

GOVERNMENT OF CANADA

DEPARTMENT OF REGIONAL ECONOMIC EXPANSION

✓ THE MARKET FOR COLD ROLLED AND
GALVANIZED SHEET AND STRIP STEELS ✓

MARCH, 1974

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March 14, 1974

Mr. A.G. MacLennan,
Industrial Development Branch,
Department of Regional Economic Expansion,
161 Laurier Avenue West,
Ottawa, Ontario.
K1A 0M4

Dear Mr. MacLennan:

We attach our report "The Market for Cold Rolled and Galvanized Sheet and Strip Steels". This study has been completed in accordance with our proposal dated October 26, 1973 and discussions with Mr. Hore.

Yours very truly,

PRICE WATERHOUSE ASSOCIATES



J.E. Konrad

GOVERNMENT OF CANADA
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
THE MARKET FOR COLD ROLLED AND
GALVANIZED SHEET AND STRIP STEELS

TABLE OF CONTENTS

| | <u>PAGE</u> |
|---|-------------|
| 1. BACKGROUND | 1 |
| 2. MARKET STUDY HIGHLIGHTS | 1 |
| 2.1 C.R. SHEET AND STRIP STEEL | 1 |
| 2.2 GALVANIZED SHEET AND STRIP STEEL | 2 |
| 3. APPROACH | 2 |
| 4. PRODUCT DESCRIPTION | 4 |
| 5. CONSUMPTION BY GEOGRAPHIC REGIONS | 5 |
| 5.1 ALL GEOGRAPHIC REGIONS | 5 |
| 5.2 CANADIAN GEOGRAPHIC REGIONS | 6 |
| 5.3 PRIMARY MARKET REGIONS | 6 |
| 6. TRENDS INFLUENCING PRICE COMPETITIVENESS | 8 |
| 6.1 STEEL COMMODITY PRICES | 8 |
| 6.2 TRANSPORTATION RATES | 9 |
| 6.3 DUTY RATES | 10 |
| 7. STEEL IMPORTS | 10 |
| 7.1 WESTERN CANADA | 10 |
| 7.2 U.S. UPPER MIDWEST | 11 |
| 8. GROWTH POTENTIAL | 12 |

TABLE OF CONTENTS

| | <u>PAGE</u> |
|---|-------------|
| 9. COMPETITIVE SOURCES OF STEEL PRODUCTS | 13 |
| 9.1 IMPORTED STEEL | 13 |
| 9.2 DOMESTIC STEEL | 14 |
| | |
| EXHIBIT I - INDUSTRY PRODUCT CLASSIFICATION | |
| EXHIBIT II - STEEL CONSUMPTION FOR THE TOTAL MARKET | |
| EXHIBIT III - TOTAL STEEL CONSUMPTION IN WESTERN CANADA | |
| EXHIBIT IV - TOTAL STEEL CONSUMPTION IN SELECTED STATES | |
| EXHIBIT V - COLD ROLLED SHEET AND STRIP CONSUMPTION | |
| EXHIBIT VI - GALVANIZED SHEET AND STRIP CONSUMPTION | |
| EXHIBIT VII - COMPARISON OF CURRENT CANADIAN AND U.S. STEEL PRICES | |
| EXHIBIT VIII - FREIGHT RATES TO CANADIAN DESTINATIONS | |
| EXHIBIT IX - FREIGHT RATES TO U.S. DESTINATIONS | |
| EXHIBIT X - IMPORT TARIFFS ON STEEL PRODUCTS ENTERING THE UNITED STATES | |
| EXHIBIT XI - LAID DOWN PRICE OF C.R. AND GALVANIZED SHEET AND STRIP | |
| EXHIBIT XII - FOREIGN EXCHANGE RATES | |
| EXHIBIT XIII - STEEL IMPORTS THROUGH BRITISH COLUMBIA PORTS | |
| EXHIBIT XIV - APPARENT CONSUMPTION OF FLAT ROLLED STEEL PRODUCTS IN WESTERN CANADA | |
| EXHIBIT XV - APPARENT CONSUMPTION OF FLAT ROLLED STEEL PRODUCTS IN CANADA | |
| EXHIBIT XVI - IMPORTS OF STEEL VIA NORTH DAKOTA AND MINNESOTA | |
| EXHIBIT XVII - INDUSTRIAL CONSUMPTION OF GALVANIZED SHEET AND STRIP IN WESTERN CANADA | |
| EXHIBIT XVIII - CANADIAN STEEL INGOT PRODUCTION | |
| EXHIBIT XIX - PROJECTION OF STEEL PRODUCTION CAPACITIES IN ONTARIO | |
| EXHIBIT XX - LIST OF ORGANIZATIONS CONTACTED | |

GOVERNMENT OF CANADA

DEPARTMENT OF REGIONAL ECONOMIC EXPANSION

THE MARKET FOR COLD ROLLED AND GALVANIZED SHEET AND STRIP STEELS

1. Background

On November 13, 1973, the Industrial Development Branch of the Department of Regional Economic Expansion authorized a study to assess the market for cold rolled and galvanized sheet and strip steels in Western Canada. The purpose of the study was to establish the magnitude of markets for Saskatchewan-produced flat rolled products which would complement the present pipe operations of Interprovincial Steel and Pipe Corporation Ltd. in Regina. Pipe was specifically excluded from the study. The terms of reference included cold rolled sheet and strip steel in full hard and annealed conditions and galvanized sheet and strip steel.

The market was to be analyzed geographically, that is, by provinces in Western Canada, and by states in a selected region of the northwestern United States. Market data was to be given in tonnage by gauges and widths; prices by product and local market. Present sources of supply were to be identified. An analysis was to be made of past growth in these products and a projection made of future growth. Future markets were to consider the present economic climate in Canada and the effects of foreign competition.

2. Market Study Highlights

2.1 C.R. Sheet and Strip Steel

. During 1973, IPSCO's primary market region consumed about 21,500 tons of C.R. sheet and strip steel. The region comprises British Columbia, the Prairies and Montana.

- . Approximately 20,000 tons or 95% was 48" or narrower.
- . Approximately 21,500 tons, virtually all of the C.R. sheet and strip steel consumed, was used in the annealed condition.
- . The demand for C.R. sheet and strip steel is expected to increase from 3% to 4% per year over the next five years.

2.2 Galvanized Sheet and Strip Steel

- . During 1973, IPSCO's primary market region consumed about 143,500 tons of galvanized steel. This region comprises British Columbia, the Prairies and Montana.
- . Approximately 130,000 tons or 90% was 48" or narrower.
- . Approximately 90,000 tons, or 63% was light gauge galvanized steel made from C.R. sheet and strip steel.
- . The demand for galvanized sheet and strip steel is expected to increase from 6% to 8% per year over the next five years.

3. Approach

We began the study with a visit to the offices and plant of Interprovincial Steel and Pipe Corporation to establish the range of products to be covered in this study. In particular, it was necessary to recognize gauges and widths for the purpose of classifying the products.

Statistics Canada and industry sources were researched to provide a basis of estimating historical growth, regional markets and industry trends. A listing of major steel users by standard industrial classification was procured from Statistics Canada. This information was used later in our questionnaire and interview survey.

A questionnaire was designed and issued to prime users of the selected steel products. The survey was to provide a rough guide as to the kind of steel products used, quantities consumed, and future needs. On the basis of these questionnaires, we were able to identify a relatively short list of users who account for the major share of steel consumption.

Another questionnaire was designed and issued to steel service centres in Western Canada. This survey provided a relatively good measure of volume handled in each product classification. The main purpose of this questionnaire was to provide a basis for later interviews.

With a substantial amount of background data available, an interview program was pursued throughout Western Canada among steel service centres, distributors, and major users. These interviews were the main source of our estimates of current demand, prevailing prices and trends for each of the product groups.

Representatives of each of the provincial Departments of Industry in the western provinces were interviewed to identify recent studies undertaken with respect to demand for steel, and any other information that might support our inquiries.

A parallel interview program among steel service centres, distributors, and major users was undertaken to assess current demand, prices and trends in Minnesota, North Dakota, South Dakota, Montana and Wyoming. Since these particular states do not correspond to any defined U.S. region, we have referred to these states as "the U.S. Upper Midwest" or for brevity "Selected States".

Research was undertaken in Western Canada and the U.S. Upper Midwest with respect to freight rates and tariffs affecting demand for these steel products.

The statistical, questionnaire and interview data was analyzed and correlated to provide a profile of current and future demands for the selected steel products. On the basis of limited discussions with several steel producers knowledgeable with the western market, we were able to confirm the essential conclusions of this study.

4. Product Description

Cold rolled steel is produced from hot rolled sheet and strip by reducing the steel's thickness in a cold rolling mill. This cold rolling operation hardens the steel and reduces its ductility. If the material is to be stamped or formed into a finished part, its ductility must be restored by annealing prior to fabrication. Before the steel is cold rolled, the black mill surface on the hot rolled steel must be removed. This is generally done by a pickling process which involves dipping the steel into a warm acid solution to dissolve the iron oxide that formed during the hot rolling operation.

Cold rolled steel can be produced as thin as 30 gauge whereas hot rolled steel cannot be produced any thinner than 16 gauge. Cold rolled steels also have a better surface finish and superior forming properties than hot rolled steels.

Galvanized steel is a zinc coated hot or cold rolled steel. The zinc coating protects the base steel from rusting by galvanic action, the process of forming zinc oxide in preference to iron oxide (rust). Most galvanized steel is produced by dipping sheet steel into a molten bath of zinc metal. Most continuous hot dipped galvanizing lines are based on the Sendzimir process. In this process the strip is heated in an oxidizing atmosphere to remove all rolling greases and to prepare the surface for galvanizing. The strip then passes into an annealing furnace with a specially prepared atmosphere to reduce all iron oxide back to iron. The strip passes

directly from this furnace into a bath of molten zinc, on to a cooling tower and from there to sheet shearing and levelling lines. A typical Sendzimir line, such as the Dofasco #2 line, has a maximum capacity of about 125,000 tons per year and can produce galvanized sheet ranging in thickness from 8 to 30 gauge and in width to 60 inches. In Canada only Dofasco and Stelco produce galvanized steel.

Steel is classified as sheet or strip depending upon the material thickness and width as shown in Exhibit I, "Industry Product Classification". Accordingly strip steel is never over 12 inches wide while sheet steel is always wider than 12 inches. The distinction between sheet and plate depends on both width and gauge.

5. Consumption by Geographic Regions

5.1 All Geographic Regions

A summary of consumption of C.R. and galvanized sheet and strip steel in the major geographic regions covered by this study is shown in Exhibit II, "Steel Consumption for the Total Market". Of the more than 200,000 tons of C.R. steel consumed in all regions, Western Canada accounts for only about 20,000 tons, or 10%. However, of the 250,000 tons of galvanized steel consumed in all regions, Western Canada accounted for more than 135,000 tons, or about 54%.

A more detailed analysis of Western Canada consumption by regions is shown in Exhibit III, "Total Steel Consumption in Western Canada". British Columbia, Alberta and Manitoba clearly dominate the Western Canada market for both cold rolled and galvanized sheet and strip steels. These three provinces accounted for more than 20,000 tons, 98% of Western Canada C.R. steel consumption and 122,000 tons, or 90% of galvanized consumption.

A similar analysis of U.S. consumption presented in Exhibit IV, "Total Steel Consumption in Selected States", illustrates the dominance of the Minnesota region in the U.S. Upper Midwest market. This region accounts for more than 180,000 tons, or 96% of C.R. consumption, and 85,000 tons, or 73% of galvanized consumption.

5.2 Canadian Geographic Regions

A more detailed analysis of C.R. consumption by width and temper for selected geographic regions is shown in Exhibit V, "Cold Rolled Steel and Strip Consumption". Approximately 19,000 tons, or 95% of Western Canada's C.R. consumption is 48" or narrower, compared to 168,000 tons, or 90% of C.R. consumption in the U.S. Upper Midwest. Virtually all of the 20,000 tons of Western Canada consumption is used in the annealed condition compared to 90% of the U.S. consumption.

A similar analysis of galvanized consumption is presented in Exhibit VI, "Galvanized Sheet and Strip Consumption". Approximately 123,000 tons, or 90% of Western Canada galvanized consumption is 48" or narrower compared to 87,000 tons, or 75% in the U.S. Upper Midwest.

Galvanized consumption was analyzed in two gauge ranges, heavy galvanized ranging 8 to 16 gauge, and light galvanized ranging 17 to 30 gauge. This was to reflect the relative amounts of hot and cold rolled sheet and strip used in the manufacture of galvanized steel. Virtually all of the light gauged galvanized steel ranging from 17 to 30 gauge is made from C.R. sheet and strip, while a very large proportion of the heavier gauge galvanized is produced from H.R. sheet and strip steel. The data in Exhibit VI indicates that about 85,000 tons, or 63% of Canadian consumption, is light gauge galvanized compared to 93,000 tons, or 80% of U.S. consumption.

5.3 Primary Market Regions

We have defined "primary market regions" as those areas offering IPSCO the greatest potential to increase current market share or to penetrate new markets. The basis for determining these regions is the lowest laid

down price in a particular region. In determining these prices we have considered the following factors:

- . Steel commodity prices F.O.B. mill as shown in Exhibit VII, "Comparison of Current Canadian and U.S. Steel Prices".
- . Canadian freight rates as shown in Exhibit VIII, "Freight Rates to Canadian Destinations".
- . American freight rates as shown in Exhibit IX, "Freight Rates to U.S. Destinations".
- . Rates of duty in Exhibit X, "Import Tariffs on Steel Products Entering the United States".

On the basis of this information and the prices shown in Exhibit XI, "Laid Down Prices of Galvanized and C.R. Sheet and Strip", we have estimated the following market for C.R. sheet and strip steel.

- . During 1973, IPSCO's primary market region consumed 21,500 tons of C.R. sheet and strip. This region comprises British Columbia, the Prairies and Montana.
- . Approximately 20,000 tons, or 95%, was 48" or narrower.
- . Approximately 21,500 tons, virtually all of the C.R. consumption, was purchased in the annealed condition.

Similarly, we have estimated the following market for galvanized sheet and strip steel:

- . During 1973 IPSCO's primary market region consumed approximately 143,000 tons of galvanized steel. This region comprises British Columbia, the Prairies and Montana.
- . Approximately 130,000 tons or 90% was 48" or narrower.
- . Approximately 90,000 tons or 6% was light gauge galvanized steel (17 to 30 gauge) made from C.R. sheet and strip steel.

6. Trends Influencing Price Competitiveness

6.1 Steel Commodity Prices

In Canada, Stelco is the acknowledged industry price leader. Under normal market conditions, other mills adjust their prices to be competitive with Stelco on a regional basis. For example, to be competitive with a customer east of the Hamilton region, Algoma would quote F.O.B. Sault Ste. Marie but would absorb freight to Hamilton. Correspondingly, to be competitive with a customer west of Sault Ste. Marie, Stelco and Dofasco would quote F.O.B. Hamilton but would absorb freight to Sault Ste. Marie. In either case, Stelco's F.O.B. price is generally used as the base. However, since IPSCO is so much further west, its F.O.B. price could be greater than Stelco's F.O.B. price by the difference in freight rates to Winnipeg. This assumes that IPSCO does not attempt to compete in markets east of Winnipeg. Therefore, IPSCO's competitive position will not change as domestic producers change their steel prices. This pricing strategy is employed to maintain market share but does not necessarily assure satisfactory profit margins.

IPSCO's competitive position in the U.S. Upper Midwest depends directly on the relative movement of Canadian and U.S. F.O.B. mill prices and changes in the exchange rate between Canadian and U.S. dollars. The U.S. mill prices shown in Exhibit VII, "Comparison of Current Canadian and U.S. Steel Prices" will probably increase significantly after April 1, 1974. On this date wage and price controls will end with the introduction of Nixon's Phase V program. This will tend to improve IPSCO's price competitiveness in U.S. Upper Midwest.

Since IPSCO must convert its U.S. dollar sales into Canadian funds, the exchange rate between the two dollars will play a role in IPSCO's price competitiveness in U.S. regions. As shown in Exhibit XII, "Foreign Exchange Rates", the U.S. dollar has been devalued relative to the Canadian dollar by over 9%. Such devaluation tends to make Canadian goods more expensive in U.S. markets.

Because the U.S. is such an important market for Canadian goods, we expect that the Canadian government will resist further increases in the Canadian dollar. The net result of anticipated U.S. price increases and further changes in exchange rates should improve IPSCO's competitive position in the U.S. Upper Midwest.

6.2 Transportation Rates

Recently the railways have announced sharp freight rate increases for steel shipments from Hamilton to Vancouver. It is unlikely that Regina - Vancouver rates will be increased proportionately. Since IPSCO ships steel to Vancouver via rail, its price position will be strengthened relative to eastern based steel mills. Because of recent commitments made to western provinces by Ottawa, it seems likely that railway rates will be held down and politically administered by the federal government.

However, as can be seen from Exhibit VIII, "Freight Rates to Canadian Destinations", IPSCO uses trucks to ship steel to all other Canadian destinations. We anticipate that truck rates will rise because of fuel price increases. Unless trucking rates are subsidized, IPSCO's competitive position would deteriorate in Western Canada. However, IPSCO should always maintain a transportation cost advantage.

A relative increase in truck rates compared to rail rates would have a more serious effect on IPSCO's competitiveness in the U.S. Upper Midwest. As shown in Exhibit IX, "Freight Rates to U.S. Destinations", IPSCO's truck rates are already significantly higher than rail rates from various U.S. steel mills. Such relative increases in truck rates may more than outweigh any advantage from higher U.S. steel prices expected after April 1, 1974.

6.3 Duty Rates

The objective of the current round of GATT talks (General Agreement on Tariffs and Trade) is to encourage free trade by the reduction of tariffs and other trade barriers. However, we do not anticipate any reduction in steel duty rates into the U.S. before 1975, or significant reductions until at least 1980.

7. Steel Imports

7.1 Western Canada

A summary of imports is presented in Exhibit XIII, "Steel Imports Through British Columbia Ports". Approximately 15,000 tons or, 75% of total Western Canada's C.R. consumption, and 26,000 tons, or 19% of galvanized consumption, is currently imported through British Columbia ports. More than 98% of the cold rolled imports were under 51" in width in 1973.

Exhibit XV, "Apparent Consumption of Flat Rolled Steel Products in Canada" gives comparable national figures. While Western Canada imported 75% of its cold rolled requirements the national proportion was only 14.5%. Similarly, Western Canada imported 19% of its galvanized consumption compared to the national proportion of only 4.2%.

As of January 1974 imported C.R. steel was being laid down in Vancouver at prices 5% to 10% higher than domestic steel, and imported galvanized at 25% to 30% higher. Major imports are from Japan, Germany and Great Britain. It is estimated that Japan accounts for more than 90% of the total.

This represents a complete reversal of the competitive situation prevalent from the late 1960's to the beginning of 1973. From the mid-sixties to the end of 1971, the steel industry in most western countries had excess

production capacity. Many countries, Japan and Germany in particular, were selling in international markets at distress prices. Imported steel was selling in Western Canada at prices 25% to 35% lower than steel from domestic sources. Exhibit XIV, "Apparent Consumption of Flat Rolled Steel Products in Western Canada", illustrates the steady increase in the proportion of imported steel consumed in Western Canada from 1968 to 1972. During 1972 imports reached a peak and remained constant in the west during 1973. In Eastern Canada imports fell sharply during 1973. Domestic steel supplies became very tight during 1973 and western consumers, who had imported most of their requirements during the last few years, did not qualify for sufficient allocations from domestic producers. Western consumers were therefore forced to continue the import of a large proportion of their requirements at premium prices.

Imported steel prices moved from a discount of 25% to 35% to a premium of 5% to 35% within two years. This occurred because of a world-wide surge in steel demand concurrent with a reduced rate of increase in Japanese production capacity. This led to the current world-wide shortage of steel production capacity. Also, major currency realignments forced up the price of imports to Canadian consumers. These changes in foreign exchange rates are illustrated in Exhibit XII, "Changes in Foreign Exchange Rates". The sharp increase in the value of the Japanese yen and German mark made steel imports from these countries more expensive in Canada.

7.2 U.S. Upper Midwest

The level of steel imports into the U.S. Upper Midwest is shown in Exhibit XVI, "Imports of Steel via North Dakota and Minnesota". Generally imports represent a much lower proportion of total apparent consumption in this U.S. region than in Western Canada. Approximately 19,000 tons, or 10% of total Upper Midwest C.R. sheet and strip consumption, was imported during 1972. Only about 6,000 tons, or less than 5% of total galvanized consumption, was imported. As indicated in the exhibit, a very large proportion of these imports are from Canada, particularly Ontario.

8. Growth Potential

The summary of western consumption shown in Exhibit XIV, "Apparent Consumption of Flat Rolled Steel Products in Western Canada", indicates that total sheet and strip market growth has been about 10.4% per year during the last five years. National growth rates for individual commodities are shown in Exhibit XV, "Apparent Consumption of Flat Rolled Steel Products in Canada". During the past five years both C.R. and galvanized consumption have increased at more than 10% per year.

We have estimated that the historical growth rate for cold rolled sheet and strip has been only about 3% to 4% per year. This rate is significantly below the national rate because few high growth C.R. steel consuming industries are located in Western Canada. It is unlikely that this rate will be exceeded during the next five years because H.R. sheet and strip surface finish is being improved which will encourage further substitution for the more expensive C.R. steels.

Analysis of galvanized consumption by type of industry is presented in Exhibit XVII, "Industrial Consumption of Galvanized Sheet and Strip in Western Canada". The metal fabricating industries are the single most important consumers of galvanized steel. Although culvert manufacturing accounts for about 25% to 30% of galvanized consumption, its growth rate has been only about 2% to 3% per year. However, with the likelihood of increased activity in the resource industries and a commensurate increase in highway construction, culvert demand could increase at a rate of 5% to 6% over the next five years.

Substantial amounts of galvanized steel is used by the construction industry as heavy and light gauge roofing, flooring or steel decks, wall cladding, weather stripping, flashing, and in the construction of agricultural buildings. Large amounts are also consumed in Manitoba for the manufacture of grain bins. We anticipate that the agricultural market will continue to

hold firm for the next two years and that there will be significantly increased construction activity during the next five years in Western Canada. Consequently, we expect that the demand for heavy and light gauge galvanized sheet and strip steel should increase by 6% to 8% during this period.

Although Stelco is actively promoting the use of galvanized steel floor joists for residential construction, we do not anticipate general acceptance by the construction industry for at least three years. Consequently increased steel usage in residential construction, including steel basements in Saskatchewan, will not have a significant impact on heavy gauge steel demand in Western Canada until at least 1977 or 1978.

9. Competitive Sources of Steel Products

9.1 Imported Steel

The two major factors that determine the prices of steel imports are the balance between world steel supply and demand, and changes in foreign exchange rates, particularly the Canadian dollar versus the Japanese yen.

Today there is a world-wide shortage of steel production capacity. In spite of the energy crisis and escalating prices of crude oil, the economies of developed countries are expected to expand during the next five years. This will support the current strong demand for steel products. Several other basic commodities are in short supply due to plant capacity limitations. Supply of these commodities can only be increased by heavy capital investment in new production facilities which in turn will consume large amounts of steel.

On the steel supply side, Japan has recently reduced its annual increase in steel production capacity from 15% per year to a longer term target of 5% per year. Furthermore, it seems likely that substantial increases in world steel production capacity will not occur before 1978. This high demand - tight supply situation should persist for at least three to four years maintaining the price of foreign made steel at a high level.

Significant adjustments in exchange rates can dramatically alter prices of imported steel in Western Canada. At this time it is very difficult to project with any confidence the direction or magnitude of exchange rates adjustments during the next five years. Assuming that there will be no drastic realignment of current exchange rates we expect that prices of imported steel will remain as high or higher than domestic prices during the next five years. Consequently IPSCO will probably have a good opportunity to enter the western cold rolled and galvanized sheet and strip markets.

9.2 Domestic Steel

In Canada there are only two producers of galvanized sheet and strip steel, Stelco and Dofasco in Hamilton. Both can supply galvanized steel from 8 to 30 gauge to widths of 60".

Although Dofasco has excess galvanizing capacity, it cannot increase galvanized production without decreasing the production of some other products since it is now producing at its maximum ingot capacity. Stelco faces the same production restrictions until late 1977 when its new steel complex on Lake Erie comes on stream.

There are three major suppliers of C.R. sheet and strip steel in Canada, Stelco, Dofasco and Algoma. As with galvanized production, C.R. steel production must compete with other products for ingot tons. However, Algoma will be increasing its steel making capacity by 1.3 million ingot tons before the end of 1975.

A summary of ingot ton production data for the three major steel producers is shown in Exhibit XVIII, "Canadian Steel Ingot Production". A schedule of announced steel making capacity increases over the next five years is shown in Exhibit XIX, "Projection of Steel Production Capacities in Ontario". These announced increases average 5.8% per year over the five year period.

If a major steel consuming project, such as the MacKenzie Valley pipeline, is initiated during this five year period it is unlikely that announced increases in domestic steel production capacities will be sufficient to meet total demand.

* * * *

The information presented in this report is based on careful research and is believed to be reliable and current as of March 6, 1974. Estimates and projections are subject to many variables which could quickly render specific conclusions invalid. In interpreting this report attention should be given to the underlying assumptions.

PRICE WATERHOUSE ASSOCIATES

OTTAWA, March, 1974

INDUSTRY PRODUCT CLASSIFICATION

BY GAUGE AND WIDTH

| FLAT ROLLED STEEL COMMODITY TERM | THICKNESS LIMITS FOR A GIVEN WIDTH RANGE | | | |
|--|---|--|--|--|
| | 8" or less | over 8" to 12" | over 12" to 48" | over 48" |
| Bar | Over 0.2030" 13/64" and over Heavier than #5 gauge | | | |
| Plate | | Over 0.2299" 15/64 and over Heavier than #4 gauge | | Over 0.1799" 3/16" and over Heavier than #7 gauge |
| Strip | 0.2030" and under Under 13/64" #5 gauge and lighter | 0.2299" and under 7/32" and under #4 gauge and lighter | | |
| Sheet | | | 0.2299" and under 7/32" and under #4 gauge and lighter | 0.1799" and under 11/64" and under #7 gauge and lighter |

STEEL CONSUMPTION FOR THE TOTAL MARKET

BY PRODUCT AND REGION

(Thousands of Tons)

| <u>STEEL PRODUCT</u> | <u>TOTAL CONSUMPTION</u> | <u>WESTERN CANADA</u> | <u>SELECTED STATES</u> |
|----------------------------|------------------------------|---------------------------|----------------------------|
| Plate | 495 | 365 | 130 |
| Hot Rolled Sheet & Strip | 273 | 144 | 129 |
| Cold Rolled Sheet & Strip | 207 | 20 | 187 |
| Galvanized Sheet & Strip | 253 | 136 | 117 |
| Hollow Structural Sections | 72 | 68 | 4 |
| TOTAL CONSUMPTION | 1,300 | 733 | 567 |

NOTE: 1. Flat rolled steel figures do not include steel used for the manufacture of pipes and tubes, or tinplate steel.

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TOTAL STEEL CONSUMPTION IN WESTERN CANADA

1973

BY PRODUCT AND PROVINCE

(Tons)

| <u>STEEL PRODUCT</u> | <u>WESTERN CANADA</u> | <u>BRITISH COLUMBIA</u> | <u>ALBERTA</u> | <u>SASKATCHEWAN</u> | <u>MANITOBA</u> | <u>NORTHWESTERN ONTARIO</u> |
|----------------------|---------------------------|-----------------------------|----------------|---------------------|-----------------|---------------------------------|
| Plate | 365,000 | 120,000 | 130,000 | 15,000 | 90,000 | 10,000 |
| H.R. Sheet & Strip | 144,000 | 55,000 | 20,000 | 16,000 | 50,000 | 3,000 |
| C.R. Sheet & Strip | 20,300 | 6,000 | 4,000 | 200 | 10,000 | 100 |
| Galvanized | 136,200 | 55,000 | 41,500 | 14,000 | 25,000 | 700 |
| Hollow Structurals | 67,500 | 10,000 | 20,000 | 6,500 | 30,000 | 1,000 |
| TOTAL CONSUMPTION | 733,000 | 246,000 | 215,500 | 51,700 | 205,000 | 14,800 |

- NOTE: 1. Flat rolled steel figures do not include steel used for the manufacture of pipes and tubes, or tinplate steel.
2. Approximately 75% of the C.R. Sheet & Strip and 19% of the Galvanized is imported.

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TOTAL STEEL CONSUMPTION IN SELECTED STATES

1973

BY PRODUCT AND STATE

(Tons)

| <u>STEEL PRODUCT</u> | <u>UPPER MIDWEST</u> | <u>MONTANA</u> | <u>N. DAKOTA</u> | <u>MINNESOTA</u> | <u>S. DAKOTA</u> | <u>WYOMING</u> |
|----------------------|--------------------------|----------------|------------------|------------------|------------------|----------------|
| Plate | 130,300 | 4,800 | 4,000 | 115,000 | 4,500 | 2,000 |
| H.R. Sheet & Strip | 128,900 | 2,000 | 2,500 | 120,000 | 3,500 | 900 |
| C.R. Sheet & Strip | 187,000 | 1,300 | 1,500 | 180,000 | 3,500 | 700 |
| Galvanized | 116,500 | 8,000 | 8,500 | 85,000 | 11,000 | 4,000 |
| Hollow Structural | 4,300 | 700 | 700 | 1,500 | 900 | 500 |
| TOTAL CONSUMPTION | 567,000 | 16,800 | 17,200 | 501,500 | 23,400 | 8,100 |

NOTE: Flat rolled steel figures do not include steel used for the manufacture of pipes and tubes, or tinplate steel.

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COLD ROLLED SHEET AND STRIP CONSUMPTION

1973

BY PRODUCT AND REGION
(Tons)

| <u>PRODUCT DETAILS</u> | | <u>WESTERN*</u> <u>CANADA</u> | <u>BRITISH</u> <u>COLUMBIA</u> | <u>ALBERTA</u> | <u>SASKATCHEWAN</u> | <u>MANITOBA</u> | <u>SELECTED**</u> <u>STATES</u> |
|------------------------|--------------|----------------------------------|-----------------------------------|----------------|---------------------|-----------------|------------------------------------|
| Width | 48" and less | 19,200 | 5,700 | 3,800 | 200 | 9,500 | 168,000 |
| | over 48" | 1,000 | 300 | 200 | NIL | 500 | 19,000 |
| Temper | Full hard | NIL | NIL | NIL | NIL | NIL | 19,000 |
| | Annealed | 20,200 | 6,000 | 4,000 | 200 | 10,000 | 168,000 |
| TOTAL CONSUMPTION | | 20,200 | 6,000 | 4,000 | 200 | 10,000 | 187,000 |

* Canadian total figures do not include Northwestern Ontario which accounts for less than 1% of total Western Canada cold rolled sheet and strip consumption.

** U.S. figures are estimates based on the Minnesota market which accounts for more than 96% of total Selected States cold rolled sheet and strip consumption.

GALVANIZED SHEET AND STRIP CONSUMPTION

1973

BY PRODUCT AND REGION

(Tons)

| <u>PRODUCT DETAILS</u> | | <u>WESTERN*</u> <u>CANADA</u> | <u>BRITISH</u> <u>COLUMBIA</u> | <u>ALBERTA</u> | <u>SASKATCHEWAN</u> | <u>MANITOBA</u> | <u>SELECTED**</u> <u>STATES</u> |
|------------------------|--------------|----------------------------------|-----------------------------------|----------------|---------------------|-----------------|------------------------------------|
| WIDTH | 48" AND LESS | 122,600 | 52,200 | 41,500 | 12,600 | 16,300 | 87,400 |
| | OVER 48" | 12,900 | 2,800 | NIL | 1,400 | 8,700 | 29,100 |
| GAUGE | 8 TO 16 | 50,000 | 19,300 | 14,500 | 11,200 | 5,000 | 23,300 |
| | 17 TO 30 | 85,500 | 35,700 | 27,000 | 2,800 | 20,000 | 93,200 |
| TOTAL CONSUMPTION | | 135,500 | 55,000 | 41,500 | 14,000 | 25,000 | 116,500 |

* Canadian total figures do not include Northwestern Ontario which accounts for less than 1% of total Western Canada galvanized consumption.

** U.S. figures are estimates based on the Minnesota market which accounts for 73% of total Selected States' galvanized consumption.

Price
Waterhouse
Associates

COMPARISON OF CURRENT CANADIAN AND U.S. STEEL PRICES

(Per cwt.)

| <u>PRODUCT DESCRIPTION</u> | <u>CANADIAN MILL PRICES</u> | | | <u>U.S. MILL PRICES</u> | |
|---------------------------------|-----------------------------|-----------------------------|--|---------------------------|-------------------------|
| | <u>DATE EFFECTIVE</u> | <u>CANADIAN DOLLARS</u> | <u>IN U.S. DOLLARS PLUS DUTY</u> | <u>DATE EFFECTIVE</u> | <u>U.S. DOLLARS</u> |
| Plate - base price | Jan. 1, 1974 | 7.85 | 8.65 | Jan. 1, 1974 | 9.15 |
| H.R. Sheet - Min. coil basis | Mar. 11, 1974 | 8.30 | 9.15 | Jan. 1, 1974 | 8.675 |
| C.R. Sheet - Min. coil basis | Feb. 4, 1974 | 10.00 | 11.07 | Oct. 1, 1973 | 10.30 |
| Galvanized - G90 coating | | | | | |
| 48" X 22 gauge x coil | Jan. 28, 1974 | 12.10 | 13.50 | Jan. 1, 1974 | 12.775 |
| 48" X 10 gauge x coil | Jan. 28, 1974 | 10.45 | 11.67 | Jan. 1, 1974 | 11.075 |
| Hollow Structurals - base price | Jan. 1, 1974 | 11.50 | 11.89 | | 11.50 |

SOURCE: The Steel Company of Canada and U.S. Steel International, Toronto.

- NOTE:
1. Canadian prices converted into U.S. dollars using an exchange rate of \$0.9755 Canadian per dollar U.S.
 2. Canadian and U.S. prices are F.O.B. mill.

Price
Waterhouse
Associates

FREIGHT RATES TO CANADIAN DESTINATIONS

(Per cwt.)

| <u>STEEL MILL LOCATION</u> | <u>DESTINATIONS</u> | | | | |
|--------------------------------|------------------------|-----------------|---------------|----------------|---------------------|
| | <u>THUNDER BAY</u> | <u>WINNIPEG</u> | <u>REGINA</u> | <u>CALGARY</u> | <u>VANCOUVER</u> |
| Hamilton | (\$1.20) | \$1.82 | \$2.46 | \$2.76 | \$2.20 ² |
| Sault Ste. Marie | (0.98) | (1.36) | (1.98) | (2.35) | 2.12 |
| Regina | (1.04) | (0.42) | - | (0.66) | (1.23) 0.89 |

SOURCE: The Steel Company of Canada
The Algoma Steel Corporation
Interprovincial Steel and Pipe Corporation

- NOTE:
1. Above rates are based on a minimum railcar load of 80,000 pounds except for figures in brackets which are truck rates generally based on a 40,000 pound minimum load.
 2. Hamilton to Vancouver rates are currently being increased; the above rate is an estimate and will probably be increased by a further 20% in July, 1974.
 3. Rates are current as of March 6, 1974.

Price
Waterhouse
Associates

FREIGHT RATES TO U.S. DESTINATIONS

(Per Cwt.)

| <u>STEEL MILL LOCATION</u> | <u>DESTINATIONS</u> | | | | |
|--------------------------------|----------------------------------|----------------------------------|----------------------------|-----------------------------|-----------------------------|
| | <u>MINNEAPOLIS MINNESOTA</u> | <u>SIoux FALLS S. DAKOTA</u> | <u>FARGO N. DAKOTA</u> | <u>CHEYENNE WYOMING</u> | <u>BILLINGS MONTANA</u> |
| CHICAGO, ILLINOIS | \$0.69 | \$0.90 | \$1.03 | \$1.40 | \$2.17 |
| REGINA, SASKATCHEWAN | 1.80 | (1.64) | (1.17) | (1.67) | (1.11) |
| SAULT STE. MARIE, ONTARIO | 0.92 | | | | |
| PROVO, UTAH | | | 2.43 | 0.90 | 1.44 |
| FONTANA, CALIFORNIA | | | | 2.55 | 1.89 |
| OAKLAND, CALIFORNIA | | | | | 1.86 |

SOURCE: Burlington Northern Inc.

Interprovincial Steel and Pipe Corporation

- NOTES:
1. Above rates are based on a minimum railcar load of 80,000 pounds except for figures in brackets which are truck rates based on a 40,000 pound minimum load.
 2. All rates are current as of March 6, 1974 and include the 2.1% railway surcharge effective February 1, 1974.

IMPORT TARIFFS ON STEEL PRODUCTS ENTERING
THE UNITED STATES

| <u>PRODUCT DESCRIPTION</u> | | <u>ITEM NUMBER</u> | <u>RATES OF DUTY</u> | |
|----------------------------|-------------------------------------|------------------------|--------------------------|------|
| Hot Rolled | Plates | 6088420 | 7.5% | |
| | Sheets (black) | 6088440 | 7.5% | |
| | Sheets (pickled) | 6088742 | 8.0% | |
| Cold Rolled | Sheets | 6088744 | 8.0% | |
| Galvanized | Sheets valued over \$10/cwt. | 6089530 | 10¢/cwt. +8.0% | |
| | Sheets valued not over \$10/cwt. | 6089430 | 9.0% | |
| Strips | Lighter than 31 gauge | hot rolled | 6090220 | 6.0% |
| | | cold rolled | 6090240 | 6.0% |
| | 31 to 18 gauge | hot rolled | 6090320 | 8.5% |
| | | cold rolled | 6090340 | 8.5% |
| | Heavier than 18 gauge | hot rolled | 6090420 | 9.5% |
| | | cold rolled | 6090440 | 9.5% |
| Hollow Structurals | | | 10¢/cwt. | |

Source: Tariff schedules of the United States, annotated (1972), Schedule 6

L A I D D O W N P R I C E O F
C. R. AND GALVANIZED SHEET AND STRIP
(Per Cwt.)

| <u>DESTINATION</u> | <u>STEEL MILL LOCATION</u> | | | | |
|------------------------|----------------------------|-------------------------|----------------|----------------|----------------|
| | <u>HAMILTON</u> | <u>SAULT STE. MARIE</u> | <u>REGINA</u> | <u>CHICAGO</u> | <u>FONTANA</u> |
| Vancouver | | | | | |
| C.R. S & S | \$12.20 | \$12.12 | <u>\$10.89</u> | \$ | \$ |
| Galv. 22 gauge | 14.30 | - | <u>12.99</u> | | |
| Winnipeg | | | | | |
| C.R. S & S | 11.82 | 11.36 | <u>10.42</u> | | |
| Galv. 22 gauge | 13.92 | - | <u>12.52</u> | | |
| Thunder Bay | | | | | |
| C.R. S & S | 11.20 | <u>10.98</u> | 11.04 | | |
| Galv. 22 gauge | 13.30 | - | 13.14 | | |
| Minneapolis, Minn. | | | | | |
| C.R. S & S | | 11.99 | 12.87 | <u>10.99</u> | |
| Galv. 22 gauge | | - | 15.30 | <u>13.47</u> | |
| Sioux Falls, S. Dakota | | | | | |
| C.R. S & S | | | 12.71 | <u>11.20</u> | |
| Galv. 22 gauge | | | 15.14 | <u>13.68</u> | |
| Fargo, N. Dakota | | | | | |
| C.R. S & S | | | 12.24 | <u>11.33</u> | |
| Galv. 22 gauge | | | 14.67 | <u>13.81</u> | |
| Cheyenne, Wyoming | | | | | |
| C.R. S & S | | | 12.74 | <u>11.70</u> | 12.85 |
| Galv. 22 gauge | | | 15.17 | <u>14.18</u> | 15.33 |
| Billings, Montana | | | | | |
| C.R. S & S | | | <u>12.18</u> | 12.47 | 12.19 |
| Galv. 22 gauge | | | <u>14.61</u> | 14.95 | 14.67 |

- Note:
1. The lowest laid down prices are underlined.
 2. Steel prices from Exhibit VII.
 3. Transportation rates from Exhibits VIII and IX.
 4. Rates of duty from Exhibit X.

FOREIGN EXCHANGE RATESCHANGES IN QUARTERLY RATESFROM 1969 AVERAGE MID-RATES

(In Canadian Dollars)

| | <u>U.S. DOLLAR</u> | <u>JAPANESE YEN</u> | <u>BRITISH POUND</u> | <u>GERMAN MARK</u> |
|---------------------------|------------------------|-------------------------|--------------------------|------------------------|
| 1969 AVERAGE MID-RATES | \$1.0768 | \$0.003005 | \$2.5739 | \$0.2746 |
| 1970 1st Quarter | -0.4% | -0.2% | 0.2% | 6.1% |
| 2nd Quarter * | -2.4 | -1.5 | -0.9 | 6.3 |
| 3rd Quarter | -5.0 | -5.0 | -5.1 | 2.6 |
| 4th Quarter | -5.3 | -5.1 | -5.4 | 2.1 |
| 1971 1st Quarter | -6.3 | -5.1 | -5.4 | -0.1 |
| 2nd Quarter | -6.0 | -5.4 | -4.9 | 2.3 |
| 3rd Quarter ** | -5.7 | -2.9 | -3.6 | 8.3 |
| 4th Quarter | -7.1 | 2.3 | -2.5 | 10.4 |
| 1972 1st Quarter | -6.9 | 8.9 | 1.2 | 14.3 |
| 2nd Quarter | -8.3 | 6.4 | -0.2 | 13.3 |
| 3rd Quarter | -8.7 | -2.2 | -6.6 | 12.6 |
| 4th Quarter | -8.2 | -1.6 | -9.2 | 12.4 |
| 1973 1st Quarter *** | -7.6 | 18.9 | -6.3 | 21.2 |
| 2nd Quarter | -7.2 | 25.7 | -1.7 | 33.4 |
| 3rd Quarter | -7.0 | 26.1 | -3.4 | 52.8 |
| 4th Quarter | -7.3 | 21.0 | -7.6 | 43.1 |
| SELLING RATES | | | | |
| MARCH 1, 1974 | \$0.9755 | \$0.003360 | \$2.2232 | \$0.3675 |
| CHANGE FROM 1969 | | | | |
| AVERAGE MID-RATES | -9.4% | 11.8% | -13.6% | 33.8% |

SOURCE: Foreign Exchange Department, The Royal Bank of Canada

* Canadian dollar floated in May, 1970

** President Nixon introduced wage and price controls on Aug. 15, 1971

*** Japan floated the yen in February, 1973

STEEL IMPORTS THROUGH BRITISH COLUMBIA PORTS

1972-1973

BY PRODUCTS

(Tons)

| <u>PRODUCTS AND DIMENSIONS</u> | | <u>1972</u> | <u>1973</u> |
|--------------------------------|---------------|---------------|---------------|
| Plate | Over 60" | 116,250 | 141,000 |
| | 60" and under | <u>52,250</u> | <u>47,300</u> |
| Total | | 168,500 | 188,300 |
| Hot Rolled Sheet & Strip | Over 51" | 13,900 | 17,100 |
| | 51" and under | <u>83,450</u> | <u>71,800</u> |
| Total | | 97,350 | 88,900 |
| Cold Rolled Sheet & Strip | Over 51" | 300 | 220 |
| | 51" and under | <u>13,450</u> | <u>14,900</u> |
| Total | | 13,750 | 15,120 |
| Total Imports | | 318,400 | 318,420 |

Source: Statistics Canada by special request

Note: These figures include steel used in the manufacture of pipes and tubes.

APPARENT CONSUMPTION OF FLAT ROLLED STEEL PRODUCTS IN WESTERN CANADA

1968-1972

(Thousands of Tons)

| <u>YEAR</u> | <u>PLATE</u> | | | <u>SHEET AND STRIP</u> | | |
|-------------|-----------------------|------------------------------------|--------------------|------------------------|------------------------------------|--------------------|
| | <u>WESTERN CANADA</u> | <u>PROPORTION TOTAL CANADA (%)</u> | <u>IMPORTS (%)</u> | <u>WESTERN CANADA</u> | <u>PROPORTION TOTAL CANADA (%)</u> | <u>IMPORTS (%)</u> |
| 1968 | 447 | 39.0 | 13.7 | 187 | 6.8 | 25.9 |
| 1969 | 515 | 44.3 | 26.5 | 267 | 8.6 | 38.2 |
| 1970 | 482 | 37.0 | 22.1 | 216 | 7.2 | 31.2 |
| 1971 | 508 | 39.9 | 23.7 | 257 | 6.7 | 42.0 |
| 1972 | 615 | 43.4 | 28.2 | 312 | 6.3 | 50.8 |

GROWTH RATES

| | <u>PLATE</u> | <u>SHEET AND STRIP</u> |
|---------|--------------|------------------------|
| 1968-72 | 6.4% | 10.4% |

Source: Statistics Canada's special reports, "Regional Distribution of Domestic Rolled Steel Shipments".
Import data obtained by special request from Statistics Canada.

- Notes:
1. Values include steel for the manufacture of pipes and tubes.
 2. Sheet and Strip volumes include Hot Rolled, Cold Rolled, Galvanized and Tinplate steel.
 3. Approximately 75% of imported Plate is greater than 60" wide.
 4. Approximately 17% of imported Sheet and Strip is greater than 51" wide.

APPARENT CONSUMPTION OF FLAT ROLLED STEEL PRODUCTS IN CANADA

1963-1973

(Thousands of Tons)

| <u>YEAR</u> | <u>PLATE</u> | | <u>H.R. SHEET AND STRIP</u> | | <u>C.R. SHEET AND STRIP</u> | | <u>GALVANIZED</u> | |
|-------------|---------------|--------------------------|-----------------------------|--------------------------|-----------------------------|--------------------------|-------------------|--------------------------|
| | <u>VOLUME</u> | <u>PER CENT IMPORTED</u> | <u>VOLUME</u> | <u>PER CENT IMPORTED</u> | <u>VOLUME</u> | <u>PER CENT IMPORTED</u> | <u>VOLUME</u> | <u>PER CENT IMPORTED</u> |
| 1963 | 785 | 9.8 | 900 | 10.1 | 630 | 3.2 | 347 | 1.5 |
| 1964 | 914 | 8.0 | 1,095 | 17.7 | 735 | 2.7 | 415 | 1.5 |
| 1965 | 1,144 | 19.0 | 1,249 | 16.8 | 828 | 4.0 | 468 | 1.7 |
| 1966 | 1,074 | 17.0 | 1,114 | 7.2 | 801 | 2.9 | 488 | 1.5 |
| 1967 | 1,031 | 16.1 | 1,123 | 7.3 | 766 | 2.8 | 463 | 1.6 |
| 1968 | 1,147 | 13.6 | 1,374 | 6.9 | 873 | 3.4 | 513 | 1.4 |
| 1969 | 1,163 | 20.9 | 1,536 | 13.1 | 1,004 | 9.2 | 553 | 3.0 |
| 1970 | 1,305 | 11.6 | 1,532 | 9.5 | 911 | 5.3 | 562 | 3.1 |
| 1971 | 1,273 | 19.0 | 2,016 | 19.9 | 1,201 | 17.8 | 649 | 7.5 |
| 1972 | 1,419 | 21.2 | 2,355 | 18.4 | 1,309 | 19.0 | 695 | 0.2 |
| 1973 | 1,488 | 19.4 | 2,693 | 12.2 | 1,399 | 14.5 | 876 | 4.2 |

GROWTH RATES

| | | | | |
|---------|------|-------|-------|-------|
| 1963-73 | 5.4% | 10.5% | 7.5% | 7.7% |
| 1968-73 | 5.5% | 15.1% | 10.3% | 10.6% |

Sources: Statistics Canada Catalogues 41-001 and 65-007, December Issues 1963 to 1973.

- Notes:
1. Includes steel for the manufacture of pipes and tubes.
 2. Cold Rolled includes electrical steel (silicon steel) and tinplate steel.

IMPORTS OF STEEL VIA NORTH DAKOTA AND MINNESOTA

1972

(Tons)

| <u>STEEL PRODUCT</u> | <u>IMPORTS</u> |
|----------------------|----------------|
| Plates | 2,200 |
| H.R. Sheet and Strip | 12,350 |
| C.R. Sheet and Strip | 19,100 |
| Galvanized Sheet | 5,800 |
| | |
| TOTAL | 39,450 |

Source: U. S. Department of Commerce; Minneapolis Regional Office and
Canadian Consulate in Minneapolis.

Notes:

1. Approximately 29,500 tons or 75% of the total were imported
from Canada; 99.7% of this amount from Ontario.

INDUSTRIAL CONSUMPTION OF GALVANIZED SHEET AND STRIP

IN WESTERN CANADA

BY INDUSTRIAL CLASSIFICATION AND REGION

| <u>INDUSTRY</u> | <u>PRAIRIES</u> | <u>BRITISH COLUMBIA</u> |
|--|-----------------|-------------------------|
| <u>Metal Fabricating Industries</u> | <u>91%</u> | <u>96%</u> |
| Boiler and Plate Works | | |
| Fabricated Structural Metal | 3 | 1 |
| Ornamental and Architectural | 1 | |
| Metal Stamping, Pressing and Coating | 76 | 94 |
| Hardware, Tool and Cutlery | | |
| Heating Equipment Mfg. | 3 | 1 |
| Machine Shops | | |
| Misc. Metal Fabricating Ind. | 8 | |
| <u>Machinery Industries</u> | <u>5%</u> | <u>nil</u> |
| Agricultural Implement | 5 | |
| Misc. Machinery and Equipment Mfg. | | |
| Comm. Refrigeration and Air Conditioning | | |
| Office and Store Machinery | | |
| <u>Transportation Equipment Industries</u> | <u>3%</u> | <u>2%</u> |
| Truck Body and Trailer Mfg. | 3 | 2 |
| Motor Vehicle Parts and Accessories | | |
| Railroad Rolling Stock | | |
| Shipbuilding and Repair | | |
| Boatbuilding and Repair | | |
| Misc. Vehicle Mfg. | | |
| <u>Electrical Products Industries</u> | <u>1%</u> | <u>2%</u> |
| Small Electrical Appliances | | 1 |
| Lighting Fixtures | | |
| Communications Equipment | | |
| Electrical Industrial Equipment | | 1 |
| Electric Wire and Cable | | |
| Misc. Electrical Products | 1 | |

Source: Statistics Canada regional consumption data for 1971 by special request

CANADIAN STEEL INGOT PRODUCTION

1963-1974

(Thousands of Tons)

| <u>YEAR</u> | <u>STELCO</u> | <u>DOFASCO</u> | <u>ALGOMA</u> | <u>TOTAL BIG 3</u> | <u>TOTAL CANADA</u> | <u>PROPORTION BIG 3</u> |
|-------------|---------------|----------------|---------------|------------------------|-------------------------|-----------------------------|
| 1963 | 3,110 | 1,391 | 2,092 | 6,593 | 8,065 | 81.7% |
| 1964 | 3,479 | 1,584 | 2,301 | 7,364 | 8,969 | 82.1 |
| 1965 | 3,846 | 1,785 | 2,486 | 8,117 | 9,866 | 82.3 |
| 1966 | 3,794 | 1,877 | 2,347 | 8,018 | 9,814 | 81.7 |
| 1967 | 3,966 | 1,879 | 2,073 | 7,918 | 9,551 | 82.9 |
| 1968 | 4,485 | 2,180 | 2,261 | 8,926 | 11,109 | 80.3 |
| 1969 | 3,670* | 2,279 | 1,725* | 7,674 | 10,152 | 75.6 |
| 1970 | 4,801 | 2,322 | 2,495 | 9,618 | 12,154 | 79.1 |
| 1971 | 4,673 | 2,468 | 2,360 | 9,501 | 11,964 | 79.4 |
| 1972 | 5,031 | 2,773 | 2,426 | 10,230 | 12,894 | 79.3 |
| 1973 | 5,723 | 3,036 | 2,650 | 11,409 | 14,550 | 78.4 |
| 1974** | 5,850 | 3,250 | 2,850 | 11,950 | 15,200 | 78.6 |

GROWTH RATES

| | | | | | |
|---------|------|------|----|------|------|
| 1963-73 | 5.1% | 7.3% | 1% | 4.5% | 5.1% |
| 1968-73 | 6.3% | 6.8% | 5% | 6.1% | 6.0% |

Sources: Company Annual Reports and Research Brief by Pitfield Mackay
Ross & Company Limited

* Operations interrupted by strikes in 1969

** Estimated

PROJECTION OF STEEL PRODUCTION CAPACITIES IN ONTARIO

1972-1978

(Millions of Ingot Tons)

| <u>YEAR</u> | <u>STELCO</u> | <u>DOFASCO</u> | <u>ALGOMA</u> | <u>TOTAL</u> | <u>INCREASE OVER PREVIOUS YEAR</u> |
|-------------|---------------|----------------|---------------|--------------|--|
| 1972 | 5.4 | 2.9 | 2.6 | 10.9 | |
| 1973 | 5.7 | 3.0 | 2.7 | 11.4 | 4.6% |
| 1974 | 5.9 | 3.3 | 3.0 | 12.2 | 7.0% |
| 1975 | 6.0 | 3.4 | 4.0 | 13.4 | 9.8% |
| 1976 | 6.2 | 3.5 | 4.1 | 13.8 | 3.0% |
| 1977 | 6.6 | 3.6 | 4.2 | 14.4 | 4.3% |
| 1978 | 7.3 | 3.6 | 4.3 | 15.2 | 5.6% |

SOURCES: Statistics Canada and Company sources

- NOTE:
1. The average projected growth rate for producers' steel ingot capacities from 1972 to 1978 is approximately 5.8% per year.
 2. Since Dofasco has not announced plans for a new melt shop and hot rolling mill, we have assumed no substantial capacity increases for 1977 and 1978.

LIST OF ORGANIZATIONS CONTACTED

STEEL MILLS

The Steel Company of Canada, Hamilton
Dominion Foundries and Steel Limited, Hamilton
The Algoma Steel Corporation Limited, Sault Ste. Marie
Interprovincial Steel and Pipe Corporation Limited, Regina
U.S. Steel International, Toronto

STEEL SERVICE CENTRES

Brayshaw Steel Limited, Thunder Bay
Dominion Bridge Company Limited, Winnipeg
Drummond, McCall & Co. Limited, Winnipeg
Russelsteel Limited, Winnipeg
Wilkinson Company Limited, Saskatoon
Shragg Steel, Regina
Russelsteel Steel Ltd, Regina
Dominion Bridge Company Limited, Regina
Westeel-Rosco Limited, Regina
Drummond, McCall & Co. Limited, Calgary
Mueller Metals Limited, Calgary
Quadra Steel Limited, Calgary
Russelsteel (Alberta) Limited, Calgary and Edmonton
Dominion Bridge Co. Limited, Calgary and Edmonton
Wilkinson Company Limited, Calgary and Edmonton
A.C. Leslie & Co. Ltd., Edmonton
Dominion Bridge Company Ltd., Vancouver
A.C. Leslie & Co. Ltd., Vancouver
A.J. Forsyth & Co. Ltd., Vancouver
MacQuarrie Steel Limited, Burnaby
Quadra Steel Limited, Vancouver
Westeel-Rosco Limited, Vancouver

STEEL SERVICE CENTRES, CONT'D.

Wilkenson Company Limited, Vancouver
Lambton Steel Limited, Vancouver
Joseph T. Ryerson & Son Inc., Minneapolis, Minn.
Fargo Steel Products Co., Fargo, N. Dakota
Tri-State Steel Co., Cheyenne, Wyoming
Northland Steel Co., Billings, Montana
Paper Calmenson & Co., St. Paul, Minn.
Burkhardt Steel, Denver, Colo.
Egger Steel Co., Sioux Falls, S. Dakota

STEEL USERS

Thunder Bay

Canadian Car Division, Hawker Siddeley

Manitoba

Canadian Co-operative Implements, Ltd., Winnipeg
Versatile Manufacturing Ltd., Winnipeg
Behlen-Wicks Company Ltd., Brandon
Flyer Industries, Fort Gary
Canadian Steel Tank, Ltd., Brandon
Metal-Pac Mfg. Ltd., Fort Gary
Empire Sheet Metal Mfg. Co. Ltd., Winnipeg
Inland Steel & Forgings Ltd., Winnipeg
Canadian Rogers Western (1971) Ltd., Winnipeg
Elite Metal Products, Ltd., Winnipeg
MacDonald Brothers Sheet Metal, Winnipeg
Killbery Ind. (1971) Ltd., Winnipeg
National Products Ltd., Winnipeg
Kipp Kelly Limited, Winnipeg
Joy Manufacturing Co. (Canada) Ltd., Winnipeg
Westfield Industries Ltd., Rosenort
Farm King Limited, Morden
Big "M" Mfg. Ltd., Neepawa

STEEL USERS, CONT'D.

Manitoba, continued

Dalman Enterprises Ltd., Killarney
Dominion Bridge Co. Ltd., Fabricating Division, Winnipeg
C.J. Malach Co. Ltd., Fort Whyte

Saskatchewan

Westeel - Rosco Limited, Regina
Armco Canada Ltd., Regina
Fairford Industries, Moose Jaw
Richardson Culvert, Saskatoon
Rock-O-Matic Ltd., Varda
Anderson Manufacturing Ltd., Southey
Degelman Industries Ltd., Regina
Morris Rod Weeder, Yorkton
Leon's Mfg. Co. Ltd., Yorkton
Harding Industries Limited, Saskatoon
Fulco Metal Products Ltd., Regina
Inland Metal Mfg. Co. Ltd., Regina
Crown Mfg. Ltd., Regina
Western Roto Thresh Ltd., Saskatoon
Westank Industries Ltd., Regina
Craik Mfg. Co. Ltd., Craik
Sakundiak Farm Equipment, Regina
Mel-Com Industries Ltd., Imperial
Centra Canadian Structures, Limited, Regina
Signal Industries Ltd., Regina
Regina Iron Works Ltd., Regina

STEEL USERS, CONT'D.

Alberta

Armco Canada Ltd., Edmonton
Tested Truss, Calgary
Edwards Rod Weeder Ltd., Lethbridge
Westland Metals Ltd., Calgary
EZEE On Mfg. Ltd., Vegreville
Kaps Mfg. Ltd., Edmonton
Wenco Industries Limited, Calgary
Great West Steel Ind. Ltd., Calgary
Trus Joist (Western) Ltd., Claresholm
Universal Industries Ltd., Lloydminster
Maloney Steel - Crafts Ltd., Calgary
Int'l Cooperage Co., Lloydminster
Kirchner Machine Ltd., Lethbridge
Babco Electric and Engine Ltd., Calgary
Corod Mfg. Ltd., Edmonton
Triangle Steel Fabricators Ltd., Edmonton
Westal-Rosco Ltd., Calgary

British Columbia

TPL Industries Ltd., Burnaby
Coldform Industries Ltd., Richmond
Hayes Trucks Ltd., Vancouver
Freightliner of Canada Ltd., Burnaby
Bradson Machine Ltd., Vancouver
Ahoy Industrial Corp. Ltd., N. Vancouver
Moore Canada Ltd., Richmond
Elliott Steel Ltd., Vancouver
Dominion Bridge Co. Ltd., Vancouver
D. Tidy Welders, Vancouver
Monarch Steelcraft Ltd., Vancouver

STEEL USERS, CONT'D.

British Columbia

Sandford Pearce Ltd., Vancouver
Jasco Mfg. Ltd., Burnaby
Lincon Steel Products Ltd., Richmond
Canwest Metal Sections Ltd., Granville Island
Armco Canada Ltd., Vancouver
Spir-L-OK Ind., Vancouver
Synkoloid Metal Prod., Vancouver

U.S. Upper Midwest

Sioux Steel Co., Sioux Falls, S. Dakota
Schwartz Farm Machinery, Sioux Falls, S. Dakota
Empire Steel Manufacturing Co., Billings, Montana
Marketing Specialities & Mfg., Billings, Montana
Darbo Development Co., Billings, Montana
Westeel-Rosco, Fargo, N. Dakota
H.V. Johnson, Fargo, N. Dakota
Tri-State Steel Co., Cheyenne, Wyoming
Metal-Matic Inc., Minneapolis, Minn.
Tubeco Division Hofmann Ind., Owatonna, Minn.

Other Organizations

Burlington Northern Inc., Minneapolis, Minn.
Canadian Consulate & Trade Commission, Minneapolis, Minn.
U.S. Department of Commerce, Minneapolis, Minn.
Business & Industry Magazine, Des Moines, Iowa
National Small Business Administration, Washington, D.C.
Statistics Canada, Ottawa
The Royal Bank of Canada, Toronto
Canadian Steel Service Centre Institute, Toronto
Pitfield, Mackay, Ross & Company Limited, Toronto



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