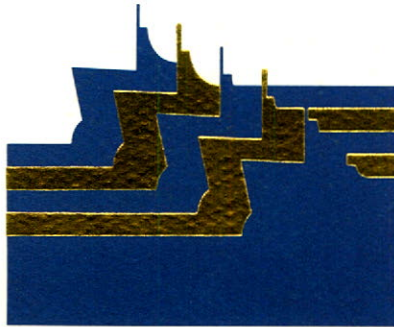
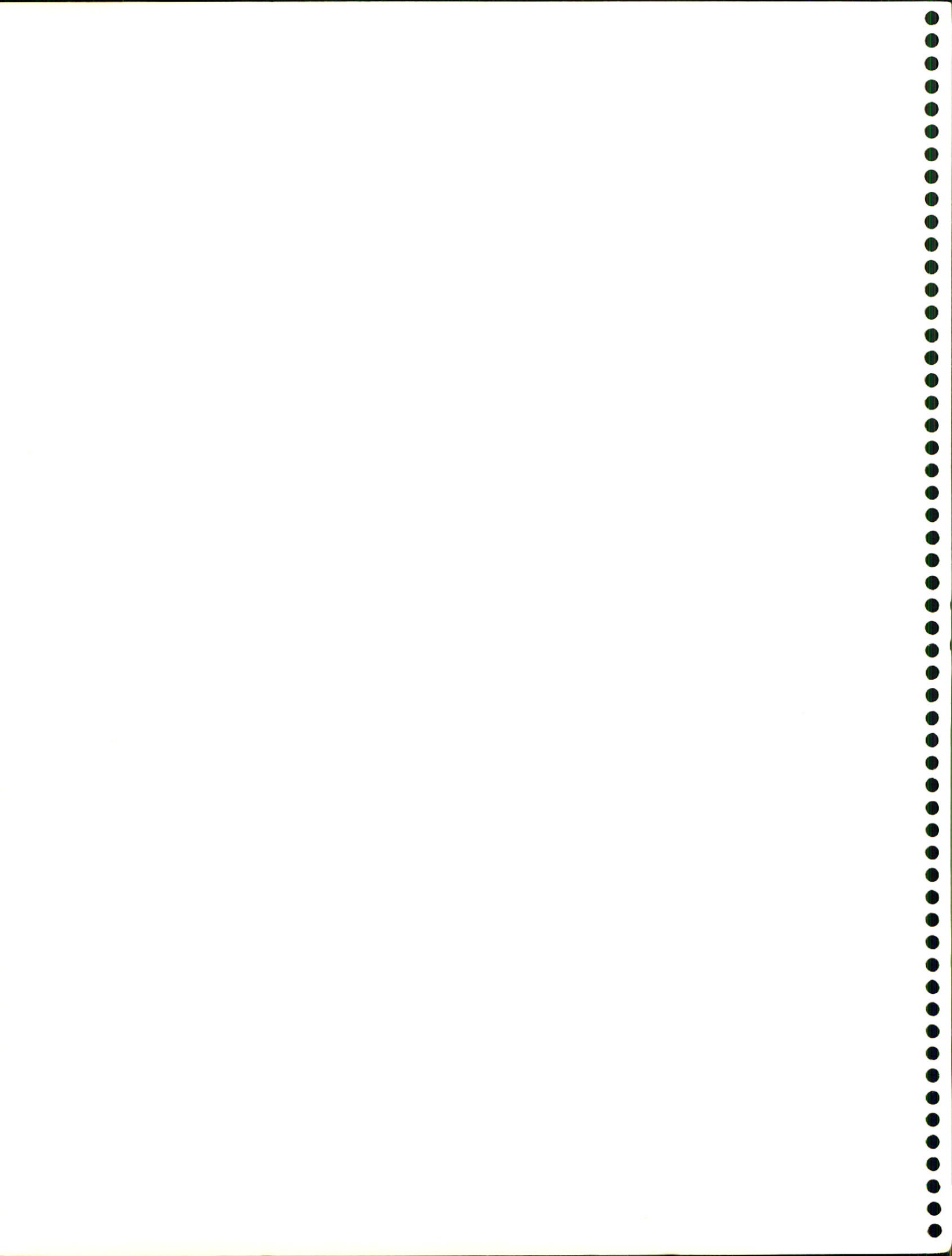


NEW  
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**CANADIAN SHIPOWNERS ASSOCIATION  
ASSOCIATION DES ARMATEURS CANADIENS**

1990 Annual Report



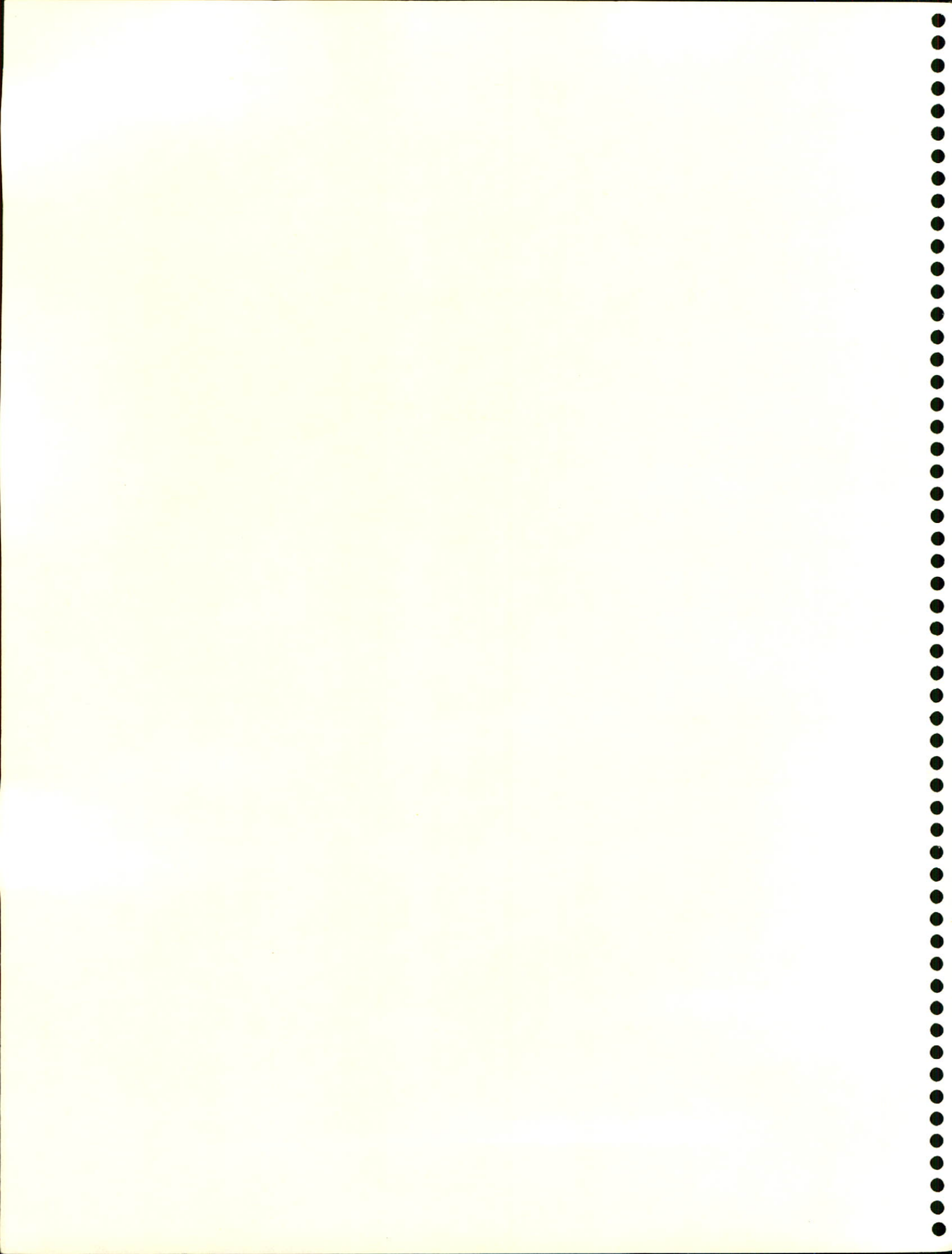


*CANADIAN SHIPOWNERS ASSOCIATION*

*ANNUAL REPORT*

*1990*

*JUNE 1991*



*Report to the Members:*

*It is difficult to find any developments that might have produced rays of hope in 1990. Cargo volumes continued to be sporadic with minimum overall growth over the previous year.*

*On the legislative side, the industry was inundated with proposed new regulations or reports and therefore potentially increased costs.*

*As well as the appointment of a new Deputy Minister, there was, once again, a change of Ministers, bringing to four the number of new Ministers of Transport over a six year period. Clearly this frequency of change is no reflection upon the abilities of the respective appointees, but it has led to a concern on our part with the inevitable disruption of continuity at the senior level, as some issues take time to develop to the point where they can become policy. We were pleased to see the Senior Assistant Deputy Minister-Marine elevated to Associate Deputy Minister.*

*The industry has been going through difficult times since the mid-eighties which forced the disappearance of several companies and a general reduction in the size of the fleet. Member companies by necessity worked diligently to reduce costs both ashore and afloat. New relationships developed with the formation in one case of a market pooling arrangement of the straight deck bulkers of two fleets. Towards the end of the year, discussions began on the formation of a new company to operate the straight deck bulkers of three other fleets to achieve economies of scale and provide a more efficient service. However, it cannot be all one way. An analysis of the Association's financial profile reveals that while average daily revenues are down over a five year period, and so are most controllable expenses, the exceptions are regulated or government-imposed charges, be they tolls, pilotage, port charges or cargo-related handling fees. These have all been increased.*

*On top of this, other potentially costly policy initiatives surfaced: cost recovery for certain Coast Guard services which had been in the mill for some time; proposed substance abuse regulations; the "Brander-Smith Report" on tanker safety; and lack of action on proposed changes in pilotage regulations on the St. Lawrence.*

*In response to some of the aforementioned issues the Association over the year expressed its frustrations rather forcefully to Ministers and senior officials. These communications did produce positive results at least from the point of view of better dialogue at various levels.*

*Our objectives for 1991 therefore must be to continue to press not only for more positive dialogue but for more positive results. We must develop with government a focus on the total effect on our industry of a multitude of actions taken by various government agencies in a vacuum, as it were, with no one taking a macro view of the cumulative impact on the sector.*

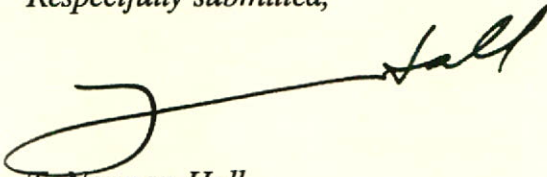
*We must also focus on longer term issues: the age of the fleet, changing national and international trade patterns and increasing competition from other modes or routes in the ever-expanding deregulated environment.*

*Lastly, as an Association we are conscious of the fact that we must do more to inform and educate the public and the politicians at all levels of our contribution to the country's economic health, that we are good corporate citizens and continue to show leadership and concern for Canada's marine environment.*

*I would like to take this opportunity to thank the many conscientious people in government, differences of opinion aside, who work with us in trying to achieve these objectives and the many other associations or entities who have supported us in our efforts, particularly those who agreed to co-sponsor our comprehensive study on cost recovery.*

*I thank as well the Executive Committee, our members and our staff for their support, advice and dedication during what proved to be a very active year.*

*Respectfully submitted,*

A handwritten signature in black ink, appearing to read "T. Norman Hall". The signature is written in a cursive style with a large, sweeping initial "T" that extends to the left and underlines the rest of the name.

*T. Norman Hall  
President*

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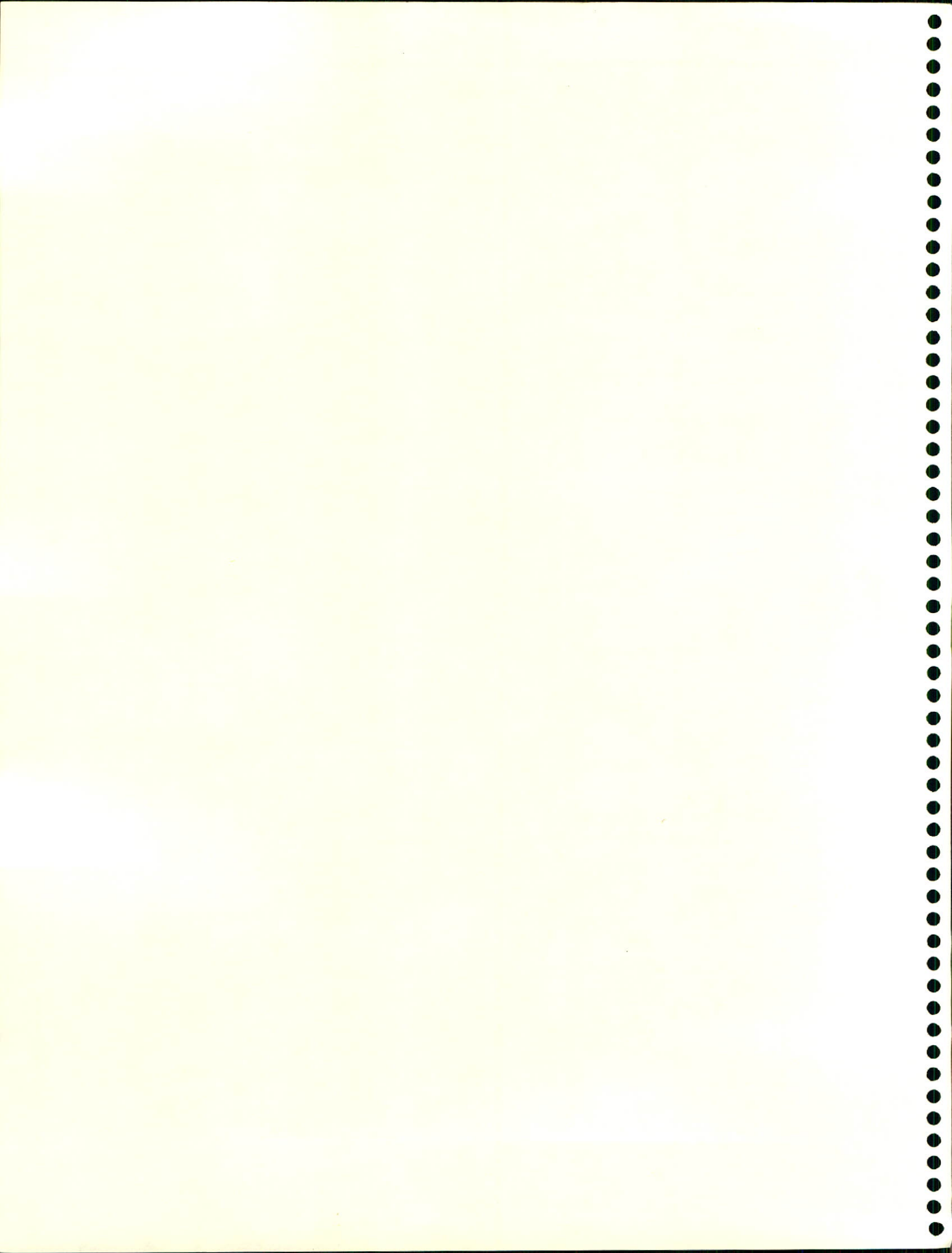
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## PART I

### Report on Activities and Development

#### MEMBERSHIP

The Association is made up of fifteen member companies operating a domestic flag fleet of 112 vessels. In addition to the domestic fleet, members operate 12 vessels under foreign registry.

Early in 1990, Incan Superior of Thunder Bay was admitted to membership. Incan, a subsidiary of CP, operates a rail-car ferry between Thunder Bay, Ontario and Duluth, Minnesota.

#### MEETINGS

The Annual General Meeting was held in Ottawa on May 10, 1990. In addition, two full Board meetings were held in January in Toronto and in September in Montreal. As well there were three Executive Committee meetings.

Officers elected at the Annual General Meeting were:

- ▶ Duncan Maxwell  
Chairman - Executive Committee
- ▶ Robert J. Paterson  
Member - Executive Committee
- ▶ James R. Elder  
Member - Executive Committee
- ▶ T. Norman Hall  
President and Member - Executive Committee
- ▶ Joanne L. Griffin  
Secretary-Treasurer

The Annual International Joint Conference of the Canadian Shipowners Association and the Lake Carriers' Association of Cleveland, Ohio was held in Florida February 25-28, 1990.

At December 1990, the following comprised the Board of the CSA.

- ▶ Peter R. Cresswell  
Algoma Central Corporation
- ▶ James Stitt  
Algoma Steel Corporation Ltd.
- ▶ James R. Elder  
The C.S.L. Group Inc.
- ▶ Anthony M. Airey  
Enerchem Transport Inc.
- ▶ David Watson  
Esso Petroleum Canada
- ▶ Louis-Marie Beaulieu  
Groupe Desgagnes (1981) Inc.
- ▶ William D. Scott  
Incan Superior Ltd.
- ▶ Réjean Gagnon  
Logistec Corporation
- ▶ David K. Gardiner  
Misener Shipping/Pioneer Shipping Ltd.
- ▶ Robert J. Paterson  
N.M. Paterson & Sons Limited
- ▶ Robert I. Milne  
P & H Shipping
- ▶ William McIlvean  
Shell Canadian Tankers Limited
- ▶ Guy Bazinet  
Socanav Inc.
- ▶ Duncan Maxwell  
ULS Corporation
- ▶ J.D. Leitch  
Honorary Director
- ▶ T. Norman Hall  
Canadian Shipowners Association

**MARINE OPERATIONS COMMITTEE  
MEETING**

The Annual Meeting of Masters, Chief Engineers and Superintendents took place January 9-11, 1990 in Ottawa. The meeting was attended by 21 Masters and 16 Chief Engineers.

**COMPOSITION OF FLEET**

Please see Charts B and C at the end of Part 1 for the composition of the member fleets in 1990 including a 10 year profile of the CSA fleet.

**ST. LAWRENCE SEAWAY OPERATIONS**

**NAVIGATION SEASON**

Official navigation on the Montreal-Lake Ontario section commenced March 28, 1990 and concluded December 26, 1990, a period of 274 days.

The Welland Canal opened to navigation on March 28, 1990 and closed on December 24, 1990, a period of 272 days.

**MONTREAL - LAKE ONTARIO**

Cargo tonnage on the Montreal - Lake Ontario section totalled 36.7 million tonnes, a decrease of 1.1% from 1989. Total grain movement was 12.2 million tonnes versus 11.4 million tonnes the previous year, an increase of 6.8%. While Canadian grain increased in volume to 8.25 million tonnes from 5.7 million tonnes (16.4%), United States grain volumes decreased to 3.96 million tonnes from 5.73 million tonnes (30.9%).

Iron ore cargoes increased slightly to 11.5 million tonnes from 11.2 million tonnes (3%) but coal volumes declined to 489,000 tonnes from 777,000 tonnes (37%). All other bulk totalled 8.5 million tonnes, down from 9.0 million tonnes (5.5%). Products carried in tankers - gasoline, fuel oil and petroleum products - are included in these figures and amounted to 1.46 million tonnes, an increase over 1989 of 260,000 tonnes (22%).

Vessel transits in 1990 totalled 2,768, the same figure observed in the previous year. The Seaway Authority records the transit data as follows:

	<u>1989</u>	<u>1990</u>	<u>Change</u>	<u>%.</u>
Laker Transits	1 430	1 554	124	8.7
Loaded	1 169	1 260	91	7.8
Ballast	261	294	33	12.4
Ocean Transits	1 104	927	(177)	(16.0)
Loaded	903	752	(151)	(16.7)
Ballast	201	175	(26)	(12.9)

## WELLAND CANAL

Cargo tonnage on the Welland Canal totalled 39 million tonnes, a decline of 1.3% from 1989.

Grain cargo totalled 12.66 million tonnes, versus 12.09 million tonnes the previous year (an increase of 4.5%). At 8.43 million tonnes, Canadian grain cargoes showed an increase of 2.38 million tonnes (39%) over the previous year. United States tonnage however fell by 1.8 million tonnes to 4.22 million tonnes (30%).

Coal cargoes fell slightly to 6.2 million tonnes from 6.32 million tonnes (0.8%). Iron ore volumes increased to 7.48 million tonnes from 7.29 million tonnes (2.6%).

Other bulk showed a slight decline to 10.04 million tonnes from 10.77 million tonnes in 1989 (6.8%). Included in these figures are gasoline, fuel oil and petroleum products which totalled 1.23 million tonnes, up from 1.1 million tonnes (13%) in 1989.

Vessel transits in 1990 totalled 3,577 versus 3,598 the previous year, a drop of 0.6%. The Seaway Authority records the transit data as follows:

	<u>1989</u>	<u>1990</u>	<u>Change</u>	<u>%.</u>
<i>Laker Transits</i>	2 341	2 493	152	6.5
<i>Loaded</i>	1 524	1 593	69	4.5
<i>Ballast</i>	817	900	83	10.2
<i>Ocean Transits</i>	942	736	(206)	(21.8)
<i>Loaded</i>	718	564	(154)	(21.4)
<i>Ballast</i>	224	172	(52)	(23.2)

## CSA FLEET OPERATIONS

In 1990, CSA vessels hauled a total of 77.4 million tonnes of cargo. See Chart A at the end of Part 1. More detailed analysis is provided in Part II.

## ISSUES AND DEVELOPMENTS

### GOVERNMENT ORGANIZATION

In the Spring of 1990 following a Cabinet shuffle, the Honourable Doug Lewis was

appointed Minister of Transport and the Honourable Jean Corbeil Minister of Labour as well as Minister of State-Transport.

In the fall of 1990, Mme Huguette Labelle was appointed Deputy Minister of Transport Canada. At the same time Mr. Ranald Quail, formerly Senior Assistant Deputy Minister Marine was appointed Associate Deputy Minister retaining responsibilities for Marine as well as remaining Commissioner of the Coast Guard.

## **CANADIAN TRANSPORTATION ACCIDENT INVESTIGATION AND SAFETY BOARD**

*The formation of this Board was legislated by Parliament in the summer of 1989. Appointments were announced in 1990. It consists of a Chairman and four members who are knowledgeable in the marine, rail, air and pipeline modes. The Board will report to Parliament through the President of the Privy Council.*

## **COST RECOVERY**

### *Phase II Discussion Paper*

*The long awaited release of the "Phase II Cost Recovery" paper came in mid-year. The target recovery level for the cost of navigational aids is \$25 million - split between international voyages (where a tonne/kilometre fee is proposed with a cap of 300 km), and domestic voyages (where a flat charge of 40¢ per N.R.T. per month is proposed).*

*As the year went on it became evident that there was near unanimous opposition to the cost recovery paper across the country from many sectors, including shippers, shipowners and ports. The paper was seen as espousing the notion of fairness and equity, yet arbitrarily citing commercial shipping as being the core user of navigational aids. It also became obvious that little had been done to determine the economic impact on the whole marine sector, including importers and exporters.*

*The Association together with others made representations to Transport Canada for an extension to the proposed response date of*

*November 1st. In October, the Minister announced that in consideration of these requests, the response date had been postponed to February 1, 1991.*

*The Association determined that as cost recovery was a serious challenge to the well-being of the industry and its customers, a study should be commissioned to examine the following prime areas.*

- 1. A critique of the Phase II paper*
- 2. An impact analysis of shippers and ports*
- 3. An impact analysis of shipowners*
- 4. A review of the operations of the Coast Guard system with a view to determining potential internal savings.*

*A contract was awarded October 1, 1990 for completion by late January 1991. The Association formed a coalition with other concerned associations and industries in order to share the burden of cost for such a study.*

### *Study of Government Fleets*

*In anticipation of cost recovery, the Association together with the Chamber of Maritime Commerce suggested to government that a review of the government's own fleets be considered to determine if better use could be made of these assets if they were amalgamated in some fashion. This included the Coast Guard fleet, Fisheries and Oceans and certain units of the navy.*

*Mr. Gordon Osbaldeston, formerly Clerk of the Privy Council was commissioned to carry out such a study. The report was completed late in October but not released as of year-end.*

**PUBLIC REVIEW PANEL ON TANKER  
SAFETY AND MARINE SPILLS  
RESPONSE CAPABILITY**

*The report of this panel, more commonly known as the "Brander-Smith Report" after its Chairman, Mr. David Brander-Smith Q.C., was finally released in the fall of 1990.*

*It is a very well-presented report, containing some 107 recommendations. The most significant and most onerous of these recommendations from the Association's view-point are first, a recommendation that the domestic tanker fleet be replaced with double-hulled tankers within seven years, and second, that a \$2.00 per tonne levy be assessed on all petroleum products moved by vessel within Canadian waters.*

*While the Association acknowledges that there is some merit in the double hull design, we have suggested that the government keep an open mind to other designs and studies being carried out by the IMO and the National Academy of Sciences in Washington.*

*The Association is also concerned with the start-up time to conform to such a proposal, that is seven years for the domestic fleet and ten years for any foreign flag tanker entering Canadian waters. In this context it should be noted that the U.S. Oil Pollution Bill of 1990 permits a time scale of up to twenty-five years for compliance, based on a formula covering the size and age of the ship.*

*At year-end the Association's tanker committee was in the process of drafting a response to the "Brander-Smith Report". It is expected that the government will consult with the various interested parties prior to issuing a response.*

**PILOTAGE**

*Laurentian Pilotage Authority*

*During the course of the year the terms of both the Chairman and the Vice-Chairman expired. For various reasons both were only extended for a short term, i.e. Chairman one year, Vice-Chairman six months. The Association feels the Authority has performed well and is encouraging a further extension for the Chairman.*

*Further, 1990 was a negotiating year with both pilot corporations and employee pilots. The latter negotiations were resolved amicably. In the case of the pilot corporations these negotiations continued well into December before an agreement was reached.*

*In mid-December as fleets were rushing to meet commitments prior to the close of the Seaway for the winter, the pilot corporations chose to hold a "study session". Delays were minimal as members' ships were granted waivers where appropriate and the study session proved to be short-lived.*

*The settlement with the pilots was well above the cost of living index but much below the initial demands. A significant factor in their demands was the request for parity with the Pacific pilots.*

*The Association finds the settlement with the pilot corporations excessive, with an "all-in cost" to the Authority of about 10% in the first year. During the fall and prior to the settlement with the pilot corporations, the Authority applied for a 7% tariff increase for the 1991 season. The Association will be filing an objection on the grounds that it is excessive, against the government's own guidelines and devoid of proper analysis.*

For the past several years masters and mates from member companies have been attempting to obtain pilotage certificates for LPA District 2. Only two candidates so far have been successful despite what they claimed was harassment by the examination committee. A similar complaint by an unsuccessful candidate was brought before the LPA board. The board appointed an investigator to look into the matter. The investigator found that the candidate had grounds for complaint, however, the board did not accept the investigator's recommendations, and subsequently the candidate and his company have gone to court with the support of the Association. It is anticipated that the case will not get to court until the autumn of 1991.

### **Great Lakes Pilotage Authority**

The investigator appointed by the Minister of Transport in the fall of 1989 to make recommendations on proposed amendments to the regulations and objections to such recommendations, filed her report in the spring of 1990.

The Association is disappointed with the "Gauthier Report" in that it is insensitive to the implications of the recommendations, should they be fully adopted.

Following several meetings with Transport Canada officials, the Association filed a response to the report clearly illustrating that the proposed requirements would force all our own ships to take pilots at a cost of some \$ 15 millions per year. Secondly, there was the more pressing question of the recruiting of over 100 pilots to accommodate these requirements.

The Association's pilotage committee will be holding further discussions with officials to arrive at an amicable solution.

Regarding contract negotiations with the GLPA, all the contracts were signed without a work stoppage and the increases in compensation were kept below the increase in the cost of living. Proposed tariff increases were maintained below the cost of living index and no objection was made by CSA.

### **U.S. Pilotage**

As a direct result of the passage of the "Oil Pollution Bill" of 1990 by the U.S. government the so-called "B" certificates became null and void. This was of little concern to members as the majority of such certificates were being used by regularly trading foreign flag ships.

The salty laker dispute has been shelved for the time being by unofficial agreement with the pilots that salty lakers will take pilots only under certain circumstances. There is not a lot of salty laker traffic just now and the issue is therefore dormant. Meanwhile an out-of-court settlement with the two companies concerned led to the dismissal of charges by the US Coast Guard. An audit by the US Department of Transportation found several irregularities in the administration of the Great Lakes pilotage services. Shortly thereafter the administration was transferred from the 9th District in Cleveland to headquarters in Washington.

## **LEGISLATION AND REGULATIONS**

### **Financial Administration Act**

The Phase II Cost Recovery paper suggested that the legislative authority for the imposition of user fees would be the Financial Administration Act (Section 19). Legal counsel suggested that a case could be made against the use of the Act for the purpose of implementing this type of cost recovery regime.



*In the fall, the government tabled Bill C-91 "An Act to Amend the Financial Administration Act". The Association objected to the introduction of certain changes in the Act as proposed by the new Bill. With the help of legal counsel, the Association appeared before a special committee of the House to present our concerns. Despite these concerns and those expressed by two other organizations, the Commons saw fit to pass the Bill with one amendment. The Association will seek to appear before the Senate when the Bill is debated.*

### **Goods and Services Tax (GST)**

*As expected the GST was passed by Parliament over heavy opposition. Our main concerns -- international trade implications -- had been addressed in early discussions with officials of the Department of Finance. Regrettably our concern with the cascading tax effect of GST on excise taxes on commercial fuel was not addressed in the final GST text.*

### **Revisiting the Rules on Duties on Imported Ships**

*In 1989 certain Canadian companies purchased a U.S. vessel for conversion to a barge for use in domestic trade in the Maritimes. At the same time the principals sought duty remission on the grounds that there was considerable economic benefit to Canada from the conversion at a Maritimes shipyard. The Association challenged the duty remission application on the grounds that not only were the regulations clear in this instance but that such action would discriminate against two of our members who operated in the same trade with Canadian-built and/or duty paid ships.*

*After some deliberations the Minister of State, Regulatory Affairs agreed with the Association's point of view. However, in the spring of 1990, following some financial difficulties, the principals reapplied for duty remission. Although no other circumstances had changed, the Department of Finance reversed its earlier decision and granted duty remission mainly on the criterion of "absence of material harm" to competing operators.*

### **Duties on Ships Repaired Abroad**

*After several years of unexplained delay, the government brought down an Order-in-Council revising a number of tariff items relating to ship repairs and importation. Our original concerns regarding duty on repairs abroad were fully met.*

*Our other major concern in this area -- and one which is not explicitly provided for in the new tariff regime -- is the case of ships in the Lakes requiring repairs that could be effected in a timely manner only in a U.S. yard. At present, Revenue Canada would interpret the movement of a ship from Canadian waters to a U.S. yard as export for repair abroad. The Association has renewed discussions with the Department of Finance, although clearly the advancing schedule of the Free Trade Agreement's tariff removal should promote favourable treatment in future.*

### **Substance Abuse**

*Following the tabling of a paper in the House of Commons for legislation to combat the use of drugs and alcohol in the transportation industry, the Standing Committee on Transport held hearings and reported to Parliament in June. The paper*

required transport employees in "safety sensitive positions" to undergo tests at certain times to ensure that they had not been consuming alcohol or drugs prior to going on duty or when on duty. The President of the Association appeared before the Committee and made several criticisms of the proposed legislation but also several suggestions. Our submissions were similar to those of other witnesses and the Standing Committee made proposals that took these into account. The Department of Transport is expected to introduce a Bill in the first half of 1991.

## **TRANSBOUNDARY ISSUES**

### ***Immigration Act of 1990***

Considerable effort was expended monitoring progress of and seeking changes to a comprehensive immigration bill before Congress. The original language of the Bill would have substantially changed practices relating to securing and unloading self-unloading vessels in United States ports, by reserving to U.S. longshoremen work that has hitherto been undertaken by crews on board the vessels.

The Bill drew the attention of a wide spectrum of maritime operators and shippers in the U.S., Canada and Europe.

After extensive consultations and hearings, the United States Congress passed the Bill (The Immigration Act of 1990) which maintained the longshore provisions but included two exceptions that would permit the use of alien crew for activities described in the legislation under a significantly expanded definition of longshore work. The exceptions are allowable in the case of a foreign ship registered in a country which would allow United States crew to perform

similar work in similar circumstances (the reciprocity exception) and in cases where the "prevailing practice" in a United States port allowed alien crew of self-unloading vessels to operate cargo-discharging equipment.

As of year end, the Association was preparing to monitor the rule-making procedure which follows upon passage of the legislation.

### **Oil Pollution Prevention Measures - United States**

Whilst the Brander-Smith study team was preparing a report in Canada (see page 5), Congress passed a bill that would require tankers to have double hulls. A phasing-in period geared to vessel age and size meant that some vessels would have to be replaced within the next 5 years and others within 25 years. The U.S. Bill was particularly stringent in that there was potentially no limit to a shipowners liability in the case of a massive oil spill. The U.S. Bill is of major concern to those Association members which regularly carry cargoes of oil into United States ports.

## **OTHER SIGNIFICANT DEVELOPMENTS**

### ***International Shipping Centres***

The concept of International Shipping Centres appeared to gain some momentum as a group of Cabinet Ministers appear to be ready to support the proposal by the Asia-Pacific Initiative group. The Association has expressed to various Ministers its support of the proposal and it is expected that more positive results will emerge in the new year.

*With respect to the so-called Second Registry issue, there has been little progress. Transport Canada has been supportive and has worked with the Association on a variety of suggestions to achieve an acceptable formula. Unfortunately officials in the Department of Finance are concerned with certain aspects of a "Second Registry" including the fear of it being precedent-setting legislation that could create requests from other industrial sectors for the same treatment.*

### ***Fleet Ownership Study***

*In light of the provisions of the Free Trade Agreement whereby duties on U.S. ships imported into Canada will be eliminated over ten years, the Association felt that changes should be made to the Canada Shipping Act in order to provide ownership requirements of Canadian flag vessels along the lines of the U.S. Jones Act and the requirements of the National Transportation Act with respect to the ownership of Canadian airlines. Transport Canada officials determined that a study should be carried out seeking the views of shipowners, as well as shippers across the country.*

*A "draft final" report was completed in the fall of 1990. The Association held discussions with Transport Canada officials on these findings. The final report is expected in the spring of 1991.*

### ***St. Lawrence Seaway Authority***

*A "changing of the guard" occurred early in 1990 with the appointment of Glendon Stewart as the new President of the Authority. Mr. Stewart replaced William O'Neil who was elected Secretary-General of the International Maritime Organization (IMO) in London.*

*Mr. Stewart determined that his first priority was to do more to market the system and increase traffic. The Authority announced the first phase of an incentive toll program that produced positive results during the course of the season.*

*A "Seaway Summit" meeting was arranged in late autumn and involved all stakeholders in order to examine what might be done to increase traffic through greater productivity and cost containment.*

*It is expected that a broader incentive toll program will be introduced in 1991.*

### ***Coast Guard Strike - 1989***

*As reported in last year's Annual Report, the crews on Coast Guard ships went out on strike mid-November. The ships' crews were legislated back to work after being off for five weeks.*

*Following the close of navigation, members assessed their losses and after consultations with legal counsel, an action for damages was taken against the Crown early in 1990.*

### ***Agrifood Policy Review***

*Late in December of 1989, the Minister of Agriculture called a National Agrifood Policy Conference with a view to bringing together a wide variety of interests involved in grain production, handling and transportation, in order to set in motion a review of national policy. The review was intended to proceed within a framework of four guiding principles: market responsiveness, self reliance, regional sensitivity and environmental sustainability.*

CSA participated on the Transportation Committee, one of several bodies that was formed at the Conference to complete the review. The Transportation Committee's report, released in August, enumerated options for changes to Feed Freight Assistance (FFA), Minimum Compensatory Rates (MCR) in movement of canola products, and the Western Grain Transportation Act.

Options for FFA were grouped in four categories: removal of restrictions that raise feed grain costs, resource neutral grain/livestock development programs, paying the subsidy directly to livestock producers, and enhancing the program.

MCR options involved changing the way rates are determined or replacing regulated rates with commercial rates. The WGTA report examined options for payment of the subsidy (status quo, phase out without compensation, three ongoing "pay the producer" proposals, four "pay out to producer" options and a safety net). Also examined were the implications of the options on grain and livestock products and prices in western and eastern Canada, on trade, on value added and on land use. The report also examined efficiency improvements in the handling and transportation system.

The report was submitted to a meeting of Agriculture Ministers who determined that some follow-up work by federal and provincial officials was warranted. This effort, which is to include consideration of improving efficiencies in transportation of grain in the absence of a change in the method of payment, and further examination of changes to the WGTA, is expected to culminate in several reports that will be circulated to industry for comment in mid-1991.

### **Technical**

The Engineers Committee met on two occasions with Coast Guard officials to discuss matters of concern such as the proposed reduction of the time period between insulation tests of major electrical circuits on board ships and the installation of a fixed fire extinguishing system in the tunnels of self-unloaders. Representatives of the Association were also involved in discussions at IMO regarding the subdivision and stability of cargo ships - in particular self unloaders in international trade.

### **RANAV**

For several years the Authority has been interested in the development of a precise navigation system which would allow the ships to navigate in poor visibility and without dependence on floating aids. Such a system has been developed by Offshore Systems Ltd., Vancouver, B.C. It would be effective in a long channel as well as in a restricted area. The Seaway Authority has agreed to a demonstration of the system in the Welland canal. They will participate financially and materially in the demonstration which is due to commence mid-May 1991.

### **FETCO**

The Association is a member of this organization which represents most employers in the federally-regulated transportation and communication industries. FETCO has concerned itself with amendments to the Canada Labour Code and with various other issues such as legislation to prevent drug abuse, the introduction of a federal workman's compensation regime and aspects of labour relations.

CHART A

<u>COMMODITY</u>	<u>1990 METRIC TONS</u>	<u>1989 METRIC TONS</u>
Coal	16 435 000	19 086 000
Iron Ore	16 263 000	17 895 000
Grain	12 008 000	10 468 000
Limestone	9 047 000	8 574 000
Tanker Products	8 665 000	6 765 000
Salt	4 800 000	4 686 000
Gypsum	1 535 000	1 426 000
Potash	1 081 000	1 215 000
Cement	1 009 000	1 085 000
Coke	988 000	869 000
General Cargo	346 000	215 000
Misc. Bulk	5 203 000	4 860 000
<b>TOTAL</b>	<b>77 377 000</b>	<b>77 222 000</b>

CHART B

COMPOSITION OF CSA FLEET

<u>Member Company</u>	<u>Bulker</u>	<u>Self Unloader</u>	<u>Tanker</u>	<u>Foreign*</u>	<u>Other</u>	<u>31/90</u>	<u>31/89</u>
<i>Algoma Central Corporation</i>	6	12	-	-	-	18	18
<i>Algoma Steel Corporation Ltd.</i>	-	-	-	-	1	1	1
<i>Canada Steamship Lines Inc.</i>	10	15	-	5	-	30	27
<i>EnerChem Transport Inc.</i>	-	-	6	1	-	7	7
<i>Groupe Desgagnés (1981) Inc.</i>	8	-	-	-	-	8	6
<i>Logistec Navigation</i>	-	2	-	-	-	2	2
<i>Imperial Oil Limited</i>	-	-	4	-	3	7	7
<i>Incan Superior Ltd.</i>	-	1	-	-	-	1	-
<i>Misener Shipping</i>	5	-	-	2	-	7	7
<i>N.M. Paterson &amp; Sons Ltd.</i>	7	-	-	-	-	7	8
<i>P &amp; H Shipping</i>	3	-	-	-	-	3	4
<i>Pioneer Shipping Limited</i>	2	-	-	1	-	3	2
<i>Shell Canadian Tankers Limited</i>	-	-	1	-	-	1	1
<i>Socanav Inc.</i>	-	-	13	-	-	13	13
<i>ULS Corporation</i>	10	6	-	-	-	16	16
<b>Total</b>	<b>51</b>	<b>36</b>	<b>24</b>	<b>9</b>	<b>4</b>	<b>124</b>	<b>119</b>

\* Vessels which are flagged under other registries.

CHART C

CSA FLEET - TEN YEAR PROFILE

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990*
<b>SHIPS</b>	175	172	161	156	137	136	131	129	121	119	124
<b>G.R.T.</b>	2,058,412	2,115,669	2,100,988	2,102,788	1,957,000	1,915,246	1,835,375	1,776,518	1,651,440	1,660,676	1,798,835
<b>BULKERS</b>	86	87	85	84	69	65	60	64	55	56	51
<b>G.R.T.</b>	1,159,864	1,175,911	1,168,680	1,148,167	1,098,525	941,607	943,953	968,123	899,828	887,255	768,358
<b>Percent</b>	56,3	55,6	55,6	54,6	56,1	49,2	51,4	54,5	54,6	53,4	0,41
<b>S - U</b>	38	41	40	37	34	35	35	35	33	34	36
<b>G.R.T.</b>	669,140	732,562	728,669	773,638	688,394	801,626	729,546	663,302	588,919	632,214	620,881
<b>Percent</b>	32,5	34,6	34,7	36,8	35,2	41,9	39,7	37,3	35,7	38,1	0,29
<b>TANKERS</b>	31	32	31	30	29	28	28	23	28	25	24
<b>G.R.T.</b>	167,062	169,678	170,236	165,073	154,171	149,476	149,476	123,390	140,990	135,236	131,620
<b>Percent</b>	8,1	8,0	8,1	7,9	7,9	7,8	8,1	6,9	8,3	8,1	0,19
<b>FOREIGN FLAG</b>	-	-	-	-	-	-	-	-	-	-	9
<b>G.R.T.</b>	-	-	-	-	-	-	-	-	-	-	272,005
<b>Percent</b>	-	-	-	-	-	-	-	-	-	-	0,09
<b>GENERAL CARGO</b>	13	6	3	3	3	6	6	4	3	1	3
<b>G.R.T.</b>	56,518	32,575	13,983	13,983	13,983	20,610	10,476	19,012	19,012	3,280	2,691
<b>Percent</b>	2,7	1,5	0,7	0,7	0,7	1,1	0,6	1,1	1,2	0,2	0,02
<b>MISC.</b>	7	6	2	2	2	2	2	3	2	3	1
<b>G.R.T.</b>	5,829	4,943	19,420	1,927	1,927	1,927	1,927	2,691	2,691	2,691	3,280
<b>Percent</b>	0,3	0,2	0,9	0,1	0,1	0,1	0,1	0,2	0,2	0,2	0,01

\* Includes 9 vessels which are flagged under other registries

## CHART D

## CHANGES IN CANADIAN MERCHANT FLEET

## VESSELS OF 1 000 GRT AND OVER - 1990

<u>OWNER / OPERATOR</u>	<u>VESSEL</u>	<u>GRT</u>	<u>COUNTRY</u>	<u>YEAR</u>	<u>REMARKS</u>
<b><u>FOREIGN TRADE:</u></b>					
Groupe Desgagnés (1981) Inc.	Catherine Desgagnés	5 675	UK	1961	Transferred to Atlantic Coast - Home Trade
	Cecilia Desgagnés	5 814	Finland	1971/74	Transferred to Atlantic Coast - Home Trade
	Mathilda Desgagnés	4 462	Canada	1959	Transferred to Atlantic Coast - Home Trade
Misener Shipping	Canada Marquis	21 548	UK	1983	Sold Foreign - Registry Closed May 18, 1990
<b><u>ATLANTIC COAST:</u></b>					
Groupe Desgagnés (1981) Inc.	Amelia Desgagnés	4 490	Canada	1976	Canadian Registered July 31, 1990
Algoma Central Corporation	Algobay	22 466	Canada	1978	Registry Closed February 5, 1990
Canada Steamship Lines Inc.	Atlantic Huron	23 263	Canada	1984	Registry Closed August 29, 1990
N.M. Paterson & Sons Ltd.	Ontadoc	4 488	Canada	1975	Sold to Groupe Desgagnés Inc. Name Changed to "Melissa Desgagnés"



## CHANGES IN CANADIAN MERCHANT FLEET

## VESSELS OF 1 000 GRT AND OVER - 1990

<u>OWNER / OPERATOR</u>	<u>VESSEL</u>	<u>GRT</u>	<u>COUNTRY</u>	<u>YEAR</u>	<u>REMARKS</u>
<u>INLAND WATERS:</u>					
Algoma Central Corporation	Algogulf	17 955	Canada	1966	Name Changed to "AlgoSteel"
	Algomarine	17 820	Canada	1968/88/89	Gross Tonnage now 18 339
Canada Steamship Lines Inc.	Baie St. Paul	17 810	Canada	1963	Operated by Great Lakes Bulk Carriers
	Black Bay	17 848	Canada	1962	Operated by Great Lakes Bulk Carriers
	Lemoyne	17 831	Canada	1966	Operated by Great Lakes Bulk Carriers
	Murray Bay	17 873	Canada	1963	Operated by Great Lakes Bulk Carriers
	Richelieu	17 822	Canada	1967	Operated by Great Lakes Bulk Carriers
	Simcoe	18 102	Canada	1966	Operated by Great Lakes Bulk Carriers
	Whitefish Bay	18 370	Canada	1961/69/83	Operated by Great Lakes Bulk Carriers
	Winnipeg	18 883	Germany	1959/77	Operated by Great Lakes Bulk Carriers
Misener Shipping	David K. Gardiner	17 917	Canada	1965	Operated by Great Lakes Bulk Carriers
	J.N. McWatters	17 591	Canada	1961	Operated by Great Lakes Bulk Carriers

CHART D (cont'd)

CHANGES IN CANADIAN MERCHANT FLEET

VESSELS OF 1 000 GRT AND OVER - 1990

<u>OWNER / OPERATOR</u>	<u>VESSEL</u>	<u>GRT</u>	<u>COUNTRY</u>	<u>YEAR</u>	<u>REMARKS</u>
<u>INLAND WATERS (cont'd):</u>					
Misener Shipping	John A. France	17 382	Canada	1960	Operated by Great Lakes Bulk Carriers
	Peter Misener	17 908	Canada	1969	Operated by Great Lakes Bulk Carriers
	Ralph Misener	19 160	Canada	1968	Operated by Great Lakes Bulk Carriers
	Scott Misener	15 279	Canada	1954	Sold for Scrap
	Senneville	18 845	Canada	1967	Operated by Great Lakes Bulk Carriers
	Silver Isle	18 127	Eire	1963	Operated by Great Lakes Bulk Carriers
N.M. Paterson & Sons Ltd.	Canadoc	10 061	Canada	1961	Sold for Scrap
P & H Shipping	Elmglen	13 884	Canada	1952	Sold to Marine Salvage Company
	T.R. McLagan	15 500	Canada	1954	Name Changed to "Oakglen"
Enerchem Transport Inc.	Enerchem Laker	3 542	Canada	1958/60/72	Registry Closed December 6, 1990

## PART II

### Statistical Report of 1990 Operations

#### SUMMARY OF TONNAGE

##### INTRODUCTION

This part of the report describes the cargoes carried by CSA member fleets under Canadian flag in the year. A distance factor is attached to each cargo movement in order that comparisons of trade patterns over time and among commodities may be drawn. Section 1 of this part summarizes the highlights of 1990 traffic; section 2 describes the fleets operated by CSA members; section 3 examines in detail traffic in each of twelve commodities or groups; section 4 draws comparisons to place the operations of CSA members in the context of marine transportation generally.

##### SUMMARY BY COMMODITY

In 1990, CSA member fleets hauled 77.4 million tonnes of cargo. The average length of haul was 1 144 kilometres.

The table below is a summary of commodities handled and tonne-kilometres generated.

<u>SUMMARY BY COMMODITY</u>				
<u>COMMODITY</u>	<u>(000's)</u> <u>TONNES</u>	<u>%.</u>	<u>(000's)</u> <u>TONNE-KILOMETRES</u>	<u>%.</u>
Coal	16 435	21.2	9 718 187	11.0
Iron Ore	16 263	21.0	25 312 712	28.6
Grain	12 008	15.5	25 003 733	28.2
Limestone	9 047	11.7	6 166 888	7.0
Tanker Products	8 665	11.2	6 038 405	6.8
Salt	4 800	6.2	3 929 569	4.4
Gypsum	1 535	2.0	3 664 044	4.1
Potash	1 081	1.4	1 416 344	1.6
Cement	1 009	1.3	628 678	0.7
Coke	988	1.3	1 541 186	1.7
General Cargo	346	0.4	336 280	0.4
Misc. Bulk	5 203	6.7	4 776 099	5.4
<b>TOTAL</b>	<b>77 377</b>	<b>100.0</b>	<b>88 535 125</b>	<b>100.0</b>

The table below shows total movement in each of the years 1980 to 1989. Tonnage carried in 1990 exceeded the five year average by 1.1 million tonnes (1.4%) but

fell short of the ten year average by 2.3 million tonnes (2.9%). Tonne-kilometres in 1990 exceeded the five year average by 3.3%, but fell short of the ten year average by 5.9%.

COMMODITY MOVEMENT

MILLIONS OF  
MILLIONS OF TONNES    TONNE-KILOMETRES

1980	90.7	109 484.1
1981	86.7	107 085.1
1982	74.8	94 488.3
1983	78.9	97 711.6
1984	84.6	103 244.5
1985	74.8	88 112.3
1986	72.1	81 865.3
1987	76.5	85 023.5
1988	80.7	90 861.0
1989	77.2	82 706.2
<i>Five Year Average</i> 1985 - 1989	76.3	85 713.7
<i>Ten Year Average</i> 1980 - 1989	79.7	94 058.2

The table below indicates that eight commodities showed increases in tonnage carried in 1990 and four showed declines.

In all cases except cement, changes in tonnage corresponded to changes in tonne-kilometres generated.

	<u>TONNES</u>		<u>TONNE-KILOMETRES</u>	
	<i>% Increase</i>	<i>% Decrease</i>	<i>% Increase</i>	<i>% Decrease</i>
<i>Coal</i>	-	13.9	-	17.8
<i>Iron Ore</i>	-	9.1	-	3.0
<i>Grain</i>	13.9	-	17.9	-
<i>Limestone</i>	5.5	-	61.4	-
<i>Tanker Products</i>	28.1	-	17.8	-
<i>Salt</i>	2.4	-	8.5	-
<i>Gypsum</i>	7.6	-	15.3	-
<i>Potash</i>	-	11.0	-	3.5
<i>Cement</i>	-	7.0	2.8	-
<i>Coke</i>	13.7	-	2.8	-
<i>General Cargo</i>	60.8	-	6.3	-
<i>Misc. Bulk</i>	7.0	-	21.4	-
<i>Aggregate Change</i>	0.2	-	7.0	-

**CARGO VOLUMES 1980 - 1990**

**MILLIONS OF TONNES**

	80	81	82	83	84	85	86	87	88	89	90
<i>Coal</i>	17.7	17.7	19.1	17.4	20.6	17.4	15.5	17.4	21.2	19.1	16.4
<i>Iron Ore</i>	20.3	20.9	12.2	16.9	17.1	14.5	13.9	15.1	16.4	17.9	16.5
<i>Grain</i>	22.1	20.2	20.8	20.1	18.6	14.5	13.8	15.6	13.2	10.5	12.0
<i>Limestone</i>	4.3	4.2	2.4	3.1	3.9	5.5	6.5	7.2	6.9	8.6	9.0
<i>Tanker Products</i>	12.4	10.6	10.3	10.8	10.7	8.9	8.4	8.1	8.5	6.8	8.7
<i>Salt</i>	3.5	3.5	3.3	3.5	4.8	4.5	5.4	4.4	4.8	4.7	4.8
<i>Gypsum</i>	0.9	0.9	0.6	0.9	1.2	1.7	1.3	1.6	1.7	1.4	1.5
<i>Potash</i> <sup>1</sup>	-	-	-	1.4	1.8	1.7	1.3	1.3	1.0	1.2	1.4
<i>Cement</i>	1.2	1.2	0.9	0.9	0.7	0.7	1.0	0.9	0.9	1.1	1.0
<i>Coke</i>	1.4	0.9	0.5	0.5	0.7	0.6	0.9	0.8	1.2	0.9	0.9
<i>General Cargo</i> <sup>2</sup>	1.0	0.9	0.3	0.4	0.6	0.3	0.3	0.4	0.3	0.2	0.3
<i>Misc. Bulk</i>	5.9	5.5	4.4	4.4	5.6	4.5	3.9	3.8	4.4	4.9	4.9
<i>Total</i> <sup>3</sup>	90.7	86.7	74.8	78.9	84.9	74.8	72.1	76.5	80.7	77.3	77.4

<sup>1</sup> Until 1983, potash data were included in the Misc. Bulk category.

<sup>2</sup> Package freight service on the Great Lakes was discontinued at the end of 1981.

<sup>3</sup> Actual totals may vary slightly due to rounding.

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**SUMMARY OF TYPE OF TRADE**


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The table below shows tonnage carried by CSA members in 1990 by type of trade.

<u>TONNAGE BY TYPE OF TRADE</u>		
<u>Trade</u>	<u>(millions) Tonnes</u>	<u>% of CSA Movement</u>
Domestic	36.9	47.6
Imports from U.S.	24.3	31.5
Exports to U.S.	15.4	19.9
Trade with and between other countries	0.8	1.0
	<hr/>	<hr/>
Total	77.4	100.0

The table below shows the five principal cargoes as a proportion of trade.

<u>FIVE PRINCIPAL CARGOES AS A PROPORTION OF TRADE</u>			
	<u>% Domestic</u>	<u>% Import</u>	<u>% Export</u>
Iron Ore	17	13	44
Coal	7	55	3
Grain	25	10	3
Limestone	10	13	11
Tanker Products	20	-	7

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## THE FLEETS OF CSA MEMBERS 1990

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Tables at the end of Part I of this report show CSA Members and their fleets. Comparisons with the Canadian merchant fleet of self propelled cargo ships of 1 000 gross registered tonnes and over are made in Part 4.

Although some of the member companies operate vessels registered in other countries, tonnage carried by these ships is not described in this report.

Most of the CSA Canadian registered ships operate primarily in the Great Lakes - St. Lawrence system among Canadian ports and in export and import trades between Canadian and United States Great Lakes ports. Some members operate vessels in the Atlantic region, in Arctic waters and to and from U.S. East Coast and Gulf ports.

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## ANALYSIS OF TRAFFIC BY COMMODITY

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### COAL

#### 1990 Trade:

Tonnes:	16 435 000
Tonne-kilometres	9 718 187 000

In 1990, coal cargoes amounted to 21.2% of total tonnage and 11.0% of tonne-kilometres generated.

Fully 80% of the trade is in imports, generally originating at the Lake Erie ports

of Sandusky, Toledo, Ashtabula and Conneault which accounted for 12.6 million tonnes. The coal was hauled to steel mills and other industrial facilities in the upper Lakes and to Ontario Hydro thermal generating stations at Lambton and Nanticoke (7.4 million tonnes). A further 5.2 million tonnes transitted the Welland Canal for Lake Ontario and St. Lawrence ports, the latter area having received just over 400 000 tonnes; a small amount of coal was imported to the Maritimes.

Imports from Superior, Wisconsin to Thunder Bay and Nanticoke exceeded 350 000 tonnes, while 410 000 tonnes were hauled from United States east coast ports to the lower St. Lawrence.

Thunder Bay exported just over 400 000 tonnes to the Chicago area, and small quantities were carried from the St. Lawrence to Trenton, Michigan, and from Sydney, N.S., to the eastern seaboard.

Thunder Bay was also origin to 2.3 million tonnes of domestic shipments to Sarnia and Nanticoke.

Just over 120 000 tonnes were hauled from Sydney to Montréal, Sept-Iles and Canso.

As the summary table below shows, all trades were down in 1990. Imports to facilities in the upper Lakes declined by 800 000 tonnes (10%). Tonnage through the Welland to Lake Ontario and St. Lawrence ports fell by one million tonnes (16%).

Imports from Superior, Wisconsin rose by about 100 000 tonnes (60%) as did movement from U.S. east coast ports which increased by about 160 000 tonnes (65%).



Domestic movement from Thunder Bay declined by 700 000 tonnes (30%) and from Sydney by 370 000 tonnes (70%).

Exported coal also declined, the Thunder Bay to Chicago movement by 185 000 tonnes (30%).

### COAL TONNAGE 1985 - 1990

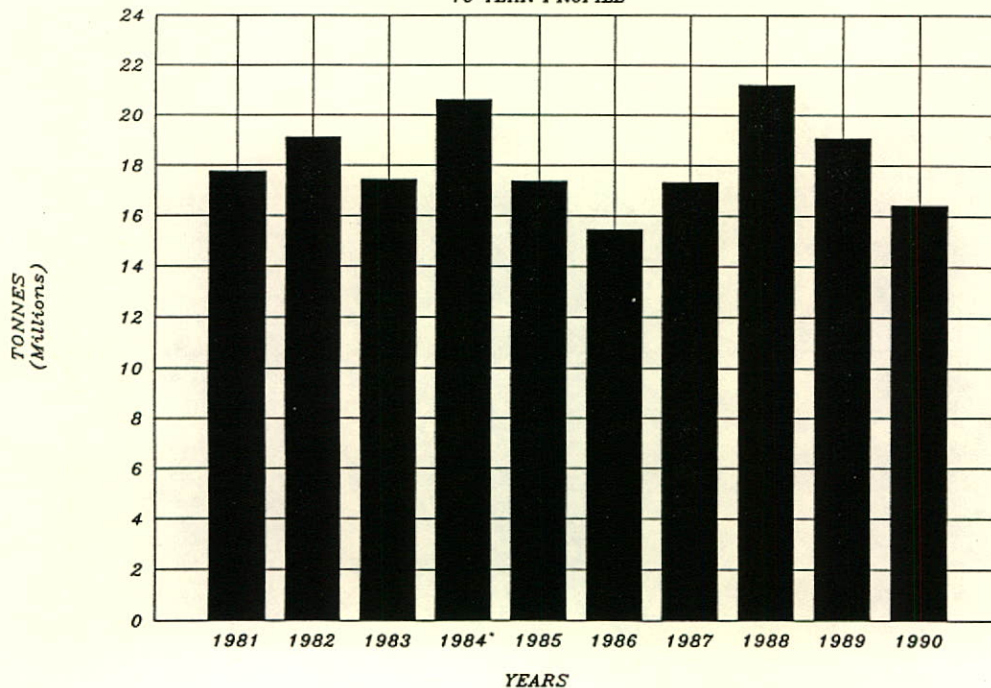
	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	17 366	9 982 644
1986	15 460	8 457 624
1987	17 336	8 944 580
1988	21 233	11 030 436
1989	19 086	11 823 733
<i>Five Year Average 1985 - 1989</i>	18 096	10 047 674
1990	16 435	9 718 187

Overall tonnage in 1990 declined by 2.7 million tonnes (13.9%) and falls short of the five year average by 1.7 million tonnes

(9.2%). Tonne-kilometres produced were less than both the previous year (18%) and the five year average (3.2%).

### COAL TONNAGE

10 YEAR PROFILE



SUMMARY - COAL TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	13.399	-	5.921	-
<i>Over (Under) '89</i>	(1.554)	(10.4)	0.861	(12.7)
<i>Imports as proportion of total</i>	-	81.5	-	60.9
<i>1989 Figure</i>	-	78.3	-	57.4
<i>Average length of haul</i>	442 kilometres			
<i>Export Trade</i>	0.512	-	0.645	-
<i>Over (Under) '89</i>	(0.145)	(22.1)	(0.139)	(17.8)
<i>Exports as proportion of total</i>	-	3.1	-	6.6
<i>1989 Figure</i>	-	3.4	-	6.6
<i>Average length of haul</i>	1 258 kilometres			
<i>Domestic Trade</i>	2.524	-	3.152	-
<i>Over (Under) '89</i>	(0.951)	(27.4)	(1.105)	(26.0)
<i>Domestic as proportion of total</i>	-	15.4	-	32.4
<i>1989 Figure</i>	-	18.2	-	36.0
<i>Average length of haul</i>	1 248 kilometres			
<i>Cargo hauled in self-unloaders</i>	99 %			
<i>Overall average length of haul</i>	591 kilometres			
<i>Overall average 1989 length of haul</i>	620 kilometres			

**IRON ORE****1990 Trade:**

Tonnes:	16 263 000
Tonne-kilometres	25 312 712 000

Iron ore accounted for 21% of tonnage and 28.6% of tonne-kilometre produced. There was a decline of 1.6 million tonnes (9.1%) in tonnage (3% in tonne-kilometres) from the previous year, mostly on account of a significant fall in imports (36%) and a lesser decline in domestic trades (9%).

Domestic and export cargoes originate at the St. Lawrence ports of Pointe Noire, Port Cartier, Sept-Iles and Contrecoeur. Exports from these locations to Lake Michigan ports (Gary and Indiana Harbour, Burns Harbour and Chicago) totalled 2.89 million tonnes; to the Detroit area: 719 000 tonnes; to the Ohio ports of Conneault, Lorraine, Cleveland and Ashtabula: 2.47 million tonnes; and to United States East Coast ports: 560 000 tonnes. Imports totalling 3.257 million tonnes originated mostly at the Lake Superior ports of Marquette and Superior and Duluth, and were hauled to mills at Sault Ste-Marie (1.5 million tonnes), Nanticoke (679 000 tonnes) and Hamilton (1 million tonnes).

Of 6.3 million tonnes in domestic trade, all originated in the lower St. Lawrence, with 5.1 million tonnes bound for Hamilton, 300 000 tonnes for Nanticoke and the balance for other ports on the St. Lawrence.

Straight deck (gearless) bulk ships hauled 65% of cargoes (10.6 million tonnes) in 1990, and generated 68.3% of tonne-kilometres. The balance was hauled in self-unloaders. (In 1989, gearless bulkers carried 60% of 10.7 million tonnes). Of the tonnage carried upbound through the Seaway (11.5 million tonnes), 2.69 million tonnes or 23% were carried on self-unloaders, a proportion identical to that of 1989, when 2.6 million tonnes of 11.1 million tonnes upbound were carried in these same vessels. The balance was hauled in gearless bulkers, a movement which is as far as possible integrated with the downbound movement of prairie grain aboard the same vessels bound for St. Lawrence elevators.

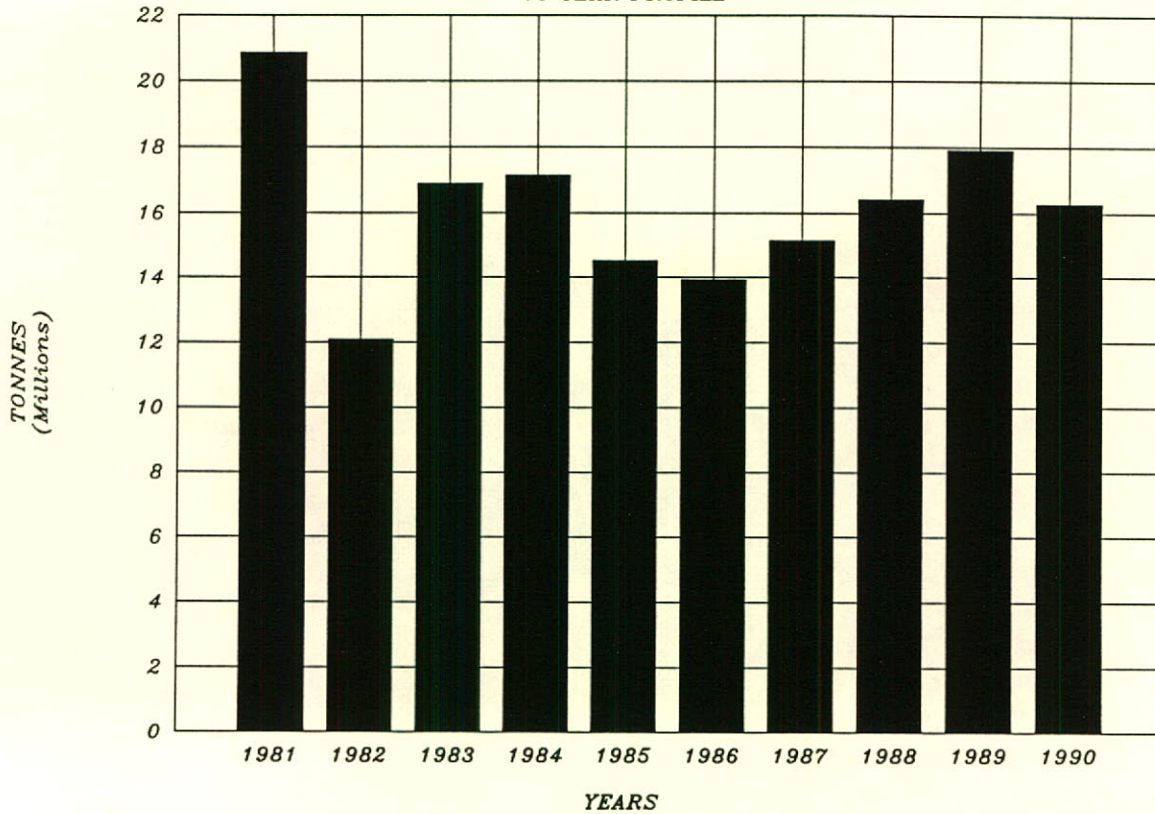
**IRON ORE TONNAGE 1985 - 1990**

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	14 524	21 159 437
1986	13 925	19 748 408
1987	15 140	19 978 638
1988	16 407	23 685 187
1989	17 895	26 099 574
<i>Five Year Average</i>		
1985 - 1989	15 578	22 134 249
1990	16 263	25 312 712

Total tonnage exceeded (marginally) the five year average (3%), as did tonne-kilometres generated, (14%).

## IRON ORE TONNAGE

10 YEAR PROFILE



As the summary below indicates, domestic and import trades declined in 1990 while exports rose. While shipments of Québec-Labrador ore to Lake Michigan ports declined slightly (90 000 tonnes or 3%), exports to Detroit and Ohio ports increased by just under one million tonnes (40%). Exports to United States east coast ports remained at roughly the same as in the previous year.

Import movements from Lake Superior ports to Canadian mills in the upper Lakes and to Hamilton also declined. Likewise domestic movements from St. Lawrence ports fell, although movement among ports on the river remained at previous year's levels.

SUMMARY - IRON ORE TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	3.257	-	3.139	-
<i>Over (Under) '89</i>	(1.867)	(36.4)	(1.321)	(29.6)
<i>Imports as proportion of total</i>	-	20.0	-	12.4
<i>1989 Figure</i>	-	28.6	-	17.1
<i>Average length of haul</i>	963 kilometres			
<i>Export Trade</i>	6.690	-	14.208	-
<i>Over (Under) '89</i>	0.859	14.7	1.444	11.3
<i>Exports as proportion of total</i>	-	41.1	-	56.1
<i>1989 Figure</i>	-	32.6	-	48.9
<i>Average length of haul</i>	2 123 kilometres			
<i>Domestic Trade</i>	6.316	-	7.966	-
<i>Over (Under) '89</i>	(0.624)	(9.0)	(0.910)	(10.3)
<i>Domestic as proportion of total</i>	-	38.8	-	31.5
<i>1989 Figure</i>	-	38.8	-	34.0
<i>Average length of haul</i>	1 261 kilometres			
<i>Cargo hauled in bulkers</i>	65 %			
<i>Overall average length of haul</i>	1 556 kilometres			
<i>Overall average 1989 length of haul</i>	1 458 kilometres			

GRAIN*1990 Trade:*

Tonnes:	12 008 000
Tonne-Kilometres:	25 003 733 000

*Grain accounted for 15.5% of tonnage and 28.2% of tonne-kilometres produced.*

*The largest trade is domestic, mainly transshipments of western Canadian grain from terminal elevators in Thunder Bay to transfer elevators in the lower St. Lawrence.*

*In 1990, terminals at Thunder Bay loaded 8.1 million tonnes of grain destined for Canadian ports. These included Goderich and ports on Georgian Bay (613 000 tonnes), the Windsor-Sarnia area (240 000 tonnes), Port Colborne (280 000 tonnes), Hamilton (120 000 tonnes), Prescott (75 000 tonnes) and Halifax (197 000 tonnes). The lower St. Lawrence ports of Montréal, Sorel, Trois-Rivières, Québec, Port Cartier and Baie Comeau received 6.6 million tonnes.*

*Significant other domestic movements occurred between Goderich and lower St. Lawrence ports (100 000 tonnes) and between the Sarnia-Windsor area and lower St. Lawrence ports (517 000 tonnes). Grain cargo totals of 60 000 tonnes or less were loaded at Goderich for Owen Sound, Goderich for Prescott, Windsor for Prescott, Sarnia for Toronto, Port Colborne for Montréal, Hamilton for Baie Comeau, Prescott for Montréal and Baie Comeau and Port Stanley for Cardinal, Prescott, Québec and Halifax.*

*Imports from the United States amounted to 2.4 million tonnes, most of which was carried to St. Lawrence transfer elevators*

*from Duluth (1.7 million tonnes), Toledo (360 000 tonnes) and Milwaukee (178 000 tonnes). The balance was hauled in small quantities from those same ports to Hamilton, Toronto, Port Colborne and Cardinal. Exports totalled 520 000 tonnes, of which 455 000 tonnes originated at Thunder Bay, destined for ports on Lake Superior, Lake Michigan and Lake Erie. Small cargo volumes were also hauled to those same destinations from Sarnia and Port Stanley.*

*Grain movement is characteristically divided into two categories: short haul, which involves movement through only one or neither section of the Seaway and long haul, involving passage through both sections. The latter involves predominantly grain bound for export via lower St. Lawrence elevators, and is integrated as much as possible with the upbound ore trade which utilizes the same gearless bulkers.*

*In 1990 short haul cargo amounted to 2.349 million tonnes (20% of total) while the balance of 9.66 million tonnes was carried in the long haul.*

*Straight deck bulkers carried 91% of cargo tonnage (10.9 million tonnes) and generated 93.3% of tonne-kilometres. The average length of haul for the gearless bulkers was 2 137 kilometres; for the self unloaders, 1 545 kilometres.*

*At 9% of tonnage, the share of grain carried by self unloaders in 1990 was greater than that of 1989 (7%) and it was higher in volume terms (1 080 000 tonnes in 1990 vs. 738 000 tonnes the previous year).*

GRAIN TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	14 450	28 131 154
1986	13 578	27 725 129
1987	15 621	32 089 670
1988	13 203	26 976 888
1989	10 546	21 202 003
<i>Five Year Average</i> 1985 - 1989	13 480	27 224 969
1990	12 008	25 003 733

Grain movement showed some recovery from the record low in 1989, overall cargo volumes improving by 1.46 million tonnes (14%), and tonne-kilometres by 18%. The 1990 tonnage fell short of the five year average by 1.47 million tonnes (11%).

The predominant domestic movement increased by 44%. The recovery was due in large part to a significant international sale of Canadian grain in the latter part of the navigation season, as well as highly

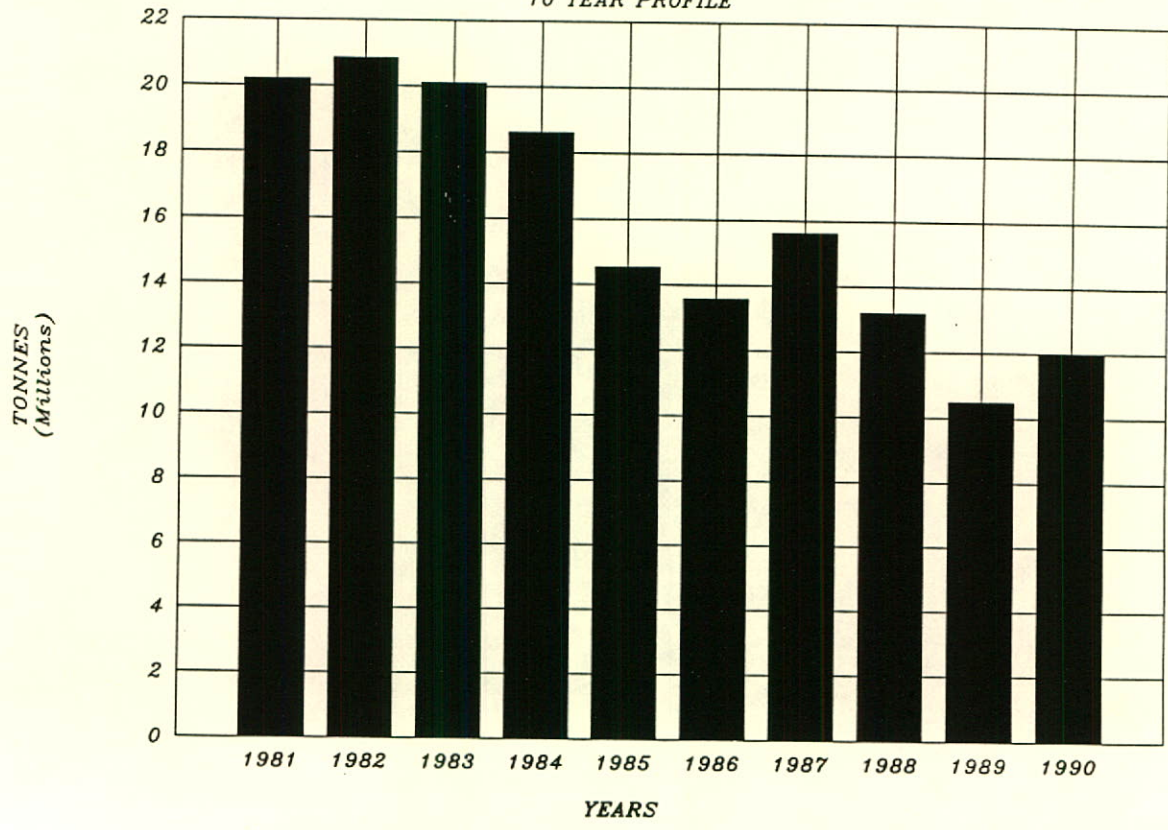
favourable navigation conditions at the same time (in contrast to severe ice conditions which marked the close of navigation in 1989).

Imports of United States grain fell by 1.38 million tonnes (36%), while exports increased by 1 million tonnes (26%).

Both the short haul and long haul movements increased in 1990 by 240,000 tonnes (11%) and 1.26 million tonnes (15%) respectively.

# GRAIN TONNAGE

10 YEAR PROFILE





SUMMARY - GRAIN TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	2.421	-	5.886	-
<i>Over (Under) '89</i>	(1.375)	(36.2)	(2.477)	(29.6)
<i>Imports as proportion of total</i>	-	20.2	-	23.5
<i>1989 Figure</i>	-	36.0	-	39.4
<i>Average length of haul</i>	2 430 kilometres			
<i>Export Trade</i>	0.520	-	0.355	-
<i>Over (Under) '89</i>	0.170	26.0	0.119	50.4
<i>Exports as proportion of total</i>	-	4.3	-	1.4
<i>1989 Figure</i>	-	3.9	-	1.1
<i>Average length of haul</i>	682 kilometres			
<i>Domestic Trade</i>	9.067	-	18.763	-
<i>Over (Under) '89</i>	2.762	43.8	6.342	51.1
<i>Domestic as proportion of total</i>	-	75.5	-	75.0
<i>1989 Figure</i>	-	59.8	-	58.6
<i>Average length of haul</i>	2 069 kilometres			
<i>Cargo hauled in bulkers</i>	91 %			
<i>Overall average length of haul</i>	2 082 kilometres			
<i>Overall average 1989 length of haul</i>	2 010 kilometres			

LIMESTONE**1990 Trade:**

Tonnes: 9 047 000  
 Tonne-Kilometres: 6 166 888 000

Limestone accounted for 11.7% of tonnage and 7.0% of tonne-kilometres produced in 1990.

Limestone is imported from locations in Michigan on the west shore of Lake Huron -- Calcite, Port Dolomite and Stoneport -- and from Drummond Island. These cargoes were carried to Sault-Ste. Marie (560 000 tonnes), the Windsor-Sarnia area (2 million tonnes) and Port Cartier and Sept-Iles (285 000 tonnes). A small quantity was imported to Pointe Noire from Duluth and to Parry Sound from Calcite. Exports totalled 1.6 million tonnes, and were hauled from Manitoulin Island (640 000 tonnes) to U.S. ports on Lake Huron and Lake Michigan (108 000 tonnes), and Lake Erie (400 000 tonnes); from Port Colborne to Lake Erie locations (638 000 tonnes); and from Port Hawkesbury to eastern seaboard ports and to the Bahamas (445 000 tonnes).

Domestic trade of 3.7 million tonnes originated mainly at Meldrum Bay and Colborne (3.55 million tonnes). Destinations included Lake Superior ports (33 000 tonnes), the Windsor-Sarnia area

(780 000 tonnes), Lake Ontario ports (2.3 million tonnes) and lower St. Lawrence locations (380 000 tonnes). The balance of domestic trade involved small cargoes carried from Hamilton to Port Cartier and from Thessalon, Ontario to the Windsor-Sarnia area.

Just over 600 000 tonnes were hauled from the Caribbean and Mexico to southern United States ports.

Limestone is the common term for carbonate rocks which may be classified according to their content of the minerals calcite and dolomite. Limestone has a wide variety of applications (depending upon mineral constituents and the primary processes to which it is subjected), but most of the limestone carried on the Great Lakes is used as aggregate for concrete and asphalt. Other uses for lime - developed from calcined limestone - are as a flux and as a neutralizing agent in industrial processes, and as an agricultural additive.

Limestones are widely distributed in Canada and can be found in abundant quantities in Ontario, Québec and the Great Lakes States; it is a low-price commodity and is generally moved short distances only.

LIMESTONE TONNAGE 1985 - 1990

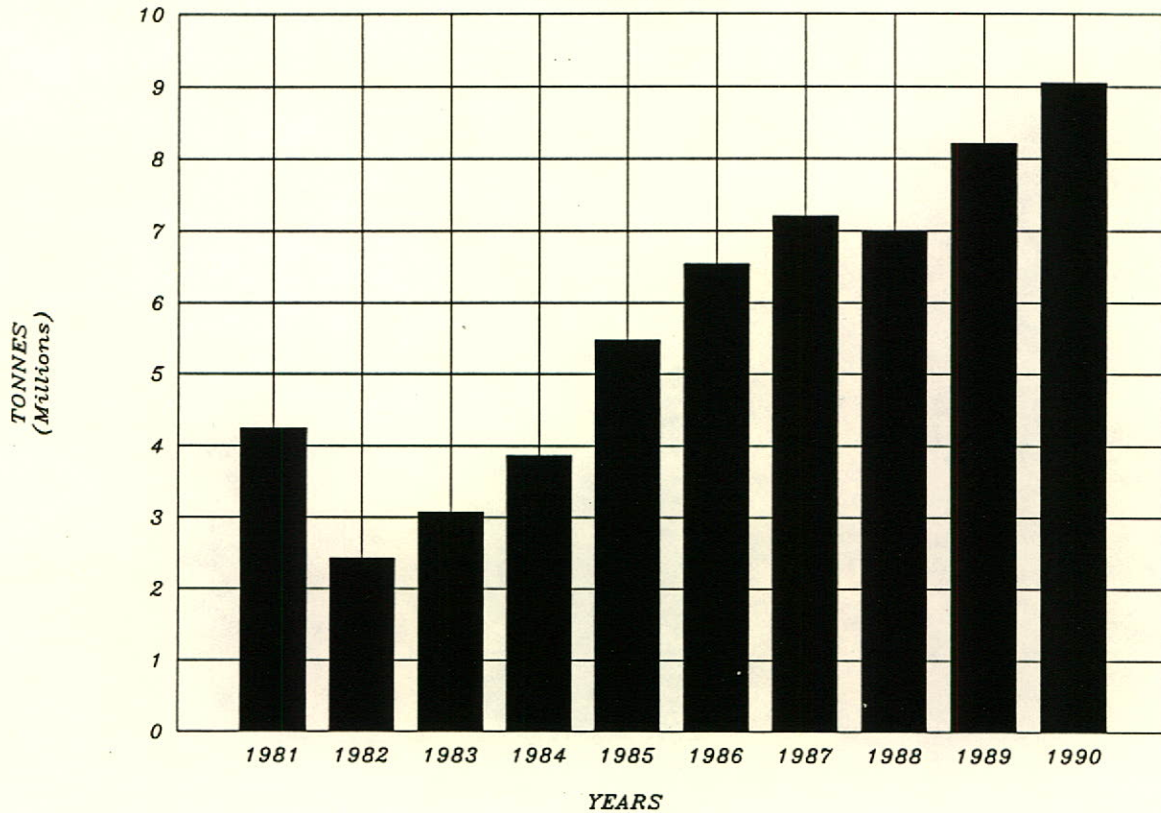
	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	5 474	2 151 382
1986	6 546	2 477 708
1987	7 199	3 157 700
1988	6 994	2 996 034
1989	8 574	3 820 476
<i>Five Year Average</i>		
1985 - 1989	6 957	2 920 660
1990	9 047	6 166 880

Stone shipments in 1990 exceeded those of 1989 by 473 000 tonnes (5.5%) and the five year average by 2.1 million tonnes (30%). Tonne-kilometres produced in 1990 exceeded the previous year's and the five

year average by 61% and 111% respectively. The average lengths of haul in all trades (including cross trades, a negligible movement in 1989) were up significantly over the previous year.

## LIMESTONE TONNAGE

10 YEAR PROFILE



SUMMARY - LIMESTONE TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	3.122	-	1.745	-
<i>Over (Under) '89</i>	0.052	1.7	0.291	20.0
<i>Imports as proportion of total</i>	-	34.5	-	28.3
<i>1989 Figure</i>	-	35.8	-	38.1
<i>Average length of haul</i>	559 kilometres			
<i>Export Trade</i>	1.633	-	1.321	-
<i>Over (Under) '89</i>	(0.121)	(6.9)	0.072	5.7
<i>Exports as proportion of total</i>	-	18.1	-	21.4
<i>1989 Figure</i>	-	20.5	-	32.7
<i>Average length of haul</i>	809 kilometres			
<i>Domestic Trade</i>	3.667	-	2.436	-
<i>Over (Under) '89</i>	(0.027)	(0.7)	1.369	128.3
<i>Domestic as proportion of total</i>	-	40.5	-	39.5
<i>1989 Figure</i>	-	43.1	-	27.9
<i>Average length of haul</i>	664 kilometres			
<i>Cross Trade</i>	0.625	-	0.665	-
<i>Over (Under) '89</i>	0.570	1029.3	0.615	1230.6
<i>Cross trade as proportion of total</i>	-	6.9	-	10.8
<i>1989 Figure</i>	-	0.6	-	1.3
<i>Average length of haul</i>	1 064 kilometres			
<i>Cargo hauled in Self-Unloaders</i>	100 %			
<i>Overall average length of haul</i>	682 kilometres			
<i>Overall average 1989 length of haul</i>	446 kilometres			

## TANKER PRODUCTS

### *1990 Trade:*

Tonnes:	8 665 000
Tonne-Kilometre:	6 038 405 000

Tanker products accounted for 11.2% of tonnage and 6.8% of tonne kilometres produced in 1990. Tanker products include gasoline, heating fuel, bunker oil and smaller quantities of calcium chloride and caustic soda.

Domestic trade is the largest at 7.5 million tonnes (87%). The Windsor-Sarnia area originated 1.38 million tonnes of this trade and the refinery at Nanticoke, another 430 000 tonnes. Product was carried from these facilities to ports on Lake Superior (498 000 tonnes), Georgian Bay (235 000 tonnes), Lake Ontario and the upper St. Lawrence (260 000 tonnes), the lower St. Lawrence (506 000 tonnes) and the Atlantic region (48 000 tonnes). A further 113 000 tonnes moved from Oakville and Clarkson to ports on Lake Ontario and the St. Lawrence. Just over 85 000 tonnes were hauled from Thunder Bay to Sarnia and Cornwall.

Locations on the lower St. Lawrence originated 3.68 million tonnes; 2.65 million tonnes were hauled to ports within the same region. The balance was transported upbound to various location (Sarnia, 73 000 tonnes; Nanticoke 58 000 tonnes; Lake Ontario ports 177 000 tonnes; Cornwall and Morrisburg 86 000 tonnes) and downbound to the Maritimes (264 000 tonnes) and Newfoundland (303 000 tonnes). Arctic shipments from Montréal totalled 42 000 tonnes.

Upbound shipments from Halifax to lower St. Lawrence ports amounted to 204 000 tonnes, while a further 431 000 tonnes were carried from Halifax to Newfoundland ports. Shipments within the Maritimes totalled 733 000 tonnes and a further 411 000 tonnes moved from Newfoundland locations to Halifax.

The export trade totalled 1.09 million tonnes in 1990. Most of this originated in the Sarnia area (646 000 tonnes) and was carried to Chicago, Cleveland and Oswego N.Y. Small quantities were also hauled from Nanticoke to U.S. ports on Lake Ontario, (Oswego and Tonawanda) which also received 264 000 tonnes of product from the Clarkson and Oakville facilities.

A relatively few cargoes were imported to Sarnia, Hamilton, Toronto and Sault Ste-Marie from Chicago, Cleveland and Toledo.

The liquid bulk movement posted a significant increase in 1990 (1.9 million tonnes or 28%). All trades were up, the most significant in absolute terms being domestic operations (28%). While domestic shipments out of the Windsor-Sarnia area declined to 1.38 million tonnes from 1.67 tonnes the previous year, tonnage from the refineries at Montréal, Québec and Trois-Rivières increased to 3.68 million tonnes from 3.03 million tonnes. A slight drop in shipments from Halifax to the lower St. Lawrence was more than offset by increased shipments to other ports in the Maritimes and to Newfoundland.

Exports increased by 67% to 1.09 million tonnes from 654 000 tonnes in 1989.

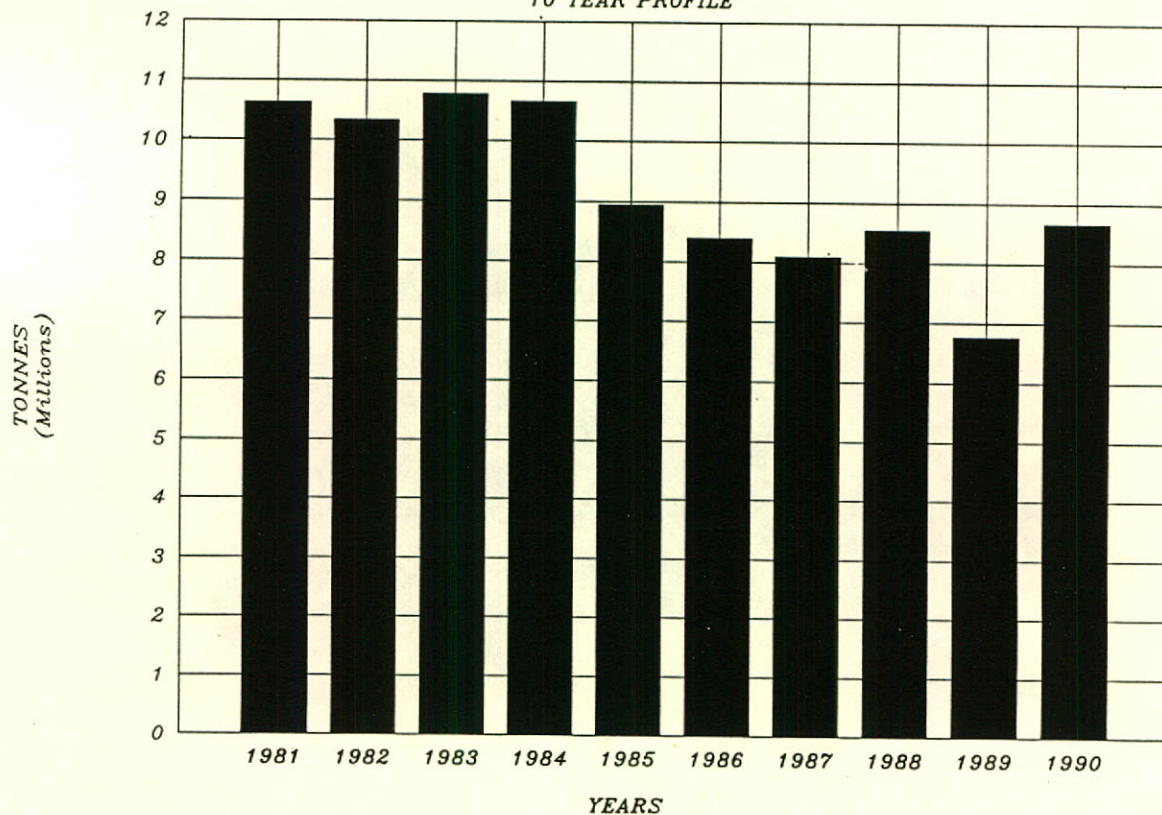
Tonnage in 1990 exceeded the five year average by 52,000 tonnes (6.4%) but tonne-kilometres fell short by 8%.

### TANKER PRODUCT TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	8 947	8 007 962
1986	8 393	7 574 720
1987	8 094	5 559 660
1988	8 549	6 538 000
1989	6 765	5 125 637
<i>Five Year Average 1985 - 1989</i>	8 145	6 561 959
1990	8 665	6 038 405

### TANKER TONNAGE

10 YEAR PROFILE



SUMMARY - TANKER PRODUCTS TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	0.029	-	0.016	-
<i>Over (Under) '89</i>	0.021	258.6	0.012	278.3
<i>Imports as proportion of total</i>	-	0.3	-	0.3
<i>1989 Figure</i>	-	0.1	-	0.1
<i>Average length of haul</i>	562 kilometres			
<i>Export Trade</i>	1.093	-	0.683	-
<i>Over (Under) '89</i>	0.439	67.1	0.327	91.7
<i>Exports as proportion of total</i>	-	12.6	-	11.3
<i>1989 Figure</i>	-	9.7	-	6.9
<i>Average length of haul</i>	625 kilometres			
<i>Domestic Trade</i>	7.542	-	5.339	-
<i>Over (Under) '89</i>	1.439	23.6	0.574	12.0
<i>Domestic as proportion of total</i>	-	87.0	-	88.4
<i>1989 Figure</i>	-	90.2	-	93.0
<i>Average length of haul</i>	708 kilometres			
<i>Overall average length of haul</i>	697 kilometres			
<i>Overall average 1989 length of haul</i>	758 kilometres			

**SALT****1990 Trade:**

Tonnes:	4 800 000
Tonne-Kilometres:	3 929 569 000

Salt accounted for 6.2% of tonnage and 4.4% of tonne-kilometres produced in 1990.

Domestic cargoes totalled 2.53 million tonnes. Goderich and Windsor loaded 939 000 tonnes destined for ports in the upper Lakes (292 000 tonnes), the lower Lakes (91 000 tonnes), and the upper and lower St. Lawrence (639 000 tonnes).

Domestic shipments from the Magdalen Islands and Pugwash totalled 1.51 million tonnes, distributed among ports in Lake Ontario (247 000 tonnes), the upper St. Lawrence (87 000 tonnes), the lower St. Lawrence (854 000 tonnes), the Maritimes (82 000 tonnes) and Newfoundland (227 000 tonnes).

Imports of 828 000 tonnes were loaded at Cleveland and Fairport, Ohio, and delivered to ports on the upper Lakes (71 000 tonnes), and Lake Ontario and the St. Lawrence (560 000 tonnes). Several cargoes were hauled to the Atlantic region.

Exports originated, in the main, at Goderich (1.16 million tonnes) and Windsor (230 000 tonnes) and were carried to Lake Michigan ports (875 000 tonnes), and to ports on Lake Huron (225 000 tonnes), the Detroit area (186 000 tonnes), and Lake Erie (96 000 tonnes). Just under 50 000 tonnes were exported from the Magdalen Islands and Mulgrave to the eastern seaboard.

Total tonnage in 1990 increased by 2.4% (or 110 000 tonnes); both import and domestic trades were up from 1989, while export tonnage fell by 6%.

**SALT TONNAGE 1985 - 1990**

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	4 533	4 137 690
1986	5 433	4 385 218
1987	4 398	3 611 735
1988	4 841	3 968 423
1989	4 686	3 620 937
<i>Five Year Average</i>		
1985 - 1989	4 178	3 944 801
1990	4 800	3 929 569

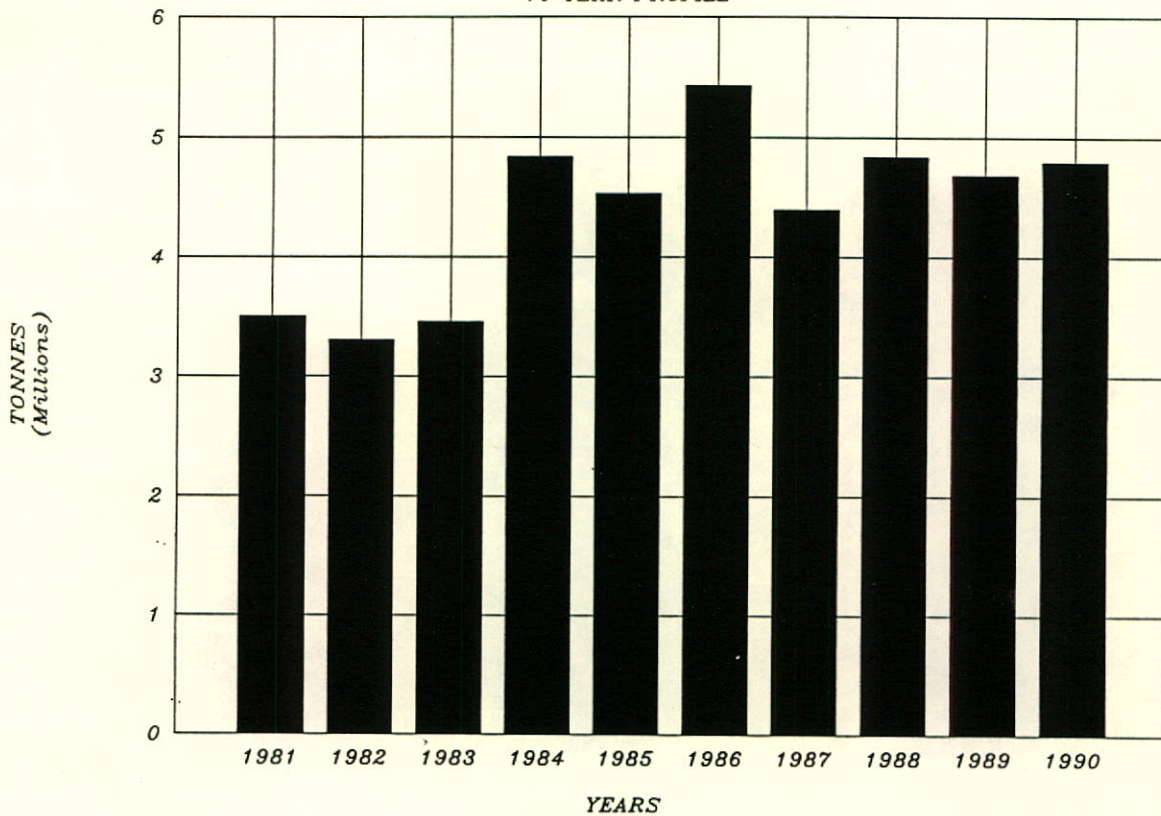


*Tonnage in 1990 exceeded the five year average by 15% although tonne-kilometres marginally fell short of the average.*

*Salt is used by many communities for road de-icing and as an input in industrial processes such as meat packing; food processing and the fishing industry.*

## SALT TONNAGE

10 YEAR PROFILE



SUMMARY - SALT TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	0.828	-	0.441	-
<i>Over (Under) '89</i>	0.024	3.0	(0.090)	(16.9)
<i>Imports as proportion of total</i>	-	17.3	-	11.2
<i>1989 Figure</i>	-	17.2	-	14.7
<i>Average length of haul</i>	533 kilometres			
<i>Export Trade</i>	1.443	-	0.906	-
<i>Over (Under) '89</i>	(0.085)	(5.6)	(0.097)	(9.7)
<i>Exports as proportion of total</i>	-	30.1	-	23.0
<i>1989 Figure</i>	-	32.6	-	27.7
<i>Average length of haul</i>	628 kilometres			
<i>Domestic Trade</i>	2.529	-	2.583	-
<i>Over (Under) '89</i>	0.209	9.0	0.600	30.2
<i>Domestic as proportion of total</i>	-	52.7	-	65.7
<i>1989 Figure</i>	-	49.5	-	49.5
<i>Average length of haul</i>	1 021 kilometres			
<i>Cargo hauled in</i>				
<i>Self-Unloaders</i>	94 %			
<i>Overall average length of haul</i>	819 kilometres			
<i>Overall average 1989 length of haul</i>	773 kilometres			

GYPSUM*1990 Trade:*

Tonnes: 1 535 000  
 Tonne-Kilometres: 3 664 044 000

Gypsum accounted for 2% of tonnage and 4.1% of tonne-kilometres generated in 1990.

All of the gypsum moved originated in the Atlantic region at Halifax and Little Narrows. Domestic cargoes totalled 890 000 tonnes, of which 168 000 tonnes were

hailed to Lake Ontario and the balance of 722 000 tonnes to the Montréal and Québec areas. Exports from Halifax to United States Gulf ports totalled 645 000 tonnes.

Overall tonnage in 1990 increased by 109 000 tonnes (7.6%) and tonne-kilometres by 15%.

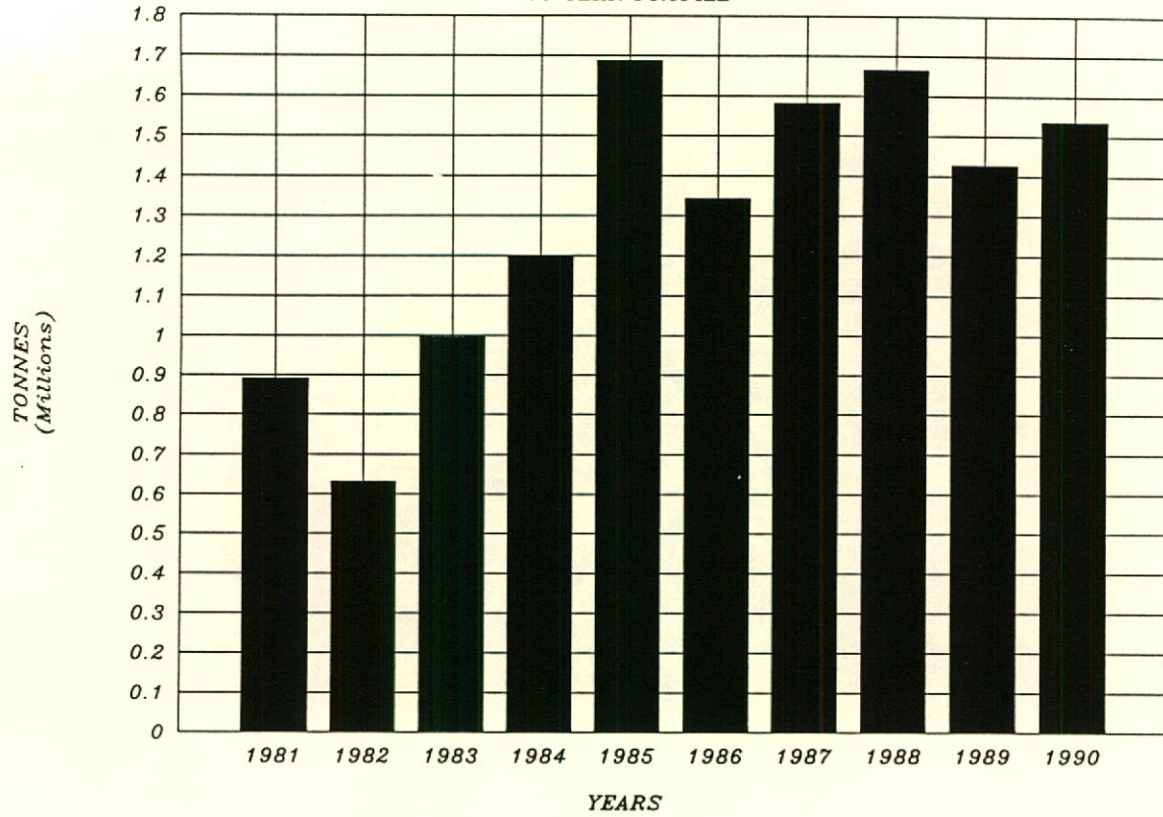
The export trades increased by 42% while domestic tonnage declined by 8%.

GYPSUM TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	1 687	3 893 361
1986	1 341	2 915 359
1987	1 581	3 613 450
1988	1 665	3 766 696
1989	1 426	3 177 048
<i>Five Year Average</i> 1985 - 1989	1 540	3 473 183
1990	1 535	3 664 044

Tonnage in 1990 fell short of the five year average by a slight margin, while tonne-

kilometres produced exceeded the average by 5.5%.

*GYPSUM TONNAGE**10 YEAR PROFILE*

SUMMARY - GYPSUM TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Export Trade</i>	0.645	-	2.290	-
<i>Over (Under) '89</i>	0.190	41.7	0.682	42.4
<i>Exports as proportion of total</i>	-	42.0	-	62.5
<i>1989 Figure</i>	-	31.9	-	50.6
<i>Average length of haul</i>	3 550 kilometres			
<i>Domestic Trade</i>	0.890	-	1.374	-
<i>Over (Under) '89</i>	(0.081)	(8.4)	(0.195)	(12.4)
<i>Domestic as proportion of total</i>	-	58.0	-	37.5
<i>1989 Figure</i>	-	68.1	-	49.4
<i>Average length of haul</i>	1 544 kilometres			
<i>Cargo hauled in Self-Unloaders</i>	100 %			
<i>Overall average length of haul</i>	2 387 kilometres			
<i>Overall average 1989 length of haul</i>	2 228 kilometres			

POTASH*1990 Trade:*

Tonnes: 1 081 000  
 Tonne-Kilometres: 1 416 344 000

Potash accounted for 1.4% of tonnage in 1990 and 1.6% of tonne-kilometres generated.

The larger trade is in exports, at 961 000 tonnes, most of which was loaded at Thunder Bay for United States ports on Lake Michigan and Lake Erie. Small amounts were hauled to lake Huron, Lake Ontario and to the eastern seaboard.

The balance of exports - just over 115 000 tonnes - was carried from Saint John to United States east coast ports.

Domestic potash - at 120 000 tonnes - was hauled from Thunder Bay to Sarnia, to ports on Lake Erie and Lake Ontario and Montréal.

Overall movement declined in 1990 by 134 000 tonnes (11%); both domestic and export movements were affected.

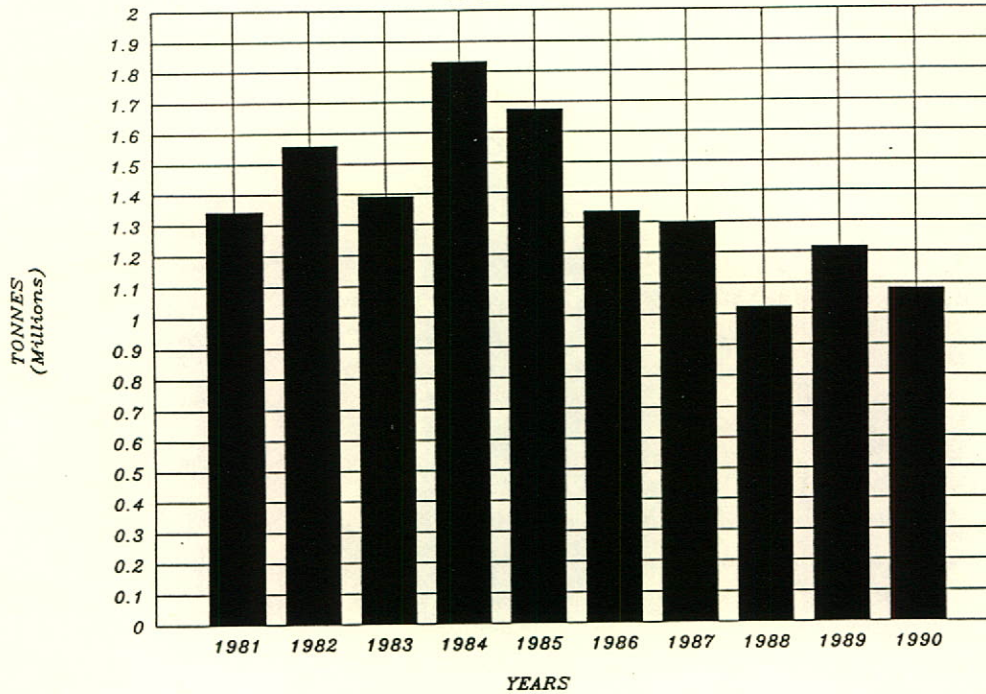
POTASH TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	1 674	2 395 800
1986	1 335	1 762 452
1987	1 299	1 613 904
1988	1 024	1 210 027
1989	1 215	1 468 109
<i>Five Year Average</i> 1985 - 1989	1 309	1 690 058
1990	1 081	1 416 344

Potash shipments in 1990 fell short of the five year average by 17%; tonne-kilometres

produced were less than the average by 16%.

**POTASH TONNAGE**  
10 YEAR PROFILE



**SUMMARY - POTASH TRADE**

	TONNES		TONNE-KILOMETRES	
	Millions	Percent	Billions	Percent
<i>Export Trade</i>	0.961	-	1.247	-
<i>Over (Under) '89</i>	(0.047)	(4.7)	0.090	7.8
<i>Exports as proportion of total</i>	-	88.9	-	88.0
<i>1989 Figure</i>	-	83.0	-	78.8
<i>Average length of haul</i>	1 298 kilometres			
<i>Domestic Trade</i>	0.120	-	0.170	-
<i>Over (Under) '89</i>	(0.086)	(41.8)	(0.142)	(45.6)
<i>Domestic as proportion of total</i>	-	11.1	-	12.0
<i>1989 Figure</i>	-	17.0	-	21.2
<i>Average length of haul</i>	1 417 kilometres			
<i>Cargo hauled in Self-Unloaders</i>	99 %			
<i>Overall average length of haul</i>	1 310 kilometres			
<i>Overall average 1989 length of haul</i>	1 209 kilometres			

CEMENT**1990 Trade:**

Tonnes: 1 009 000  
 Tonne-Kilometres: 628 678 000

(310 000 tonnes), Detroit (114 000 tonnes), Cleveland (37 000 tonnes) and Oswego, NY (167 000 tonnes).

Cement and clinker accounted for 1.3% of tonnage and 0.7% of tonne-kilometres produced in 1990.

With the exception of a small cargo loaded at Port Stanley, all cement originated at Lake Ontario ports. Domestic tonnage totalled 291 000 tonnes carried to the Toronto area with a small amount moved to Montréal. Exports in the amount of 717 000 tonnes were transported to Lake Superior (86 000 tonnes), Lake Michigan

A 7% (76 000 tonnes) decline in overall tonnage in 1990 was marked by a sharp drop in domestic trade (250 000 tonnes or nearly 50% down from 1989), which was offset to a large degree by a jump in exports (180 000 tonnes, up 33% from the previous year).

Tonnage in 1990 exceeded the five year average by 10%; tonne-kilometres produced fell short of the average by 7%.

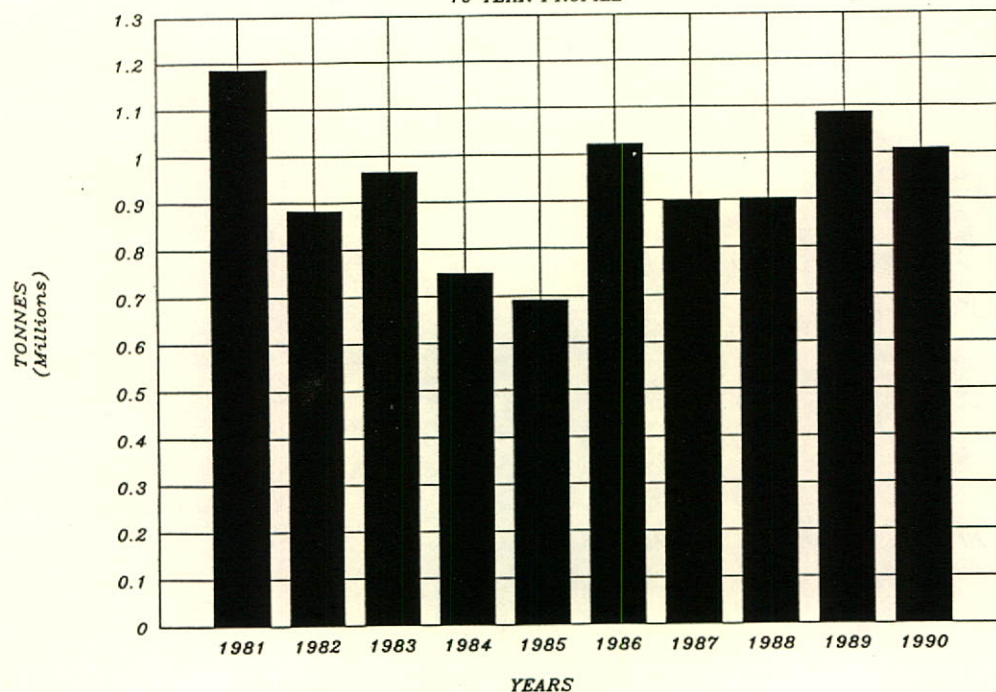
CEMENT TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	691	610 674
1986	1 021	887 182
1987	899	642 992
1988	903	629 100
1989	1 085	611 424
<i>Five Year Average</i> 1985 - 1989	920	674 474
1990	1 009	628 678



## CEMENT TONNAGE

10 YEAR PROFILE

SUMMARY - CEMENT TRADE

	TONNES		TONNE-KILOMETRES	
	Millions	Percent	Billions	Percent
Export Trade	0.717	-	0.560	-
Over (Under) '89	0.179	33.2	0.139	33.1
Exports as proportion of total	-	71.1	-	89.0
1989 Figure	-	49.6	-	68.8
Average length of haul	781 kilometres			
Domestic Trade	0.291	-	0.069	-
Over (Under) '89	(0.248)	(46.0)	(0.108)	(61.1)
Domestic as proportion of total	-	28.9	-	11.0
1989 Figure	-	49.8	-	29.0
Average length of haul	237 kilometres			
Cargo hauled in Self-Unloaders	90 %			
Overall average length of haul	623 kilometres			
Overall average 1989 length of haul	564 kilometres			

COKE**1990 Trade:**

Tonne:	988 000
Tonne-Kilometres:	1 541 186 000

Coke accounted for 1.3% of tonnage and 1.7% of tonne-kilometres in 1990.

Most of the coke trade was in imports (642 000 tonnes), loaded mainly at the head of Lake Michigan (484 000 tonnes), and at Detroit, Cleveland and Duluth. Ports on the lower St. Lawrence are primary destinations (539 000 tonnes) while the balance (103 000 tonnes) remained in the upper Lakes.

Exports of 138 000 tonnes originated principally in Hamilton, destined for Detroit and Conneault. A small quantity was moved from Sault Ste Marie to Detroit.

A larger trade in domestic coke saw 208 000 tonnes shipped from Sault Ste Marie and Hamilton to the lower St. Lawrence (94 000 tonnes), and from Contrecoeur to other ports on the river (107 000 tonnes). A small cargo moved from Newfoundland to the St. Lawrence.

Total tonnage in 1990 increased by 119 000 tonnes (14%). While imports were off by 51 000 tonnes (7%), domestic movement rose by 56 000 tonnes (37%) and exports were up by 114 000 tonnes to 138 000 tonnes (from 26 000 tonnes the previous year).

In 1990, 79% of coke was hauled in self-unloaders, versus 83% the previous year.

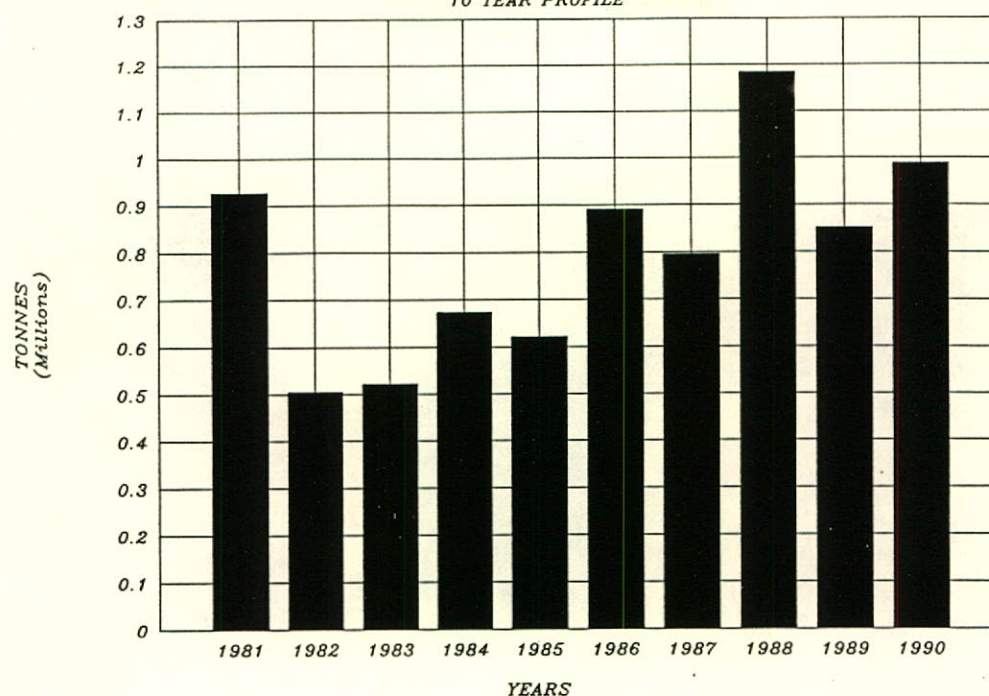
Tonnage this year exceeded the five year average by 13%; tonne-kilometres fell short of the average by 8%.

COKE TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	621	1 200 347
1986	891	1 838 651
1987	796	1 604 027
1988	1 184	2 248 931
1989	869	1 505 781
<i>Five Year Average</i> 1985 - 1989	872	1 681 547
1990	988	1 541 186

## COKE TONNAGE

10 YEAR PROFILE

SUMMARY - COKE TRADE

	TONNES		TONNE-KILOMETRES	
	Millions	Percent	Billions	Percent
<i>Import Trade</i>	0.642	-	1.315	-
<i>Over (Under) '89</i>	(0.051)	(7.4)	-	(0.040)
<i>Imports as proportion of total</i>	-	65.0	-	85.3
<i>1989 Figure</i>	-	79.8	-	90.0
<i>Export Trade</i>	0.138	-	0.062	-
<i>Over (Under) '89</i>	0.114	475.0	0.042	213.7
<i>Exports as proportion of total</i>	-	14.0	-	4.0
<i>1989 Figure</i>	-	2.8	-	1.3
<i>Average length of haul</i>	449 kilometres			
<i>Domestic Trade</i>	0.208	-	0.164	-
<i>Over (Under) '89</i>	0.056	37.3	0.033	25.4
<i>Domestic as proportion of total</i>	-	21.0	-	10.7
<i>1989 Figure</i>	-	17.4	-	8.7
<i>Average length of haul</i>	788 kilometres			
<i>Cargo hauled in Self-Unloaders</i>	79 %			
<i>Overall average length of haul</i>	1 560 kilometres			
<i>Overall average 1989 length of haul</i>	1 733 kilometres			

GENERAL CARGO AND NEO-BULK**1990 Trade:**

Tonnes:	346 000
Tonne-Kilometres:	336 280

General cargo and neo bulk accounted for 0.4% of tonnage and 0.4% of tonne-kilometres generated in 1990. Commodities included in this category include semi-finished and finished steel products, pig iron, containers and cargo classified as general by the carrier.

This year the dominant trade was exports at 214 000 tonnes. Most of this amount, 139 000 tonnes, remained in the upper Lakes, much of it originating at Thunder Bay and Sault Ste. Marie. A further 40 000 tonnes were hauled from Thunder Bay downbound to Toledo, Ohio and Oswego NY. Lower St. Lawrence ports loaded 22 000 tonnes for U.S. Lakes ports, and small cargoes were transported from Hamilton to Lake Michigan and to a Gulf port.

Most of the 125 000 tonnes in domestic trade - 105 000 tonnes - originated at Sault Ste Marie and was destined mainly for Windsor. The balance of 20 000 tonnes consisted of a number of small cargoes traded between Hamilton and Port Cartier, Belledune and Port Stanley and between Montréal and Arctic ports.

Imports in 1990 consisted of two cargoes only from U.S. Great Lakes ports.

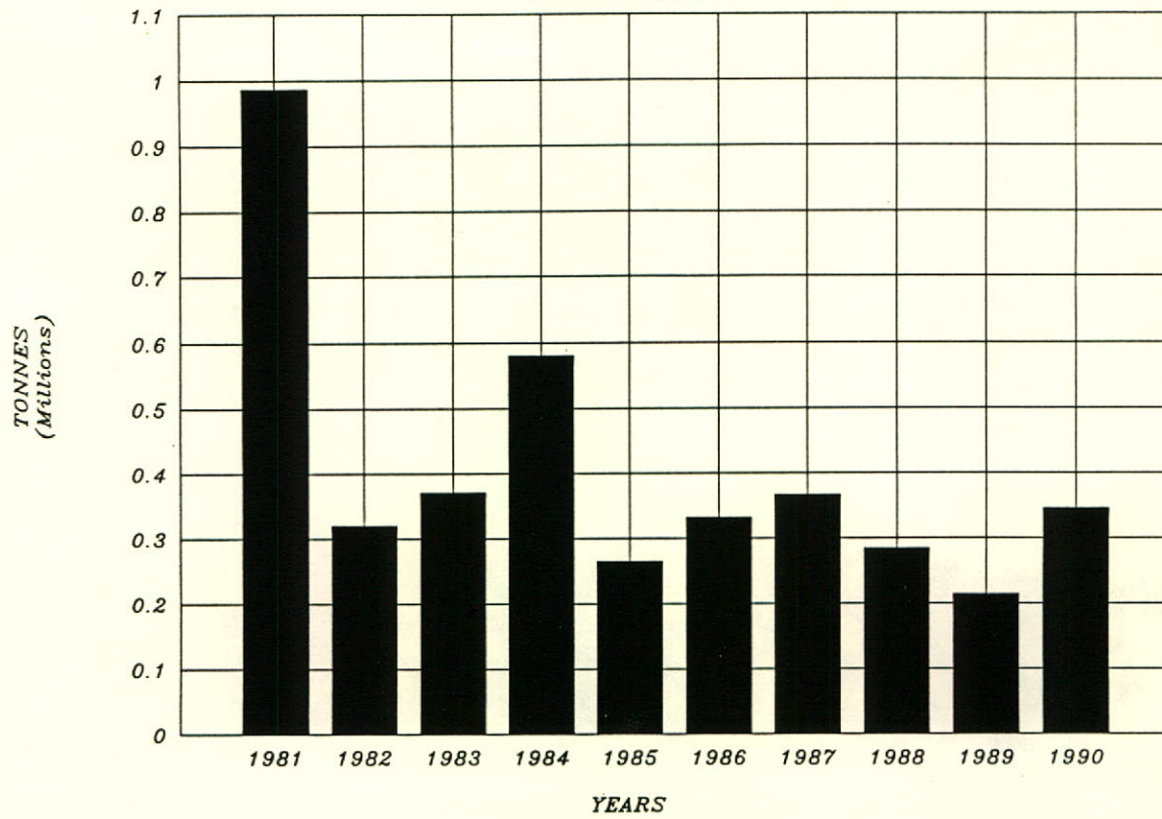
Overall tonnage increased by 131 000 tonnes (61%) while tonne-kilometres rose by 6%. The rise in exports (by 169 000 tonnes) was solely responsible, as imports are a marginal trade and the domestic trade declined by 17% in 1990.

Tonnage in 1990 exceeded the five year average by 11% while tonne-kilometres fell short of the average by the same percentage.

GENERAL CARGO AND NEO BULK TONNAGE 1985 - 1990

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	265	304 710
1986	332	352 720
1987	366	555 736
1988	285	366 612
1989	215	316 285
Five Year Average 1985 - 1989	293	379 213
1990	346	336 280

*GENERAL CARGO TONNAGE*  
*10 YEAR PROFILE*



SUMMARY - GENERAL CARGO AND NEO BULK TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	0.006	-	0.008	-
<i>Over (Under) '89</i>	0.005	316.1	(0.004)	(35.4)
<i>Imports as proportion of total</i>	-	1.9	-	2.2
<i>1989 Figure</i>	-	0.7	-	3.7
<i>Average length of haul</i>	1 333 kilometres			
<i>Export Trade</i>	0.214	-	0.221	-
<i>Over (Under) '89</i>	0.169	370.6	0.118	115.4
<i>Exports as proportion of total</i>	-	61.9	-	65.8
<i>1989 Figure</i>	-	21.2	-	32.5
<i>Average length of haul</i>	1 033 kilometres			
<i>Domestic Trade</i>	0.125	-	0.108	-
<i>Over (Under) '89</i>	(0.025)	(17.0)	0.013	13.8
<i>Domestic as proportion of total</i>	-	36.2	-	32.0
<i>1989 Figure</i>	-	70.2	-	29.9
<i>Average length of haul</i>	864 kilometres			
<i>Cargo hauled in general cargo ships</i>	49 %			
<i>Overall average length of haul</i>	973 kilometres			
<i>Overall average 1989 length of haul</i>	1 471 kilometres			

**MISCELLANEOUS BULK****1990 Trade:**

Tonnes:	5 203 000
Tonne-Kilometres:	4 776 099 000

Miscellaneous bulk commodities accounted for 6.7% of tonnage and 5.4% of tonne-kilometres in 1990.

This section aggregates the bulk commodities not treated as individual categories for one or more of the following reasons: only one or a few shiploads are moved in a year; movement is not on a regular basis from year to year; while tonnages may be comparable to commodities discussed separately, only a single origin and destination and/or a single carrier is involved.

At 3.6 million tonnes, domestic trade is the largest of the four observed this year. Exports and imports follow at 801 000 tonnes and 633 000 tonnes respectively. Trade among other countries totalled 180 000 tonnes. Just over 22% of the traffic (1.19 million tonnes) occurred in the upper Lakes. A further 262 000 tonnes (5%) transitted one or both sections of the

Seaway downbound. Similar amounts (283 000 tonnes) were hauled upbound from the lower St. Lawrence and the lower Lakes. Trade among St. Lawrence ports totalled 2.9 million tonnes (55%).

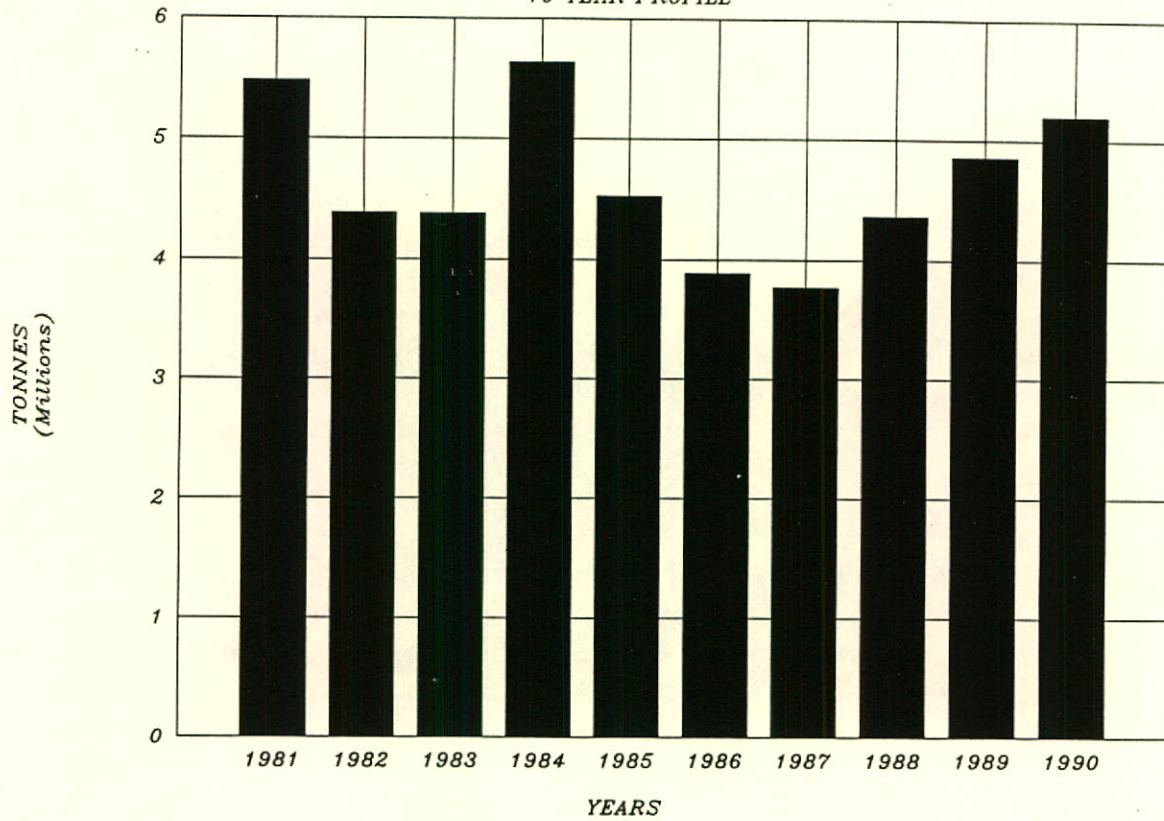
Tonnage in 1990 increased by 343 000 tonnes (7%); only imports declined. Cargo movement in the upper Lakes fell, by 270 000 tonnes (to 1.19 million tonnes from 1.46 million tonnes). There was a small decline in downbound cargoes and an offsetting increase in bulk carried upbound.

Trade among ports in the lower St. Lawrence increased by 200 000 tonnes over 1989 (7%).

The data embrace among others the following types of products: ores and concentrates other than iron ore, (3.5 million tonnes in 1990); quartzite (11 000 tonnes); silica and sand (442 000 tonnes), the former used as a metallurgical flux in the manufacture of glass and in the production of ferrosilica and silicon metal and the latter used in glass manufacturing.

**MISCELLANEOUS BULK TONNAGE 1985 - 1990**

	TONNES (000'S)	TONNE-KILOMETRES (000'S)
1985	4 525	6 707 389
1986	3 886	3 767 124
1987	3 769	3 651 432
1988	4 362	3 857 223
1989	4 860	3 935 175
<i>Five Year Average</i> 1985 - 1989	4 280	4 383 669
1990	5 203	4 776 099

*MISCELLANEOUS BULK TONNAGE**10 YEAR PROFILE*



SUMMARY - MISCELLANEOUS BULK TRADE

	TONNES		TONNE-KILOMETRES	
	<u>Millions</u>	<u>Percent</u>	<u>Billions</u>	<u>Percent</u>
<i>Import Trade</i>	0.633	-	0.908	-
<i>Over (Under) '89</i>	(0.082)	(11.5)	(0.237)	(20.7)
<i>Imports as proportion of total</i>	-	12.2	-	19.0
<i>1989 Figure</i>	-	14.7	-	29.1
<i>Average length of haul</i>	1 434 kilometres			
<i>Export Trade</i>	0.801	-	0.584	-
<i>Over (Under) '89</i>	0.077	10.7	(0.194)	(24.8)
<i>Exports as proportion of total</i>	-	15.4	-	12.3
<i>1989 Figure</i>	-	14.9	-	19.9
<i>Average length of haul</i>	734 kilometres			
<i>Domestic Trade</i>	3.588	-	2.965	-
<i>Over (Under) '89</i>	0.175	5.1	1.006	51.4
<i>Domestic as proportion of total</i>	-	69.0	-	62.1
<i>1989 Figure</i>	-	70.2	-	49.8
<i>Average length of haul</i>	826 kilometres			
<i>Cross Trade</i>	0.180	-	0.315	-
<i>Over (Under) '89</i>	0.172	2 254.7	0.266	542.4
<i>Cross as proportion of total</i>	-	3.5	-	6.6
<i>1989 Figure</i>	-	0.2	-	1.2
<i>Average length of haul</i>	1 750 kilometres			
<i>Cargo hauled in bulkers</i>	57 %			
<i>Overall average length of haul</i>	918 kilometres			
<i>Overall average 1989 length of haul</i>	810 kilometres			

## ROLE OF CSA IN CANADIAN TRANSPORTATION

### INTRODUCTION

The following sections draw comparisons between statistics relating to the performance of CSA member companies and those of the two principal railways, show the participation of CSA fleets in Canadian waterborne trade and relate CSA tonnage to the total Canadian merchant fleet.

In 1989, CSA members carried the equivalent of 71.5% hauled by the CNR and 97.5% by the CPR. Members' cargo tonnage was equivalent to 41.2% of the total railway movement.

TONNES CARRIED IN 1989	
CNR	107 900 000
CPR	79 100 000
CSA Members	77 100 000

### CSA CARGOES RELATIVE TO TOTAL WATERBORNE TRADE

The table below compares CSA cargo tonnes with totals for waterborne trade as provided by Statistics Canada, for the year 1989.

	Total Canadian Trade 1989	Tonnage Carried By CSA 1989	Percent
	<u>(millions of tonnes)</u>		
Domestic	62.0	34.3	55
Import	80.3	29.2	36
Export	<u>159.1</u>	<u>13.6</u>	<u>15</u>
Total Trade	301.4	77.1	26

For the five previous years, the proportion of total trade carried by CSA fleets were as follows: 1984 - 31%, 1985 - 28%, 1986 - 27%, 1987 - 27%, 1988 - 25%

In 1989, of 39.3 million tonnes of cargo imported from the United States by water, 29.2 million tonnes or 74% was in CSA vessels. The same ships carried 13.6 million tonnes in exports to the United States (of a total volume of 43.4 million tonnes, or 31%).

The participation of CSA members in trade between Canada and the United States varies considerably by area: members do not trade into Pacific coast ports but, as well as carrying on most of the international trade on the Great Lakes, they are engaged in trade between Canadian Atlantic ports and United States Atlantic and Gulf ports.

### CSA TONNAGE RELATIVE TO SEAWAY TONNAGE - 1990

In 1990, 45% of the cargo tonnage carried by CSA member fleets passed through one or both of the Welland Canal and the Montréal-Lake Ontario section of the Seaway.

Tonnage through the Welland only, totalled 8.5 million tonnes; through the MLO section only, 6.2 million tonnes; 20.5 million tonnes went through both sections and 42 million tonnes (55% of total) transitted neither section.

The table below compares CSA cargo tonnage with the total carried by ships of all registers in 1990.

	<u>Welland Canal</u>	<u>Montreal Lake Ontario Section</u>
CSA Members	28.9 MT	26.7 MT
Total Tonnage	39.0 MT	36.7 MT
Percentage CSA	74.1 %	72.8 %

Canadian flag vessels provided 61% of total revenues collected on the Montréal-Lake

Ontario section and 75% of those collected on the Welland Canal.

**CSA FLEET AS PROPORTION OF THE  
CANADIAN MERCHANT FLEET - 1990**

The following table shows the proportion of Canadian-registered cargo ships of 1 000 GRT and over that were operated by CSA Members in 1990. The figures were obtained from documents prepared annually by the National Transportation Agency of Canada. The table relates to self-propelled, commercially-owned merchant ships of 1 000 GRT and over on the Canadian

registry as of December 1, 1990. Data in the table may differ from those in Part I of this report (Chart B "Composition of the Fleet"), as the NTAC documents reflect an end of the year "snapshot", whereas the section on the CSA fleet shows the vessels which actually carried cargoes through the year.

<u>Type of Ship</u>	<u>Canadian Merchant Fleet</u>	<u>CSA Members</u>	<u>Percentage</u>
<u>Number of Ships</u>			
General Cargo	17	5	29%
Dry Bulk	80	77	96%
Tankers	34	25	74%
<b>Total</b>	<b>131</b>	<b>107</b>	<b>82%</b>
<u>Gross Registered Tonnage</u>			
General Cargo	90 354	23 069	26%
Dry Bulk	1 383 663	1 364 012	99%
Tankers	248 889	133 634	54%
<b>Total</b>	<b>1 722 906</b>	<b>1 520 715</b>	<b>88%</b>
<u>Deadweight Tonnage</u>			
General Cargo	99 490	32 316	32%
Dry Bulk	2 098 637	2 072 866	99%
Tankers	383 619	200 732	52%
<b>Total</b>	<b>2 581 746</b>	<b>2 305 914</b>	<b>89%</b>

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**APPENDIX I: METHODOLOGICAL  
NOTES**

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**REPORT METHODOLOGY**

*Statistics are collected shortly after the close of the navigation season from member companies on a commodity basis with tonnage by ports of origin and destinations. Individual company data are then aggregated in such a way as to protect the confidentiality of company records. Tonnage figures for each origin-destination pair for each commodity are then multiplied by the appropriate distance between origin port and destination port. The total tonne-kilometres for each commodity between various port pairs are then combined to calculate the tonne-kilometres produced in the transport of a given tonnage of a commodity in the past season. The composite output measure can be used to compare output over time or with other modes. Usual composite output measures in shipping involve ship-days as these are a more accurate indicator of output than kilometres (e.g. a ship can travel fewer kilometres in a day when it is canalizing or in a lock system than in an open lake). It was decided to use tonne-kilometres in this report to enable comparison with other modes and due to the time constraints in publishing.*

**USE OF THE METRIC SYSTEM**

*CSA Annual Reports use metric units for measures of both weight and distance.*

*Historically, in the shipping industry, measures of cargo transported have varied from one commodity to another -- some using units of weight, others units of volume. For example, iron ore has been measured in gross or long tons, coal in net or short tons, petroleum products in barrels and grain in bushels. In order to compare and manipulate measures of cargo carried, the quantity of each commodity carried has been converted to weight carried as expressed in metric tons using standard conversion factors.*

*Canadian and U.S. practice has been to measure distances in inland shipping in statute miles, while coastal and international distances have been expressed in terms of the British Nautical Mile (6 080 feet) or the International Nautical Mile (1 852 metres). For navigation purposes, the shipping industry has been allowed to continue using the International Nautical Mile in coastal and international shipping. It will also replace the statute mile in inland shipping.*

However, all distances in this report, since they are not related to navigational purposes, have been converted to kilometres in order to express statistics in units which are familiar to those outside the shipping field.

#### **DATA SOURCES**

Data were collected from member companies of CSA and were aggregated in such a way as to maintain the confidentiality of individual company records.

Other sources of data and information include Statistics Canada's Shipping Report, the publications of the Canadian Grain Commission, the St. Lawrence Seaway Authority's operations report, Skilling's Mining Review, and statistical reports from various port authorities and commissions. We are particularly indebted to officials of Statistics Canada and of the Department of Energy, Mines and Resources whose publications and information provide background to the trade data.

