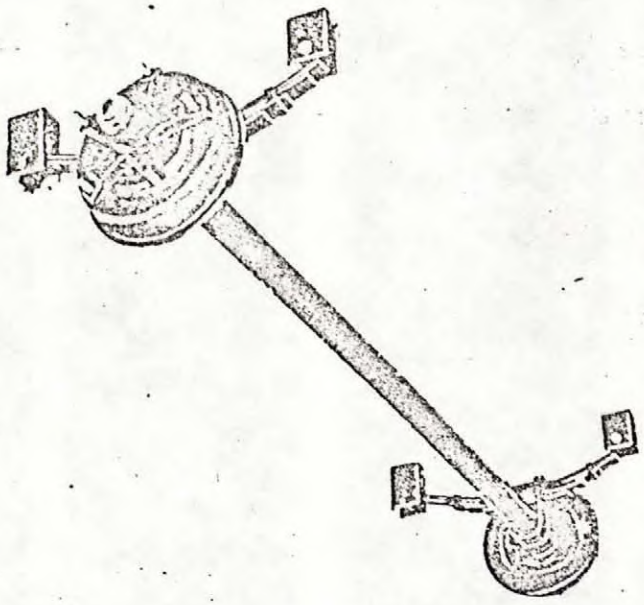
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION

STUDY OF OPPORTUNITIES IN NON-AUTOMOTIVE AXLES

FEBRUARY 1973



Regional Economic Expansion
Expansion Économique Régionale

PLEASE NOTE

This report has been edited, where necessary, to remove comments and data that are classed as confidential. In the interest of efficiency, this has been done by simply removing small sections of the report. As a consequence, there are some blank spots which, we hope, will not interfere with the readability of the report.

Department of Regional Economic Expansion

NON-AUTOMOTIVE AXLES

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NON-AUTOMOTIVE AXLES

SUMMARY

The consumption of non-automotive axles in Canada is estimated at about 110,000 units in 1972; this figure is expected to grow at over 10% annually over the next five years.

Some 60% of consumption is supplied by imports, principally from 3 U.S. manufacturers. These firms have long enough production runs to enable them to be price competitive in Canada, in spite of the 17½% tariff.

Mobile homes account for an estimated 32% of axle consumption, tent trailers 27%, travel trailers 23%, and boat and snowmobile trailers 9% each.

Six Canadian companies supply the estimated 40% of axles made in Canada.

Since sales of mobile homes tend to be seasonal because of the long Canadian winter, most companies make a wide range of products besides axles (see Appendix A).

Five of these companies are located in Ontario, and one also has a plant in Alberta. One company is in Winnipeg. Generally, the companies appear to be located close to their major customers. We were informed that transportation costs form a significant proportion of direct costs.

Capital requirements for the machine shop equipment required for making axles do not appear to be high (a figure of $500-750,000 was mentioned to us by one respondent, to cover the cost of machinery) and axle manufacture is fairly capital intensive. However, labour costs can have a significant effect on profits because most workers are reported to be unionized. Research and development expenditures would not be likely to be high, as there is not said to be very rapid technological change in axles. But a potential axle manufacturer must have sufficient engineering capability to meet the high quality standards imposed by the federal government on axle assemblies.

In conclusion, it does not appear that the Canadian market is large enough to justify the entry of a new company making axles. The opportunity appears to be for existing machine shops with the necessary equipment for axle manufacture to add axles to their present product line. This possibility should be explored with existing machine shops in the development regions.

BACKGROUND

Axle assemblies generally consist of:

a) tubular constructed axles of high tensile strength

b) springs which usually are multileaf but may be monoleaf

c) electric or hydraulic brakes

d) hubs

e) associated hardware (hangers, shackles, U-bolts, etc.)

For mobile homes, axle assemblies are generally of the tandem variety; however, for the larger homes, triple assemblies are not uncommon. For example, one mobile home manufacturer interviewed has historically purchased triple and tandem assemblies in a ratio of 40:60. However, if the Federal Government passes the proposed law allowing 14 foot wide mobile homes, the manufacturers will probably use a substantially greater number of triple assemblies.

SHIPMENTS OF MOBILE HOMES IN CANADA
1963-1972

	Domestic (Units)	Imports (Units)	Consumption (Units)
1963	1,562	1,513	3,075
1964	2,152	1,960	4,112
1965	3,395	1,784	5,179
1966	3,215	1,473	4,688
1967	4,362	2,284	6,646
1968	6,302	2,848	9,150
1969	9,151	3,602	12,753
1970	9,391	2,948	12,339
1971	(1) 14,500	3,986	18,386
1972	(2) 18,000	(2) 4,200	22,200

Source: Canadian Mobile Home & Travel Trailer Association (compiled from Statistics Canada)

(1) Estimated by CMHTTA
(2) Based on estimate by an industry source

MARKET POTENTIAL

1. Composition by Type of User

Current demand for axles comes from 5 sources and has been estimated as follows:

User Industry	No. of Units	No. of Axles	% of Total
Mobile Homes	18,000 assemblies/year	36,000 axles	32%
Travel Trailers	20,000 assemblies/year	25,000 axles	23%
Tent Trailers	(singles)	30,000 axles	27%
Boat Trailers	(singles)	10,000 axles	9%
Snowmobile Trailers	(singles)	10,000 axles	9%
Total		111,000 axles	100%

2. Canadian Produced Axles versus Imports

Published figures are not available for axle shipments or imports. However, industry sources interviewed said that an approximation of the breakdown between domestic and import purchases would be:

Canadian produced	40% (by value)
Imports	60%
Total	100%

3. Growth of Mobile Home and Travel Trailer Industry

The largest demand for axles in terms of value comes from the mobile home and travel trailer industry. Growth in mobile home sales is currently projected by informed commentators at 12% annually to 1980. As can be seen from the table opposite, domestic production of mobile homes has risen from 1,562 units in 1963 to 18,000 units (estimated) in 1972.

ANNUAL PRODUCTION AND IMPORTS OF TRAVEL TRAILERS IN CANADA
1963-1972

	Domestic (Units)	Imports (Units)	Consumption (Units)
1963	5,482	* 600	6,082
1964	7,474	*1,000	8,474
1965	8,661	*1,500	10,161
1966	7,120	2,067	9,187
1967	12,838	2,782	15,620
1968	10,550	2,586	13,136
1969	14,668	3,082	17,750
1970	13,513	2,682	16,195
1971	18,250	3,224	21,474
1972	*21,900	*4,000	25,900

Source: Canadian Mobile Home and Travel Trailer Association (compiled from Statistics Canada)

* Estimated by CMHTTA

If current import rates of 20 percent of total sales of mobile homes remain constant, this would mean an annual production figure of about 42,000 units by 1980. Translating this into sales of axle assemblies, using 2 axles as an average figure for mobile homes, this would mean that about 84,000 axles would be demanded for the production of mobile homes alone in 1980. Based on historical data (see table opposite), and present industry conditions, a 10 percent rate of growth for travel trailers, tent trailers, and boat trailers seems likely to continue to 1980. Total demand (domestic production plus imports) for axles in 1980 would therefore be distributed as follows if current trends continue:

User Industry	No. of Units	No. of Axles	% of Total
Mobile Homes	42,000 assemblies	84,000 axles	34%
Travel Trailers	41,500 assemblies	53,600 axles	22%
Tent Trailers	(singles)	64,300 axles	26%
Boat Trailers	(singles)	21,450 axles	9%
Snowmobile Trailers	(singles)	21,450 axles	9%
Total		244,800 axles	100%

SUPPLY

1. Imports

Virtually all of the imports of axles come from the United States. American firms are able to sell in Canada at prices slightly lower than those of Canadian manufacturers even after the imposition of a 17½% import tariff. The principal U.S. firms that compete in Canada are:

1. Dexter Axle
2. Kelsey-Hayes
3. Phillips Industries

2. Domestic

Canadian produced axles are manufactured by six firms in Canada:

1. Aurora Tool and Manufacturing Ltd. - Oakville, Ontario and Claresholm, Alberta
2. Canadian Tool & Die Works - Winnipeg, Manitoba
3. Ingersoll Machine and Tool Co. Ltd. - Ingersoll, Ontario
4. Morco Products Ltd. - Kingston, Ontario
5. McCoy Machinery & Supply Co. Ltd. - Troy, Ontario
6. Otaco Ltd. - Orillia, Ontario

(See Appendix A for further details of these companies).

Most of the other producers of axles have a variety of products, some of which are not related to the mobile home, travel trailer, or recreational trailer industries.

Suppliers generally tend to locate near their largest markets which consist of mobile home and travel trailer manufacturers. These companies are mainly concentrated in Ontario and Alberta.

MARKETING CHARACTERISTICS

1. Buying Practices

Purchases of axles, and axle assemblies are contracted for, as a rule, in truckload lots. About 98 percent of purchases appear to be made this way. Larger quantities are being ordered at a time because mobile home and travel trailer manufacturers are turning more toward a smoothly functioning assembly line operation in order to reduce their own unit costs.

2. Determining Factors

Pricing is a major factor in competition. The industry practice involves quotation for truckloads of axles. Unit prices are therefore dependent upon the specific characteristics of the particular axles contracted for as well as the quantity purchased at one time. While individual quotations are kept highly confidential, thereby obviating reference to a representative or list price, it can be said that complete tandem axle assemblies, depending upon quantity, are slightly under $200 and triple assemblies are slightly under $300. Single axles for boat, tent, and snowmobile trailers, not having the same complexity of components as mobile home and travel trailer assemblies, are considerably less.

Dependability of suppliers, particularly with respect to lead purchase times, is very important.

most buyers try to give suppliers 3 or 4 weeks notice in order to avoid unforeseen delays which might disrupt their own assembly line operations.

Quality, of course, is another important determining factor and this is controlled not only by buyer acceptance but by standards set by the government.

3. Competition

Despite a growing market for axles, competition from U.S. based firms poses a constant threat to Canadian manufacturers. The fact that U.S. suppliers can sell in Canada at competitive prices even after a 17½ percent tariff has been applied is mainly attributable to their lower unit production costs. With longer production lines they can spread operating costs over a larger number of axles. Furthermore they do not have to change over their production line as frequently. One Canadian manufacturer, on the other hand, finds he has to change over his production line at least once a day. This costs him about $200 additionally per change-over. Axle manufacturers generally do their own selling and do not engage in extensive advertising.

Because of the high degree of price competition that prevails in the industry, future relations between the Canadian and U.S. dollars will be important in either narrowing or widening price differentials.

4. Relationships with End Users

End users are becoming increasingly concerned with reliability of supply, both in timeliness of delivery and quality of product. This augurs well for Canadian manufacturers. However, price differentials can quickly swing trade to the advantage of U.S. suppliers when these differentials become large enough to represent substantial savings to mobile home manufacturers.

EXPORTS

There is not at present, nor does there appear to be in future, any worthwhile prospect of exporting axles.

INDUSTRY CHARACTERISTICS

1. General

Since the majority of buyers are mobile home and travel trailer manufacturers, there is a good deal of seasonality in axle sales. This is because mobile homes and trailers are not readily moveable during the winter months in Canada and mobile home manufacturers do not stockpile their products in quantity. To avoid this seasonality, several axle manufacturers complement this product with others that are not adversely affected by seasonal conditions at the same time.

Profit margins are generally low with gross profits on assemblies as low as $4.50. Manufacturers have to rely on volume in order to meet return on investment requirements.

2. Import Considerations

Canadian manufacturers of mobile homes and travel trailers are currently insisting on multileaf springs from Canadian axle manufacturers. They are, however, willing to accept monoleaf springs from U.S. axle manufacturers. The difference between the two types is that in a monoleaf spring, a break can quickly result in the spring completely splitting in two and separating whereas a break in a single leaf of a multileaf spring need not be transmitted further. The difference in cost to the Canadian axle manufacturer is about $0.70 per spring or $2.50 per tandem assembly more for a multileaf than for a monoleaf spring.

3. Material Requirements

The largest material input by weight is cast iron. Each hub on an axle assembly weighs 30 pounds. Thus for the current annual production of about 60,000 axles for the mobile home and travel trailer manufacturers alone, required cast iron would be in the vicinity of 3,600,000 pounds. Steel is the next most important input in the form of tubing and springs.

COSTS

1. Materials

Viewing material costs from the point of view of competition with U.S. manufacturers, Canadian axle producers are in a reasonably competitive position. The one major disadvantage facing them in terms of material costs is the higher price they pay for cast iron. We were told that U.S. manufacturers can buy cast iron at 9¢ to 9.2¢ per pound whereas Canadian manufacturers must pay 13¢ per pound. This means that the Canadian axle producer is paying about $1.20 more per hub for material than his American counterpart.

Steel in Canada of the type required by axle producers is less than in the U.S. However, although this advantage reduces the cost gap substantially it does not close it completely. We were informed that tubing can be obtained at a price ½¢ less per foot in Canada than in the U.S.

2. Operating Costs

Operating costs appear to be the key to maintaining and improving competitiveness. In the U.S. production runs can be several times those in Canada with 3 shifts per day permitting 24 hour operation. In Canada, the market is still too small to permit similar operations.

3. Labour Costs

Labour costs are not highly significant in this capital intensive business. However, labour is organized and union demands can affect profit margins at times when competition is heavy.

PLANT LOCATION CRITERIA

Transportation costs and proximity to major customers are the main factors affecting the rationale of plant location. While one or two manufacturers, who are long-established, originally choose their locations on the basis of other considerations, this in no way diminishes the importance of the above-mentioned factors.

Given the polarity of market concentration (Alberta in the West and Ontario in the East) there appears to be a rationale for decentralizing production. One company has done this with plants in Oakville, Ontario and Claresholm, Alberta.

RESEARCH AND DEVELOPMENT

Little R & D, if any, is required as the technology involved in assembling axles does not change substantially. Product innovations do occur gradually but are generally part of improvements in regular engineering techniques.

OPPORTUNITIES

Considering the growth that is expected for the mobile home and travel trailer markets, there will clearly be a need in future for greater capacity in the manufacture of axles. We were told that in 1972 5 new plants were established in the mobile home and travel trailer industry. Prior to their entry the mobile home industry was said to be operating at between 75 and 80 percent of capacity. Currently, the industry would be operating at only slightly in excess of 50 percent of capacity.

However, before any action is taken to encourage a new entrant to this industry, it seems advisable to examine in more detail the effect of such entry on the competitive structure of the market. Alternatives to new entry, such as inducements to existing manufacturers to lengthen production runs through marketing assistance should also be considered.

Another alternative would be to explore with existing machine shops in the development regions with the necessary equipment for axle manufacture the possibility of adding axles to their present product line. However, in order to take market share from the existing suppliers, it would be essential to have a clearly defined marketing strategy covering the following topics:

- which customers and types of axle offered the best potential for long production runs
- whether to attempt to displace U.S. imports, compete with Aurora, or try to replace one or more of the smaller Canadian suppliers who make axles as part of their product range
- where to locate
- what other products, if any, to make
- any novel technical features that could give an edge over existing competitors
- any improved production methods
- target volume
- pricing strategy.

The likely competitive reaction from existing suppliers would also need to be taken into account in laying out the marketing plan.

3. INGERSOLL MACHINE AND TOOL CO. LTD.
347 King Street West
P.O. Box 250
Ingersoll, Ontario

Executives:

President	H.A. Wilson
Vice-President and Secretary-Treasurer	J.D. Duncan

Products: Automotive parts and axles

Employees: Factory 135 M - 2 F
Office 20 M - 6 F

4. McCOY MACHINERY AND SUPPLY COMPANY LTD.
RR #1
Troy, Ontario

Executives:

President	A.H. McCoy
Secretary-Treasurer	Mrs. J. McCoy
Sales Manager	P. Crawford
Controller	C.G. Fraser

Products: Custom machine work

Employees: 100 M

5. MORCO PRODUCTS LTD.
2 Joseph Street
P.O. Box 294
Kingston, Ontario

Executives:

President	H.A. Cohen
Vice-President	S.J. Cohen
Secretary-Treasurer	Mrs. A.R. Morlock
Assistant General Manager	M. Carberry

Products: Trailer running gear, trailer axles, spring hanger sets, trailer steps, threaded rods, U-belts, trailer jacks, machining and forgings

Employees: Factory 12 M
Office 2 M - 2 F

6. OTACO LTD.
West Street South
Orillia, Ontario

Executives:

President	J. Morrissey
Vice-President - Foundry	R.M. Turnbull
Vice-President - Administration	R.E. McCarthy
Treasurer	R.H. McRae

Products: Custom ductile castings, farm wagons and implements, wheels and hubs, dumps and pressure systems, vices, winter haulage equipment, leisure vehicles

Employees: Factory 300 M - 5 F
Office 30 M - 20 F

Head Office Bartaco Ind. Lt., Orillia, Ontario

Source: Scotts Directory