .................................................................77
Charles Foskett, President and CEO,
RailRunner N.A. Inc. ......................................................................77
William Logan, Director, Material Handling,
FELLFAB Limited .........................................................................83
Dory Tuvim, President,
MCS Agri-Terminal ......................................................................87

Rapporteur
Dennis Apedaile, Canadian Pacific Railway (retired) .........................95

Conference Agenda ..................................................................102
Speaker Profiles ......................................................................105
List of Speakers and Participants ..............................................116
Conference Sponsors ................................................................120
**Welcome**

**Gordon Baldwin, President**  
Canadian Transportation Research Forum  
Morning Chairperson

Good morning and welcome to the 9th Annual Fields on Wheels/CTRF Semi-annual conference, my name is Gordon Baldwin, and I am President of CTRF. I am very happy to be here this morning. Besides my great interest in transportation there is certainly grain in my background. Both of my grandfathers worked in grain elevators, to the point that when my parents got married it was wheat not rice that they threw at the wedding.

I would like to start by thanking our sponsors. The continental breakfast was sponsored by Agricore United, our morning coffee break sponsored by Aikins MacAulay and Thorvaldson LLP. Lunch sponsors Canadian Pacific Railway, the afternoon coffee break sponsor is the Railway Association of Canada. We have some general conference sponsors, the Manitoba Department of Transportation and Government Services, Canadian Wheat Board, RailRunner, Western Economic Diversification Canada, Canadian Grain Commission, and sponsors in kind include Vancouver Port Authority, Hotel Fort Garry, WESTAC, CTRF and Destination Winnipeg. I will keep things very short, you have bios on all the speakers in your conference package, so rather than read the very long list of Barry’s many accomplishments, and I will just introduce him and get things going.

**Session 1**  
**Bottlenecks Forms, Causes and Impacts: A Conceptual Framework**

**Dr. Barry E. Prentice, Past President (1997), CTRF**  
Director, Transport Institute  
Asper School of Business, University of Manitoba

Thank you very much Gordon. My talk today presents an introduction to the program and a framework that sets out some ideas that we are going to discuss in greater detail over the course of the day. The focus of my talk is a conceptual framework for the examination of bottleneck forms, causes and impacts.
A bottleneck can be defined as any impediment that slows down the flow of traffic. Congestion and waiting queues are often thought of as bottlenecks, but they are really just the symptoms. The cause of the bottleneck is usually something that is physical in nature, or an economic phenomenon, or the result of politics. The tendency is to blame infrastructure failures as the first and only cause of bottlenecks. This confuses the issue and I will show you why.

**Bottleneck Impacts**

Obviously the speed of a traffic flow is determined by the worst bottleneck. Even if goods move quickly to this bottleneck, they have to wait to process through the bottleneck. Traffic cannot move faster than the worst constraint and goods will back up in a queue if they arrive faster than they can be processed. As the speed of traffic is reduced, the fixed costs of transportation and logistics start to rise because of lower equipment utilization and greater in transit inventories. An individual bottleneck is a problem, but it can also have a cascading effect. Evidence of this is visible on the Mississippi River locks, and possibly on the St. Lawrence Seaway. Problems at one lock can cascade through the whole system. Even once the bottleneck is cleared up, evidence of its impact is visible for some time.

**Figure 1.1 Economic Model of Bottleneck Impacts on**

![Economic Model](image)

Figure 1.1 is a conceptual model that illustrates the impacts of bottlenecks. Costs would be minimized if there were no bottlenecks to interrupt the free flow of traffic. Obviously the more traffic that is put through a system, the better is the utilization of infrastructure and equipment. Consequently, costs per unit should fall continuously with greater throughput. As bottlenecks...
appear, traffic slows down and average costs of logistics and transportation start to rise.

The removal of bottlenecks may seem futile. The problem is that if only one bottleneck is removed, the system does not improve very much because traffic flow is impeded by the next bottleneck. A system wide change may be necessary to get significant improvement, but removing the worst bottleneck would increase the average speed of flow. One should not necessarily give up on the idea of trying to find opportunities where bottlenecks can be eliminated and making those changes when the opportunities arise.

Figure 1.2 presents a taxonomy of bottleneck causes. The three general categories are infrastructure related bottlenecks, regulatory bottlenecks and bottlenecks that develop because of supply chain dysfunctions.

The infrastructure bottlenecks are easiest to understand. They fall into two categories: chronic constraints that are predictable and temporary constraints that are more random. Climate is a chronic constraint where for some environmental reason a facility for part of the year. The Port of Churchill, for example, suffers a capacity constraint each year because of ice conditions. To a lesser extent, the St. Lawrence Seaway has the same sort of climate barrier, because ships cannot transit the canals all year round.

**Figure 1.2 Taxonomy of Bottleneck Causes**

```
<table>
<thead>
<tr>
<th>Causes of Bottlenecks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure Bottlenecks</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Regulatory Bottlenecks</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Supply Chain Dysfunctions</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
```
Infrastructure Bottlenecks

Physical restrictions cause another type of chronic bottleneck. Tunnels and rock cuts can be used to expand the capacity of mountain passes, but as traffic expands, these physical restrictions will form new bottlenecks. Rivers are a similar form of physical restriction. In this case, river crossing traffic capacity is a function of bridge construction.

Under investment in infrastructure can produce chronic bottlenecks. Where economic growth is very rapid, infrastructure investment may not keep up. Intermodal freight transport is growing at such a rapid pace that it is hard for the system to sustain capacity. Even as container facilities are expanded, they seem to fill up almost as soon as they are opened and it is time to start planning an expansion. Hence, rapid growth can cause bottlenecks if investment is insufficient.

Temporary transportation bottlenecks can be caused by natural or market forces. Severe weather events, such as a hurricanes, floods, and blizzards can disrupt traffic flows. It may not be the whole route that has problems, but traffic can slow to a stop at the point of greatest impact. Similarly, construction and accidents create temporary bottlenecks. Such events are expected, but not predictable, and delays are coped with as a normal part of business.

Market perturbations are a source of temporary infrastructure bottlenecks that are caused by surges in supply or spikes in demand. These seasonal events vary in length and impact depending on the underlying market conditions. In the grain industry, supply peaks in the fall right after the harvest. The system is always over taxed to some degree during the peak and temporary bottlenecks appear. During the summer months when the flow of grain is much less these bottlenecks disappear. These seasonal bottlenecks are caused by market perturbations on the supply side.

On the demand side, an example of a market perturbation is the Christmas season. Whether it is the strain on postal services, or finding a parking spot at the shopping center, the peak in seasonal demand overwhelms the available infrastructure capacity.

Dis-investment can cause temporary bottlenecks if the incentives are too weak to maintain the necessary infrastructure. Transportation infrastructure is long lasting, but requires on-going maintenance and renovation. If capital cannot be attracted, or if a competitive system siphons away too much of the market demand, the infrastructure owner may lose interest in maintaining capacity. As the dis-investment gradually occurs, temporary bottlenecks can develop. For example, as facilities close, traffic demand has to be served somewhere else. If the volume is sufficient, it can overwhelm the capacity of the alternative facility and cause bottlenecks.
Regulatory Bottlenecks

Regulations may cause bottlenecks as a direct or an indirect effect of their application. Regulations that halt goods movements for safety or quality inspections create bottlenecks as a direct effect of their activities. The intention is not to create a bottleneck, and careful consideration is given to methods that minimize delays, but the nature of the activity means that bottlenecks are very hard to avoid. Bottlenecks associated with security measures are almost new in the sense of the potential to disrupt trade. As the concerns about terrorism and other events rise, this form of bottleneck is likely to get much greater in terms of delays at the border and further back up the supply chains.

Three sources of bottlenecks created by the indirect effects of regulation are cabotage restrictions, fiscal policies and commercial policy. The impediments all work through regulations that affect competition in some fashion. Cabotage restrictions simply prevent foreign carriers from assisting the movement of the traffic during peak demand. Bottlenecks develop as an indirect effect of these regulations because the opportunity to access extra capacity is prohibited.

Fiscal policies can be an indirect source bottlenecks, if they impose taxes that deter investments. If a business is taxed such that it cannot invest in infrastructure, then bottlenecks will appear.

Commercial policy is often directed toward maintaining competition. This helps guarantee that prices are set efficiently, but it can also be a source of bottlenecks. When competing businesses try to use the same facilities simultaneously, bottlenecks are more likely to appear. To some degree it is concern over bottlenecks that causes governments to think twice about forcing open access on the railways. If open access were allowed, bottlenecks would develop very quickly in critical areas of rail infrastructure because competing rail carriers would seek to serve the most desirable time slots.

Supply Chain Dysfunctions

Dysfunctional supply chain bottlenecks are probably the most controversial because it gets into the matter of finger pointing, who is causing the bottleneck. An example is the experience in which one group of workers operates 5-day weeks, while another group works 24/7. Goods that arrive when no one is available to complete the next step in the supply chain have to wait in a queue. These sorts of bottlenecks are most likely to occur at intermodal and intramodal transshipment points.

Competing corporate agendas can also cause bottlenecks. Firms that are battling for market share, or for power within the system, may create bottlenecks inadvertently or as an intentional strategy. Rent seeking is
another source of supply chain dysfunction. Some members of the supply chain may profit by their ability to manage a capacity pinch point, or to force all parties to employ their services. The services of ship pilots are a case in point.

Technological incompatibilities create bottlenecks that should disappear over time, but the pace can be very slow. As an example, international ocean shipping lacks a communications protocol standard. Paper has to be exchanged between ships and shore, when the supply chain is essentially electronic. Another example, not necessarily technological, is the Gordian knot in the Chicago rail system. Bottlenecks at Chicago have existed for almost as long as they have had rail service. Huge investments are being made to sort out freight and commuter lines, and to build fly-overs, but bottlenecks are persistent.

**Bottlenecks Solutions and Costs**

It is unfair and unwise to treat problems such as congestion and queues simply as infrastructure problems. There is a general tendency to leap to that conclusion, but often the problems can be regulatory in nature. There is a very good example of this at Laredo, which is a border crossing from Texas into Mexico. Laredo/Nuevo Laredo has two to three times the number of bridge lanes of traffic capacity of the Windsor/Detroit crossing, but goods and trucks are delayed for much longer. Building more bridge lanes across the border at Laredo/Nuevo Laredo would not speed up the traffic. The problem is a regulatory issue caused by the inspections and the processing of forwarding and customs documents. Further expansion of the infrastructure is a waste of money.

Bottlenecks are most likely to occur at locations where goods change hands. Companies make sure their systems are designed to accommodate anticipated traffic flows in an expeditious manner, but must rely on supply chain partner not to drop the ball. These points of connectivity are worth close examination.

In the case of infrastructure bottlenecks, there is almost no bottleneck that cannot be solved with enough time and money. The difficulty always is, does it pay to do it? In many cases it is better to live with a bottleneck than spend the money to try and solve it. This is particularly true if it is a seasonal bottleneck that occurs every year. In that kind of situation, it may be better to use a pricing mechanism. Charging a higher price during the peak season spreads out the demand because it encourages shippers to postpone movements until the non-peak time of year. This helps reduce the impact of the bottleneck. Pricing can sometimes do what building infrastructure may not be affordable to do.

Another aspect of bottlenecks that is very interesting is the will to remove a bottleneck. The elimination of a bottleneck can improve efficiency, but if you
happen to be the owner a critical asset and benefit from the bottleneck because goods and equipment have to stop, you may have no interest any solution. For example, Laredo, Texas would be much smaller if the traffic flowed smoothly across the border. Residents may complain about the truck line-ups, but the city does not necessarily want the bottleneck resolved. There are many other cases in which extra revenue accrues to the owner because of bottlenecks.

The question of dis-investment as a source of bottlenecks is an interesting topic for research. Dis-investment can be very gradual. To the degree that our infrastructure does not keep up, more bottlenecks appear. This problem has been identified in Canadian transportation, although it is usually referred to as an “infrastructure gap”. It has never been approached in the terms of costs of bottlenecks and lost efficiency that result because of a failure to re-invest.

The costs of bottlenecks created by government regulation do not get sufficient attention. The impact of new security mechanisms in terms of trade reduction and inspections costs could be significant. Governments should be trying to quantify the impact of bottlenecks before they introduce new regulations.

Bottlenecks caused by supply chain dysfunctions are a fruitful area for research. Improving supply chain efficiency and creating positive buyer/seller relationships is the key to more competitive supply chains and happier customers. Everyone can agree with this, but the reality is that many supply chains do not work so well. A lot of supply chains have members that battle with each, rather than working co-operatively. Bottlenecks that develop within supply chains should have their members asking why.

Why do we find new ways of doing things? E-commerce is an example of a new technology that has spawned non-traditional supply chains. Is it simply that the technology makes a new system more economical, or is it that products were not moving as fast as they should have in the system they replace? Containerization is emerging as a new supply chain of moving grain, as opposed to bulk. If one system has more bottlenecks than the other, more costs will accrue to that system. The bulk system has had many years to solve its bottlenecks, but some are chronic. The container system is still developing and sorting out its bottlenecks. As new challenges of maintaining identity preservation and GMOs confront the grain industry, the system that can cope better with the inevitable bottlenecks is likely to emerge as dominant.

**Question from the Audience:**

Could regulations governing land use be another cause of bottlenecks?
Dr. Barry Prentice:

Land use is governed by municipal planning regulations, so it would be a form of indirect regulatory bottleneck cause. The traffic delays that are starting to occur on Route 90 in Winnipeg could be an example of land use regulations leading to bottlenecks. It does not appear that anyone thought about the implications of building big box retail stores and new traffic lights on the major urban ring road of the city. This type of regulatory bottleneck cause could be added to my taxonomy.

Session 2:
Chronic Infrastructure Bottlenecks

Gord Tufts, Past President (2000), CTRF
Manitoba Department of Transportation and Government Services
Moderator

Good morning. The first speaker on Chronic Infrastructure Bottlenecks is Richard Corfe, CEO, St. Lawrence Seaway Management Corporation. Richard is a professional engineer and certified management accountant. He has been with the Seaway for 20 years and was appointed President and CEO in April 2003.

Richard Corfe, President and CEO
St. Lawrence Seaway Management Corporation

Good morning everybody. It is a pleasure to be here today to address this conference. I suppose it is appropriate for the first speaker to not be a wheels guy, but someone who runs a marine operation. When Barry asked me to speak at today’s conference, I asked him to change the title to “Fields on Wheels and Water,” but that did not happen. Then Barry talked about chronic infrastructure bottlenecks and I was not sure that I wanted to be in the category called “Chronic Infrastructure Bottlenecks.” However, I can live with the way that he defined it. You will note as I go through my presentation that some of the things that I will talk about will fall into chronic, none will fall into seasonal and others will fall into regulatory bottlenecks.

I would like to start by taking the opportunity to talk about the Great Lakes Seaway System, which is something that is very dear to my heart. I will cover some of the constraints and what we are doing about those constraints. I will talk about where we are as an organization and where we are going and I will try to keep it relevant to those of you who are involved with the movement of grain.
The Seaway is a bi-national system with 3,700 km of waterway from the Maritimes up to Thunder bay or Duluth. The system covers eight Great lake states, two provinces and about a hundred million people. This represents about one third of the combined population of the U.S. and Canada that lives in and around the Great Lakes Seaway basin. The seaway system supports 15 major ports and 50 smaller ports. This year is the 50th anniversary of the start of construction of the seaway, and the 175th anniversary of the first Welland Canal. When Barry talked about going through mountains, the Welland Canal was basically built to go around or over Niagara Falls. We have a transportation system that to some people, is long in the tooth, and to others, has stood the test of time. Only the future will decide which of those it is.

To us, it is Highway H2O. We are not on wheels, but we do like to refer to ourselves as a highway system, a water born highway system. One of our initiatives going forward in the next couple of years is to brand the Great Lakes Seaway System as Highway H2O. We find that our Provincial colleges have a vested interested in highways so we felt that from the marine point of view, we should coin a phrase that would get some of their money.

The seaway was built for the movement of boat cargos. It was built to ship grain down through the seaway system to the Saint Lawrence river ports for export and to carry cargo up to the industrial heartland for economic development. These two major movements were the reason behind the Great Lakes Seaway System. We have moved some 2 billion tonnes of cargo since opening in 1959. The graph in figure 2.1 shows that, the traffic has somewhat declined over the last 4 or 5 years.

**Figure 2.1 Seaway Tonnage (Metric Tonnes (millions): 1999-2003)**

![Graph showing Seaway Tonnage (Metric Tonnes (millions): 1999-2003)](image-url)
This year, we are hopeful that we are coming out of the slump, as the water levels on the Great Lakes are coming out of their slump. We feel that cargo will be up in the 43-44 million tonne range. Over the recent past we have been losing cargo as a system.

Grain has followed a general downturn in cargo volumes over the years. We had 15 million tonnes of Canadian grain and 8-9 million tonnes of U.S. grain 20 years ago. Today we carry 5-6 million tonnes of Canadian and 3-5 million tonnes of U.S. grain. It is a dramatic decrease. If we take grain and ore together, when the Seaway was in its heyday, we were moving from 45 to 48 million tonnes. Today, if we get 21 million tonnes between grain and ore we are doing well.

The dynamics have changed and we have to reflect that in our thinking going forward. We are not here to talk about why grain traffic is going down on the Seaway, but the implications of this are significant and we have to build them into our strategies. Obviously the inland fleet has adjusted to this situation. There has been a rationalization. When we talk about bottlenecks, that is going to come back and bite us. Other cargos are seen as priorities by the ship owners. Grain is starting to be seen as a back haul. There is a change of dynamics that we will have to be aware of as we move forward. In fact, last year rail was moving grain by November 1 that should have and would have moved by water out of Thunder Bay had there been bottoms to move it.

I will talk about infrastructure bottlenecks in generalities. Weather conditions and seasonality result in closing the system. We have not found a way of staying open throughout the year yet. As Barry said, you have to look at the cost-benefit ratio. With time and money you can change anything, but do you really want to. Is it beneficial to society at large? I will look at the winter closing, the size of locks, the depth of channel and aging infrastructure, all physical constraints. The depth of channel and size of locks are constraints that we have to deal with. Aging infrastructure is an investment restraint that we have to plan for going forward.

The navigation season on the seaway has been eight months a year. Over the last fifty years we have been able to extend the length of opening of the St. Lawrence Seaway system to some degree. We have made a concerted effort over the last 4 or 5 years to increase this incrementally day by day, or a couple of days each season. We are now open 9 plus months a year. We are striving for a longer season; we are doing everything that we can to accommodate it. Obviously, if you cannot get the grain to grow earlier in the season, then we have to look into being open later in the season to move it, otherwise the availability and the need do not jive.

This is a problem, for two reasons. One is the maintenance of the system. We have to be able to maintain our system on an annual basis. We do not have parallel locks in much of the system, so if you take one lock out of
commission, you shut the system down. With the Welland canal in it is 73rd year and the rest of the Seaway in its 44th year, we are looking at maintenance needs that are becoming larger and larger. We have to close down for maintenance. Obviously from our point of view it would be better to close down in the summer and do concrete work in the good weather as opposed to in the ice and snow. We also have to close down because we are living in a country where the environment is not conducive to shipping in winter. We maintain the system during the winter because we have to close down due to ice. Our challenge is to look at how we can constrain the time that we need to do the maintenance on one hand and how we can increase our ability to keep the system open in inclement weather. We have some things on the go and we have some strategies that we are looking at.

We have come to the conclusion that we cannot have a twelve month season with our system. Referring back to Barry’s time and money comment; with time and money we could have a twelve month season, but it would be a new system, not the current system. What can we do? Well, we have set ourselves a challenge. We have a project in our strategic objectives to look at a 10 month season. That is not to say it can happen. We feel we can push towards a 10 month season, closing down between January 15th and March 15th. That scenario should be possible depending on things that we do not control, like the weather.

We have new ways of dealing with ice and we have new ways of allowing navigation to go on in inclement weather. With changes that we are looking at making with our infrastructure, that should be possible. Whether it is a good move is another question. We have worked out the costs, but what we do not know, is what the benefits are. We have an idea for the current use of the system, but we do not have a good feel for the benefits that could accrue if the system were open 10 months instead of 9 months. Would the extended time attract another stream of users that currently are not using the system?

Barry talked about containers. We shudder in the Seaway when anyone talks about containers because we do not move containers on the Seaway. Another project is to find ways of being in the container business. Every time someone talks about putting goods such as grain into containers it gives us cold friction down the back because we see the loss of another cargo.

Another physical restraint is the size of the locks. When the Seaway was built it was built to a certain size. We are not in the business of changing that, certainly not in the short term. The length of the lock, the width of the lock, the depth within the lock are all things that we are stuck with. We have to work around these problems. These dimensions are not big when you start looking at the size of vessels that are being built in the world. More and more of the world fleet cannot come into the Seaway. Having said that, we have done a lot of work and continue to do a lot of work to try and maximize the use of these dimensions. The 740 foot maximum length of a vessel was
730 feet not so long ago, we have gained 10 feet. We have found ways of controlling the vessel within the lock that allows a longer vessel. Width is now at 78 feet. We started at 75 feet, went up to 76 and now we allow vessels of 78 foot width to come into 80 foot locks.

We end up with this big box with almost no room underneath or on either side of it. The hydraulics of getting the vessel in and out are interesting, because the water that is displaced has to go somewhere. It has to go around the outside of vessel. This is indicative of the way that we look at our business, we are trying to make the maximum out of what we have. This has allowed the inland fleet to customize their vessels, big boxes that just fit in the locks so that they can haul the maximum cargo in one shot.

There are a good number of ocean vessels that can presently and will in the future be able to fit into these dimensions. In fact, we noticed a phenomenon in the last couple of years that was interesting. We saw a lot of ocean vessels in the system that had not been in the system for a long time or had not been in the system at all and these were not new vessels. What we realized was happening was that the big vessels were moving towards a market with higher freight rates. A lot of the slack left by the larger vessels was being picked up by smaller vessels. The vessels are there. It is up to us to make sure that we can bring them into the system and make sure that we do what we have to, to allow our Canadian fleet to prosper.

The third dimension is the depth or the draft in nautical terms. I suppose that when you try and control a draft dimension, you have to look at certain things. One of the things that is very important in commercial navigation system is under keel clearance. That is the amount of water under the keel of the vessel. We have been working on this issue for a number of years. In the mid 90’s, we were able to increase the draft in the Seaway system from 26’ to 26’3”. At that time we thought that was as far as we could go. Over the last 4 years, we have redoubled our efforts in this area and by using technology, we have been able into increase the draft another 3 inches. We are not going any deeper, we are not dredging the bottom of the canal or the bottom of the rivers. We are managing the data that allows us to be able to navigate safely with a deeper draft.

AIS, Automatic Identification System and DGPS, the satellite tracking system, are technologies that have allowed us to understand the relationship between the speed of a vessel through the water and what we call the squat, how much a vessel sits down in the water. As a vessel goes faster, it sits deeper in the water, so it’s static draft plus what we call squat. Knowing the relationship between the speed and the squat has allowed us to increase the draft for inland vessels, or ocean vessels with bow thrusters. We know that all vessels do not behave the same way, so we have some possibilities to customize going forward. We believe that 26’6” is the maximum depth, but there might be a customization effect that we can bring into play. Someone may want to go slower but load deeper, maybe that is a possibility for the
future. Or somebody may want to load lighter and go faster. Those are the kind of optimization scenarios that we are looking at.

Obviously the depth of water available is important as well. We control the water within the canal system and between some of our locks. In the lakes and rivers, we do not have that luxury, we are captive to what is going on as a result of nature. These things are somewhat cyclical. We have high lake levels and we have low lake levels. There is a disturbing trend of thinking that as we go forward with what we are doing as mankind, we are going to do things that decrease the lake levels over the system. That obviously will have an impact on transportation. We have seen a number of changes and Lake Ontario provides an example. We allow vessels to load at 26’6” for the Seaway, but if they can only get out of the port at 25’6”, then that extra 12 inches we allowed does not work. It is the combined effort of all the parts of the system that have to come into play. Lake Superior has been low these last number of years. Lake Huron and Lake Michigan have been low but now they are coming up. We are coming out of a cycle and lake levels are coming up. Whether they will come up to where they were or go down below where they were is not known. The key point is that we are captive to the system and we have to plan around things that we do not always have full control over.

What we do have control over is our infrastructure and we do have an aging infrastructure. The first concrete on the Welland Canal was poured in 1919 and the canal was opened in 1932. The canal is 70+ years old. In the early 80’s, we had two life changing events on the Seaway. We closed the whole system down two years in a row for more than two weeks, 18 days one year and 21 days the other year. A bridge failure, a blow out of concrete or a rupture. I have to watch my legalese because the lawyers refer to it as a rupture, of concrete on the wall at lock 7 on the Welland canal. These were events that should not have happened, would not have happened had the corporate thinking been aligned to maintaining the system as opposed to expanding it. We were coming out of a period where the thinking was that we would have to build a new canal. Traffic was up and we were looking at how we could incrementally twin the locks. We had only just come off that point when we were suddenly faced with the fact that we first had to maintain what we have.

As a corporation, we had not come to grips with this issue. Since then, we have taken the approach, “never again.” We are not going to live through these circumstances any more and we have done a lot of work to make sure that they do not happen again. In the mid 80’s we completed a major rehabilitation of the Welland Canal. We have been doing a major electrical upgrade and we are doing major mechanical work as we speak. But doing the work is one thing and knowing the condition of the infrastructure is another and that is equally important. We have developed a model for a long-term plan for the investment required to ensure that we have a system that meets its obligations.
We have about a thousand assets in the seaway system. When we talk about an asset, we are talking about a lock gate that weighs something like 300 to 500 tonnes. It is a big chunk of metal. An asset is a lock wall, 800 feet of concrete, 80 feet high and 35 feet wide. These are assets and we have over a thousand of them. We assess each one of these assets every year through a running program of inspection. Engineering has developed a monitoring system with physical measurements that lead us to an assessment on an annual basis. That assessment then goes into the data bank of work going forward to determine the work that has to be done over the next 2, 3, 5, 10, 15, and 20 years.

On an annual basis, we evaluate the priorities. Each asset has a rating, 1 is that it is failed or is failing to complete its tasks, 5 is like new. All our assets are rated between 1 and 5. We also have a risk measure. Some assets are more important than others. If we have gates with no spares, then they become critical assets. If we have spares, they are less important. The assets are important to us and their condition defines the work that has to be done and the timing of that work. The high-risk asset is obviously scheduled the following year without a problem. The rest go through a cost-benefit analysis. We also incorporate things like system improvements and other business needs so that we have a certain amount of money that has to be restricted to the infrastructure, to improvements and to our other business needs. We have a robust, rigorous process that has served us very well as we have come to grips with what we need to do with the present system.

That defines where we spend our money. We spend a lot of money on what we call corrective maintenance. This is repairing things that have gone past the point of being able to fulfill their mandate. A lot of work is rehabilitation, bringing equipment back to as new. The preventive maintenance side really is to slow down the degradation of assets, whether it is painting structural steel on bridges or gates or replacing wear components.

I talked about IAS earlier on and the technology that we apply to try and maximize system dimensions for our users. We have to put money into those things; new technology, new control systems, remote operation structures to increase our efficiency and reduce our costs. All those kinds of things go into system improvement. We track this because it is important to understand whether what we are doing is having an impact. As I said earlier, all of our assets have condition ratings. As you do work, you increase the condition rating of that asset. We have developed what we call the reliability index that we have been tracking since 1996, shown in Figure 2.2.
You can see that it is going up. We are confident that it tells a good story because if you look at the little blip in 2002, we made a management decision to defer some work, and you can see the sensitivity of the indicator to that decision.

We have a way of tracking what we are doing because it is critical to us. Our objective is to not have down time at all. Obviously, there are routine down times in the system. However, we have gone through a number of years without losing a full day of production on the system. We track the number of times that we have system failures of more than six hours, and it is single digits. We have a 99.75% availability index that we track and have met over the last 3 years. We have an old system but the new approaches that we are applying to it are keeping the wolves at bay.

There are two major components that could be real bottlenecks in the system but we have approaches to deal with both of them. One is the mechanical equipment on the Welland Canal, 1932 vintage, well maintained, but due for rehabilitation. Two years ago we looked at, what needs to be done. Do we just want to replace what we have got? Do we want to bring in something new? Do we want to apply new technology? We decided to put in a hydraulic drive system across the Welland Canal at a cost of $40-45 million over six years. It is money that is well spent. It is about the same amount of money that we would have spent on rehabilitating what we had and yet this gives us certain other flexibility.

At the moment a lot of our lock gates and valves are operated with wire rope cables. These wire ropes and assorted equipment are under water. Trying to operate this equipment in ice or icy conditions is a thankless task. Moving to hydraulics and moving the equipment above water, will do a number of things. One, we reduce maintenance and increase reliability, and we allow
ourselves to think about operating longer. If you do not have constraints that are affected by adverse conditions then you can operate longer. We are looking at operating longer on the Welland Canal by doing these kinds of things with hydraulics. An example of how simplified it is; on the one side you have a valve building with valves that are 15 feet tall, 7 or 8 feet wide and weigh 15-20 tonnes. They are big components. On one side you see the new hydraulic cylinders. You have one cylinder with a motor driving that valve. On the other side, you see the ropes, the counter-weights and the open gears. All those things that were put in place when the canal was built to do the same function. Simplification is one of our mottos as we go forward.

The other issue that could be a permanent bottleneck is called Alkali Aggregate Reaction (AAR). Alkali Aggregate Reaction basically is something that is inbred within the concrete. When the locks were built, they were built with an aggregate with high alkali cement. It is like a time bomb that is going to explode sometime in the future. The AAR causes the concrete to grow in three dimensions. It was dormant for 15-20 years and then it started to expand. The concrete expands if there is humidity and of course with a lock system, it is hard to not have humidity. You can control the expansion by lowering the temperature, but it gets warm in the summer. This is something that we have to live with but we have a strategy for dealing with it.

In our system, we have gates and valves that are imbedded in the concrete. The concrete starts moving and the alignment of the mechanical equipment components is lost. In fact, that is how we discovered that we had a problem. We were not smart enough to understand that this was going to happen. We started to see things moving in the late 80’s early 90’s and wondered what was happening. We observed that the stop log would not fit in the slot and we had to shave the end of the stop log off. That is fine once or twice, but you start thinking, “why is this happening?” It is this expansion process called Alkalite Aggregate Reaction that we are facing. We are spending a lot of money dealing with the symptoms, re-aligning gates and re-aligning valves. However, at the end of the day the concrete has expanded 3” up and 3” out on 80 feet of concrete. It is going to get worse as we go forward.

One solution is to anchor the concrete together with steel rods. We use finite element analysis (FEA) and models to predict when an explosion is going to happen. It starts happening around the weakest points and eventually cracks, risking the structures toppling or overturning. We have to have a strategy to tie them together.

Under earthquake conditions, there is no immediate concern, but the concern is coming at us and will be coming at us over the next five or six years depending on the different locks. We have to pre-engineer solutions to this. We also have to worry about the fact that the lock walls are expanding into
the lock. You have a 78 foot wide vessel and an 80 foot lock and well now you do not have an 80 foot lock, you have a 79’6” lock, and suddenly you add ice and you have real problems. We also have to look at shaving off or blasting off concrete from the lock walls and replacing it.

This conference is focused on bottlenecks and opportunities. This is an opportunity, if we can replace the concrete on the wall with something else, something that allows us to operate year round or allows us to secure vessels without having to tie them up. We have some opportunities here, so that is what we are looking at as we are faced with this constraint, this obligation to fix this infrastructure situation. We are looking at the opportunities that it brings to us to improve our system going forward.

With respect to expenses, we are looking at maintenance expenses increasing quite substantially as we go forward.

On port issues, we are partners with other players in the transportation system. Grain is very important to us, so important that a few years ago we helped to orchestrate workshops around Thunder Bay and Duluth to help try and find ways of improving port operations. It was tough to find a lot of interest. There has not been a lot of movement, but maybe we were before our time. We need to collectively come together: rail, ports and marine operators; we all have a part to play and we need to come together to find what Dr. Prentice talked about. We control our own destiny pretty well, but it is the handovers where we have problems. We are encouraged by CN and CP approaches in Vancouver. Perhaps similar approaches could be transposable to other locations.

Temporary constraints such as the market and queuing, are things that we live with on a system wide basis. The things that we tend to have a good control of, whether it is wind or other adverse conditions, we operate through those as best we can. Ice and ships do not mix that well, but it can be made to happen. Obviously vessel maintenance is important to us. If you have one vessel that shuts your system down, the other vessels in the system are going to suffer. We want to make sure that we do not have accidents or incidents in the system. We have a pretty good track record of, less than 4 incidents per 1,000 transits.

In closing, we would like to transport more grain through the system. However, we have to be realistic. When you look at what has been happening over the last number of years, we see ourselves being used as a residual route. If that is where we are, then we as an organization have to look at expanding our cargo base and that is really what our vision 2012 is. We have to find new cargos, whether it is grain in containers or others, we have to find new cargos to put through our system. We cannot erode the base cargos of the system to the point where the system is no longer self-sustaining. We have a vision for the future, to grow our business, to look at new cargos, to work with partners across the system, to diversify. We have
to find ways of keeping vessels busy 9 or 10 months of the year. This busy spring and busy fall is not the way of the future, we have to find ways of smoothing out the flow. Whether it’s pricing as Barry talked about earlier on, or other things, we have to be smart about what we do. One of our objectives is to work with partners across the system to get the best out of the system that we are managing. Thank you very much.

Gord Tufts, Past President (2000), CTRF
Manitoba Department of Transportation and Government Services
Moderator

Thank you Richard. Our second speaker is Doug Welsh. Doug is Executive Director Strategy, Business Planning and Development at CP Rail. He has a Bachelor’s degree in mechanical engineering and a Masters in Management Sciences from the University of Waterloo. Doug’s been with CP since 1972.

Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

Thanks Gord, and good morning everyone.

Isn’t this an attractive room? I point out to you that this hotel was built by a railway. You should see the view from up here. You know one interesting thing is that it has a hardwood floor; you do not see that in a public room in a modern hotel. And it creaks like an old house, and that is my not so artful segue to the fact that the railway network is creaking, because it dates from about the period of this hotel.

Now to extend this thought, the most significant problem that the railway industry in North America faces today is the huge investment that will have to be made in the network to expand its capacity and to modernize it. This is a personal opinion that is also shared by several others in the industry.

The amazing thing is that today’s railway business is carried out on a shrunken down version of the 1920s railway network, and yet the volume of traffic handled today is many times what was handled circa 1920. We have had a period of grace where we have not had to invest in the network. The important thing for this talk is that that period of grace is coming to an end.

The end is a little different for each railway in North America depending upon historic circumstances. In the case of the CPR, we are at the end, and we are not alone. There are several US railways that are facing the same huge investment hurdles. I think that to fully appreciate the significance of this, one has to get into the history of the network and how it is that we have had this period of grace, and why it is now over.
The first thing that we have to understand is what has happened to capacity in the industry. We are going to disaggregate capacity into an upward trend and a downward trend. The overall effect on the industry is the net of those two trends.

In the following graph, Figure 2.3, the top line represents the carrying capacity of a single freight train. This is an illustrative curve and not based on plotted data.

**Figure 2.3.** Long-term Capacity Trends

You can see that it is quite a steeply rising curve. I think that anybody with gray hair, and maybe some others, will know in their own lifetime that there has been a huge increase in the carrying capacity of freight trains. You can see it for yourself at level crossings.

The other line, the bottom line, is not so obvious. It represents the shrunk down network, the decline in capacity of the network. That has been a purposeful result driven by the needs of the railway industry. The consequence is that we are now out of capacity.

Let’s deal with the first one, the tremendous increase in carrying capacity of an individual freight train. I have some examples here.

Carrying grain may be topical for this room, and what we have done is picked 50 years of progress. We have compared a grain car of 1955 to a grain car today. The 1955 car was the standard one used by CPR and CN - called the Dominion grain car. It had a carrying capacity of about 70 tons and a
123,000 pounds gross weight. A long grain train in those days would have been about 70 of those cars.

In contrast, a modern grain handling car carries about 112 tons and has a gross weight of 286,000 pounds. A typical train is 120 plus cars. When you do the math, you can see that one grain train today carries the same content as four grain trains of 50 years ago. I do not know what has happened to the harvest on the Prairies over 50 years - I imagine it is similar, maybe up a little bit. What that means is that today’s harvest can be carried with ¼ the number of grain trains that had to be operated 50 years ago.

My next example is transporting automobiles. In 1955, automobiles were carried 4 per boxcar, tilted up at about a 45 degree angle and blocked. The modern freight car, called the multi-level, has three floors and can easily hold 5 automobiles on each floor, and if they are small, 6 automobiles. Train lengths for auto traffic have increased from about 50 cars to 80 or more cars. When you do the math, you get a train carrying capacity ratio of about 6:1.

My last example is transporting truck trailers and containers. CPR recently had the 50th anniversary for its intermodal department. 50 years ago we carried 18-foot pup trailers, two per 40-foot flatcar, and about 70 cars per train. Today we carry 48 to 53-foot containers, double-stacked on each platform, with up to 125 platforms per train. There has been a significant increase in the cubic carrying capacity of each train, again a ratio of about 6:1.

As a final comment on trains, the locomotives have become much larger and more powerful. The ratio over 50 years is about 3 times the pulling power for a modern locomotive.

That is the above-rail story, which is about half of the capacity story. This is fundamentally how railways have been able to grow and to carry a few times more tonnage, at least, than they did 50 years ago. Importantly, these examples illustrate how we have been able to do it without expanding the network. CPR has done it, and the whole industry has done it, by improving our above-the-rail capacity.

The other underlying factor in railway capacity is network capacity. This one is more difficult to communicate to you. It is also very individual - it really depends on what segment of the network you are talking about. What I am going to do is show you a schematic which tries to summarize 80 years of progress, if you could call it progress, and explain why we have now hit the wall.

In Figure 2.4, the black horizontal line across the top is meant to depict the maximum number of trains per day that a segment of the network can process. I started with 1915, about the date that this hotel was built, and the period when the railway reached its maximum capacity. You can see that
back in those days there were a very large number of passenger trains, as well as freight trains. Freight trains were very small compared to today, and passenger trains were also small but numerous. There was enough capacity in those days to process all those trains.

**Figure 2.4 Evolution of Network Capacity and Utilization**

Now we roll forward to about 1955, and the passenger business is shrinking. Interestingly, the number of freight trains being operated is also less. There are fewer freight trains because the effect of the track traffic growth on the highway networks. Business was starting to be lost to trucks. There are also fewer freight trains because by 1955 trains were much bigger than they were in 1915 and you did not need as many to do the same work.

A large gap opened up between the capacity of the network and the number of trains being operated. So what did the railways do? They took out a great big scalpel and they cut - they disinvested. They picked up second main track. They abandoned parallel routes, and they abandoned every second siding and made the surviving sidings longer for the longer trains. It was the right decision to make 40 years ago.

In CPR’s case, we have probably lost about 1,000 miles of double track since that period. We are not alone. Every U.S. railway has done the same thing. Those assets were spun off to secondary lines, which helped with the capital needs of the railway. The passenger business continued to decline and all but disappeared.

What we now see, after all these decades, is that the number of freight trains has finally caught up with the shrunken capacity of the network. That is the problem. We wish that we had the capacity of 1915. We wish that we had
The thousand miles of double track back, but we do not. So the grace period is over and the industry, if it is going to continue to grow, will have to invest heavily in the network. This is something it has not done since the First War.

**Figure 2.5 Western Canada Capacity Concerns**

The shaded line segments are the ones that are at, or soon will be at, capacity. On the right is Moose Jaw to Medicine Hat. In the middle, the Calgary Terminal area is a problem. Calgary to Edmonton is at capacity. The most difficult capacity problem is in the mountains between Revelstoke and a place just west of Kamloops. In the south, the old Crow’s Nest line between Lethbridge and Fort Steele is at capacity. We cannot talk about all those lines, so for today we have selected Moose Jaw to Medicine Hat, and specifically the west end of that line. It is called the Maple Creek Subdivision, and extends 147-miles from Swift Current to Medicine Hat.

The Maple Creek Subdivision was built a long time ago – 1882-1883 - as part of the original transcontinental construction. It is a very busy line by Canadian standards, 60 million tons and about 30 trains a day. The topography, if you know western Saskatchewan and eastern Alberta, is rolling Prairie.

We know what the line looks like today from our engineering files, and also what it was when we built it, and therefore we can determine the level of change or improvement that this line has undergone in the last 120 years. We went to our plan room and asked our guys for the oldest plan of the Maple Creek Subdivision, and by golly they turned up an 1885 one showing exactly the alignment as built.

There is a little bit of history here that is interesting. It has WC Vanhorne’s signature, and is the plan that was filed with the Dominion Government saying, look boys, here is where the railway was built. We have compared it
to what we have today, and we noticed some changes. We then found out that the line changes were made between 1906 and 1908.

To cut to the chase, I am going to quickly show you the original and today’s alignment for the first 50 miles of the subdivision. On Figure 2.6, Swift Current is at the far right of, and the line across the middle of the page is the centerline. If you got in a locomotive cab and started at Swift Current, the first thing you would see is a right hand curve, that is that little lines sticking up. Then you would see another line (right hand curve), then a left hand curve, then another and another and another. Everything that is white is the original Vanhorne alignment; the shaded areas are the modernizations. Please take note of the dates.

So this makes my point. What the railway uses as its factory is a network that was built a very long time ago, and modernized in terms of alignment a very long time ago. That network is becoming the constraint to the future growth of the railway industry.

**Figure 2.6 Maple Creek Sub – Frequency and Severity of Curves**

I could not resist trying to summarize the alignment of the whole subdivision, so the analogy I would like to use is homogenized milk. Suppose you had one of those old milk bottles with the milk in the bottom of the bottle and the cream on the top. The cream is the curves and the milk is the tangents or straight sections. If you shook this mixture of curves and tangents and then poured it out, what would you have?
Figure 2.7 is the homogenized alignment of the Maple Creek Subdivision between Swift Current and Medicine Hat. The average straight section is only 1.1 miles long. The average curve is 0.23 miles long, the average central angle is 23 degrees, which is shown to scale on the schematic, and the total amount of curvature is equivalent to 7.1 revolutions. That is the way we go across the Prairies. The reason for all the curves is that there wasn’t heavy earth moving equipment in those days. When you came across a knoll you could not just brush it away with big graders - you went around it. Of course, you all have experienced old rural roads and how twisty and hilly they are. You have also experienced the Trans Canada Highway and how straight it is. We have never gone through a Trans Canada Highway reconstruction. We are still operating on the alignments last changed in the early 1900’s.

**Figure 2.7 Maple Creek Sub**

<table>
<thead>
<tr>
<th>Homogenized alignment</th>
<th>Maple Creek Sub</th>
</tr>
</thead>
</table>

**Curvature Summary**

- 110 curves; 25.3 miles; 17% of subdivision mileage
- Average curve: 1.9 degree curvature; 23 degree central angle
- Total central angle: 7.1 revolutions

You may say, so what? Well, one ‘so what’ is that it affects train speed, and another ‘so what’ is maintenance costs. The life of rail in the tangent position, meaning straight, is about 1.6 billion tons for heavy mainline rail. As you enter curves, the life of the rail drastically reduces. The average curvature on the Maple Creek Subdivision was shown to be 1.9 degrees, and curves constituted 17% of the route mileage. This results in nearly 40% of the life of the rail being lost on 17% of the mileage of this subdivision because of curvature, that exists because the railway was laid out in the era before heavy earth moving equipment. That is a fact that we live with in the railway industry.

I would now like to review what it costs to maintain track and how that relates to input taxes paid by railways. In Figure 2.8, the Y axis is dollars
per mile per year. These are steady state values. You can see that ordinary maintenance for the Maple Creek Subdivision is sitting around $20,000 per mile per year. That cost goes directly to the expense portion of the income statement in a railway.

**Figure 2.8 Maple Creek Sub – Minor Maintenance**

![Normalized Maintenance Graph](image)

**NOTE:** Capital renewals on forward looking basis (rail life = 1.6BGT; ties = 35 years; ballast = 28 years)

All the bars are capital expenditures. They are really maintenance - just replacing ballast, ties and rail - but in the railway industry they are capitalized. That is one reason the railway industry is one of the most capital intensive of all. If we add up the four solid bars, we get the tall bar at the right. That is the sum of all the capital expenditures per year, on average, that have to be made on that line to maintain it.

Now here is the point. In addition to the maintenance and capital expenditures, the railways also have to pay input taxes. These consist of property taxes, and fuel taxes paid to both the provinces and the federal government for the fuel consumed by the trains using that line. To get a complete picture, we really should add the input taxes to the graph, which we’ll do in a moment.

This raises the major difference between the railway industry and the trucking industry. In the trucking industry, truck operators pay those input taxes - at least the fuel taxes, I do not think they pay the property taxes. What the truckers do not pay are the maintenance and capital expenditures
for the roads. Those costs are paid by government authorities. Notionally, the input taxes are a recovery from the users of the highway to compensate the public authorities for the cost to maintain the highway.

In the railways’ case it is different. We pay the direct costs of maintenance, and we also pay the input taxes. Are these differences significant?

In Figure 2.9, the column at the far right is the input taxes for the portion of this subdivision that is in Saskatchewan. The bottom part of the column is the property tax per mile. The middle is the provincial fuel tax, restated to be on a per-mile basis, and the top is the tax paid to the federal government for fuel. Saskatchewan is the highest cost jurisdiction. Next to it is the portion in Alberta, the lowest cost jurisdiction. So you have the contrast. Even in Alberta the input taxes are as much as the rail. And in Saskatchewan, the taxes are more than all the capital expenditures combined required to maintain the railway!

Figure 2.9 Maple Creek Sub – Input Taxes

What I would like to do now is move on to the capacity of the Maple Creek Subdivision. I am going to show you 50 years of progress.

At the top of Figure 3.0 we have the 1955 configuration - the main line and all the sidings. The secondary mainline line through Empress, Alberta, is a parallel route having its own sidings.
Today, the configuration at the bottom, the Empress line is gone. There are noticeably fewer sidings. And guess what? The piece between Swift Current and Dunmore, which is right beside Medicine Hat, is at capacity. It would be nice to have that old configuration back, but it is gone forever. What have we got to do? We have to build more capacity on that section.

The graph in Figure 3.1 deals with capacity-caused delays. The Y-axis is the number of seconds of train delay for every mile of progress. The train moves one mile and then notionally stops and waits, then it goes another mile and stops and waits. It really does not happen that way of course - What really happens is that the train might go 10 miles and then enter a siding and wait and wait and wait, and then go again. But if you homogenize it, you can see the delay is over 30 seconds, 33 seconds to be exact, for every mile of progress, and that applies to 30 trains a day!

**Figure 3.1 Maple Creek Sub – Train Delays and Capacity Costs**

![Figure 3.1 Maple Creek Sub – Train Delays and Capacity Costs](image)

Based on a one week simulation averaging 30 trains per day and utilizing actual train length variability.

If we were to put 4 more trains on that line, which is something that we would like to do in the coming years, it is going to increase the delay by 23%. We find that unacceptable. I should add that this result is very specific to this subdivision - everyone is different.

In this case, the remedy is to spend $32 million on capacity improvements. If we do that, the 34-train delay level returns back to what it is today for 30 trains. This is an example of where investment is needed, and there are lots of these examples across the system.

In conclusion, I hope that you believe me when I say that railways function with inherited networks that would be impossible to build today from the
earnings of the railway industry. Those earnings can barely maintain the system.

It has been possible to take a big butcher knife to the railway network and still increase volumes, and we saw the reasons why. But we are approaching the limits of train size, so the above-rail avenue for further growth is limited.

To build more capacity below-the-rail, the railway has to have a rate of return, and to have a rate of return you have to be pretty confident that the growth is going to come. You also have to be pretty confident that there are no ‘wild cards’ out there that could strip the earnings out of the railway. What I mean by that is ‘access’.

For financial feasibility, you must convince Wall Street that you are using the money wisely. It does not matter whether you generate the money out of your own cash flow, whether you borrow through raising more debt, or float some equity - any of those decisions would be scrutinized by Wall Street. What they want to see is that the base business is profitable enough, and that the use to which you are putting the new money has a high likelihood of a shareholder return.

And finally - What about the public interest? Public policy has produced an under-invested railway network. An example is that CPR’s input taxes are over $200 million a year - think what you could do modernizing the network with $200 million, year-over-year.

I believe the public interest is strongly served if these capacity investments are made, but the conditions have to be right for them to be made. Therein lies the big issue for the industry.

Gord Tufts, Past President (2000), CTRF
Manitoba Department of Transportation and Government Services
Moderator

Thank you Doug. Could we now have your questions for our two speakers.

Ruth Sol, President
WESTAC

I have a question for Richard. I was very interested in the reliability index. Everything has to be measured today. I would be interested in knowing how you constructed it and whether there is any opportunity for customers to input to that reliability index. I think that there might be. I also wondered if there was any external use of that.
Richard Corfe, President and CEO
St. Lawrence Seaway Management Corporation

Yes Ruth, you are not supposed to ask me questions. I am meant to have an easy time here. We went, as an organization, through a process some years ago to create a way of measuring what we do in the organization, a scorecard approach was what we used. Out of that came a number of indicators, one being reliability. We have a very heavily invested infrastructure that needs to be maintained, so reliability was key to us. That measure itself is a very technical measure, it is based on the assessment of the condition of all our equipment and infrastructure. In support of that, we have availability measures, down time measures, delay measures and transit time measures, which are built with the input of customers and are shared on a twice-annual basis at customer relations meetings. We refine the measures as we go forward because if we can consistently meet what the customer thinks is important, then we should be increasing the difficulty of reaching that measure. Transit time’s a good example. We had difficulty meeting our transit time measures back in the mid '90’s. The Welland Canal for instance. Transit times through the Welland Canal should be 11 hours. We were having difficulty getting there and now we can get there for two reasons. One is less vessels, so it is easier, and secondly we have applied technology to our traffic control system. We are able to meet that measure, so now we are looking at reducing the time through the canal to 10.5 hours so we can have a tougher challenge. There is a fair amount of discourse between the use of the system and ourselves on those measures.

Question

Doug, when did the CPR abandon the Empress line and how much has that abandonment saved?

Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

It was severed in the 80’s - I forget the date exactly. Before then it had been downgraded. The Empress line was no longer necessary and there was not enough money to maintain both routes through the 60’s and 70’s to mainline standards. The Empress route, being the secondary route, was left to deteriorate. It became no longer suitable for mainline trains, and was finally abandoned due to a lack of local traffic. This is interesting because it is an example, I think, of where the right decision was made at the time. This goes back to the early 60’s when so much of the double track was picked up. If you had to do it over again, it was the right decision. There were 40 years of benefits gained and that is a long time in a DCF analysis. But the decision also had long-term strategic implications, which we now face.
Question

Is the movement shift to rail reflective of a shift or loss of capacity or it is a factor of price/cost. What is the differential in cost between the St. Lawrence Seaway versus Rail?

Richard Corfe, President and CEO
St. Lawrence Seaway Management Corporation

Our books are open.

Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

Yes. Well, I want to deal with one misconception. Richard went through the history and the reduction of the volume of grain being handled on the Seaway. That grain did not move to rail, mostly it is not moving at all, the markets have changed. When I started with the company 30 years ago, about 60 or 70% of the harvest went through Thunder Bay and down the Seaway. Perhaps 30 or 40% went to Vancouver. It is the reverse now. That has created some interesting problems for CPR because we had a very robust infrastructure from Winnipeg to Thunder Bay. It was all double-track because of the historic volumes of grain, amongst other things. With the loss of the European grain markets, we now have single-tracked the 400 miles between Winnipeg and Thunder Bay.

Richard Corfe, President and CEO
St. Lawrence Seaway Management Corporation

Yes. There is no question that the market’s have changed as Doug says. A lot of grain is going out to the west now. Europe has become an exporter as opposed to an importer and of course, the Russian market has gone away. That accounts of a fair amount of that decline. The challenge for us from the Seaway point of view is to find replacement cargos or find a way of moving that cargo to its market through the East coast. We are seeing more and more congestion on the West coast and maybe there are East coast alternatives that will come back into play.

Question

My question is for Mr. Welsh. It is with regard to rail capacity in North America. Has the industry factored in the growth of Asian imports and West Coast handling capacity. I understand that at any given time, at a port like Long Beach, that there are 60 container ships waiting to be offloaded. I guess it is two part, do you see any economies in the freight that you are handling versus maybe some of the bottlenecks like labor issues at ports like Long Beach.
Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

The growth of Asian trade is probably the single biggest factor contributing to the capacity crunch. You used L.A. as an example. Union Pacific, which is one of the main carriers out of L.A., is looking at spending about $2 billion over several years to double-track L.A. to El Paso, Texas. That is because of the Asian growth. The other big carrier in L.A., Burlington Northern Santa Fe (BNSF), has a huge problem facing them coming out of the Los Angeles basin. The route through a place called the Cajon Pass, is a difficult one, a very steep climb up the San Bernardino Mountains. Their line is moving 100 trains a day through there now and they are at capacity. It is going to be very expensive to fix that.

Asian trade is a big driver and it is just going to get worse, or better depending how you look at it. We have seen the forecasts for China and India. It is going to require a huge investment by the railways that serve the West Coast. I am sorry the other part of your question?

Audience member repeats last part of question (inaudible)

Well I do not know that. I just know about the railway situation, and it is what I just said, both Western carriers have capacity constraints coming out of L.A. There may be other problems associated with that port, I cannot tell you.

Charles Foskett, President and CEO
RailRunner N.A. Inc.

Thank you. My question is for Mr. Welsh. I am from south of the border, so my analogy will be less with respect to your railroad. First of all, my observation is that the railroads in the US were not built privately, they were built with public money, through a variety of different ways. The situation now is that they have to be reconstituted. Maybe they should be reconstituted with public money. You have left that question hanging, in other words you said public policy is somehow flawed here. What is your recommendation for how that public policy might be changed to solve this capacity problem.

Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

This is a very difficult knot to untie. It is one that has preoccupied the railway industry for a long time. The fundamental problem is that the pricing system is not working properly in transportation. If all the modes were priced out at their true costs, the resources would be allocated optimally and we would have the right mix of trains and planes and seaway and trucking.
But it is not working that way. Rail is probably the only mode where all the input costs are reflected in the one operating entity and then back out to the customer.

The real solution is something that we call Modal Equity. I will use highways as an example. Modal Equity means that big trucks would have to pay more to use the highway than they do now. The U.S. completes the Highway Cost Allocation Study every few years. It is a very good read if you have not seen it. The last one was a few years ago, and if I remember correctly, it concluded that heavy trucks are only paying about half of the cost that is properly attributable to them. The right answer is to price all the modes properly.

Now is that ever going to happen? Is it politically possible to toll the highways or to put some other tax on truckers to make sure that the highway costs are reflected in their pricing to the customer? I do not know. We hope that will happen someday, but we are not holding our breath.

One area that has to be dealt with right away is regulatory stability. Our President has stated that CPR will not invest in expanding capacity, particularly Western corridor capacity, unless and until we get assurances from the federal government on regulatory stability. As long as the possibility of open access exists, it would be unwise to use shareholder money to expand capacity.

One thing government can do is to ensure the regulatory stability. Another thing is to explore Public-Private Partnerships, which is a way of trying to capture the societal benefits that come from moving more traffic by rail. The difficulty that we have is that the benefits of some kinds of traffic are not sufficient to warrant the railway going after it. But there are societal benefits that come from moving traffic by rail, and there may be a way, in some cases, to negotiate a Public-Private Partnership that would pick up these benefits. This would not be necessary if the modes were priced properly because traffic would land where it is supposed to land.

Gord Tufts, Past President (2000), CTRF
Manitoba Department of Transportation and Government Services
Moderator

I have several questions for Richard. How soon before containers are moved on the St. Laurence Seaway? With the increased use of containers worldwide, would it not be a good idea to consider gearing up now? Why do you appear to be reluctant to go to containers?
Richard Corfe, President and CEO
St. Lawrence Seaway Management Corporation

We certainly are not reluctant, we would not like anything more than to be moving containers. We moved containers years ago and basically as the rail became more efficient we lost that business. We are not waiting, we ran a feasibility analysis, a cost-benefit study last year. When I say we, it was both Seaways, the American and the Canadian Seaways along with some of the international ports and some of the carriers inland and ocean carriers. We put together a group of people to look at how we could break into the container market. We looked at a number of issues, one of which was a feeder service from Halifax into the Great Lakes, into Lake Ontario and Lake Erie as far as Chicago. This study identified the barriers or the bottlenecks that would have to be addressed.

We are presently working with Transport Canada on how we can address some of those bottlenecks. Some are regulatory, some are pricing, some relate to capacity and some relate to seasonality. That is one of the reasons that we are looking at the ten-month season. Container owners like their containers to be moving every week. If we shut down for three months, it is a big black mark against the system. We are looking at all these issues with respect to how we get into containers. I did not show you our strategic plan, but behind our growth strategy, are a number of products, one of which is containers. If we do not have containers on the system this year, which we are unlikely to have, then next year is our target. It is not something that we are reluctant to do, it is something that we know we have to get into. The fact is, we want to get into it in a successful manner, as opposed to something that falls flat on its face. We are working hard at making it happen.

Question

Doug, if this subdivision were double tracked, I guess the Maple Creek example that you had, how many more trains per day could pass? Would double track be considered without realignment?

Doug Welsh, Executive Director Network Development
Canadian Pacific Railway

Double track makes the world of difference. First of all, those 33 seconds of train delay for every mile of progress drops to almost zero. The acknowledged capacity of double track is in the order of 100 trains a day. There are lots of examples in the United States of very busy double-track lines. There is even one example in the United States of a triple track, and that is Union Pacific through Nebraska, that carries 150 trains a day. It goes like this, by the time you get north of 30 trains on a single track, the delays
are starting to mount. You can run 40 even 45, but you are starting to pay the price with a lot of delays. Certainly by 45 or so, you should be double-tracking. Having done that, you jump to a 100-train capacity. And yes, double-tracking can be done without realignment of the curves; the two issues are separate.

**Question**

Richard, could you project traffic estimates along the St. Lawrence over the next decade? Will the Asian boom economy mean a down turn for the Eastern Seaboard?

**Richard Corfe, President and CEO**  
**St. Lawrence Seaway Management Corporation**

We have to project traffic, so we have our projections. I have been with the corporation for 20 years and our projections are always hockey sticks, it is going down, but it is going to go up, you know. We carried 40 million tonnes this year. We have projections up to 46-47 million tonnes over the next 2 or 3 years. That is an increase of 10-15% over the next three years. It depends on a number of things. It depends on maintaining the bulk cargos that are presently moving. It depends on encouraging other cargos to move on the seaway, and again we are not talking about stealing other people’s cargo. Really the movement of cargo is going to increase, if you look at the containers coming into North America. There are estimates that say they are going to double if not triple over the next 10-15 years. This is cargo that has to be moved. There are capacity problems now so anything that we can do with any part of the present infrastructure to help relieve that has to be good. That is the first part. The second part is that we are already seeing that the Asian boom is swamping the Western Seaboard. You should look at the initiatives the Panama Canal is taking for the all water route hitting the Eastern Seaboard from China. When we add India, it is probably as efficient to come through the Suez Canal and hit the Eastern Seaboard. In our case, traffic can come through the Suez Canal and right into the Great Lakes and hit Chicago directly. There is a changing dynamic that we are very sensitive to. But we feel that there are potential opportunities for growth in the Seaway market, both from domestic cargos and also from what is going on the International stage.
Session 3: Seasonal Infrastructure Bottlenecks

Paul Earl, CTRF Board Member 2004
Asper School of Business, University of Manitoba
Moderator

Well thank you for that very kind introduction Gordon. It is my pleasure to moderate this panel on a very controversial subject, on the ownership of the Federal Government hopper cars. Those which have been purchased, or were purchased over many years for the movement of grain. I am going to introduce to you first Mr. Sinclair Harrison who is President of Farmer Railcar Coalition. Sinclair has been a familiar face in agricultural political circles and technical circles for many years. He has been for some years promoting the idea that the Federal Government hopper cars should be owned by a producer group like the Farmer Railcar Coalition. So without further ado I will introduce Mr. Harrison and let him tell you his story.

Sinclair Harrison, President
Farmer Railcar Coalition

Thank you very much Paul, and I want to thank the Transport Institute for inviting us here today to share a few thoughts. The cars are but one piece to a very complex puzzle, as you can see from the previous speakers certainly there is a lot of things to be concerned about there. I will attempt to speak to the hopper car issue and how they may impact the bottleneck situation. Some of you may not be really familiar with the whole hopper car issue and I do not want to go back too far.

The Federal Government announced in 1995 that they were going to divest of transportation infrastructure: ports, airports and the railcars. They have pretty well divested themselves of airports to not-for-profit corporations, ports to not-for-profit corporations, but the railcars are still outstanding. The Minister has said that he is going to take it to cabinet sometime this year, so there is only a month left.

I have had the pleasure of chairing the Coalition since 1996. The reason we came together was there was a thought that the cars should go to the railroads, and the freight rate should go up by $100 million dollars to the farmers. We looked at that and said if we are going to pay for these cars perhaps we should own them, and that is why the coalition came together in 1996. We have been to Ottawa 28 times; some of our colleagues are before the standing committee on Agriculture as we speak. The first trip to Ottawa went to see the Deputy Minister of Transport. He looked at me and said Mr. Harrison, you have got two problems. Hopper cars are very sophisticated pieces of equipment. Secondly, farmers are not really smart enough to run a business like this. I do not have a great memory, but that has stuck with me...
for 9 years. I am going to go through a few comments here, I do not want to get into a lot of detail. We do call ourselves a leasing company with a difference. The main difference between our leasing company and any other leasing company of railcars in North America is we are responsible to the farmers of Western Canada and we want to keep the lease rates as low as we possibly can. To the benefit of farmers, every other leasing company, including the railroads wants to maximize the return to their shareholders. That is their business; CP just said that, we know that. If I were in their shoes I would want to do that too. This is the significant difference between farmer ownership of this asset and anyone else. They want to maximize return, maximize lease rates, we want to minimize.

I would like to set the stage for transportation and grain handling cost and how that fits into a farming enterprise. You can see that the dark column shows a significant cost on the farm today. Especially this year when we produced a lot of low quality, low value commodity. It takes the same amount of money to transport a tonne of number 1 high protein as it does one tonne of feed wheat. The difficult part is the return to the farmer on a tonne of feed wheat is about half what it is for the number 1. It is going to have a significant impact, especially this year because it is very low quality and it does not affect the cost of transportation one little bit.

**Figure 3.1 Farm Input Costs**

![Farm Input Costs Chart](chart.png)

Source: Saskatchewan Agriculture and Food, Saskatchewan Highways and Transportation

There are not only the Federal cars in what we call the base grain fleet. The column on the left is the Federal fleet, and originally there were 13,000. The bottom part of the column represents the steel cars, which for our 45-50 cubic foot capacity, 263 gross weight. The next section on top of that column is aluminum cars. There were 2,400 aluminum cars purchased back.
in the 1980s because it was light steel and there was a Churchill line. They are 70 tonne cars as opposed to the 90 tonne for steel, so they are inefficient car for today’s market.

The next column you see is the Federal Government, they leased 2,000 cars, one of the reasons that we put that in there in purple is that lease runs out next year. If the government does not pick up that lease, naturally that is going to be a capacity concern or a bottleneck. All these cars on the way across are supplied to the farmers of Western Canada at no capital cost, but we do pay the maintenance, on both the Federal Government owned cars and leased cars. Saskatchewan owns 1,000, Alberta owns 1,000, and the Canadian Wheat board own 2,000 cars on behalf of farmers. So there are actually 19,000 cars in the base fleet, but what we are here to talk about really, is the column on the left hand side.

**Figure 3.2 Base Grain Fleet**

![Base Grain Fleet Chart]

Note: Federal Leased – Expires 2005

These cars were purchased originally starting in 1972. The railroads at that particular time said that they did not have the dollars to convert from boxcars to hopper cars. So, the Federal Government started to buy hopper cars in 1972, and purchased the 13,000 cars through until 1985-86. A railcar has a defined life. There are some things you can do to extend the life, but there are three blocks of time that we have to replace them. Starting in 2011, some of these cars will have to be replaced, regardless of who buys them. This is about a $1.2-1.3 billion dollar liability. Everyone realizes that we should be replacing the aluminum cars. They come with the
package, and if the government should decide before Christmas that they are coming to the farmers, certainly we will make every attempt to replace those cars as quickly as possible.

**Figure 3.3 Retirement of Current Fleet**

There was an opportunity three years ago when there were lots of hopper cars sitting around North America. The value of a 35-40 steel hopper car, 1985 vintage was $10,000. You could take an aluminum car, scrap it and sell the scrap for $10,000. There was a lost opportunity, by all of us, that we did not seize the opportunity to replace the 2,400 aluminum cars with steel cars and it would not have cost us a nickel. We lost that opportunity, it may come again and we would like to think as farmers and owners we would be nimble and seize an opportunity like this.

Dealing with maintenance, it has been no secret that generally the railroads maintenance strategy is fix it when it is broken, and that is what they have chosen to do. We as farmers have been somewhat critical of that methodology. We have looked at the airline industry and certainly if they had that strategy, a lot of us would not be here today. There are technologies available that can predict when you should be doing maintenance, ahead of when it breaks – pro-active maintenance. This particular strategy – and there are several different ones – is called a WILD detector which is a Wheel Impact Load Detector. Along a section of rail there are sensors, and if you have a perfectly smooth wheel and a perfectly smooth rail, then naturally there is very little vibration. But if you have a flat
spot or if you have spalding or any imperfection, naturally it sets up vibration, so the WILD detector picks that up. They are called kips not vibrations, and there is a bar code on every car. You take that reading along with the bar code, it goes to a central intelligence bank in North America. There are dozens of these detectors right across the North American continent, every time a car goes across there it sends in the information on every car in North America. As of October 2004, railroads and car owners have to comply with the readings. Once they reach a certain level they will get a warning, if it goes higher they will get another warning. If they do not do anything, the next level is the railroads pull the car into a shop, fix it and send you the bill. We have suggested that this is the kind of monitoring that we would adopt as owners. We want to be proactive, and we want to catch things before they cause a problem.

**Figure 3.4 and 3.5**

Figures 3.4 and 3.5 are pictures of hatch covers. When such a car shows up at an elevator, or a producer car, you have the option of bad ordering. However, if you have been waiting a month for a car and it shows up and it looks like that, do we grab the duct tape, the shingle and the tar and load it, or do we bad order it? In most cases, whether you are a producer car, or an elevator company you do end up loading it. There are situations where a car like that will get to the States with milling oats and they will refuse it and send it back. When we were in Ottawa about three years ago we were told by Transport Canada, once they get the airline security down to where they want it, the trucking industry and the rail industry is next. So we know that we are going to have to clean up our act, that this is unacceptable.

There are aluminum hatch covers that are much more robust and we would suggest that as an industry we have to go perhaps away from fiberglass and into something more stable. A lot of people recognize this as a gate that lets the grain out of the car, there are several different designs, some are better than others. They are not a complicated piece of equipment, but you can see the layer of grain exposed in the picture. When they load that at the elevator, or a producer loads it, it is sitting still, it may not leak. It is just like picking up a saltshaker and not shaking it. It may not run out, but you can
imagine the vibration from the Prairies to Thunder Bay or to the coast, how much grain may leak out, and that is unacceptable.

You may have read the article about what happened in the environmentally sensitive Banff National Park. This naturally takes place everywhere grain cars go, but when you get into National Parks they are more concerned about wildlife, the leaking of the grain, it is just like feeding time for the wildlife. They hear the train coming, it is dinnertime, so they all flock to the track because of the leaking grain. One of the last ones did go and buy a vacuum for half a million dollars to vacuum up the grain, they were being environmentally responsible, but we would suggest, why do not we take the money and fix the gates and get at the root of the problem.

We have done some work with the Grain Commission to try to determine actually how much grain does leak out. It is not a difficult exercise, every carload of grain is weighed before it leaves the Prairies and it is weighed when it gets to export. We do not have figures going into the States, but our initial analysis is in excess of $11 million worth of grain that is wasted throughout the course of a year. In the neighbourhood of 430 hopper cars are wasted, spread on the tracks all across North America. We can do better, collectively working with the railroads, the maintenance shops and we have to do better.

These are but a few examples of things that we, as farmers, have looked at over the last nine years. We have surrounded ourselves with a team of experts. Collectively, from the waterways, the rail, and we have to make a better system. If we become the owners of the cars, that is exactly where we want to go. There are many pieces of the puzzle and we just want to improve our piece.

Paul Earl, CTRF Board Member 2004
Asper School of Business, University of Manitoba
Moderator

Our reaction panel is Mr. Ian McCreary from the Canadian Wheat Board, Judie Dyck who is the executive director of the Saskatchewan Canola Council, and Wade Sobkowich who is Executive Director of the Western Grain Elevator Association and are speaking on behalf of the Grain industry I presume. What I will do is ask each of these people in turn to give a short reaction to Mr. Harrison’s presentation. So Ian since you are first on this list I will let you come up here and give a reaction.

Ian McCreary, Board Member
Canadian Wheat Board

Thanks Paul, and thanks for the opportunity to address the group. It is a bit of an unenviable position to follow Sinclair Harrison on the topic of railcar
ownership. In my case the last time the car debate was a constraint, happened when I was still in school. Sinc started on this process on behalf of farmers 8.5 years ago to take on the Farmer Railcar Coalition, when I was in a very different life. He has been basically focused on this issue throughout that time period. So, a bit of a daunting task to follow it up. There are times you want to thank Sinc, because 8.5 years ago the alternative plan was for the farmers to buy the railcars through an increase in freight rates of $3.00 a tonne and for the railways to take ownership. Through the work of the Farmer Railcar Coalition, I think that we have moved passed that debate and that is in no short order to the focus of Sinc. So when you are at a core time, farmers do owe Sinc a big load of thanks. The rest of the time we just want to tell Sinc to get a life. We have heard from Sinc in terms of the core issues as to what they have the capacity to do through the Farmer Railcar Coalition in terms of taking one segment of the rail sector and alleviating some of the potential bottlenecks and capacity constraints. Sinc alluded to the dedicated fleet and talked directly to a responsible replacement plan, specifically a pro-active maintenance program.

On behalf of the Board, we come to this file from a bit of a different perspective. We come from the perspective of farmer cost. For us it was a very straightforward file, the railcar ownership was not part of the farmer cost base, with government ownership. If they were to be transferred to the railways that cost would be born by farmers and the railways would own the asset. This portion of the argument is extremely straightforward. I would say that the path on the dedicated fleet for us was a bit more of a journey. When I came back to this industry six years ago, in terms of getting back involved in farm politics, railcars were a dime a dozen, and the lease market was floating all over the place. We were still in that period where America was flooded with customer-based cars that had been encouraged through public policy in the U.S. and through the railway’s focused effort to have customer’s purchase cars. However, in that six short years we should have a core learning. Railcar costs on a lease market in the last three years have gone from $200 per car a month American to $450 per car a month American, and fundamentally these cars are not available. The value of a dedicated fleet, the value of Canada not depending on the American infrastructure market for a long-term view has become clear, and the Farmer Railcar Coalition’s circle of value to our industry is completed.

The other piece of the puzzle that Sinc adds to the table, is the package of pro-active maintenance. As a chair of the Board’s transport committee and a person who has sort of been flagged as being sent out in the lime light on behalf of the Board on transport politics I hear the concerns. There is concern among many of our agents with gates and hatches. As Sinc said, it gets a mix of bad order cars and a bunch of farmer maintenance that happens for free, be it by an elevator agent or a farmer. It speaks to the difference between having the farmers and the railways owning the asset. I will not resist the opportunity to respond to the Canadian Pacific presentation that we just heard. Farmers invest billions of dollars in this industry on an
annual basis and we do so without any regulatory certainty. If farmers are going to be connected to our customers around the world, we are going to have to have a guarantee of competitive rail rates in order to know that we are viable in the long term.

Connecting these two subjects together, the farmers have a longer term view of necessary infrastructure and the investments that are required and will by definition have that longer term view than will the carriers. We are not going to go throwing an asset away in the mid-Eighties and come whining back to the public purse in 2004 saying oops. We are here, we have invested in a land base, we have spent billions of dollars and there is good economic rational for tying the cars to the farm. On that note, those would be my comments and I look forward to moving on the panel.

Judie Dyck, Executive Director
Saskatchewan Canola Growers Association

Thank you, it is a real pleasure and honor to be here to present at the conference. The Saskatchewan Canola Growers Association has been the voice of business minded canola growers since 1969. It was the first provincial canola association formed, and at that time was the Rape Seed Association. The association was formed to insure that canola growers had a voice provincially as well as nationally, and this objective remains true to this day. The association has been and will continue to be committed to a commercially transparent transportation system. The association has had a long history on transportation issues and has present briefs before both Estey Review and Kroeger Process. Canola is an important cash crop for producers in Western Canada, many sell their canola in the fall to pay their bills. The canola industry is dependant upon an efficient transportation system to reach our major markets, both south to the U.S. and Mexico and went to Japan, China, Pakistan and so others.

Canola growers were one of the founding members of the Farmer Railcar Coalition, and until March of this year participated on the board. I had the opportunity to attend the February board meeting on behalf of the board of directors of the Saskatchewan Canola Growers and came back to our board to discuss some of the concerns. It appeared at that time from the discussions around the table that the cars were in the position to potentially be transferred to the Farmer Railcar Coalition. It seemed imminent and yet I still had concerns that I addressed with regards to the risks and liability of those cars with respect to ownership. There appeared to be little discussion with railways at that time, which of course is integral to any business plan. Concerns over the storage of the cars, any potential trade action on the transfer of those cars, as well as the future direction of the grain industry. At our March board meeting it was voted to remove the Association’s membership from the Railcar Coalition.
So as an Association do we think there needs to be changes to the transportation system? Absolutely. Do we think that producers have a roll in grain handling? Yes. In fact many play an important role in the inland terminals across Western Canada, but this ladies and gentlemen, is a business decision, and we have a lot of unanswered questions. The following are some of the concerns we have.

First, freight rates. We are concerned that simply transferring the ownership of these cars will result in a freight rate increase with no additional benefits or efficiencies, regardless of who the new owners are. So where do these concerns come from? As we understand it, the current agreement between the Federal Government and the railways is that each railway is apportioned to approximately half of the 12,500 hopper cars. These cars are used by the railway at no charge with the provision that they must maintain the cars to the same standards as their own.

There has been a lot of discussion about the condition of these cars and we too are concerned about these cars and hear stories such as the wildlife wanting to come and have dinner. Of course the maintenance cost is imbedded within the revenue cap, and in order for the FRCC to take over the maintenance amendments or any other new owner would require clarifications to the act. As we understand it, this has not been done. However, Transport Canada did say at the November stakeholder meeting in Winnipeg that they were prepared to make those changes.

Second, the CTA has stated that the maintenance that is imbedded in the revenue cap is some $4,300 per car, and the estimate by FRCC is that these cars can be repaired for $1500. As I understand it, the balance of those funds were going to be used to keep the freight rates at current or lower rates, as well as to use this fund to replace the cars in the future. However, it is my understanding that there is no fund that can be used for capital. The only source of revenue as I see it, would come from the commercial leases that are negotiated.

Third, the FRCC or any new owners may impact the freight rates through leases, but do not set the freight rates. The railways set the freight rates. FRCC can maintain these rates or lower them by offsets with leases with lower maintenance costs. Lastly Transport Canada stated at the November 1st meeting that they did not know if freight rates could be reduced. It would depend upon maintenance, the sales price and commercial lease rates. Many of these three points have not been clarified as to what they would be. I will go on to the second concern: ownership and leasing. Whoever owns these cars will have to negotiate the lease rates. As I understand it, ownership of the cars does not empower the owners to any further authority within the transportation system. It certainty may cause and potentially divide what is considered to be a common fleet, which includes the Federal hopper cars, and could ultimately result in bottlenecks within the transportation system. If we start having division in the common fleet as to different rates, there are
potential implications. Of course as canola is an eligible crop under the Western Dedication Covenant, we want to insure that we can move our canola in any direction efficiently.

The FRCC business plan states that the lease rates will comply with NAFTA and WTO requirements and all leases will be commercial, both domestic and North America. Yet it is our understanding that the lease rates would be less than market value and as I believe it was said this morning, a leasing company with a difference to minimize lease rates. So why is this a concern? Well the concern has to do with what impact it will have on trade. The Americans are only too happy to take action on what they perceive as unfair trade. Currently we have tariffs and of those tariffs there is a 3.94% duty on Canadian Hard Red Spring Wheat and of that 3.94% duty, 3.5% is based on hopper cars. As you can see transportation policy is sited as one of the reasons. We want to make sure that the Federal Government is very careful to insure that any sale of the hopper cars, to whomever does not increase trade tensions. If the cars are sold at a nominal value this may further trade action. Also what is the impact on trade if there are less than commercial lease rates? We are not talking just sale price, but commercial lease rates. We believe that the U.S. will be watching the disposal of the hopper cars.

My fourth point is liability. Who is responsible for liability, which includes financial liability? What is the exposure and risk to producers? Well at the November 1st meeting, Transport Canada outlined three options. First was status quo, the second was a commercial disposal, and the third was to negotiate a transfer to the FRCC. However, at the end of that meeting, the Minister of Transport, Mr. Lapierre, stated that there were still a lot of unanswered questions and concerns and perhaps that maybe four or five recommendations would be taken to cabinet, as Mr. Harrison suggested, by the end of this year.

Saskatchewan Canola Growers suggest that the least risk option at this time to producers would be a modified status quo. Where there be two years with both railways, modifications would include a new operating agreement, which could also include a review of the maintenance costs that are imbedded in the revenue cap. During this two-year period the standing committee on Transportation could review all the options on the disposal of the cars as well as examine the Western Dedication Covenant and the alternate use agreements to see that they are serving the best interests of Western Canadian producers. Replacement of cars absolutely should be part of that review, before any disposition of the hopper cars, it should be done in a transparent and commercial manner.

The Saskatchewan Canola Growers believe that there should be a well thought-out, thorough, clear plan which should address potential trade action, cost of sales, governance and roll of potential owners of the fleet, as well as any exit strategy should the business plan go awry. One of the things that are very important is that the new owners meet the requirements that
Transport Canada outlined, to work with industry and the other stakeholders. We would encourage that this be in place as well.

In summary, we appreciate the commitment and dedication on this initiative by the Farmer Railcar Coalition. The Saskatchewan Canola Growers believe that it has a responsibility to members and producers to bring forward our questions and concerns. This is a business concern. While the Transport Minister has stated that a decision must be arrived soon on the disposal of the cars, we will continue to urge the Federal Government to conduct a thorough due diligence on this matter. The uncertainty within the transportation system will continue unless all the questions and concerns are dealt with.

**Wade Sobkowich, Executive Director**
**Western Grain Elevator Association**

Good morning ladies and gentlemen. I do not know how I ended up batting clean up with this esteemed panel, but I will tell you one thing, that was a big mistake because the same thing is going to happen whenever I bat clean up, no one is going home. The Western Grain Elevator Association (WGA) is an association of 9 farmer-owned public and private grain businesses operating in Canada. They collectively handle in excess of 90% of Western Canada’s bulk grain shipments. The WGA is striving toward an open and transparent transportation system that is based on commercial values. We have some similar concerns as the FRCC with the transportation system. We believe that significant changes have to be made. We do not disagree with the points on hopper car maintenance, or with the points made on hopper car condition. I personally have a lot of respect for Mr. Harrison and the FRCC, for their tenacity, 8 years is a long time. We believe the proper way of addressing these points is through legislative reform, not through the ownership of the hopper cars.

What is our problem with the FRCC proposal? On the surface, FRCC’s plan looks really good, and when it was first explained to me, I thought it sounded really good. Then I had it explained to me through my membership, why we have these concerns, and I said “OH!” Then they explained it to me again, and I said, “Okay,” one more time. After three or four times of that I understood it and it is more complicated than what it appears to be. I am a pretty simple sort of a person, so I took it and I tried to briefly explain the key points and why we have these concerns.

The portions of the FRCC that we know, insert non-commercial elements into the transportation system. A system that we believe requires increased commercialization. The core non-commercial elements are the FRCC’s proposal that the cars be given to them at a nominal sum. If the cars are to be sold, and we do not necessarily think that they should be, but if they are to be sold, not doing so at true market value has very serious and far-reaching implications to the entire grain industry.
We have three main areas of concern. The first one has to do with car apportionment. If the FRCC is able to purchase the cars for a nominal sum, it is going to eliminate or reduce their capital investment costs, because of this their lease rates have the potential of being lower, and that is one of their core principals to offer lease rates at less than market value. In a normal business environment, supply and demand strive to achieve an equilibrium and it is a basic intro to economics through price adjustments. With non-commercially lower lease rates than anyone else, the demand is always going to be artificially higher than the supply. The FRCC is therefore going to have the ability to select whom it will apportion these cars. It will not be based on price but based on political expediency.

The fact that the FRCC will be leasing cars at less than market value gives them the means to apportion the cars at their discretion. Within that, the governance structure of the FRCC adds further concern. The Saskatchewan Association of Rural Municipalities, the NFU, KAP, WRAP and APAS will specifically be given a total of 5 permanent seats out of 9 on the board of directors. The governance structure gives the FRCC the motive, for lack of a better word, to make apportionment decisions on a political basis. Essentially the FRCC is saying this is not going to happen, we are going to do this in a very commercial type of a way. However, a case in point is that the FRCC did state in the past that they were willing to provide Ontario producers with 500 cars with no commercial or market justification. They stated the purpose of this was to get them on side. This is a political reason. If the FRCC is willing to apportion cars for political reasons to get members on side, will they be willing to apportion cars on a political basis to keep members? If they end up with the ability to make these kind of arbitrary decisions the implications will benefit some producers in the short term, it will hurt other produces in the short term and it will hurt the entire industry, including all producers in the long term.

Our second area of concern has to do with the FRCC’s influence on rail transportation. By virtue of ownership of these cars, FRCC has stated that it will interject itself into the grain transportation debate between shippers and railways. Other than by making this general statement, we do not really know how they plan to do this because they have said that they are not going to be involved in car allocation. Right now, only shippers and transportation companies are decision makers on these types of issues. Other lease companies like GE Capitol are not involved in these types of debates. Allocation decisions for non-board grains are based on company sales. For board grains it is based on the companies handling percentage or the amount of grain secured through tenders.

Our third area of concern has to do with producer’s interests. A number of the FRCC’s members are corporations or associations of municipal governments. The FRCC suggests that they represent members generally, it is noteworthy that a significant number of prominent producer organizations are not included in their membership. The Saskatchewan Canola Growers,
the Grain Growers of Canada, the Western Canadian Wheat Growers are a few. In addition, we question whether the bulk of the FRCC’s membership, such as West Central Road and Rail, the Saskatchewan Association of Rural Municipalities, and the Alberta Association of Municipal Districts and Counties actually represents the grass root intent of producers in Western Canada.

What should be done with the hopper car fleet? Its value is significant, scrap metal value alone is about $80 million, market value is probably closer to $150-200 million. This is significant, and the assignment of such assets at a nominal sum by the Federal Government is probably not going to be seen as prudent by Canadian taxpayers. There are two options that we would support. The first option being that the government retains ownership with a modified operating agreement with the railways. If everybody sitting here on the panel wants to minimize the freight rate impact to producers, government retention of the hopper cars is going to be the best way to do this, under a modified operation agreement with the railways. This option will minimize the impact on Western producers by allowing the freight rates to remain the same or potentially be reduced. It is going to reduce the risk of trade challenges, especially by the United States. It will also continue to insure adequate car supply for Western Grain movements.

If the cars have to be sold and the Government has made the decision to sell the cars, our second option is that they have to be sold at commercial values. We cannot have the cars sold at less than commercial values because it will be market distorting, as we continue to prop up the transportation system that is not based on a commercial basis with rules and regulations and legislation. It is worth noting that this particular option, or recommendation, is consistent with the original announcement on the cars, which was that they be sold for true market value. It is also consistent with Justice Estey’s report. He is the only one to my knowledge that has studied the overall grain transportation issue in such depth and detail in the last 5 years. He recommended that they be sold at commercial values as well, because he understood the concerns that we have.

In summary, the best assurance that the FRCC can give us is that everything will be the same for two-years, but beyond that we are going to have to wait and see. If the Government of Canada is going to provide some assistance to producers, then it should do so in a manner that is not market distorting. An option that has not been explored, and it is only an idea at this point, is if the value of the hopper cars is worth $200 million, what about taking the proceeds for a sale and figuring out how to benefit producers with those funds through the Ag policy framework for example. Thank you very much.
Paul Earl, CTRF Board Member 2004  
Asper School of Business, University of Manitoba  
Moderator

We now come to a round table discussion. We will start this by giving Sinclair Harrison two or three minutes to respond to some of the comments that have been made, and then I will let other people come in.

Sinclair Harrison, President  
Farmer Railcar Coalition

Thank you Paul. I would like to go back to the topic for this particular session, seasonal infrastructure bottlenecks. This is what I had tried to address. If I had known that our business plan was going to come under attack, that is what I would have addressed. But when you are asked to come and present, with respect to the people that asked you, you should stick with that topic. We do have a 96-page business plan that is on our web site and have 3 or 4 copies here. Certainly I can go through issue-by-issue of all the things that were raised, specifically by the Saskatchewan Canola Growers and Western Grain Elevators.

There are inconsistencies when we think there are 450,000 hopper cars on the North American continent. Most of them are non-railroad owned. We are not doing something that is dramatically different, it has already been done. We are going to take on a full service lease, which means we provide the maintenance, we are responsible for it. We are going to put our money where our mouth is, we have been critical of the railroads, there is a lot of capacity in Western Canada outside of the railroads. They will be able to bid on both CP and CN, it will go out for tender. Progress Rail have bought the CP shop in Winnipeg, there is a big CN shop were. There is a smaller Central Manitoba shop, Red River Rail Break provide parts. In Saskatchewan there are shops by: GATX, Procor, GE, and Rescar has two mobile maintenance facilities. Since a lot of the maintenance done on cars is done mobile you do not need to go into a building. For example, a tank, if you want to take the wheels off the car, take them into a shop and replace them, then bring the new wheels out, you can do that all with mobile. Folks this is not rocket science.

To suggest that there are questions, of course there are questions. After 9 years, to suggest that we should go with a status quo; there is no replacement strategy in status quo. The Federal Government said they are getting out of ports for a nominal fee, and airports for a nominal fee. We suggest treating us the same. Why? Because of the simple math. Everything we pay you more than a dollar goes into the lease rate, which goes into the freight rate. If you think farmers in Western Canada can afford a higher freight rate today, you had better go out and talk to them.
Question

If the railways purchase the government cars at market rates instead of the FRCC, do all the problems go away?

Wade Sobkowich, Executive Director
Western Grain Elevator Association

No. The problems do not go away, but at least we are trying to correct problems based on a commercial system.

Ian McCreary, Board Member
Canadian Wheat Board

Every time we get a chance to agree with the WGEA we want to do that. No, the problems do not go away. I mean ultimately none of the price discovery price mechanisms, all of those pieces are implied. Particularly when you hear the railways earlier talk about the fact that they are not really that interested in a competitive open access model. It is fair to say that the problems do not go away on that front.

Sinclair Harrison, President
Farmer Railcar Coalition

If I might talk to commercial, as I indicated earlier, right now specifically the 13,000 cars are supplied to Western Canada free of capital cost. If and when we take possession of those cars, we cannot do that. We will be leasing them back, hopefully to the railroads. At 80-90% of lease rates, and that is for statutory grains going to Thunder Bay, Churchill, Rupert and Vancouver. Trade going into the States goes at full commercial value now, full lease rates, and it will when and if we take possession. This idea that we are going to cause a huge trade action into the States, for now it is for nothing. We are going to be 90% of the market, so we are 90% better off with farmer ownership than we are today. The trade, or the tariff is miniscule when you look at the saving that we can accrue on the maintenance, about $35 million a year. So when you take a miniscule tariff of today, add a 90% lease rate, as compared to today, it is a good deal.

Question

If the government keeps the rail fleet, who will replace the fleet? And who will pay for it?
Judie Dyck, Executive Director  
Saskatchewan Canola Growers Association

Part of the review would be to look at who would replace those cars because it is an important issue. That would be determined by the standing committee on transportation, that is what we have asked for.

**Question**

Government grain cars are only a portion of the fleet, if the cars go to the FRCC what cars will the railways deploy first? Railway owned cars, railway commercial leased cars or FRCC cars?

Sinclair Harrison, President  
Farmer Railcar Coalition

We are getting into the lease arrangement, and we have met with both CP and CN on several occasions. This spring, we took a model lease agreement to both railroads to start talking about the elements within this lease. They said, once you get some cars, come back and see us. We have to have something in our business plan. We said we are going to start off with a two-year lease. Now when we get into negotiations with the railroads, that may end up being a three-year lease depending on a whole host of things, that is the art of negotiations. But you have got to start somewhere, so we are starting at a dollar, purchase it, and a two-year lease. There are lots of things in between. For example there are structural cracks on those cars in the shear plate. Who is going to be responsible for fixing those? Is it the Federal Government, the railroads or is it us? Half of the steel fleet that was built in Nova Scotia has that problem. We know about it and so do the railroads, and nobody is doing anything about it. There are patches that are cracked, that all comes into the lease negotiations.

Certainly what they are paying for lease to the Farmer Railcar Coalition and alternate use. Is alternate use in or out of the lease, that will determine a lot of whether they use our cars or let our cars sit.

Paul Earl, CTRF Board Member 2004  
Asper School of Business, University of Manitoba  
Moderator

Both the Western Grain Elevator Association and the Canola Growers want the hoppers sold at commercial rates. Would this sale on the open market continue the current practice of dedicating the cars to Western Grain? If there is no dedication how do you prevent cars from going into other markets? If there is dedication then how do you square that with a fully commercial system?
Wade Sobkowich, Executive Director
Western Grain Elevator Association

This is a really good question. It would have to go with a condition probably, or it would have to be worked out. It would not be fully commercial to offer the cars for a commercial sale to whomever you want, and let them just be taken to somewhere else in the continent and be used not for Western Grain. We know that this was one of the original intentions of these cars. If the government wants to put a condition on the sale that it be used for Western Grain and that any replacements be used for Western Grain, then that would have to be something that needs to be explored.

Judie Dyck, Executive Director
Saskatchewan Canola Growers Association

Our recommendation to the Transport Minister as well as to the standing committee, is that the Western Dedication Covenant, the alternate use agreements be reviewed to ensure that we can get our canola to markets, at the least cost rates and least risk to Western Canadian producers.

Sinclair Harrison, President
Farmer Railcar Coalition

Well naturally it is inherent in our business plan that we dedicate it to Western Grain, if the Federal Government wants to put that restriction on us, go ahead. That is the whole reason for being, is to move Western Grain with this fleet. To be fully commercial and sell these cars with no restrictions on them, people are saying that we do not really care where they go in Western Canada, as long as we maximize the return to the taxpayer of Canada.

Lunch and Keynote Speaker

Gordon Baldwin, President
Canadian Transportation Research Forum (CTRF)

Ladies and Gentlemen. If I could have your attention please. Dean Glenn Feltham from the Asper School of Business will introduce our luncheon speaker, the honorable Ron Lemieux, Minister of Transportation and Government Services, Province of Manitoba. Thank you.
Dean Glenn Feltham  
Asper School of Business  
Luncheon Chair

Fourteen years prior to his 1999 election to the legislature as the MLA for LaVerandre, Ron earned his B.A. and B.Ed. from the University of Winnipeg. He also completed post Baccalaureate certification in Education from the University of Manitoba. Before becoming an educator, Ron worked in sales and also as a recreational director. The Pittsburg Penguins drafted him, and for a time he was a professional hockey player. He was also employed as a provincial civil servant, which gave Ron an intimate knowledge of how government works. On November 4, 2003, Premier Gary Doer appointed Ron to Minister of Transportation and Government Services. Previous portfolios included: Minister of Education and Youth, Minister of Culture, Heritage and Tourism, Minister responsible for Sport, as well as the Minister of Consumer and Corporate Affairs. If you would please join me in providing Ron Lemieux with a heartfelt welcome.

Hon. Ron Lemieux  
Minister of Transportation and Government Services  
Province of Manitoba

Thank you very much for the invitation to speak today. I know that I am pinch hitting for my friend, Minister LaPierre, Federal Minister of Transportation, but I think we can all appreciate the demands of his schedule. I would just like to say a few words about Mr. LaPierre.

During a recent Federal, Provincial and Territorial Minister’s meeting, Minister LaPierre warmly welcomed all his provincial and territorial counterparts and indicated that he is ready and willing to work with them. The provinces and territories, similarly feel that Minister LaPierre will be a good individual to work with and are encouraged by his strong grasp and understanding of some of the issues, regardless of mode, facing the industry. Although we, at the provincial/territorial level may not agree with all the decisions made or actions taken by Transport Canada, we are optimistic, now more than ever, by their willingness to consult with us.

I would like to thank the organizers of this event. The University of Manitoba Transport Institute as well as the Asper School of Business should be congratulated for their continuous efforts in the field of transportation. I would also like to congratulate all of you in this room for participating in this event. Conferences like this one are positive for Manitoba as they provide a forum for information and discussion towards taking initial steps to addressing some of the transportation challenges that we face. I know that bottlenecks in our supply chains are an issue being faced not only with industry and government here in Manitoba, but in other jurisdictions as well. I commend you all for taking action by attending this conference here today.
I know Ruth Sol from WESTAC is here in the audience. The Western Transportation Advisory Council is a forum dedicated to strengthening Western Canada’s economy through improving the region's transportation system. It facilitates high-level forums and discussions among its members—an active and diverse group of organizations represented by business, labour and government leaders—to address transportation-related issues. This year I am very fortunate to be the chair of WESTAC. As transportation is not my background, it has given me the opportunity to gain a deeper understanding of many of the issues facing the industry—issues that many of you deal with on a daily basis. One such issue—grain handling and transportation in Western Canada, the challenges facing the industry, and the complexities surrounding the issue—which I will speak to from a provincial perspective today.

The grain industry is one of Western Canada’s, in fact one of Canada’s main industries. It pumps over $12 billion into the economy each year and employs well over 100,000 grain farmers, mostly in western Canada. Manitoba exports of grain and oilseed products make up 15% of the dollar value of our province’s total merchandise exports.

An efficient supply chain is critical to meet the challenges being faced by the industry. Canadian grain farmers have some of the longest inland distances to market of any exporting nation—Manitoba is no exception here. As a result transportation is a large portion of our farmers’ costs. Minimizing these costs help farmers mitigate the risks the industry faces at the hands of crop unpredictability and global market competition.

For example, nations such as Russia and the Ukraine, who have improved their grain productivity and output, are making the market increasingly competitive and thus driving down grain prices. Eliminating bottlenecks and ensuring timely service to our customers will result in increased sales and will benefit everyone. All available transportation corridors should be utilized to the best extent possible to maximize the return to farmers.

Thunder Bay, the primary port for Manitoba grain shipments, handles roughly 60-80% of our grain exports. Another 15-30% goes through the port of Vancouver.

Rail and port bottlenecks to and through the Canadian Rockies and at Vancouver are a concern to Manitoba, given the Province’s growing trade with Asia. Not only are there bottlenecks on export-bound shipments, but import-bound as well. I applaud CPR and CN for forming an alliance to address railway capacity issues in the West. As a Minister responsible for transportation I feel that it is my responsibility to encourage industry to work together to come up with solutions. I am personally committed to working more closely with the transportation industry to address such issues and find practical solutions. The Province of Manitoba is also supporting the development of the Port of Vancouver as a 24-7 operation.
The Port of Churchill offers an alternative to Thunder Bay and Vancouver for grain movements. It is an optimal exporting route for many grain-producing points in the prairies. The CWB’s Freight Rebate Program for the port resulted in over $6 million returned to farmers between 2000-2002. The OmniTRAX/Louis Dreyfus partnership at the port’s terminal has increased non-CWB movements such as feed peas, canola and linola. The Government of Manitoba, OmniTRAX and the Federal Government have partnered to form the Churchill Gateway Development Corporation—an initiative focused on finding new growth opportunities for the port. With the help of the Province, the Churchill Gateway Development Corp. is pursuing port development opportunities with Russian interests, and recently met with the Russian ambassador in Churchill. Domestic and foreign interests along with new technology available to keep the port and passage ice-free for longer periods of time are presenting new opportunities for Manitoba and the Port of Churchill.

Within a North American context, Manitoba has seen growth in its agricultural trade with the US and Mexico. Since 1994, the dollar value of Manitoba’s exports of wheat to Mexico has increased by 200%. The Province’s exports of oats, soya bean, and sunflowers to the US have also increased significantly. Both CN and CP railways have extensive rail networks into the US and Mexico supporting Western Canada’s grain transportation south. From a provincial perspective, Manitoba’s Mid-Continent Corridor Strategy—an initiative aimed at supporting Manitoba’s trade with its NAFTA partners through the development of efficient supply chains—supports southward bound grain logistics.

A key aspect of grain transportation and handling is the highway system support linking farms to next points in the supply chain—usually prairie grain elevators or terminals. The Government of Manitoba is responsible for providing a highway network linking farms to core corridors, and for maintaining that highway system so that it is not a bottleneck in the grain supply chain. As the number of farms and prairie grain terminals decrease and the number, weight and distances of grain loads increases, our highways and rural road networks are taking a beating. We as a government face a growing challenge of maintaining our highway and rural road networks.

The Province has taken several steps towards meeting the infrastructure needs that support our supply chains and trade sectors. To address the problem we are in our third year of implementing a five-year, $600 million infrastructure plan. In addition the transportation budget has been increased by $10 million this year and next year to go directly towards construction and maintenance. Manitoba has committed that all provincial revenues raised through gas and diesel taxes will be spend on highway infrastructure. Manitoba wants to demonstrate that we view our transportation and logistics networks as being critical to our economy and therefore is committed to being accountable for the revenues raised and invested. We have committed to investing any new share in federal gas taxes into municipal...
infrastructures. We also intend to imbed sustainability as a principle into the Manitoba infrastructure approach. Our intent is to send the message that fuel tax dollar revenues derived from road transportation should be put back into the road construction and maintenance.

I mentioned earlier that Manitoba is eager to work with Minster LaPierre as he has indicated to us that he is prepared to work with us to improve the overall transportation infrastructure system.

In our meeting with Minister LaPierre, Manitoba was a strong advocate of putting gas tax money back into highways. The fact of the matter is that in Manitoba, the Federal government takes about $165 million in motor fuel tax out of Manitoba, and puts back about $10 million. Although Manitoba recognizes that we will not recover all the revenue, we certainly expect a better return. Having said that, we are hoping that in the days to come there will be negotiations taking place between the federal government, the province and the municipalities, to get more dollars into the municipal infrastructure system.

There are several issues and challenges preventing a bottleneck-free transportation and supply chain network. In the past year, I have learned a lot about these issues. I strongly believe that the more opportunities we as an industry have to talk about these challenges, the more likely we are to reach ideas and solutions to address them. Our Department has had several outreach initiatives to hear the thoughts and ideas of the business community. My Deputy Minister and Assistant Deputy Minister are here today and I invite you to take this opportunity today to speak with us and share your ideas and concerns on a more informal basis. The key is to talk.

I would like to thank you very much for allowing me to speak today. Minister LaPierre, if he could have been here, would have taken advantage of this opportunity, as he is very enthusiastic about all aspects of transportation and transportation infrastructure. On behalf of Premier Gary Doer and myself I would like to extend a welcome to those of you who may have come from outside of Manitoba. I thank you for allowing me to say a few words and congratulations on the conference. I know that it will be very successful.

Dean Glenn Feltham
Asper School of Business

Ron, thank you very much for what was a very informative presentation. We really do appreciate your coming on such short notice. I think that it is equally clear to everyone in this room, that to move forward on a number of these issues, the Government of Manitoba is going to have to be a central partner. Having this representation here today, I think, is critical to furthering our understanding. In any case, once again Ron, thank you very much.
Session 4: Regulatory Bottlenecks

Ruth Sol, President
WESTAC
Afternoon Chairperson

Welcome back for the afternoon session. When we started this morning, Barry laid out a framework for working with bottlenecks. He described three causes of bottlenecks: infrastructure, both chronic and temporary; regulatory; and supply chains dysfunctions. This morning we had two sessions that dealt with infrastructure bottlenecks, mainly the nuts and bolts of queues and congestion caused by nature and economics. This afternoon, we are going to be dealing with regulatory and supply chain related bottlenecks. Bottlenecks that are caused by us and our relationships.

I would like to now introduce our session 4 moderator, Doug Duncan who is with the University of Manitoba, Transport Institute. He has been with the Institute for about 6 years, and comes with a long experience in transportation. He spent 28 years with Canadian National and is a chartered accountant. I would like to welcome Doug Duncan.

Doug Duncan, Past President (1995) CTRF
Transport Institute, University of Manitoba
Moderator

In this afternoon’s session we have two speakers, April Taylor and Erica Vido. April is going to tell us about the American scene: containers and how they move in the United States, freight rates, the containerized grain trade and market reporting. Erica will talk about the regulatory side in Canada, in particular, container cabotage issues.

April Taylor, Economist
Transportation Services Branch
United States Department of Agriculture

Good afternoon. I am here today to tell you about what we do at the USDA, specifically in the area of containerized shipping. Our transportation group, is small. In the whole USDA, about 20 people deal with transportation. We are split between bulk grain and containerized movements of Ag products; I work on the containerized side. Only three of us work on containerized grains.

There are three markets that we publish on a regular basis. These reports include containerized grain and not just high valued products. The three
reports that I would like to walk you through are: Ocean Rate Bulletin, our Agricultural Ocean Transportation Trends Report and our newest report the Agriculture Container Indicators Report. These publications report freight rates, industry trends, and industry indicators for containerized movements.

There are some terms that you will hear me mention. Twenty-foot containers are denoted by TEU, (Twenty foot Equivalent Unit). Forty-foot containers are denoted with an FEU, (Forty foot Equivalent Unit). The shipping line is a company that operates a ship or ships between advertised ports on a regular basis and offers space in return for freights. Lastly, publicly filed tariff rates, are ocean rates filed by the shipping line with Federal Maritime commission. These are in contrast to confidential service contract rates that are negotiated by the shipping line and the exporter or importer. The rates quoted in this presentation are publicly filed tariff rates. Confidential service contract rates are unavailable because we do not have access. Even if we did, I would not be able to tell you.

The Ocean Rate Bulletin is a quarterly publication that tracks 18 high value containerized products from the U.S. to mostly Asian destinations, but also some European and Latin American destinations. The commodities tracked include: oranges, apples, grapefruit, beef, poultry, cotton, hay, animal feed, and soybeans. You name it, we run it. Some of the specific elements that you will find in our Ocean Rate Bulletin include actual shipping line market share, transit times and the tariff rates reported along with any available surcharges or applicable surcharges.

**Figure 4.1  Ocean Rate Bulletin, Animal Feed: Seattle/Tacoma Ports to Busan, Korea (September 2004)**

<table>
<thead>
<tr>
<th>Hatsu Marine</th>
<th>Lloyd Trestino</th>
<th>Hanjin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CY2004: 82 TEU</td>
<td>$840</td>
<td>$550</td>
</tr>
<tr>
<td>Total September 2004: 13 TEU</td>
<td>$1,024</td>
<td>$550</td>
</tr>
<tr>
<td>Market share – September 2004</td>
<td>92%</td>
<td>8%</td>
</tr>
<tr>
<td>Transit time</td>
<td>20 Days</td>
<td>17 Days</td>
</tr>
</tbody>
</table>

In the top left hand corner, is the total TEU’s shipped during the calendar year. Next shipments for the month published that we are reporting on. The bulletin reports shipping line market share, transit times (in days), Ocean Rates and applicable surcharges, and the final Ocean Rate. These are tariff rates, so keep in mind that actual rates paid could be different.
Each commodity is tracked to a variety of destinations. For example, we track animal feed from the Pacific northwest, Seattle or Tacoma to Taiwan, Hong Kong, Philippines or Malaysia; a lot of different ports. Figure 4.1 presents just one small sample of what we offer in the Ocean Rate Bulletin.

Tariff rates are not actually what the shipper is paying to move the product. The confidential service contracts will typically be lower with the tariff rates generally used as a benchmark during service contract negotiations. These rates can show trends in the industry. Finally, rates are reported in terms of commodities. In the container industry, the commodity is a factor in determining the rate offered, where as in the bulk industry, it is pretty much one flat rate, no matter what you have in the vessel.

Sources for the Ocean Rate Bulletin include the Port Import/Export Reporting Service. This is a product of the Journal of Commerce, a private company that is actually at the ports reporting this information from the bill of lading data. Even though the bill of lading data is public knowledge, no one wants to sit at the port and actually write it all down, PIERS does that for us and we get that information from them. Online rate retrieval systems from the shipping lines is the source of the tariff rates. Other industry publications provide transit times and that sort of information.

The next report is the Agricultural Ocean Transportation Trends Report (AgOTT). This is a semi-annual report that provides information on the ocean container market trends as well as cost trends. AgOTT was created to help the agricultural shipper remain competitive in the international arena. Our group basically focuses on the small time exporter. Those that do not have the resources to be able to find all of this data on their own. Some of the specific elements in the Agricultural Ocean Transportation Trends Report are service contract negotiation trends, such as a carrier favorable versus a shipper favorable environment, and impacts of any security measures going on, such as the new customs 24-hour rule for inbound and outbound cargo. Also, any trends in rates and capacity information available on any shipping disruptions such as the West Coast Port lockout, and current congestion issues in Long Beach is reported. We update our secretarial on a weekly basis. The transportation group produces the AgOTT in co-operation with the Agricultural Ocean Transportation Coalition. They are a group out of D.C. that surveys their members to help us find the latest industry trends.

Figure 4.2 displays the Agricultural Container Indicators Report (ACIR). ACIR reports three main indicators: volume, rates and capacity. On the front page of our report, are tariff rates for refrigerated and dried commodities. Other information reported includes surcharges applicable, actual volume moved during that month, and number of slots available versus capacity. Data can be compared to the percentage change from the last quarter and the percentage change from the last year.
Figure 4.2 Agricultural Container Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Current</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rates - 3d Quarter 2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refrigerated shipments¹</td>
<td>$3,695</td>
<td>(3%)</td>
</tr>
<tr>
<td>Dry shipments²</td>
<td>$1,263</td>
<td>21%</td>
</tr>
<tr>
<td>Surcharges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bunker (fuel) Adjustment Factor¹</td>
<td>$230</td>
<td>20%</td>
</tr>
<tr>
<td>Currency Adjustment Factor³</td>
<td>49%</td>
<td>(9%)</td>
</tr>
<tr>
<td>Volume - July 2004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outbound shipments °</td>
<td>82%</td>
<td>5%</td>
</tr>
<tr>
<td>Percentage of container slots used</td>
<td>60%</td>
<td>(10%)</td>
</tr>
</tbody>
</table>

Figure 4.3 is the rates graph that shows the movement of rates over 23 quarters, since 1999 for dry and refrigerated commodities. The ACI uses shipments to Asia only because about 60% containerized Ag products are moved to Asia. The tariff rate information is from the Ocean Rate Bulletin. Refrigerated rates dropped 3 percent in the latest quarter but have increased steadily over the period. Dry shipments increased 21 percent in the past quarter, but have been more or less that for the past five years.

Figure 4.3 Agricultural Container Rates Indicators

Figure 4.4 shows the number of containers moved to Asia on a monthly basis as compared with a five-year average.

Source: Ocean Rate Bulletin, AMS/TMP/TSB

59
The capacity graph in Figure 4.5 shows the number of slots made available by the carriers compared with the percentage of those slots actually used. The bars show the number of slots made available by carriers for export and the line shows the percentage of those slots that were actually used. This graph illustrates the market tempo. If utilization is low relative to capacity, then carriers are probably offering lower rates than favor shippers. If there is a high utilization, then it is a more carrier favorable environment and rates are higher.

Within the next 4 to 5 years, shipping lines are expected to increase capacity by bringing online a number of vessels that could carry as many as 10,000
TEUs. Already the 8,000 TEU vessels are coming into Long Beach through Costco, China Shipping, and a Mediterranean shipping company that has started to bring a couple online. Note that the capacity data is compiled for all commodities and all trade lanes, obviously not just for Ag or the Asian trade lane. These data are actually taken from another Journal of Commerce publication called the On Board Review, where they show capacity and utilization data for the industry.

Containerized grain is a relatively new idea, accounting for only about 2% of grain exported from the U.S. in 2003. In 2000, my office started work on identifying the containerized grain industry. They found that exporters ship grain in containers for numerous reasons. They are used because of identity preservation, less handling of the product, just in time movements and comparable rates. The last one is new, and we are going to look a little more into that.

As a result of our study on containerized grain, we added a containerized grain section to our weekly grain transportation report. Our bulk side puts out this report on a weekly basis looking at rail movements, barge movements, truck movements, etc. They report rate and volume information, carload availability, and all kinds of good data. We added a section on containerized grain that looks at two things: rates and volume. The rate section uses animal feed and soybeans as representative for containerized grain as they account for almost 60% of containerized grain exported during 2003.

**Figure 4.6 Grain in Container Rates**

![Graph showing grain in container rates for animal feed and soybeans from Q3 99 to Q3 04.](source: Ocean Rate Bulletin, USDA/AMS/TSB)
In Figure 4.6 the top line represents soybean rates and the bottom line represents animal feed rates. These are rates on containers. This information is available in our grain transportation report and is updated quarterly, as we update the Ocean Rate Bulletin.

The second piece of the Grain Transportation Report for grain in containers is volume. This is the actual number of containerized grain shipment on a monthly basis compared with a three-year average. Based on PIERS data. It is reported monthly, and according to PIERS data, containerized grain volume to Asia has actually been above the three-year average since October 2003.

**Figure 4.7 Grain in Container Volume**

In figure 4.7, the bars are well above the three-year average line and we are only expecting it to grow higher and higher as it goes along. You can tell specifically for September, that it is well above even though this is supposed to be a lull for moving grain in containers, you can tell that as of 2004 it has gone way up for September.

*Source: Port Import Export Reporting Service (PIERS), Journal of Commerce*
The graph in Figure 4.8 compares container versus bulk rates. Container rates for animal feed leaving the Pacific Northwest, Seattle and Tacoma is represented by the top line. The bulk rates are the bottom line, also leaving from the Pacific Northwest of the U.S. and going to Asia. During the months of February and March of this year bulk rates reached over $44 per metric tonne, while the container rates fell to about $45 per metric tonne. Remember that these are tariff rates for containerized movements. The negotiated service rate for the contract rate is probably quite a bit lower so container rates probably dipped bulk rates. We plan to continue our study on containerized grain shipping, focusing more on buyer needs and requirements from Asia. I will be working with the North Dakota Transport Institute and will hopefully be starting in January.

Finally, Figure 4.9 displays all of the URL’s available for our reports. All of our reports are available online, all of the data are available if there is something that you would specifically like. If you would like to see the raw data, you can certainly contact me and I can get you that information. I look forward to any questions that you might have during discussion the period and I thank you for inviting me.
Erica Vido, Research Manager  
Agribusiness, Food and Animal Health  
Ipsos-Reid

This presentation is based on my thesis research that was just completed a couple of months ago. First, I will give you a bit of background on what drove the need for this research, bring you through the economic framework that the research was built upon and address U.S. and Canadian cabotage policy differences. Finally, I completed a survey on container cabotage with some stakeholders, and I will give you some quick results, then I will talk about the lentils case study and offer some conclusions.

Global agricultural development, freer trade combined with costly subsidies in the US and EU have changed the economics and profitability of traditional commodity markets. This has created opportunities for Canadian farmers to participate in niche and specialty markets. For example, pulses and special crops are replacing a significant amount of wheat acreage and specialty wheat varieties now account for about 5% of those remaining wheat acres.

These specialty products have unique logistical requirements. Pulses are prone to product degradation, while attribute specific inputs are sourced in smaller quantities and must be kept segregated. The most practical way to ship these products is in containers. A downside, however, are the costs of container service – which are a barrier to new trade opportunities.

One avoidable barrier to cost effective container shipping in Canada is the regulations on container use and mobility, otherwise known as cabotage. These regulations restrict the use and mobility of internationally owned containers in Canada and force many containers to be repositioned to demand areas empty. This increases both the cost and complexity of container services. Furthermore, Canadian and U.S. container policy are not the same. These differences create a disincentive for ocean carrier to position equipment in the Canadian interior.

The objective of the research was to assess the economic impact of cabotage regulations on freight rates and the volume of exports of pulse crops. Lentils were used as a test commodity.

The economic framework for this research is presented in Figure 1.
The price of a good in a country is determined by its own domestic demand and supply functions. In this example, the country on the left, the exporting country, has lower domestic prices and therefore a natural competitive advantage to producing this particular commodity than the country on the right. This disparity in prices creates the opportunity for trade. The excess demand curve (ED) is based on the demand curve of the importing country, whereas the excess supply curve (ES) is based on the supply curve of the exporting country. Let us assume that transport costs are equal to the value MN. Economic theory states that the price in the importing region is equal to the price in the exporting region plus transport costs. This is what economists like to call equilibrium. The vertical difference between the excess supply and excess demand curve creates a derived demand for transportation in the international market. If we assume for simplicity that the supply of transport is perfectly elastic, the price of freight will be PF and equal to NM. The quantity traded will equal QF. This essentially is a gravity model.

The supply of transportation is the relationship between the market price and the amount of services that carriers could supply given the costs they face. The transportation supply determines the price of freight, which is a function of many factors including fuel, labor and also the regulatory environment in which companies must operate. Now, suppose there is a change in the regulatory environment in the transportation industry. As a result, costs faced by carriers at every level of services they provide are reduced and puts pressure on the supply function to shift downward, as shown in Figure 2.
Figure 2

The new supply function puts downward pressure on rates and the new rate structure will be PF2 and the new trade will equal QF2. The magnitude of QF2 depends on the slope of the derived demand curve. With an elastic demand for transport, the reduction in freight rates would cause trade volumes to increase by more than the initial reduction in rates.

Elasticity is important because it has a direct relationship with total revenue. While a reduction in transport costs causes an increase in demand for transportation services, an elastic demand for transport will cause the volume increase to be in larger proportion than the initial reduction in rates. This has the effect of increasing revenues for transportation companies. It suggests that shippers and carriers both have a mutual interest in finding ways to reduce freight rates. Figure 3 presents a summary and interpretation of freight rate elasticities.
Figure 3

Interpreting Freight Rate Elasticity

<table>
<thead>
<tr>
<th>INTERPRETING FREIGHT RATE ELASTICITY</th>
<th>If demand for transport is... and if freight rates... then the quantity of transport services demanded... and then freight revenues will...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price-elastic (It is &gt;1)</td>
<td>↑  more than in proportion to the price change</td>
</tr>
<tr>
<td></td>
<td>↓  more than in proportion to the price change</td>
</tr>
<tr>
<td>Unitary (It is =1)</td>
<td>↑  in exact proportion to the price change</td>
</tr>
<tr>
<td></td>
<td>↓  in exact proportion to the price change</td>
</tr>
<tr>
<td>Price-inelastic (It is &lt;1)</td>
<td>↑  less than in proportion to the price change</td>
</tr>
<tr>
<td></td>
<td>↓  less than in proportion to the price change</td>
</tr>
</tbody>
</table>

Cabotage refers to the carriage of domestic cargo on sovereign territory by a foreign conveyance. These regulations are set out in the customs acts of both countries.

In the United States, containers can remain in the country for a period of one-year. There are no restrictions on the movements of containers or on the cargo that they carry. In essence, containers are deemed “instruments of international traffic.”

In Canada, foreign containers can remain in the country for 30 days. Firms that are in the Customs Post Audit System can keep containers here for 6 months. The Customs Post Audit System is a system that helps with accounting and results in faster release times at the borders. While in Canada, containers are allowed one repositioning move. This repositioning move must be similar and consistent with the international load to be picked-up. Furthermore, prior to under-taking any cabotage activity, the export load that was to be picked up must be scheduled prior to the container’s departure from the import load drop-off point.

The difference in Canadian and U.S. policy relates to how each country defines container use. The U.S. defines containers as “instruments of international traffic”. They are simply viewed as reusable packaging, and cabotage rules are not necessarily applicable. In Canada however, domestic container service is deemed as “incidental to the international traffic of goods”. This slight difference in spin creates two truly different operating environments.
Using a hypothetical example, imagine a container laden with import goods is discharged in Toronto. The container is then faced with three options. To return to the port empty to wait for an export load, to pick-up a load in the Toronto area for export, or to find an export load elsewhere in the country. The ideal scenario would be to find a load in the Toronto area for export, but this is not always possible. Many times containers will head back to the port empty. This is an inefficient use of resources, but many carriers prefer this option to minimize container dwell times. The third option requires the carrier to find a suitable export load elsewhere in the country.

Assume that the carrier located a suitable export cargo load in Regina. Carriers can instruct the railways to reposition the container in Regina. The railways can reposition this container empty, however to minimize resources and other costs the carrier may choose to load the container with west-bound domestic cargo. According to the regulations, this domestic cargo must be either Winnipeg-bound or Regina-bound because these are the only cities with intermodal terminal facilities on the Toronto-Regina direct route. If Winnipeg-bound domestic cargo were loaded, the container would have to complete the remainder of its journey to Regina empty. Moreover, the export freight in Regina must have been booked with the container line prior to the containers departure from Toronto. Suppose suitable Winnipeg-bound or Regina-bound domestic cargo was unavailable in Toronto, the carrier would be forced to reposition the container to Regina empty, a very expensive proposition. Although Saskatoon is not far from Regina, Saskatoon-bound cargo would not be permitted because it is not on the direct route between Regina and Toronto, as well doubling back would have occurred. Due to the complexity of these scenarios, some carriers might avoid serving source-loaded Prairie exports altogether.

I conducted a survey of stakeholders in 2002 with the objective of assessing how carriers view cabotage regulations and to determine whether relaxing these regulations could have cost implications. The ocean carrier industry in North America is small and concentrated. To conduct a quantitative survey of this group would require a census, but this was impossible given my available resources. Because of this, a more qualitative approach with this survey was taken.

The ocean liners that participated in this survey represent more than half of Canadian TEU capacity. The sample also contained railways, freight forwarders and container terminal operators. In total there were 16 firms in the sample.

Considering the impact these regulations have on operations, it is surprising to see that most stakeholders are only somewhat familiar with them. The one person who claimed to be very familiar with cabotage policy misinterpreted it by assuming that Canadian rail carriers are exempt from these laws.
More than two-thirds feel that Canadian regulations are more restrictive in practice when compared with the U.S. environment. The quarter of the respondents who disagreed are operators with significant Pacific operations. The Asia to North America trade corridor is so profitable that their primary concern is to minimize the time a container spends in the Canadian interior. In addition, routes are structured to minimize empty rep moves on the other side of the Pacific Ocean. While these people felt that its Canada’s rail carriers that would benefit most from relaxing these restrictions, they were nonetheless supportive of deregulation.

Almost three quarters of respondents felt that cabotage regulations made it less desirable to operate container traffic in Canada than in the U.S. This is largely driven by the sector partners - the railways, freight forwarders and terminal operators - who are usually the ones that are responsible for planning and coordinating the inland container repositioning.

Respondents were asked to estimate by how much would repositioning costs change if container cabotage were completely deregulated. The survey respondents estimated that repositioning costs could decrease by as much as 37% on the West-bound corridor and 25% on the East-bound corridor, or about $100 to $125 per container. Furthermore, an overwhelming majority of respondents support harmonizing Canadian and U.S. regulations on containers.

The impact of such changes in freight rates can be measured with a gravity model. Gravity Models estimate the volume of exports as a function of the price of freight. In essence, it is a reduced form of the trade model that traces out the slope of the derived demand curve, which provides us with the freight rate elasticity. A negative sign is expected because freight volumes tend to decrease as costs increase. Also, because transport costs make up a significant component of the final cost of agricultural commodities, we expect transport to be highly elastic (or greater than –1). In fact, my research found that the freight rate elasticity was –2, which is consistent with economic logic.

For the case study, I took the results from the survey and the model and applied them to lentils exports. In the survey it was estimated that repositioning costs could decrease by about 25% or $100 for east-bound shipments. A decrease of $100 on each container translates into an overall freight rate decrease of just under 5%. Freight rates to Western Europe experienced the largest decline in percentage terms, followed by the near East. At only 3.75%, eastern European destinations experienced the lowest freight rate decrease.

Applying the freight rate elasticity to these calculations, lentil exports on the east-bound corridor alone could increase as much as 10%. Again, Western Europe would experience the largest increase in lentil exports at almost 12%. Exports to eastern European destinations have the smallest increase.
a 9.8% increase in lentils exports translates into about 34,000 tonnes. In 2001, the average farm price for lentils was $320/tonne. The value of these 34,000 tonnes translates to $10 million.

Relaxing cabotage restrictions on international containers can reduce transport costs for shippers. Lower transport costs increase exports and finally, increasing exports helps put more money in farmers’ pockets.

Several important issues were raised during the course of this research that should be addressed in the future. In 2001, special crop exports totaled 2.5 million tones, largely in containers - a pretty significant volume. The impact of this sector should be evaluated. In addition domestic freight shippers in Eastern Canada and Prairie receivers are likely to benefit from relaxation of the regulations. The question is, how and by how much?

Finally, during the course of this research, many stakeholders admitted that cabotage regulations are not always followed and they are never enforced. It is almost impossible to track the movements of every container while they are in Canada. If containers become equipped with tracking or other security devices that can track their movements, the current economics of container shipping could be severely impacted.

**Question from the Audience (Unidentified)**

If nobody follows the rules, why would changing cabotage rules increase the amount of exports?

**Erica Vido, Research Manager**
**Agribusiness, Food and Animal Health**
**Ipsos-Reid**

I did not say that nobody followed the rules, just that some people do not follow the rules. Having different playing fields for some groups of carriers and shippers and a different field for other groups of carriers and shippers is not fair and it is inefficient. Changing the rules would give everyone the same playing field, the same opportunities, benefits and costs. Some carriers ignore the rules, or operate on the fringes of the regulations, but other carriers may not want to take that risk or are unaware that other companies are doing this. It seems like such a useless regulation and does not appear to benefit anyone. If it has no positive effect, why not just get rid of it?

**Dory Tuvim, President**
**MCS-Agri-Terminal (Moose Jaw)**

Is there any indication that somebody in the government is listening to what you are saying?
Erica Vido, Research Manager  
Agribusiness, Food and Animal Health  
Ipsos-Reid

Yes, but it is a slow process. My thesis was just finished a few months ago. I have been working on this issue for a long time, but I do not know if the government is paying attention or not.

Dory Tuvim, President  
MCS-Agri-Terminal (Moose Jaw)

Did anyone take your report and send it to Ottawa? Is anybody here in this crowd aware of this report? I am in the container industry, and I am suffering. I had to close my terminal.

Doug Duncan  
Moderator

Can anybody in the room identify other bottlenecks as to why we cannot get containers into the Prairies? Can we get some comment on that? We have a gentleman here that has indicated that he is having a severe problem.

Dory Tuvim, President  
MCS-Agri-Terminal (Moose Jaw)

Yes, I have a severe problem. I invested $1.2 million in Moose Jaw, Saskatchewan. I opened a container terminal, the first of its kind in the Prairies, it was a sensation. I got calls from nine regions, from Manitoba to Alberta. I gave lectures, about containerization and about how it happened. The miracle that allowed me to open the terminal in Moose Jaw, Saskatchewan. There is half a million tonne of cargo coming out of there, and we cannot move it. We move them in bulk systems, we move them in hopper cars, we move them in boxcars, all ways which costs fortunes to the farmers. They have to transfer it in Montreal or Vancouver. We were sitting there waiting for a whole year, waiting for somebody to knock at our door. The shipping lines could not care less for the same reason that you indicated. What a farce this system is.

Erica Vido, Research Manager  
Agribusiness, Food and Animal Health  
Ipsos-Reid

Another reason why containers are in such short supply in the Canadian interior is that containers are assets to the shipping companies and are moved where the trade flows go. If there are no imports to the Prairies, then we cannot get 20-foot boxes to the Prairies in their natural flows, and empty
containers need to be repositioned. Of course cabotage plays a roll. If we can stuff 20-foot boxes with domestic cargo, it gives them more opportunities to come into the Prairies. We also have to start diversifying our imports and trying to find ways to have a more natural container flow system rather than trying to push the containers.

**Dr. Barry E Prentice**  
**Director, Transport Institute**

One of the issues of the cabotage regulations for the very large shipping lines, is that they do not want to find themselves crossways with the government. They are not going to break the rules. When they consider North America, they see two separate markets. If they have excess containers in Chicago, rather than send them to western Canada for a load and export through to Vancouver, they will send these containers through Long Beach because they can get a load legally and move it easier. At least that is the story they gave us. They do not treat North America as a single market. Perhaps if we had unified cabotage regulations they would be much more willing to do that, and the Prairies could source containers from Chicago a little easier.

I will ask Erica to remind me who she wrote to at Customs about the issue of cabotage. We got back a very vague letter saying that they had talked to some shipping group, but it was not a problem so they were not going to worry about it.

**Erica Vido, Research Manger**  
**Agribusiness, Food and Animal Health**  
**Ipsos-Reid**

I wrote to the Minister of National Revenue, Eleanor Capelin, about container cabotage policy. She said that the reason why we cannot change our policy is because containers are subject to the GST and the United States does not have GST. If we relaxed cabotage regulations, we would have to revisit the whole GST issue on containers. She also said that they spoke with the Shipping Federation who had never heard anything about this and that their members were satisfied with the current environment. There was to be no changes in the foreseeable future.

**Judie Dyck, Executive Director**  
**Saskatchewan Canola Growers Association**

My husband is involved in exporting, and I was involved in the business with him in the past, and I can tell you from living in Saskatoon, in the last 6 months, it has been very difficult to export equipment and to get containers. Of course Saskatchewan has a large sector of farm equipment manufacturers, but it has been a real challenge, especially when you get into
Erica Vido, Research Manager  
Agribusiness, Food and Animal Health  
Ipsos-Reid  

A lot of the companies with significant Asian-Pacific operations have told me that they do not want their containers to leave Vancouver, let alone come anywhere into the Prairies or Eastern Canada. They want them unloaded, turned around and shipped back. They are making a lot of money on that corridor and they do not want to reduce that opportunity.

April Taylor, Economist  
Transportation Services Branch  
United States Department of Agriculture  

This is actually the case in the U.S. too. We have a hard time getting containers where they need to be for the containerized grain exporters as well as other exports. They are having a hard time, even though there are more containers available in the U.S. than in Canada. We face the same issue. The containers are made available in L.A. and Long Beach and turned around almost immediately back to China for re-export.

Doug Duncan  
Moderator  

Perhaps I can ask you a question about your data on the refrigerated container rates. We have had some indications from industry that refrigerated containers are more difficult to come by, and I noticed that those rates went up very substantially. Have you looked at this? Can you give us any insight?

April Taylor, Economist  
Transportation Services Branch  
United States Department of Agriculture  

Basically, the refrigerated containers were under a great demand, especially during the Iraq war. A lot of refrigerated containers were being utilized in the Middle East and not being made available to U.S. exports. This certainly put a strain on available refrigerated containers. Now we do not really see much problem with available refrigerated containers. However, the shipping lines are, unofficially, taking advantage of the great position that they have right now, and increasing rates just because they can. This is even the case
for dry rates, even though they tend to be pretty low. Just in this quarter we saw a 21% increase in dry rates, which is pretty unusual to have that big of a jump. It is just because the shipping companies can.

**Question**

Other than apathy in the system not responding to this, is it conceivable anybody would be objecting to the changes that you are proposing? Is there any vested interest that would prefer to continue with this regulation?

**Erica Vido, Research Manager**

*Agribusiness, Food and Animal Health*

*Ipsos-Reid*

In my survey I asked people how supportive they were with removing the restrictions and everyone was somewhat supportive or very supportive. A few people had no opinion, but there was not even one person that did not support the idea. I thought that the railways might have an issue, but they have so much to benefit from relaxing the restrictions. I do not see anybody benefiting from those restrictions, except maybe a domestic container leaser who would have more competition if they had to compete with foreign-owned containers. Other than that, I do not see many parties who can benefit from these regulations.

**Tom Kleysen**

*Kleysen Transport*

As far as the issue of cabotage goes, Transport Canada is aware of it and I will put on my Board of Director hat with the Canadian Trucking Alliance. For some 10 to 15 years, I forget how many runs we have taken at Transport Canada on the issue of cabotage. It also exists for over the road trailers between Canada and the United States. Maybe a unified approach between the container segment and the over the road trucking operations would help. Bottom line, the Canadian carrier, there are immigration issues involved with Canadian versus U.S. drivers, but the essence of that law means that an American driver with an American truck and an American trailer can come into Canada and do multiple movements within Canada and then exit the country. Where as, a Canadian driver with a Canadian asset truck and trailer cannot do the same in the states. This has been in front of Transport Canada for some 10-15 years and it has fallen on deaf ears. They are the same issues, it is not a level playing fielding in that particular arena, as is the case with the containers. It is not that it is unique to the container industry. Making a unified approach with several associations to Transport Canada might help.
Gordon Baldwin, President  
Canadian Transportation Research Forum (CTRF)  

Homeland security is introducing all sorts of automated new systems, for recording of imports and exports. In theory, there have been projects going on at the same time to harmonize data needs for all the Federal departments and agencies. Can you give us an idea how well that is going and will that mean more data for researchers and users of information. If so, do we have an idea when?

April Taylor, Economist  
Transportation Services Branch  
United States Department of Agriculture  

There are a lot of good things going on in terms of customs and trying to get the ITDS, International Trade Data System. It is supposed to be a sort of one stop shopping for importers and exporters to be able to file all their documentation that they need and to get through to the U.S. or out of the U.S. I have been working pretty closely with the ITDS system and USDA. We are very involved in it and we are trying to get as much information as we can available. I know I have requested the sun, moon and the stars. I have requested more data than we have available to us now, and I am hoping that that will be the case.

In general, I do feel that more trade data will be available through the system. I cannot tell you exactly what level of data will be available. At this point there is going to be about a zillion MOU’s created with customs through the different agencies. This information will depict exactly what will be available to the public. ITDS will be available to the public in a modified version obviously, and available to us in a more detailed, version. A time frame? I give it 2007, but that is just my prediction, not the USDA’s.

Sinclair Harrison, President  
Farmer Railcar Coalition  

This goes to the cars more than it does the containers, but without the cars you cannot move the product. Who owns the current fleet? Is it railroad owned? Privately owned? A mix? We get this question quite often. In the future, when we are going to replace hopper cars, if the trend is towards containers, would we consider buying flat cars to haul containers, and our answer has been yes. What rules and regulations surround providing leased flat cars?
April Taylor, Economist  
Transportation Services Branch  
United States Department of Agriculture

Unfortunately, I am not as familiar with the grain industry as I would like to be. Actually as for who owns the cars? I believe it is a combination of folks that own the cars. I would certainly encourage the rail industry to invest in flat cars so that they can accommodate containers, we do believe that is where the trend is heading. But I cannot speak much more to your comments.

Comment from the Audience

I just wanted to answer your call to anyone who is familiar with specialty crops, to give some feedback to Dory. I am a hybrid of a specialty crops broker, brokering lentils for example, worldwide. The concept is there, it is just a little bit ahead of its time right now. It goes without saying that necessity is the mother of invention. The domestic trade lanes, from Toronto to Western Canada is an industry that was built in this way for a long time. The shipping lines are dealing with a chronic shortage on containers right now. They do not really have the need to develop these cabotage opportunities that might exist. Lastly, the railways are very quick to realize any opportunity or any price saving that might be had, and to price that into the repositioning cost that they assess the carriers. It is competitive for shippers to export lentils in 20-foot containers from Regina to many destinations worldwide, but it depends on which carrier and which trade lane. The problem right now with MSC is the location. If they were perhaps here in Winnipeg where they would have access to three railways and the US market, and they were able to partner with someone like Kleysen, to pool their information and resources, the market is just about ready.

In the last 30 days, we received two notices that would be considered leading indicators to this coming down the pipeline. One is a big study on the fact that we cannot put as much agriculture products into containers as we are doing. The U.S. has seemingly known this for a long time because they have maximum weight restrictions, but in Canada, we are putting 60,000 pounds of lentils into a 20-foot container. In the U.S., we are unable to put that many lentils into a container at any of the ports. Imagine the implications when they say, this is not going to be a lasting thing, we are giving you a heads up and other container lines follow suit. It is not going to make as much sense to send 60,000 pounds to Montreal and do the consolidation and the transloading there. It is going to make more sense to eliminate one of the handling processes and do it here in Western Canada.

Let me give another example of the chronic shortage of containers. People have been making a booking with a shipping carrier and then roll it, roll it, and roll it because the railways were not getting their product there on time. A shipping line came out, saying in December on a named date, after that, if
you roll your booking we are going to start imposing penalties. As these
things come into play, the risk of penalties, the loss of the economies of scale
are going to make an inland Agra terminal more logical, because you are not
going to have those unknown risks.

Session 5:
Supply Chain Bottlenecks

Dr. Ed Tyrchniewicz, CTRF VP Program (1977)
Asper School of Business, University of Manitoba
Moderator

It is a pleasure to moderate the second last panel. Dennis Apedaile is finally
going to get the last word, and the rest of us will not be able to debate with
him. This session was going to focus on Supply Chain Bottlenecks, but I am
going to re-title it. Rather than put it into the context of bottleneck
problems, I think that we have some opportunities and some really
interesting solutions that we will talk about.

Some of the problems we heard about earlier are due to growth in value
added products since. This has led to bottlenecks in a variety of supply
chains. We are going to examine a couple of potential solutions to these
bottlenecks.

Charles Foskett, President and CEO
RailRunner NA Inc.

Ladies and gentlemen, thank you. I am going to speak to you this afternoon
about three concepts. First, a new technology that is our product,
RailRunner and how it is capable of eliminating bottlenecks at the port, by
reducing trans-loading requirements. The second concept is moving
containers from the highway by getting containerized products onto rail so
that they can enjoy the economics of rail transport more quickly and more
easily. Finally, I am going to talk to you about a business model or a service
model that we have developed to get our product to market, which I would
like to frame as being open, transparent and inter-operable. Let me start by
describing our objectives.

Our objectives are to provide identity preserved agricultural products in
containers by source loading and eliminating transloading. Many of the
identity preserved and high value grain products go to port in box cars, are
trans-loaded at the ports and then suffer from delays, shrinkage and excess
handling. They also suffer in the eyes of the end customer, from not being
truly identity preserved. It is not necessarily a guaranteed, sealed product
from the producer to the consumer. Our concept reduces handling and
provides more local control. As you will see in our service model, it provides higher profits for both producers and processors.

I am going to talk about RailRunner, how it works and what RailRunner requires to work. Another panelist, Dory Tuvim has largely devastated my case with his comments about his great difficulties in obtaining containers in Canada. However, we will try to deal with the issue of container availability when we get to market. Our business is an intermodal stack feeder operation, in other words, double-stacked trains get fed intermodal containers by our technology. I am going to introduce the concept of what I call an RSO, or a RailRunner Service Operator. It is the way RailRunner’s service is created, managed and provided to the shipper and the way the products get to the marketplace. Also, I will discuss the idea that to make this whole process work, ultimately it needs some level of commitment from the producers, processors and shippers.

Figure 5.1 RailRunner 53’ Tridem Chassis Rear View

RailRunner, has three components. It has a modified container chassis (Figure 5.1); a transition unit rail bogey (Figure 5.2); and an Intermediate Unit rail bogey (figure 5.3).

The Transition Unit bogey connects a chain of chassis together to either a locomotive or the rest of the train.
The ramp on the bogey serves two purposes. The fact that it is a ramp in a vertical direction means that instead of having to use an engine or a locomotive to assemble the train, you can use the motive force provided by a yard tractor.

The Intermediate Unit bogey connects each chassis and container system to another chassis and container system before it and another one after it in the train.

**Figure 5.3 Intermediate Unit – Ramp View**
A truck tractor can be used to build up a train in a groded rail yard. Because this ramp is wedge spaced, it automatically adjusts direction. If the driver backs his chassis under this ramp and he is at the wrong angle, that wedge shape automatically corrects it so that it lines up with the track.

The chassis or trailer itself connects to the bayonet. Think of a bayonet going into a sheath or a Nikon lens clicking into a Nikon camera. It is that sort of action that connects the chassis and the bogey.

**Figure 5.4 Mounted on Bogey**

Here you see a side view with the container already mounted on an intermediate unit. The bumper rail is folded up and it is mounted on the left hand side, connected to the bogey.

Figure 5.2 is a view of what we call the transition unit. After you assemble a block that consists of intermediate units, containers and chassis, that block has to be connected to either another railroad car or a locomotive. This is achieved with this unit, half of which is the sort of ramp assembly that you saw in the previous photographs and the side that is focused on you is a connection of standard knuckle coupler that connects to the rest of the train or a locomotive. One of the features of this product is that it is essentially a dissolvable spine car. In many rail yards, track space is a very important commodity and during the time that you are not actually building a train or using this for a train, you can easily take the bogey off the track with a forklift and use the track space for other purposes.

When we talk about the service model, we are talking about how producers and processors gain some level of economic independence from dominant
organizations such as railroads. If you can move this off a track, you can also move it to another railroad yard. There is an economic implication to this sort of portability.

Figure 5.1 is a picture of a 53-foot Tridem chassis that we are currently employing. We are operating a service on the Triple Crown network in the U.S. operating between Jacksonville and Fort Wayne, Indiana, using 50-foot trailers. Our customer is Trailer Bridge, an ocean carrier that operates out of Jacksonville and services the Caribbean. They deliver only 53-foot containers. We are migrating towards servicing other carriers so we will put some other container lengths into service.

We use the route on Triple Crown, which is a subsidiary of Norfic Southern, going from Jacksonville up to Fort Wayne. As I implied earlier, we are a feeder network. We go from a low transaction density area to a high transaction density area. We can do this because we do not require the kind of heavy capital investment that is used in standard intermodal terminals. In this case the low transaction density area is in northern Indiana and southern Michigan, were there is no intermodal terminal. Normally shippers would have to dray to Cincinnati or Chicago to get down to the intermodal hub that serves the Caribbean. In this case, they can use our product.

Part of our strategy is to focus on two vertical markets. One is the municipal solid waste market which is typically a high transaction density area going to a landfill which is in a low transaction area. In agriculture, specialty grain products have a demand for containers. There are high value, identity preserved products that have to go from a sparsely populated area where there is not a high density of intermodal activity to a high density area which is an intermodal hub, at which you would transfer the containers from our train to a standard stack train going to a port.

**Figure 5.5 RailRunner’s Unique Terminal Anywhere Features**
This is an eagle’s eye view of how the train is assembled. The containers are dropped off in what we call a “terminal anywhere yard,” a gravel graded siding for example. A yard hostler drags them around, slides them one at a time onto bogeys and the train is assembled. You back up the chassis, connect to the bogey, push them all back, connect them to the prior chassis and container and just keep repeating this process. The yard hostler or truck tractor is actually assembling the train. When the block is complete a locomotive comes in and connects to the transition unit.

It has been well established by Dr. Prentice why we need to get grain in containers. Our philosophy here is to lower the entry price, lower the barriers, so that the grain producers or specialty and identity preserved products can be serviced by containers at the source. We focus on source loading small packets of high value, or just in time manufacturing, and the security that containers provide for identity preserved products. In the Great Plains and the Prairies, you do not have ready access to these intermodal terminals, you often have high drayage costs at the terminals or, unlike in the U.S., there are not any rivers actually in Canada that can service this kind of traffic. Boxcar trans-loading at ports is plagued with congestion and expense.

In the RailRunner service model, first you need rail access, second you need freight, and third you need a RailRunner Service Operator. In our model, we try to reduce the access the rail operator offers to providing hook and haul service. Producers, processors and shippers have to be really organized so that they can provide a committed flow of freight that is negotiable with the rail provider. The business of the service operator, is to provide booking, scheduling, asset management and terminal management services.

An example of how this would work with Canadian producers and processors is Margo Junction (which I found on the map). I do not know if there is a real junction there, but it is on a rail map. The distance from Saskatoon, is about 200 miles. In our view of the world, this is where our service works. If you are closer than 200 miles, you need to truck it, because the rail economics do not add value. However if you are in the 200 to 400 mile area it is quite effective. Typically you would have a processing plant or producer in the area and dray them a short distance, taking them to an intermodal terminal, for example, in Saskatoon. Now, with our technology there are two ways to get the containers onto the double stack train.

The preferable way is to drive the train into the terminal, lift the containers off with a crane and put them directly on a double stack train, put the empties back and in a closed loop fashion bring the empties back to Margo Junction. On the other hand, a lot of railroad operators will look upon this as a foreign or alien technology and they will not let these products into their intermodal terminal. In this case, you can disassemble the train and since the chassis are present as part of the assembly, drive them across to the
intermodal terminal and “in-gate” the payloads just as if you were a regular highway chassis with a container.

This is a diagram of a traditional stack train operation with a layer of product suppliers, service operators and retailers. We envision, and are in fact practicing in our operation in the U.S., a different model employing a RailRunner Service Operator. In this case, the railroad is reduced to hook and haul hook and haul service and the RailRunner service operator provides terminal management, dray services and retails the service to shippers. We have worked out service plans, the time it takes to deliver and supply the containers to shippers, load the containers, bring them back, disassemble the train, etcetera. We have also worked out the economics. In the fictional example (of Margo Junction), comparing it to drayage over that distance, there is a savings between 10% and 15% versus dray to the Saskatoon terminal.

In summary, this is a new technology that will provide a little more economic power to shippers, producers and the processors. It depends upon a lot of things. Are the containers available? Can you indeed get fair rates from the rail carriers? Will the processors co-operate together even though they are competitors to use their combined volume to get these rates and get the services guaranteed from the rail company? This is all part of the RailRunner Service Operator’s challenge and opportunity as they deploy this service.

William Logan, Director, Material Handling
FELLFAB Limited

The topic is overcoming bottlenecks with high quality, efficient bulk product shipment technology. It is a little presumptuous, but the idea is that we want to talk about container liners. Through this mornings discussions we have heard about chronic, temporary, regulatory, direct and indirect bottlenecks. I would like to add another definition to bottlenecks. I went to the Merriam-Webster dictionary to find it. In face of some of the conversations we have heard today it might be good to talk about this one. Bottleneck is a style of guitar playing in which glissando effects are produced by sliding an object like the neck of a bottle along the strings. I do not think that applies here today, but that is a bottleneck. I think I will agree with the definition that we have spoken about all day today, and that is about a condition or situation that retards or halts free movement or progress. In our case, products shipped in bulk. I will compare the volumes of chemical exports with that of grain exports. I will also speak about container liner systems and RFID technology, and also about transportation bottlenecks, how we provide a solution and about the agriculture business crossover.

First I would like to explain a little bit about FELLFAB. You have all seen pictures of the Canada arm. We do not manufacture the Canada arm, but we do manufacture the covering of that arm. When you picture the space shuttle, you see this arm that comes out, you can imagine a glistening white
arm. Well that glistening white fabric that you see is insulation that is manufactured by FELLFAB. It is a multi-layer insulation that is manufactured in a clean room. FELLFAB was established in 1952 by the FELLFAB brothers. It is a privately held Canadian company, and has manufacturing facilities in Hamilton, Atlanta, Fort Worth and offices worldwide. FELLFAB specializes in providing engineered textile solutions to niche markets and worldwide challenges. We will be talking today about our container liners.

What is a container liner? A container liner is a bag that goes inside of a container. It is made of polyethylene or polypropylene. It has chutes to put product in, chutes to take product out and a vent to let air out as well.

The dollar value of chemicals exported from the United States to other countries is at least $40 billion according to the U.S. Census Bureau of Foreign Trade Statistics. This includes organic and inorganic fertilizers and other types of chemicals. Allow me to break out, as an example, just one of those products which is polypropylene.

If we take a look at polypropylene exports for our neighbors to the south, we see that figure comes down to $1.05 billion. In exports it represents 2.6% of the total chemical industry. If I base it on sixty-two cents a pound for polypropylene, that represents sales of $1.051 billion exported. If I translate it into pounds, it is 1.8 billion pounds. If I translate that into 40-foot containers, that is 35,000 containers. If I translate that into the movement of containers per month, it is approximately 3,000 containers per month. That is a lot of containers.

Let me compare this with the agriculture business in the United States. We have a similar amount, $22 billion, that are exported out of the United States. Of that $22 billion, we found out today that 2% goes out in containers. That represents half a billion dollars, just short of $500 million of exports. Some of these containers contain a liner. The liner holds the product in a safe manner, maintaining its integrity. These are liners that are manufactured in the United States or Canada, or manufactured throughout the world.

Some of the bottlenecks that we generally come across, that lead us to shipping in containers, are labour costs. We have heard about labour costs earlier today. Equipment availability sometimes forces us to go to containers. We have heard about the difficulty in obtaining hopper cars from time to time. Packaging costs are one of the bottlenecks in shipping in the chemical industry. I presume that it crosses over to the agricultural industry. Contamination is a bottleneck. All of these can be resolved by using a container liner inside of a container. Some of the liner bottlenecks that we run across, are the use of materials such as wood. Wood has been a traditional item or commodity that has been used in the shipment of liners, it has been used as a bulkhead. What is happening now is that wood is one of the products that has become a difficult product to export, because it has to
be heat and chemically treated so that it meets some of the international regulatory requirements. This treatment calls for 56 degrees centigrade for 30 minutes and to fumigate with methyl bromide. Quite frankly the better solution is to not use wood packaging.

Another obstacle that we come across when shipping in a bulk container, and this is not a bottleneck, is microscopic particles. The presence of product fines in the air of a bulk loading environment might be able to ignite in the presence of a spark. That creates what we all know as an explosion. It is important to include this consideration with respect to the materials supplied to you by the container liner manufacturer. Some of the products that we manufacture contain anti-static ingredients that either ground physically through the container or ground physically from the liner to the container.

The FELLCO container liner system is a materials handling product that is compatible with any standard shipping container. It is available in different materials depending upon the application. It is an engineered product. It can be made of polyethylene or polypropylene, it can be made of specially woven fabrics. It may have a triple wall cardboard and wood bulkhead or it may have an intergraded bulkhead that has steel bars, it just depends on where the product is being shipped.

FELLCO bulk container liner with a steel bar bulkhead, the importance of this, is to illustrate that we have overcome the wood difficulty. These containers can be supplied without a bulkhead. It can be top loaded and end loaded, it can be filled either by blowing product in, through a belt loader or through gravity. The discharging of these liners is similarly through gravity, in which case the container is tipped. The front end of the container is lifted hydraulically and the product flows out the back.

The benefits of a container with a liner system is that it reduces per tonne transportation cost. Sometimes it increases the capacity by 10%. How can you increase capacity? When you have a contained system, you can actually fill the container higher up.

We heard earlier today of a gentleman that fills his containers to 60,000 pounds. He did that because of regulation. In some instances, you cannot do it because the method of filling without a liner does not allow you to get the additional 2,000 or 4,000 pounds in.

Moisture content and growth of mold are significantly controlled when product is shipped in a sealed and lined container. There is also better control of shrinkage opportunities.

We heard today about shrinkage from a hopper car that lost product on the way to Vancouver, feeding the bears and the wolves along the railway. This is not a traditional form of shrinkage, but it does represent one of the ways that a lined container system will overcome that loss. We also have better
control of the product when shipped outbound and when received inbound. Traders are assured that the customer receiving their product has received what has been sent.

I would like to mention a couple of instances where container liners are used. Du Pont is a small company that you may have heard of. They ship butacite flake, and they ship it to some of their locations worldwide. They are very concerned about contamination. As a matter of fact, the product that they manufacture is a value added product, it goes into the making of plastic that goes between windshields, the safety screens on a car. Just a little contamination like a thread will actually wind its way into the final product and appear in the windshield of a car. We know this. We sort of accidentally put a little red thread in our bag and we got back a Mercedes Benz windshield. However the reason Du Pont uses a liner here is to maintain the integrity of the product that they ship.

There is another bit of technology that adds value to a liner. That is RFID equipped system. RFID technology allow for minute detail about the bulk product that it accompanies. Examples of information are crop type, grade, farms source location, quantity loaded, moisture content, date loaded, type of fertilizer used. In essence the question that we need to ask is; What do you want to know about your shipment? What does your customer want to know about your shipment? We can make it happen. RFID benefits in bottlenecks are that it improves forecasting accuracy, it better identifies order cycle time, it is an opportunity to enhance collaboration between supplier and customer, and it improves operational efficiencies.

Some of the bottlenecks are that the standards are being reviewed. The cost of the chips has not been determined, and that is because of different technology. High data, low data and in some cases signal feedback is interrupted because of high steel being present when it is read.

FELLFAB offers a complete shipping solution to improve per tonne shipping cost. You might consider using a container liner, load at the farm gate and transport the container to its final destination using existing infrastructure. The agriculture industry and FELLFAB’s engineering support is a winning combination for the design of a liner system. If we do not have something off the shelf for you, we will design it. The target is to reduce transport cost and in essence to save the producer, the processor and the shipper money. We propose to do this by cooperating with you and establishing trial shipments.

The use of a FELLCO bulk container liner system provides a method of overcoming logistical bottlenecks. It is a means of handling bulk material shipments. It provides quality control, cost savings, identifies products, and also provides a quicker return to the investor. The FELLFAB team thanks you for listening to this presentation.
Dory Tuvim, President  
MCS Agri-Terminal (Moose Jaw)

Before I opened the container terminal in Moose Jaw a major agri company that was developing the concept of product identification and traceability, hired me as a consultant to advise them on the container end of the project.

In the course of the experiments it was clear that the containers that were brought to the field to be loaded with identified product were immobilized due to lack of wheels under them. There was no way to move them and it was kind of awkward to load the containers with the produce.

I went back designed and patented the “Dory Container Traveler” to solve the mobility problem.

I approached Doepker Industries equipped with a small wooden model.

Once the Doepker’s examined my concept they took upon themselves to engineer it and build the first model of “Dory Container Traveler”.

The video we are going to show here was produced by Ag-Com for the TV “Farm Gate” program and shows the traveler in action.

**CBC Farm Gate**  
**DVD Presentation**

**Narrator:**
For many years now, in the world of transportation, the container has become extremely popular as a carrier of goods and products. Traditionally, most so called boat commodities have been hauled to the ports for export in hopper rail cars. But with the development of a very large pulse crop industry in Western Canada, containers have become very popular in this sector of agriculture. Crops like chickpeas, lentils and now even bulk barley are often stuffed into ocean going containers. Dory Tuvim is one entrepreneur who has always been intrigued with the movement of goods ever since he sailed with the Israeli Merchant Marine.

**Dory Tuvim:**
I sailed on the high seas with all kinds of ships. I landed in Montreal in 1967 and opened a small repair company relating to container repairs. This grew up into very large organization, which is based in Montreal. It is now 31 years that we are in business.

**Narrator:**
Tuvim has recognized the need to make the connection between the farmer and the end user.
Dory Tuvim:
Of course being a container person, I always associate things with containers. So grain carts as they are now, do not mean much to me. But a container does. I thought of how I could put wheels to the containers and allow the container to travel with the combine and also for port use. By doing so, the container will not just be a means to transport, but also as storage. It can stay put for a while until the farmer decides he wants the product to go.

Narrator:
So Tuvim put his thinking cap on and came up with the Dory Container Traveler. This patent pending, unique horseshoe shaped trailer is designed to lift and carry a standard 20-foot container, which holds about 50,000 pounds or 800 to 1100 bushels of grain, depending on the product. With his design in hand he approached Doepker Industries of Anaheim, Saskatchewan, who agreed to engineer and build the traveler to suit farmer’s field conditions.

Among other things, they chose to fit it with a walking beam axle in order to meet the challenges of traveling across uneven farm fields. Randy Doepker says that one of the biggest challenges was coming up with the rubber that would support the kind of loads that it would carry.

Randy Doepker:
We had to find something that would meet that pressure, the pounds and the high air pressure that would carry the pounds, and to get enough flotation to carry it in the field so that it would not have an impact on the field. We can reach speeds of 20 miles an hour with the weights that, for what it is capable of carrying. Once the Dory Container Traveler is positioned over the container and the hydraulic system is activated, the four paws hidden in each corner post of the unit extend out. As soon as they reach the containers four corner castings, they latch into them and enable the lifting motion of the container.

Dory Tuvim:
The claws come out and they fall into the corner castings of the container. Once they fall into the corner casting, they just lock into this position and of course the hydraulic system lifts all four corners in unison.

Narrator:
It takes the Dory Container Traveler about 20 seconds to lift the container about 18 inches off the ground. This is high enough for safe movement around the field and still keeps the container low enough to get under any combine-unloading auger. While most containers do not come with open tops running the length of the container, such units are available. Tuvim says there are several advantages to filling containers with grain right in the farmer’s field.
Dory Tuvim:
The advantage here is that the container first of all has an identified product in it which is identified by its number, the serial number that is on the container. The other thing is it will save all the handling, to the bins, to the elevators, going from a grain car to a truck and from a truck back to another auger, so on and so forth. So we are saving quite a few handling stages here.

Narrator:
Having containers filled in the field can be advantageous to shippers wanting to assure their customers that a certain type of grain actually comes from a specific field. By traveling in a sealed container, the commodity will not be mixed with other supplier’s. This is especially important for those marketing organically grown crops or anyone who wants to segregate genetically modified crops from conventional varieties.

Dory Tuvim:
The world market, now demands identified products. You cannot send 20,000 tonnes of produce that is not product identified because it is mixed from all different fields and one does not know what is in it.

Narrator:
Tuvim points out that with GSP systems and on board computers on combines it is now possible for farmers to provide buyers with information which links the containers contents directly to the field it came from.

Using the Dory Container Traveler is just one link in this unique grain-gathering concept. After the empty container is offloaded from a railcar at a container yard it then is picked up by a side loading semi-trailer unit. This truck then delivers the container either to the farmer’s yard or directly to the farm field.

Dory Tuvim:
They are very light and easy to handle. They just pick up the container with a side loader and drive with it on the highway. We feel that this way, that the container will come from a terminal or a depot with a side loader, be dropped on the edge of the field and on the field it will be picked up by the traveler.

Narrator:
When Doepker Industries built the Dory Container Traveler, they made sure the unit could be easily pulled by a 200-250 horse power, 4 wheel drive farm tractor.

The hydraulic systems on larger tractors can easily handle the traveler. The traveler is equipped with a heavy-duty swivel hitch to help it cope with rolling field terrain. Even though Tuvim built the Dory Container Traveler with the
Agricultural market place in mind, he has discovered other sectors that are interested in the unit.

**Dory Tuvim:**
I have already been speaking to the Frontier dealers around Canada and the U.S. There is a great interest in this machine to service terminals, port terminals, where containers are brought in and then they have to move them from the site.

**Narrator:**
Tuvim, who holds the world wide patent on the unit, says he wants to make it economically feasible for a farmer or possibly a group of farms to purchase or lease this kind of transportation technology.

For more information on the Dory Container Traveler, contact Dory Tuvim directly or the marketing department and Doepker Industries.

---

**Dr. Ed Tyrchniewicz**  
**Moderator**

We have some time for questions now. I invite you to use the microphone and pose questions to any one of the three presenters. We have three very good examples of technology that has been developed to deal with some supply chain bottlenecks.

While you are thinking of a question, I would like to pose one to Dory, if I may. In terms of these containers, they are open top containers. What kind of cover is put on them to ensure the security and the preservation of the identity while that container is in transit?
Dory Tuvim, President  
MCS-Agri-Terminal (Moose Jaw)

There are two kinds of containers. The domestic ones, which will be used on the field and the export ones. What you see here in the field is an open top container. They have a heavy-duty top cover. Of course we are looking at some hard top openings on the roof that will accommodate the combine chute and would be easy to open and close like you have in B trains and all the standard vehicles that carry grain. The idea is that the container will be loaded in the field, be sealed from the top and stay there until a truck comes and picks it up. The farmer does not have to worry about it, all he has to do is come and haul it away to wherever he wants using a tractor or transport company.

Dr. Ed Tyrchniewicz  
Moderator

What about into the export markets?

Dory Tuvim, President  
MCS-Agri-Terminal (Moose Jaw)

It will go for instance to a seed cleaning plant, and in the plant it will be traced. They will clean it and trace the product once they pack it back into an ocean going container. They know what container it came from and which container it went to.

Dr. Barry E. Prentice, Past President (1997) CTRF  
Director, Transport Institute  
Asper School of Business

This question is to the panel in general. It would seem that you are dealing with certain pieces of this new supply chain. Are you all compatible, or are you competitive. How do you work together to get this system to move all in one direction?

William Logan, Director, Material Handling  
FELLFAB Limited

From FELLFAB’s perspective, yes absolutely, we are compatible. We are compatible with what Dory has in mind, we are with what Charles has in mind. From our perspective, it is a matter of engineering a solution for either one of them in conjunction with our customers.
Charles Foskett, President and CEO  
RailRunner NA Inc.

I guess that I would like to say that I certainly think that we are compatible with FELLFAB. I really like the idea that I heard in Dory’s presentation, but from this angle, I could not quite see the product, so I could not tell whether RailRunner and the Container Traveler are compatible or competitive.

Dory Tuvim, President  
MCS Agri-Terminal (Moose Jaw)

We already have had requests. People are asking if we can make it so that the container could be elevated further up. Right now this machine is just designed for 18 inches, just to go under the combine. We are already thinking of extending the elevation, so that this container can be elevated in such a way that a trailer or chassis can go right underneath and pick it up. By doing so we will save the side loader.

Charles Foskett, President and CEO  
RailRunner NA Inc.

So the answer is Yes.

Dr. Barry E. Prentice, Past President (1997) CTRF  
Director, Transport Institute  
Asper School of Business

Bill I just wanted to know, we were talking a bit at the break about other commodities being moved in containers, I think you mentioned coffee beans. I wonder if you would describe that and what trend you see in movements of containers.

William Logan, Director, Material Handling  
FELLFAB Limited

Coffee is now being moved in containers with liners. The quantity that comes into the United States alone, is somewhere in the vicinity of 8,000 containers a month. The liners are fairly inexpensive and the labor savings is incredible. On one of the slides that I presented, you saw an open-end truck with a back end of a container, with a bunch of bags in it.

The coffee industry, traditionally uses 25 kg or slightly bigger burlap bags in which to package the coffee. It is packaged that way by the grower and then it goes to the shipper. The shipper loads it onto a container, it goes on to the ship, comes out in New York or wherever. It is very labor-intensive
process, so the coffee industry has eliminated many of those handling steps by using a liner.

The cocoa industry out of Africa, is shipping in liners to Japan and to Europe, but not to North America yet. These are some of the areas, and today I have heard that a rail car company in the United States required that containers be lined when wheat is blow into them.

One of our fellow attendees mentioned that there is an increasing tendency toward containers and liners in food handling. In the chemical industry, it has been there for years. For the food industry, there is more need to identify the product, whether it is a genetic tag, an organic tag or whether it was from a particular region by use of GPS coordinates.

One excellent way to identify the product that is being shipped, so that your customer in Japan knows that he is receiving the malt barley that he ordered, exactly they way he ordered, is in a container. Excuse me if that was a little bit of advertising for the product, but there you go. I hope that answers the question.

Brent Van Koughnet
Vancouver Port Authority

If I could make a comment and ask a question. First of all, I have followed Dory’s venture into the agriculture world over the last few years and, although I am sure he has had moments of great frustration that we will never completely understand, we appreciate the contribution that you have made to pushing and advancing many ideas here. Hopefully pieces of this will get some traction for you and you will get the just rewards that you deserve. One of the difficulties that we have always had is about getting containers into the Western Canadian market. If I could ask Mr. Logan, has there ever been any discussion about either sealed mini bulk bags or something that can be loaded at the field level, moved through box cars or other means and then loaded into containers in different places. Where you are actually packaging and sealing, but not in a container right at the field. As kind of an intermediate process?

William Logan, Director, Material Handling
FELLFAB Limited

Yes, there is that possibility available. That is what is called a flexible bulk intermediate container. Generally speaking in the industry it is called an FBIC. It now has street names: the super sack, super bag and that kind of terminology. These are also polyethylene or polypropylene bags and they can contain as much a 1 ton of material. There is a cost factor here, we are dealing in mini bulk, not bulk. So if it is advantageous in that small of a bulk quantity, then yes, those type of bags are available.
The cost of those bags are approximately $25.00 U.S. a piece. You can probably get them for less. To fill a 20-foot container, 20,000 pounds, that would be 10 of these bags, so there is a cost of $250.00. To fill a 40-foot it gets more expensive. Just right there, we run into an increased cost.

**Brent Van Koughnet**  
**Vancouver Port Authority**

Well, we are looking for every option we can to identity preserve and if it cannot happen in the field at peak time, then what are the other ways to do that?

**William Logan, Director, Material Handling**  
**FELLFAB Limited**

Let me do a little bit of assuming here, between Mr. Foskett and Mr. Tuvim on either flank, we can manage to put the container in the field. You can virtually blow your product directly into the container. Now Dory’s configuration is a fine configuration. Blow the product into the container, and blow it into a container that has a liner in it, and all of a sudden you have preserved the identity of that product. There is no doubt of that product being mixed with anything else. Now you have to seal the container and ship it on. If you use RFID technology that might be one way to assure what is in the container is what was there at the start. There is a need to get everybody to cooperate. If we can pull it through all the way from Kyoto or China, right through to the producer, then we have eliminated X amount of labour costs.

**Brent Van Koughnet**  
**Vancouver Port Authority**

There is no question that the preferred method would be a container in the field, but we have all seen that we have some regulation issues and some operational bottlenecks, that means we are not getting them to the fields. I guess I was just exploring all the different variations on this. I appreciate your comments.

**Dr. Ed Tyrchniewicz, CTRF VP Program (1977)**  
**Asper School of Business, University of Manitoba**  
**Moderator**

Thanks for the question Brent and thanks for your comments Bill. Now I would like to turn the podium back to Ruth, but before I do, thank you very much gentlemen, those were very interesting presentations. Thank you.
We called that panel our supply chain bottleneck panel, but I think we can change their name to the innovators panel. The work being done by folks such as Dory, Bill and Charles, are broadening the opportunities to containerize. More markets, more areas, it is very exciting the kinds of things that are being done. The brainpower that is being put to this is a real testament to this industry. With that, I want to thank our three panelists, Dory, Bill and Charles and our moderator Dr. Ed Tyrchniewicz.

Now with the possible exception of Kathy and her team there is one person in this room who has been working hard all day, right from the beginning. That is Dennis Apedaile, he is our Rapporteur. Dennis and I have known each other for about 20 years. He recently retired from Canadian Pacific Railway after about 35 years of service. He has been a mainstay in rail, government relations and in policy. Many associations look to him for leadership and linkage with the rail industry. I must say we are missing him, but it is good to see him back. I would like to call Dennis Apedaile to be our final Rapporteur to see if he can draw some common links together for us.

Rapporteur

Dennis Apedaile, CTRF member (1980-present)
Canadian Pacific Railway (retired)
Rapporteur

Barry Prentice opened the conference with a definitional framework of bottlenecks reminding everybody that there are different kinds of bottlenecks and that they can be physical, they can be economic and they can be political. I think we heard some of each today. Obviously when the system slows down, the costs go up. That’s why we all have an interest in today’s topic. We don’t want our system to be expensive, we want it to be responsive and we want it to be inexpensive. Barry reminded us about the importance of addressing things on a system basis. If you just fix one domino well then the problems just move down to the next level. I’ll come to that a little later. Certainly bottlenecks can be chronic or temporary, and Barry sliced and diced the definition in several ways that provided a background for where we were going.

He mentioned that there could be competing corporate agendas that cause problems. I think that what I observed is that if we could change the word corporate and it always mean business, then some of those issues might subside because business people have an interest in finding ways to work things out if they have some interest in the outcome. If they don’t have an economic interest in the outcome, why would they put their time and
attention to resolving the issues. I think that’s an important thing to remember. Sometimes removing physical bottlenecks might not be economically justified or they may be resolved in a different way. For example, price signals to spread the flow of traffic differently is sometimes a useful tool. There was a warning about how disinvestment in the system or a lack of new investment in infrastructure really needs more attention. We probably are in Canada, not just in Canada, on a slippery slope in certain areas.

Doug Welsh, Canadian Pacific Railway, spoke about certain parts of the railway being built in the late 1880’s and last being updated in the early 1900’s. Dick Corfe, St. Lawrence Seaway, spoke about the Seaway which really had predecessor canal systems with the Seaway itself being built in 1959. The Trans Canada Highway was built in the 50’s, 60’s and mostly the 70’s. All of these infrastructures are old and creaking and that is something that we need to pay attention to. Other issues like cabotage will look like a Sunday school picnic if we don’t have the infrastructure to move our goods. That’s something that the entire community that’s interested in transportation and logistics need to spend more time on. I know it’s a topic that Ruth Sol, WESTAC, and various other people are trying to get more exposure to and I just want to wave the big flag in support of that.

Dick Corfe spoke about a 2300 mile seaway system. We are really blessed in Canada to think that you can have ocean vessels come 2300 miles inland. However there are some limitations. I started to shiver when he talked about an 80-foot wide canal where the concrete was starting to expand, and the ships were 78 feet and you’ve got ice on the ships. That scared the hell out of me. There’s an example of a really creaking infrastructure. Dick’s whole approach is how to do a good job with an aging infrastructure. He would have a different management approach if he had newer infrastructure. Dick posed an excellent question; Is Seaway investment a legitimate investment of public funds? We had a chat at lunchtime about the different economic signals that we are receiving. There are certainly issues about rail and highway and there are issues about the seaway and some of the other modes. It’s less an issue on air, but it certainly affects where your ocean vessels will go. We talked about a reliability index, which is a good tool to bring to bear on managing an old system with new approaches.

Doug Welsh then made the case about the Railway network and suggested that our long grace period is over. I think that it’s absolutely true, the Maple Creek subdivision is not unique. In fact, if you took a subdivision in the Rocky Mountains, the situation would be even starker that the one that Doug chose on the Prairies. He made the point that basically taxes sometimes cost more than maintenance costs. I was struck at lunchtime how Ron Lemieux, Minister of Transportation and Government Services for the Province of Manitoba, talked about how the provinces would like to get some money back from the federal government on the gas tax. I saw a similarity in what Doug was saying and what Ron was saying, because essentially the province
has put in place a highway system which enables people to go out and use it and use the fuel which the federal government then takes the taxes from.

In a similar way, the railway infrastructure is put in place by the railways, which enables governments, plural, to take taxes from it. So there is a similarity in Canada where the Federal Government taxes provincial and corporate infrastructure whereas in the United States in particular, and other parts of the world, they recognize that infrastructure is an economic advantage to any society and any economy. The starkest example is ports. Vancouver is seen as a cash cow for tax takers, whereas south of the border, ports can float tax free bonds because the investments they achieve makes them more competitive, world class ports and makes them able to attract economic activity to the region. There is a virtuous cycle associated with that, which we don’t yet seem to have caught onto in Canada. I think that is arguably a place were the political community has to have a better understanding and be a little braver with the electorate.

Sinclair Harrison, Farmer Railcar Coalition-FRCC, reminded us about and gave us a summary on where they are with the FRCC. I think that he made a point that it’s a leasing company with a difference, it’s a leasing company with a responsibility to the farmers of western Canada. He reminded us that the grain handling and transportation system is the largest farm cost and he talked about the size of the overall government “fleet” because there are Canadian Wheat Board cars and Provincial cars. Interestingly enough, it’s important to know and it wasn’t mentioned, that the grain car fleet in any given year will vary between 25,000 and 30,000 cars. The Government fleet is a base fleet that’s always supplemented by cars that are provided by the railways. It’s not as if that’s the only car used for the movement of grain. He talked about car capacity and car replacement. Sinclair then talked about the hatches and gates on the Federal fleet, and gave some examples of issues that need to be resolved with those aging cars.

Ian McCreary, Member of the Board, Canadian Wheat Board, in response to Sinclair’s presentation suggested that cars have not been part of the farmer cost, and his view is that he doesn’t want an outcome on the disposition of the cars that will make them part of the farmer cost. This is of course were we enter into the difficulty that we have in Canada and particularly in grain where it is very difficult to resolve some of the issues because the intractability comes in large measure from people having different ideologies. It’s not only the different sectors of the industry that they are in, they have a different ideology of the framework that should guide the outcomes. Until we can get our ideologies a little closer together. I personally think that it’s going to be a dark and stormy day before we get our system improved much beyond where it is today, which is a shame.

Judie Dyck, Executive Director, Saskatchewan Canola Growers Association, made the point that she had been part of the FRCC and was now concerned that some of the questions she had were not being answered. She was
concerned that some of the business issues had not been responded to. I wrote down business versus ideology, and I meant that in the generic sense. Depending upon your approach to the issues, you are going to come to different conclusions. She suggested that ownership would empower owners to achieve suitable leases. The key issue on leases is that there has to be a willing lessor and willing leasee. That was not discussed this morning, but I think that it is an important issue that needs some discussion. Her bottom line was that any disposition of the fleet needs to be open and address current concerns.

Judie’s bottom line provided an easy segue into the Western Grain Elevators Association-WGEA presentation by Wade Sobkowich who basically took more or less the same approach and felt that the FRCC was introducing noncommercial elements into the system. There have been a lot of people trying to bring the grain handling system, like a big elephant, towards a more commercial system. You can see that if Wade believes the FRCC will introduce noncommercial elements into the system why he would be reluctant to be supportive. Basically his bottom line was that the government either keep the cars and negotiate a new operating agreement which could address some of the issues that Sinclair has described or that if they were sold, they would be sold on a commercial and transparent basis.

Sinclair Harrison wrapped up the session with a response to the panels comments. He made a very good point in that he came here to discuss the topic of “bottlenecks” and that he had not brought his FRCC business plan. I just wanted to make sure that I mentioned that because Sinclair took a bit of a beating on what was not the actual subject today.

The first afternoon session addressed regulatory bottlenecks. The presentation By April Taylor, United States Department of Agriculture, wasn’t really about bottlenecks, it was about stats and abilities to follow what was going on in the market place. When April mentioned that it was unusual to see in her ocean rate bulletin that the shipping line with the highest rates and the longest transit time has 92% of the market, that really blew me away. Now that might catch Ian McCrea’s attention I think. Then she described various other ways that they are getting into monitoring and slicing and dicing information she presented some very interesting stats that I think that will be very useful for some of the people here today.

Another surprising fact was that bulk and container rates that have always been seen as widely differing, and they were widely differing in most of the period that she covered, but they actually overlapped in the first quarter of 2004, especially with some of the reductions that weren’t in her standard rates.

Erica Vido’s, Ipsos-Reid, presentation then got into some regulatory issues. There was some discussion of the cabotage issue and the current Canadian rules and their potential negative impact on the development of Prairie Grain
exports. I think that the comment that I observed was that the containers are in the container line’s possession for the greatest part of the container’s cycle, so arguably the container lines have most of the economic interest in the value of contain cycles. I can’t be sure that that’s the reason, but I suspect that that is a big driver in the fact that the container shipping lines, the ocean shipping lines now basically control the container fleets. It wasn’t necessarily the way when containerization began, when fleet control was all over the place and there were different players, including independents and some of the land based carriers. It has evolved to the ocean shipping lines controlling the containers, and basically there is just no way, those containers are going to come into the Prairies.

The comment was made that the shipping lines could make more money on the turn between Europe and North America or between the West coast and Asia. It’s a very frustrating issue for people trying to move specialty Ag products off the Prairies. My view is that the reality is that there either has to be another supply of containers or else there has to be a change in the economics on the ocean shipping system. I have heard container owners say that they do not want their containers going into the Prairies, not just necessarily in Canada but for going to backhaul loads and getting off the main lines of the railways. The reason is that they then loose control of the velocity, they don’t know when those containers are coming back. There is some justification here because there are people, perhaps not today, perhaps none of them in this room, but there are people in the specialty crop business that have used containers as short-term storage. For example, lets take a guy with lentils or hay cubes or something like that in southern Alberta. The box arrives and stays on the farm for a couple of months. If a container line hears about that, they are just going to say there is no way that I’m going to have my container be subjected to that risk in the future.

Discussion on Julie and Erica’s presentation raised some very vigorous concerns about the availability of containers and comments about worldwide supply being tight and that supply does go up and down. The most cyclical thing that I’ve ever seen in my time in the industry is rail equipment. There have been cycles in rail equipment that are like clockwork. They last about 4 ½ years, and flow in a sinusoidal wave that has been going up and down for a long, long time. There will be cycles in the container supply business too. As the market grows and the value goes up, people will build them, then there will be too many and the value will go down, etcetera. It really does happen. There is some sign that the market is getting readier for containerization of Prairie crops, especially with the joint venture approach. We heard the point made and I believe that that’s probably true despite the problems and frustrations we heard today.

The final session was on supply chain bottlenecks. I think that Ed Tyrchniewicz was quite correct, we didn’t hear about bottlenecks we heard about opportunities. I thought that they were a very up lifting set of presentations, although really, they were marketing presentations by three
guys with three terrific products to a captive audience. Never the less, it was really great to see these new products, they really are terrific. It was a little scary to me to think of another player in the crowded logistic systems. That was the comment that I made to myself when I heard Charles Foskett, RailRunner, talking about RailRunner. On the other hand, the case was made for the addition of value through this innovative technology, and I think that really is the test of whether there should be another player in an already crowded logistics system. Do they bring value? In fact arguably he would collapse some of the other activities that are done by other players. I would just comment that the Canadian Railways have experimented with similar technology that did not prove to be sustainable.

William Logan’s FELLFAB story is ongoing. Basically he called in Engineers to solve a problem using textiles. I called it a high Tec garbage bag. You can have a container that you want to leave in the same place or you don’t want to clean out or you do not want your product to get in or out of it. I thought that his products are most interesting, especially the idea of them having unload chutes and having things to let the air out at the other end. The most interesting idea of all is having the chip on the bag that can tell you so much information about what’s in those bags. That’s just a fabulous innovation in terms of Prairie agricultural commodities. What day did you harvest the crop? These kinds of chips will be able to provide all that information to very demanding customers.

Dory Tuvim’s MCS Agri-Terminal (Moose Jaw), innovation, his container traveler is a very impressive piece of gear and it will obviously find it’s role. I know he’s frustrated by the lack of container supply but that’s going to come back and when it does, that’s going to be the way that the Ag products, and specially products can be loaded right off the field. We also learned new things like Buticite and Wolastonite, very intriguing products.

If I reflect on the day as a whole, we had a lot more opportunities than constraints talked about and I think that is a very positive sign. It’s the infrastructure that I’m worried about because that’s big bucks. The cost of infrastructure supports the need to resolve the bottlenecks that are related to regulations and supports the notion of a less regulated market place. If we could just get the market place signals right, they will kind of even things out. We all know that the free market is a little bit like a democracy. It’s the worst form of governance except for all the others, and so we probably need to move a little more in that direction. Of course, that puts me right on the edge of ideology.

I have three closing comments. The first one is that containerized movements, I believe, are entering a new phase of flexibility and opportunity that is in a way comparative to the Matson line first moving containers in 1965 to and from the Yukon and White Pass railway. There were 20-foot boxes and they had those little ships, and boy have we come a long way in 39 years. April’s picture of a vessel coming at us with zillions of containers
on it, and all the technological things that you hear today, I think that it’s a very positive story. I think that we are on the edge of a new phase of shipping.

My second comment would be that the ability to modify regulations is truly proportional to the ability of all the players to speak with a unified, articulate voice and keep it simple. That’s something that we’ve had the most trouble with. We are a small country, beside the big elephant and we should really get our act together on the things that man can resolve apart from the dollars. This regulatory stuff and the fact that we have competing views on things, it’s time in my view to grow up.

My final comment is, that it is very facile to say follow the money, but I would say follow the money and the regulations, and that will define how any part of the system will succeed and whether investment is justified and whether that’s in container handling technology or rail and port capacity. Thanks very much.
Bottlenecks and Opportunities in the Grain Supply Chain

Fort Garry Hotel, Winnipeg Manitoba  
TUESDAY, NOVEMBER 23, 2004

8:00 am – 8:25 am  Registration and Continental Breakfast

8:25 am – 8:30 am  Mr. Gordon Baldwin, President Canadian Transportation Research Forum (CTRF)
  Morning Chairperson

Session 1  BOTTLENECKS FORMS, CAUSES AND IMPACTS: A CONCEPTUAL FRAMEWORK
The terms congestion and bottlenecks tend to be used interchangeably, but this is misleading. Congestion is a symptom of a bottleneck, and if the congestion intensifies a queue begins to form. Congestion and queues reduce productivity, but this may not mean that they should be eliminated. Sometimes the cost of removing a bottleneck exceeds its benefit. These points and others are set out in the opening session to provide a framework for the discussions of infrastructure, regulations and supply chain issues.

8:30 am – 9:00 am  Dr. Barry E. Prentice  
  Past President (1997), CTRF  
  Director, Transport Institute  
  Asper School of Business, University of Manitoba

Session 2  CHRONIC INFRASTRUCTURE BOTTLENECKS
Most transportation infrastructure is long lived. As a result, capacity decisions have to be made with a look to the future of demand and yield, as well as the ability to finance construction. Capacity can be altered by innovations in equipment and management, but are also affected by the level of maintenance or upgrading that occurs over time. While infrastructure is durable, it does have a finite life and must be renewed, revised and/or expanded over time. Speakers will provide insights on the importance of infrastructure bottlenecks in transportation networks.

9:00 am – 10:20 am  Gord Tufts  
  Past President (2000), CTRF  
  Manitoba Department of Transportation and Government Services  
  Moderator
9th Annual Fields on Wheels Conference

Speakers

**Doug Welsh**, Executive Director Strategy, Business Planning and Development
Canadian Pacific Railway

**Richard Corfe**, President & CEO
St. Lawrence Seaway Management Corporation

Roundtable discussion

10:20 am – 10:50 am  Coffee Break

**Session 3  SEASONAL INFRASTRUCTURE BOTTLENECKS**

Some traffic patterns are subject to wide variations that create temporary bottlenecks because the demand for service exceeds supply. With field crops, the seasonal bottlenecks can be exaggerated by weather conditions that lead to an above average crop, or a more concentrated harvest period. Fluctuations in demand place economic stress on the system because equipment and facilities may not be fully utilized between peak seasons. The public provision of equipment is a policy that is now subject to change. A farm group has stepped forward with a proposal to manage the publicly provided fleet. A presentation on this concept will be followed by an industry reaction panel.

10:50 am – 12:00 pm  Moderator  **Paul Earl**, CTRF Board Member, 2004
I.H. Asper School of Business,
University of Manitoba

Speaker  **Sinclair Harrison**, President
Farmer Railcar Coalition

Reaction Panel  **Ian McCreary** – Board Member, Canadian
Wheat Board
**Judie Dyck** – Executive Director, Saskatchewan Canola Growers Assoc.
**Wade Sobkowich**, Executive Director, Western Grain Elevator Association

Roundtable discussion

**Lunch and Keynote Speaker**

12:00 pm – 1:30 pm  Luncheon Chair – Dean Glenn Feltham,
I.H. Asper School of Business

**Keynote Speaker**  **Hon. Ron Lemieux**
Session 4  REGULATORY BOTTLENECKS

In 2004, the ocean freight rates for bulk grain shipments on the Pacific exceeded the cost of shipping grain in containers. An analysis of trends in container rates and volumes of container traffic in the U.S. will be presented. The growth of container movements is particularly important for identity-preserved grains and special crops. These shipments have created demand for containers to be loaded on the Prairies, but the availability and costs of repositioning containers is a longstanding complaint. Examples of container supply issues include: customs regulations on the use of foreign equipment in Canada, alternate use and cycling of international containers owned by shipping lines. These speakers address the growth of demand for containerized grain shipments and an assessment of the impact that these regulations have on Prairie agriculture.

1:30 pm – 2:40 pm  Moderator  Doug Duncan
Past President (1995) CTRF
Transport Institute, University of Manitoba

Speakers  April Taylor, Economist
Transportation Services Branch
United States Department of Agriculture

Erica Vido, Research Manager
Agribusiness, Food and Animal Health
Ipsos-Reid

Roundtable discussion

2:40 pm – 3:00 pm  Coffee Break

Session 5  SUPPLY CHAIN BOTTLENECKS

The growth of value added products and the pressure to diversify is leading to bottlenecks in the supply chain. This panel examines two technological developments. The conference will hear an account of a new container transport technology that will facilitate container loading on railway branch lines, or at mini-hubs created to consolidate container shipments. Also, the loading and unloading of containers continues to be an area of discussion. A
presentation on the material handling technology used to transport bulk materials in containers will illustrate how bottlenecks in other supply chains were overcome.

3:00 pm – 4:30 pm Moderator Dr. Ed W. Tyrchniewicz CTRF VP Program (1977) I.H. Asper School of Business, University of Manitoba

Speakers Charles Foskett, President and CEO RailRunner N.A. Inc.

William Logan, Director, Material Handling FELLFAB Limited

Dory Tuvim, President MCS Agri-Terminal (Moose Jaw)

Roundtable discussion

4:30 pm – 4:45 pm Rapporteur Dennis Apedaile CTRF member (1980 – present) Canadian Pacific Railway (retired)

Closing Remarks

4:45 pm Dr. Barry E. Prentice Director, Transport Institute I.H. Asper School of Business University of Manitoba

9th Annual Fields on Wheels
Presenter Profiles

Morning Chairperson - Mr. Gordon Baldwin, President, CTRF

Gord Baldwin is presently the Director, Transportation Division, Statistics Canada and President of the Canadian Transportation Research Forum. He has worked in the transportation data field for 25 years. His career choice was no doubt influenced by two summers as a university student in the 1970's working in the Research Branch of the former Canadian Transport Commission. Besides his enjoyable work at Statistics Canada, Gord was the Canadian representative on the International Civil Aviation Organization (ICAO) Statistics Panel for 10 years, Chairman of the 13th ICAO Statistics Panel, and a member of the Study Group on the Rationalization of the ICAO Statistics Program. He has been active in the Canadian Transportation Research Forum and the Transportation Research Forum since 1991.
Session 1

Dr. Barry E. Prentice, Director, Transport Institute

Barry E. Prentice is the Director of the Transport Institute and a Professor in the I.H. Asper School of Business. His major research and teaching interests are logistics, transportation economics, urban transportation, economic development and trade policy.

Dr. Prentice has authored or co-authored more than 150 research reports, journal articles and contributions to books. His scholarly work has been recognized for excellence in national paper competitions and awards. In 1999, National Transportation Week named him Manitoba Transportation Person of the Year.

Dr. Prentice has served on the Boards of Directors of several transportation organizations: Winnipeg Airports Authority, Inc. (1994-2002), National Transportation Week (Canadian President, 2001 and 2003), and the Canadian Transportation Research Forum (Past President, 1997). He is Associate Editor of the Journal of Transportation Research Forum, and Honourary President of the Canadian Institute for Traffic and Transportation (2001-3). In addition, Dr. Prentice has served Winnipeg TransPlan 2010, the Mid-Continent International Trade Corridor Task Force and expert committees. In 1999, he received a University of Manitoba Outreach Award.

Session 2

Moderator Mr. Gord Tufts, Past President (2000) CTRF, Transportation Policy Consultant, Manitoba Department of Transportation and Government Services

Gord Tufts has been a Transportation Policy Consultant with the Manitoba Department of Transportation & Government Services since 1999.

Gord is a Professional Engineer – member of the professional engineers associations of Manitoba (APEGM) and New Brunswick (APEGNB). Gord has been involved with CTRF – Canadian Transportation Research Forum for a number of years. He has served as President (2000), VP-External, VP-Meetings, and Councilor.

From 1981 to 1986, Gord was the Principal Project Officer with UNB/Transport Canada Collision Investigation Team. In 1986, he was a Traffic Engineer in the General Traffic Directorate of the Government of the Kingdom of Saudi Arabia in Riyadh. In 1987, Gord joined the Road Safety Branch of Transport Canada in Ottawa as a Motor Vehicle Accident Investigator. He was Senior Transportation Policy Analyst for the Newfoundland and Labrador Department of Works, Services and
Transportation from 1988 to 1996. From 1996 to 1999, Gord was Senior Transportation Policy Advisor with the PEI Department of Transportation and Public Works.

**Mr. Doug Welsh, Executive Director Strategy, Business Planning and Development, Canadian Pacific Railway**

Doug Welsh was raised in Toronto. He has a Bachelors of Mechanical Engineering and Masters in Management Sciences from the University of Waterloo in Ontario.

Doug joined Canadian Pacific Limited in 1972 in the company’s Research Department. In succession, he then went to the Passenger Department to help with its dissolution into VIA, the Mechanical Department, including manager of the large main shop here in Calgary. He became Special Assistant to the VP Operations in the period leading up to significant Canadian operating deregulation. Doug then went to Toronto where he managed line abandonment for eastern Canada, then to the newly formed corporate strategy function in the late 1980s, and lately to the network development function.

Doug was project manager for the 1991 purchase of CPR’s northeast US subsidiary (the Delaware and Hudson Railway). He was in the center of the efforts to merge CPR’s eastern business with CN’s.

More recently, Doug has been involved in the implementation of CPR’s alliance strategy, and developed the recently announced restructuring of the D&H, and

On a more general level, and his highest interest area, he has been grappling with the industry’s questionable ability to fund its future network needs, the role of public private partnerships in funding network needs, and the role of passenger trains – commuter and high speed – as potential partners who can bring capital to modernize the network.

Doug says he is grateful to have a role at Canadian Pacific Railway as one of its long-thinkers.

**Mr. Richard Corfe, President and CEO, St. Lawrence Seaway Management Corporation**

Richard J. Corfe has held various executive positions with the Seaway over the past 20 years, making a substantial contribution to the waterway’s safety and reliability, and modernizing its infrastructure management. He has been involved in all aspects of waterway operations, as well as safety, environmental and labour relations matters.
Mr. Corfe joined what was then The St. Lawrence Seaway Authority in 1983, and implemented the organization’s first computerized maintenance management system. Later, as Director of Engineering and Maintenance for Niagara Region, he streamlined maintenance of the Welland Canal. In 1998, when The St. Lawrence Seaway Management Corporation took over operation of the waterway, Mr. Corfe became Vice-President of Engineering Services. Two years later, he was nominated Vice-President of Maisonneuve Region, and Corporate Process Leader for Infrastructure Maintenance.

Mr. Corfe was appointed Executive Vice-President of the Seaway Management Corporation effective September 1, 2002 and took over the position of President and C.E.O. of the organization on April 1, 2003.

Mr. Corfe served as a Director of SODES from 2000 to 2004 and currently serves on the Executive Committees of the Chamber of Maritime Commerce (CMC) and of the Western Transportation Advisory Council (WESTAC). Mr. Corfe is a Professional Engineer and a Certified Management Accountant

Session 3

Moderator - Mr. Paul Earl, Assistant Professor, Dept. of Supply Chain Management, I.H. Asper School of Business

Paul Earl comes to the Transport Institute from a long and varied career in the grain industry. He has worked for the federal government in Ottawa, for Canadian Pacific Railways, for United Grain Growers, the Grain Transportation Agency, and, most recently, for the Western Canadian Wheat Growers. In 1992, Paul also completed a doctoral degree, which examined the farm movement in Western Canada and how the institutions that have shaped the grain industry for many years came into existence.

While at UMTI, Paul would like to see the Institute's reputation as a vibrant centre for transportation research and development enhanced, and its role as a major centre for transportation education expanded.

Mr. Sinclair Harrison, President, Farmer Railcar Coalition

Sinclair was raised on the family farm seven miles north of Moosomin, Saskatchewan. He attended country school for seven years and completed his grade twelve in Moosomin. From there, he moved on to the University of Saskatchewan where he obtained his degree in Agriculture. He had a distinguished academic career winning the Nuffield Scholarship in 1984 to study Agriculture and Local Government in Australia and New Zealand.

Sinclair and his wife, Gail, raised one son and four daughters on the family farm, which they have operated for 30 years, and are helping with eleven grandchildren.
His involvement in local government began in 1974 when he was elected to the council of the Rural Municipality of Moosomin #121; two years later he became Reeve and has served as Reeve from 1976 to the present. Sinclair was elected to the Saskatchewan Association of Rural Municipalities (SARM) Board of Directors in 1986. He was elected President of SARM in 1994 and was re-elected each year until he made the decision to step down from the position in 2002.

While with SARM, he worked on behalf of rural Saskatchewan in many areas of policy and negotiation. He sat on SARM’s Indian Land Claims committee and was SARM’s representative on the SAMA (Saskatchewan Assessment Management Agency) Board. As President, commencing in 1994, he was named to the Board of Directors of the Federation of Canadian Municipalities. Sinclair remained on this Board from 1994 to 2002, becoming an Executive Member of the Federation in 1995.

Sinclair is currently the President and Chairman of the Farmer Rail Car Coalition (FRCC), a position he has held since 1996. Under his stewardship the FRCC has completed comprehensive business and financial plans. He currently leads a team of railway, financial and legal experts discussing options with Transport Canada for acquisition of the federal grain hopper car fleet.

**Reaction Panel**

**Mr. Ian McCreary, Board Member, Canadian Wheat Board**

Ian McCreary received his Bachelors and Masters degrees in Agriculture Economics from the University of Saskatchewan. Following University he worked for the CWB for five years. Positions included: Foreign Competition Analyst, Trade Policy analyst, and Marketing manager for East and West Europe.

After a brief time in Africa, Ian returned to Canada and managed a pilot project for the Canadian Foodgrains Bank on food aid and food markets.

Ian Farms with his wife Mary and two young sons in Central Saskatchewan. They raise oilseeds, pulse crops, wheat, barley and cattle. Ian was elected to the Canadian Wheat Board when the board was first turned over to farmers in 1998. He has served the Board as Transportation committee chair and continues as lead spokesperson for the board on transportation issues.

**Ms. Judie Dyck, Executive Director, Saskatchewan Canola Growers Assoc.**

Judie Dyck, P.Ag is the Executive Director of the Saskatchewan Canola Growers Association (SCGA). Since 1969 SCGA has been a voice for canola growers in Saskatchewan.
Judie was born and raised on a mixed irrigation farm near Hanley, Saskatchewan. She has her Degree in Agriculture from the University of Saskatchewan and has been working in agriculture since then. Her work has taken her internationally with 15 years experience in marketing, international finance and logistics in the agriculture equipment and grain storage sector through her and her husband’s company AgMar International.

Since August of 2003 Judie is using her experience and energy to work with business minded canola growers in policy development, promoting canola and biotechnology and helping growers put more money in their pockets.

**Mr. Wade Sobkowich, Executive Director, Western Grain Elevator Association**

Wade Sobkowich joined the Western Grain Elevator Association (WGEA) in 1997 as Executive Coordinator, and was named Executive Director in 2004. The WGEA is an organization of nine farmer-owned, public and private grain businesses operating in Canada, which collectively handle in excess of 90% of western Canada’s bulk grain deliveries.

In 1994 Wade graduated with honours from the Assiniboine Community College in Brandon with a Diploma in Rural Economic Development. He went on to graduate from the Municipal Administration Program at the University of Manitoba while working as an Economic Development Officer for the Manitoba communities of Morris, and then Gimli, between 1994 and 1997.

Wade was born in 1972 and is originally from Fisher Branch, Manitoba. He now lives in Winnipeg with his wife and two children.

**Luncheon Moderator – Dr. Glenn Feltham, Dean, I.H. Asper School of Business**

In July of 2004 Glenn Feltham, his wife Tammi and their three children, Douglas, Austin, and Josie, moved to Winnipeg where Dr. Feltham assumed the role of Dean of the I.H. Asper School of Business, and Professor of Accounting, at the University of Manitoba.

Previously, Dr. Feltham was Professor in the College of Commerce at the University of Saskatchewan where he held the Chuck and Norma Childer’s Chair for Saskatchewan Enterprise – a chair endowed by Potash Corporation. He has undergraduate degrees in business and in economics, a master’s degree in business administration, a law degree from Queen’s University, and a doctoral degree in accounting, specializing in taxation, from the University of Waterloo. Dr. Feltham was formerly enrolled as a Barrister and Solicitor of the Law Society of Alberta, and is a Certified Management Accountant in (Manitoba).
Dr. Feltham has significant background in building and administering innovative programs, and managing people in university settings. Prior to joining the I.H. Asper School, he was the Department Head of Accounting at the University of Saskatchewan, and had previously been the Director of Undergraduate Business Programs in the School of Business & Economics at Wilfrid Laurier University. He is currently the President of the Canadian Academic Accounting Association.

As Dean of the I.H. Asper School, Dr. Feltham has developed a vision based on excellence in scholarship and programs, respect, and relevance. Dr. Feltham is building on the strong relationship the School of Business has forged with the business community, especially through its relationship with the Associates and the Young Associates. He believes that the School of Business, through excellence and relevance, can play a central role in building Manitoba.

Dr. Feltham teaches, and has published extensively, in the areas of family business, tax planning and tax policy. His research, which has practical application, has affected government policy. Dr. Feltham is currently examining issues related to the taxation of family business, the most prevalent form of business in Manitoba and Canada. Of particular interest to Dr. Feltham is addressing the question, how does our tax system affect the success of family businesses on succession – passing the family business from one generation to the next. He is further interested in the overall effect of tax rules on the competitiveness of Manitoba enterprise.

Luncheon Keynote Speaker - TBA

Afternoon Chairperson – Ms. Ruth Sol, President, WESTAC

Ruth Sol is President of the Western Transportation Advisory Council (WESTAC). She joined the Council in 1983 as Research Economist and held increasingly senior positions. Previously she held positions in market research and statistical analysis at HA Simons International, a consulting engineering firm in the pulp and paper industry, and MacMillan Bloedel Limited, an integrated forest products firm.

Ruth earned a BA (economics) and an Executive MBA from Simon Fraser University. She is a member of the Association of Professional Economists of BC.

WESTAC is a member-based organization of senior decision makers in all facets of transportation – business, labour and government, across modes. Under Ruth’s leadership, this powerful forum brings together industry leaders to debate, discuss and better understand issues affecting some aspect of transportation. The Council contributes to the excellence of the western Canadian transportation system by ensuring that the industry’s voice is heard.
and that the importance of transportation to our economic and social well-being is widely understood and appreciated.

Session 4

Moderator – Mr. Doug Duncan, Past President (1995) CTRF Research Coordinator, Transport Institute, University of Manitoba

Doug Duncan has extensive experience in railway management and transportation issues in Canada. Over 28 years at Canadian National Railway, his responsibilities included financial planning, strategic and business planning, change management and transportation policy and regulation. Combined with his experience as a Chartered Accountant in public practice, Doug has a broad perspective on the marketplace.

Building new organizations, process re-engineering and leading improvement teams, Doug is a leader of new technology and leading edge management processes. Developing strategies, business plans and conducting research on a wide variety of business issues, Doug has broad analytical, measurement, project coordination and implementation experience through his roles in Marketing, Costing, Research, Internal Audit and General Management.

Doug has supported the Transport Institute over the past six years as a consultant working on the strategic development of the Institute and on Institute research projects. His current role is as Research Coordinator at the Institute.

Doug is a Chartered Accountant who has been involved in a number of senior management programs including CN, Transport Canada, and University of Western Ontario. He has served on the Boards of the Quality Council of Alberta, the Canadian Transportation Research Forum (Past President) and the Winnipeg Chapter of the Institute of Internal Auditors (Past President) as well as numerous charitable and educational organizations.

Ms. April Taylor, Economist, United States Department of Agriculture

April is an Economist for the U.S. Department of Agricultural where she has been analyzing the movement of containerized agricultural products for 4 years. She has a BA in International Economics and French and an MA in International Commerce and Policy. April recently accepted the nomination to join the Agricultural Transportation Sub-Committee of the Transportation Research Board.

Personal Information
Lives in historic Harpers Ferry, WV
Married for 4 years
Mentors college students in her church
Enjoys outdoor activities such as hiking, tubing and whitewater rafting
Never experienced temperatures below 0 degrees Fahrenheit

Ms. Erica Vido, Research Manager, Ipsos-Reid

Erica Vido has a Master’s Degree in Agricultural Economics from the University of Manitoba. Her thesis research investigated container cabotage policy in North America and the economic impact of these regulations on the trade of pulse crops.

As a graduate student, she worked as a researcher for the Transport Institute, where she specialized in a variety of topics related to agricultural and intermodal transportation, economic impact analyses, transport policy and tourism. During her time with the Transport Institute, Erica was a member of the team that examined the economics and logistics of shipping Western Canadian grain in ISO containers, and co-authored an award winning paper on this topic in 2000.

Currently, Erica is employed as a Research Manager at Ipsos-Reid in the Agribusiness, Food and Animal Health practice where she conducts a host of marketing research initiatives with farmers, agribusiness and consumers. She focuses on advanced market analysis techniques, including discrete choice, branding and customer satisfaction.

Session 5

Moderator – Dr. Ed Tyrchniewicz, CTRF VP Program (1977) Department Head, Dept. of Supply Chain Management, I.H. Asper School of Business

Dr. Ed Tyrchniewicz is adjunct professor and is trained as an Agricultural Economist (PhD – Purdue University), and has worked in Universities for more than 30 years with 20 of those years being in various academic administrative positions. While at the University of Manitoba ((1967-88), he was a Professor of Agricultural Economics, Head of the Department of Agricultural Economics, and Founding Director of the Transport Institute. He then served as Dean of the Faculty of Agriculture and Forestry at the University of Alberta (1988-96).

Since taking early retirement from the University of Alberta in 1997, he has held a variety of part-time appointments, including Senior Fellow at the International Institute for Sustainable Development (1996-99), founding Executive Director of the Manitoba Rural Adaptation Council (1997), and Adjunct Professor at the University of Manitoba from 1998 to the present. Effective July 1 2003, he was appointed a Professor (part time) in the
Transport Institute, Asper School of Business at the University of Manitoba, and currently holds the position of Acting Department Head, Supply Chain Management.

He is also involved in consulting and public service advising in the areas of agricultural and transportation policy, international food security, natural resource management, and organizational management and change.

**Mr. Charles Foskett, President and CEO, RailRunner N.A. Inc.**

Charles Foskett joined RailRunner as President and CEO in 2000. He has focused the company on introducing RailRunner’s “Terminal Anywhere Technology”, initiating service operations and developing its presence in containerized agricultural product transport market and certain other vertical segments.

Mr. Foskett has over thirty years experience in founding and managing successful businesses. As co-founder in 1970, and later for nine years as President of Digilab Inc, Mr. Foskett expanded this developer of analytic instrumentation into a worldwide business.

In 1983 Mr. Foskett co-founded Natural MicroSystems, a telecommunications equipment company, which is today a profitable and publicly listed NASDAQ company (NMSS) with a revenue rate of $120 million.

Mr. Foskett holds a B.S. and an M.S. in Physics, serves on the boards of private high-tech companies in the New England area and invests in and advises emerging businesses. He has been an elected Town Meeting Member in Arlington, MA for 25 years, and vice-chairman of its Finance Committee. Mr. Foskett also serves on the Board of the Massachusetts Association of Town Finance Committees.

**Mr. William Logan, Director, Material Handling, FELLFAB Limited**

William D. Logan has held various elected public and private sector positions over the past 20 years that have contributed to the implementation of innovative technology in his areas of influence through win/win agreements reached with local, multinational and multicultural interests. He has been involved in management, distribution and marketing operations matters throughout his career.

Mr. Logan joined FELLFAB Limited in February 2003 and immediately began procedures to successfully implement a state-of-the-art upgrade of already well-established materials handling systems for the transportation of bulk products in the chemical and agricultural sectors. FELLFAB Limited is a 52-year-old Canadian Company with manufacturing facilities and business centres in Canada, the United States and China.
FELLFAB, a leader in bulk container liner systems, holds several early patents in the design of liners for multi-modal containers.

FELLFAB Limited also provides textile-engineered solutions to the aerospace, aeronautic, and rapid-transit/rail sectors.

Mr. Dory Tuvim, President, MCS Agri-Terminal (Moose Jaw)

Dory Tuvim was born in Haifa, Israel to a family of ship owners and shipyard operators.

From the age of 14 to 29 Dory was sailing with the Israeli merchant marine as a deck hand and navigator, taking breaks from time to time to help with the family business of ship repairs.

The experience of sailing ships from general cargo to oil tankers to grain and bulk ships gave Dory the background and understanding of cargo movement firsthand.

In 1967 Dory landed in Montreal and worked with Canadian Vickers Shipyards in the ship repairs division until 1973 when he was asked by the first Container Leasing Company that came to the Canadian shores to repair their badly damaged containers in the Port of Montreal.

Dory progressed from on site repairs to depot operation, shop maintenance and repairs, and on into trucking, leasing and selling containers.

In addition to handling marine containers Dory’s company, MCS Inc, was working with the railways on various improvements and innovations. The company ventured into air cargo containers and was approved by the F.A.A. and D.O.T. for airworthiness repairs.

During his 30 years in the business Dory was presented with several awards for business excellence, innovation, and his contributions to social changes in the community due to the introduction of his ventures.

In 2000 while Dory was semi-retired on a ranch in Alberta a neighbor who needed extra storage space for his grain discussed it with Dory and the Port-A-Bin was born.

An article in the Country Guide magazine triggered a farmer in Moose Jaw to invite Dory to discuss possible containerization on the farm. Dory showed his container to the farmers in Moose Jaw, John Deere people saw it and invited Dory to discuss product identification (IP) and the use of containers in connection to their program.

Three years later on Aug 2003 MCS Agri-Terminal was open for business.
This August 1\textsuperscript{st}, 2004, marked the first anniversary of MCS Agri-Terminal. As a highlight Dory’s invention, with a world wide patent, the “Dory Container Traveler” was introduced as the first of its kind machine capable of carrying a 50000 lb open top container alongside a combine on the field to be filled with identified product at the source.

\textbf{Rapporteur – Mr. Dennis Apedaile, Canadian Pacific Railway (retired)}

Mr. Apedaile joined Canadian Pacific Ltd. in 1969, and held a range of public and government affairs positions in both CPL and Canadian Pacific Railway. He retired from CPR in July 2004 as Assistant Vice President Government Affairs.

His responsibilities included a wide variety of public policy issues over three decades. Between 1991-1993 he served on the Executive Committee of the federal Agri-Food Competitiveness Council.

He was a lead member and principal government contact for CPR during all legislative reviews for the National and Canada Transportation Act and for changes in grain transportation-related policies from the early 1980s until June 2004.

He has dealt extensively with the federal government and most provincial governments and with industry associations and policy groups on telecom, real estate, marine shipping and particularly rail issues.

He has degrees from RMC and Carleton and is active in a number of professional, educational and community organizations.

He continues to provide strategic government relations counsel.

\textbf{2004 Participants}

\textbf{Speakers}

Gordon Baldwin \hspace{1cm} Canadian Transportation Research Forum  
Barry Prentice \hspace{1cm} Transport Institute  
Gordon Tufts \hspace{1cm} Manitoba Transportation & Government Services  
Doug Welsh \hspace{1cm} CP Rail  
Richard Corfe \hspace{1cm} St. Lawrence Seaway management Corporation  
Paul Earl \hspace{1cm} Asper School of Business  
Sinclair Harrison \hspace{1cm} Farmer Railcar Coalition  
Ian McCreary \hspace{1cm} Canadian Wheat Board  
Judie Dyck \hspace{1cm} Saskatchewan Canola Growers Council  
Wade Sobkowich \hspace{1cm} Western Grain Elevator Association  
Glenn Feltham \hspace{1cm} University of Manitoba
Ruth Sol  
Doug Duncan  
April Taylor  
Erica Vido  
Ed Tyrchniewicz  
Charles Foskett  
William Logan  
Dory Tuvim  
Dennis Apedaile

WESTAC  
Transport Institute  
United States Department of Agriculture  
Ipsos-Reid  
University of Manitoba  
RailRunner N.A. Inc.  
FELLFAB  
MCS Agri-Terminal  
CPR (retired)

**Participants**

David Arnott  
Jack Arthur  
Pat Atkinson  
Steve Aubut  
Jim Belcher  
Mary-Jane Bennett  
J.C. Birt  
Monica Blaney  
Marlene Boersch  
Rachel Bosc  
Brenda Brindle

Vancouver Wharves  
Vancouver Port Authority  
Transport Canada  
Canadian Transportation Agency  
Western Cooperative Fertilizer  
Canadian Transportation Agency  
Cascade Capital Corporation  
Alberta Transportation  
Mercantile Consulting Venture  
Manitoba Agriculture, Food and Rural Initiatives  
Alberta Grain Commission

Claude Carles  
Alan Carson  
B. Albert Cerqueira  
Amar Chadha  
Jim Chatenay  
Marty Cielean  
Mark Conrad  
John Corey  
Jack Craven  
Jeffrey Crawford

Weyburn Inland Terminal Ltd.  
Manitoba Agriculture, Food and Rural Initiatives  
IBM Global Services  
Manitoba Transportation & Government Services  
Canadian Wheat Board  
James Richardson International (JRI)  
Transport Canada  
Canadian Transportation Agency  
Manitoba Transportation & Government Services  
Neptune Bulk Terminals (Canada) Ltd.

Richard Danis  
Allan Dawson  
Brent DePape  
Marcello DiMarco  
Lorraine Dodick  
Dave Doepker  
John Doran  
Erin Dupuis  
Reg Dyck  
Arthur Friesen

Manitoba Transportation & Government Services  
Farmers’ Independent Weekly  
Western Diversification  
Canadian Wheat Board  
ConAgra Foods  
Doepker Industries Ltd.  
Transport Canada  
CIBC  
Farmer Railcar Coalition  
Agriculture and Agri-Food Canada
Baljinder Gill  
Canadian Transportation Agency

Marc Girardin  
Canada Steamship Lines Inc.

Harvey Goehring  
Manitoba Institute of Agrologists

Régis Gosselin  
Canadian Grain Commission

Gerry Goyeau  
Alberta Agriculture, Food & Rural Development

Heather Gregory  
Agriculture and Agri-Food Canada

Jim Hallick  
SARM

Brad Havixbeck  
Manitoba Trade and Investment

Mark Hemmes  
Quorum Corporation

Andrew Horosko  
Manitoba Transportation & Government Services

Crystal Isaacs  
University of Manitoba

Pat Johnston  
Canadian Wheat Board

Marilyn Kapitany  
Western Economic Diversification

Bruce Kavanagh  
Transport Canada

Pat Keena  
Canadian Wheat Board

Michael Kieran  
IBI Group

Chris Kirby  
IBM Global Services

Tom Kleysen  
Kleysen Transport Ltd.

Gurcan Kocdag  
Doepker Industries Ltd.

Jurgen Kohler  
Agriculture and Agri-Food Canada

Dale Martin  
Canadian Wheat Board

Mike McIlrath  
Agricore United

Sharon Meikle  
Canadian Wheat Board

Tracy Miller  
Canadian Wheat Board

Brian Morris  
Canadian Wheat Board

Darcie Munday  
Canadian Pacific Railway

Don Neufeld  
Can-Oat Milling

Ken Newman  
Weyburn Inland Terminal Ltd.

Jeff Nolan  
ADM-Benson Quinn

David Nyznyk  
Grupo Canada Ltd.

Leah Olson  
Canadian Pacific Railway

Doug Palmerton  
Transport Canada

Stephen Paul  
Delmar International Inc.

Stephanie Penner  
Parrish & Heimbecker Ltd.

Anh Phan  
Canadian Grain Commission

Jean-Marc Picard  
Western Cooperative Fertilizer

Laurel Pilsner  
SARM

Rachid Raffa  
Ministère des Transports du Québec

Jon Regehr  
University of Manitoba

Trevor Sawchuk  
James Richardson International (JRI)
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Schmeiser</td>
<td>Saskatchewan Agriculture Food &amp; Rural Revitalization</td>
</tr>
<tr>
<td>Corinna Selk</td>
<td>Canadian Wheat Board</td>
</tr>
<tr>
<td>Doug Shumilak</td>
<td>Credit Union Central of Manitoba</td>
</tr>
<tr>
<td>Scott Shurvell</td>
<td>CN</td>
</tr>
<tr>
<td>Chris Smith</td>
<td>Manitoba Trade and Investment</td>
</tr>
<tr>
<td>John Spacek</td>
<td>Manitoba Transportation &amp; Government Services</td>
</tr>
<tr>
<td>Doug Steele</td>
<td>SARM</td>
</tr>
<tr>
<td>Sean Stewart</td>
<td>Canadian Pacific Railway</td>
</tr>
<tr>
<td>Joan Sunderland</td>
<td>Manitoba Transportation &amp; Government Services</td>
</tr>
<tr>
<td>Ray Swiderek</td>
<td>IBM Global Services</td>
</tr>
<tr>
<td>Imelda Taylor</td>
<td>Canadian Wheat Board</td>
</tr>
<tr>
<td>Rainy Thiele</td>
<td>Canadian Wheat Board</td>
</tr>
<tr>
<td>Iris Thornton</td>
<td>OmniTRAX</td>
</tr>
<tr>
<td>Bob Ward</td>
<td>Manitoba Agriculture, Food and Rural Initiatives</td>
</tr>
<tr>
<td>Jason Watson</td>
<td>Weyburn Inland Terminal Ltd.</td>
</tr>
<tr>
<td>Jim Weeda</td>
<td>Westeel Limited</td>
</tr>
<tr>
<td>Rick White</td>
<td>Canadian Canola Growers Association</td>
</tr>
<tr>
<td>Glenn Young</td>
<td>Keystone Agricultural Producers</td>
</tr>
<tr>
<td>Tracy Yu</td>
<td>Transport Canada</td>
</tr>
</tbody>
</table>
THANK YOU TO OUR CONFERENCE SPONSORS…

Continental Breakfast Sponsored By…

Agricore United

Morning Coffee Sponsored By…

Aikins, MacAulay & Thorvaldson

Luncheon Sponsored By…

Canadian Pacific Railway

Afternoon Coffee Sponsored By…

The Railway Association of Canada

General Sponsors
Manitoba Department of Transportation & Government Services
The Canadian Wheat Board
RailRunner N.A. Inc.
Western Economic Diversification Canada
Canadian Grain Commission

In Kind Sponsors
Vancouver Port Authority
The Canadian Wheat Board
The Port of Montreal
The Hotel Fort Garry
WESTAC
CTRF
Destination Winnipeg