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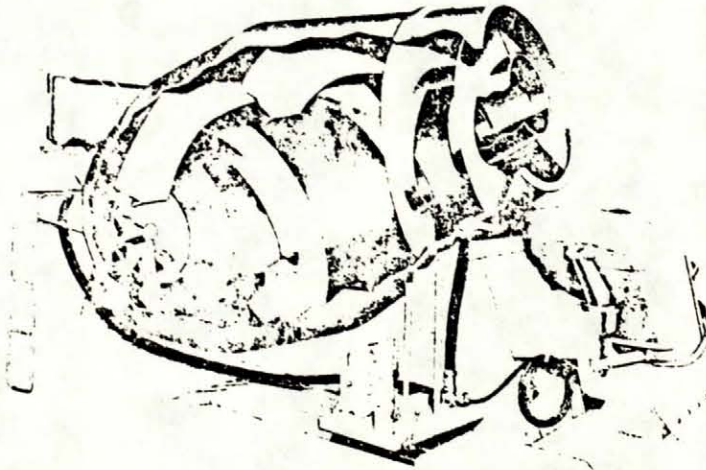
STUDY OF OPPORTUNITIES IN
CONCRETE TRUCK MIXERS



NOVEMBER 1972

"THE VIEWS EXPRESSED
IN THIS REPORT ARE
THEIR OWN AND NOT NECESSARILY
THOSE OF DREE"

"LES OPINIONS ÉMISSES
DANS CE RAPPORT
SONT LES PROPRES ET NE NECESSAIREMENT
CELLES DU MEER"



CONCRETE TRUCK MIXERS

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CONCRETE TRUCK MIXERS

SUMMARY

Sales of concrete truck mixers (ranging from 6 to 14 cubic yards) have fluctuated between 400 and 700 units annually in Canada in recent years. Sales in 1972 are estimated to be approximately 700 units worth roughly \$5,600,000; the average cost is about \$8,000 excluding the value of the truck chassis which is usually supplied by the customer to the mixer manufacturer.

Sales volumes fluctuate because of construction cycles and also because of technological considerations. There are about 4,000 units in use in Canada at the present and roughly 550 have to be replaced each year; this forms the bulk of annual sales. With minor dips, sales of ready-mix concrete have been growing at roughly 10% per year over the past ten years; this growth (subject to the cyclical construction swings) provides the major expansion factor in the mixer market.

Approximately fifty percent of the market is located in Ontario, twenty percent in Quebec, twenty percent in British Columbia and Alberta. The remaining ten percent is spread across the rest of Canada.

The existing three major manufacturers of concrete truck mixers are situated in Ontario and in British Columbia.

As regional service is a prime factor in purchasers selecting a manufacturer's product there exists an opportunity in Quebec for a manufacturing facility as approximately 150 units are sold annually there. These units are now supplied mainly by the two Ontario manufacturers, as are the 30 or so units sold annually in the Maritimes.

As the viability of the Ontario manufacturers might well be affected by the loss of the Quebec and Maritime sales, the most logical opportunity for industry expansion would be for one of the Ontario firms to find its future expansion in the mixer field through a branch manufacturing operation (including repaid facilities) in Quebec.

The conclusion that expansion of the present Ontario manufacturers into Quebec represents the most logical growth opportunity in the industry is supported by a number of other factors:

- (i) Competition in the field is characterized by close, well sustained, relationships between equipment supplies and contractors
- (ii) While price is a key factor in sales, technological know-how, service, and delivery are very important
- (iii) Substantial capital investment is required for manufacturing operation in the industry and because of the competitive nature of the business, heavy equipment manufacturing experience is virtually essential.

While design and engineering are obviously important, proprietary features do not appear to play a predominant role in sales success. Technological development appears to be concerned to a large extent with obtaining greater load capacity while meeting highway regulations. The most successful U.S. imports have been for a unit with a patented system for increasing highway load capacity. The most noticeable general trend has been that towards larger capacity units.

BACKGROUND

MARKET POTENTIAL

1. Canadian Home Market

Number of concrete truck mixer units sold per year:

400 to 700
(1972 indicated sales 700 units)

Dollar value @ \$8,000 per unit:

\$3,200,000 to \$5,600,000

2. Canadian Factory Shipments

Number of units shipped per year:

330 to 630

Dollar value @ \$8,000 per unit:

\$2,640,000 to \$5,040,000

3. Imports

Number of units imported per year:

70

Approximate dollar value of units imported:

\$490,000

4. Consumer Type

The purchasers of concrete truck mixers are the ready mix concrete producers. There are approximately 300 ready mix producers across Canada. Some of the major producers are shown in Appendix I.

These companies delivered 15,700,000 cubic yards of ready mixed concrete in 1970 and 18,000,000 cubic yards in 1971. The regional distribution of delivered ready mixed concrete is as follows:

	<u>% of Total Ready Mixed Concrete Delivered in Canada</u>
Quebec	24%
Ontario	47
Alberta	9
British Columbia	9
Rest of Canada	<u>11</u>
	<u>100</u>

Detailed figures showing ready mixed concrete delivered in Canada from 1960 to 1971 are shown in the table in Appendix II.

5. Canadian Market by Region

The breakdown of concrete mixer units sold annually in Canada by region is as follows:

	<u>% of Total Units Sold Annually in Canada</u>
Eastern Canada	5%
Quebec	20
Ontario	50
Alberta	10
British Columbia	10
Rest of Canada	<u>5</u>
	<u>100</u>

SUPPLY

1. Major Producers in Canada

There are three major producers of concrete truck mixers in Canada. These are shown below with approximate percentages of market share:

	<u>Approximate % Market Share</u>
London Concrete Machinery Co. P.O. Box 2605 London, Ontario	50%
Jaeger Machine Co. of Canada 43 Gaylord Road St. Thomas, Ontario	30
The Welding & Engineering Co. 1600 Main Street Vancouver 4, B.C.	10
Imported Units	<u>10</u>
	<u>100</u>

2. Imported Models

There are primarily two manufacturers in the United States who export truck mixers to Canada. These are:

Challenge-Cook Bros.
Industry, California
& Bryan, Ohio

Rex Chainbelt Ltd.
Milwaukee, Wisconsin

These American manufacturers sell their units through various agents and distributors across Canada.

Challenge-Cook has been particularly successful in selling a patented unit they call Boost-A-Load^(R) which can carry two extra cubic yards of concrete without breaking existing road weight laws.

Rex Chainbelt Ltd. used to manufacture mixers in their Canadian facility in Toronto, Ontario and at one point held 80% of the Canadian market. They ceased manufacturing units in Canada in 1970.

3. Other Producers in Canada

Various other manufacturers who have just begun producing units in Canada and as yet have made no market penetration are:

Patterson Industries (Canada) Ltd.
(Manufacturing Licencee for T.L. Smith)
250 Danforth Road
Toronto, Ontario

Willock Truck Co. Ltd.
205 West 2nd Avenue
Vancouver 10, B.C.

O&S Manufacturing Ltd.
4646 Builders Road S.E.
Calgary 24, Alberta

MARKETING CHARACTERISTICS

I. Buying Characteristics

The purchase of mixer units is done using a bidding system. When the ready mix companies are in the market for new equipment they will ask various suppliers to submit quotations. The key determinant in choosing a supplier are shown below in descending order of importance:

Price
Service
Delivery
Technology

Buying takes place in the winter and early spring for delivery in the spring.

2. Competition

Competition in this industry is very keen and price is the primary consideration in obtaining orders. The existence of stiff price competition and the requirement of a strong supplier-buyer relationship was the reason for Rex Chainbelt (Canada) Ltd. to abandon manufacture of these units in Canada in 1970.

There appears to be little to choose between London and Jaeger, the two main Canadian suppliers in the field. One company may have a slight edge over the other in a given region at a certain time but the opposite could be true in another region. The overall criterion for getting business is price. Jaeger has a high market share in the Atlantic provinces particularly in Nova Scotia and this appears to be due to good service availability.

London and Jaeger have a high concentration of the mixer market in Manitoba, Ontario, Quebec and Eastern Canada. However, they have made little inroads in Western Canada particularly British Columbia and Alberta.

The British Columbia market is solely the domain of the Welding & Engineering Co. who make the Clayton unit. They supply a very high majority of the Canadian manufactured units that are purchased in British Columbia. This company supplies concrete batch plant equipment in the area and 5 years ago decided to expand into the transit mixer market. Their success in British Columbia in breaking into this market has been attributed to their rapport with the concrete suppliers which had been developed through their batch plant equipment line.

The majority of the imports into Canada are the Challenge-Cook units. A high proportion of these is a unit referred to as the Boost-A-Load^(R) which has been patented in the United States. As mentioned previously, this unit can carry two extra cubic yards of concrete while complying with the existing axle weight limits. It accomplishes this by using a hydraulically operated rear axle which acts as an extra load-bearing axle on the highway and can be raised up out of the way at the job site.

The Rex mixers account for the remaining units imported by Canada but they appear to be losing ground in a totally declining import market.

The other mixer manufacturers in Canada have made little or no market penetration.

3. Relationships Between End Users

The major Canadian manufacturers (Jaeger, London and the Welding & Engineering Co.) sell direct and the imported units are handled through agents and distributors across Canada. There is some evidence that strong relationships exist between buyer and seller in certain geographical areas. The industry buyer-seller relationships have been established through a high degree of customer service.

4. Product Line and Pricing

Approximate list prices for various sizes and types of mixer units are shown below:

<u>Type</u>	<u>Size</u>	<u>List Price</u>
Separate Engine Drive Units	6 cu.yd.	\$ 8,000
	7 cu.yd.	8,200
	8 cu.yd.	8,600
Hydraulic Drive Units	6 cu.yd.	\$ 8,600
	7 cu.yd.	8,800
	8 cu.yd.	9,000
	9 cu.yd.	9,400
	10 cu.yd.	9,800
	11 cu.yd.	11,600
	12 cu.yd.	12,500
Tractor Trailer Units	10 cu.yd.	\$17,500
	12 cu.yd.	19,000
	14 cu.yd.	20,000

This price list is by no means exhaustive but serves to give an idea of list prices for the majority of unit types sold in Canada. As mentioned earlier, price discounting is an important factor in obtaining orders and the above prices should not be considered actual purchase prices for these units.

5. Exports

There appears to be a very limited export market for these units.

INDUSTRY CHARACTERISTICS

1. General

Canadian domestic sales (Canadian production plus imports) has varied from annual sales of 400 units to 700 units over the period from 1967 to the present. Sales for 1971 and those projected for 1972 are in the 700 unit range. This increased sales activity primarily

occurred in Quebec and Ontario and is believed primarily due to road weight ~~legislation~~ legislation introduced in Ontario in 1971 recently enforced in Quebec. By using the so called "bridge formula" to determine gross vehicle weight limits in Ontario, it was possible to carry larger concrete loads by modifications in the truck design without having to go to a tractor trailer unit. It is believed that many ready mix companies are or will be replacing the older smaller units (6-8 cu.yds) by the larger 8-12 cu.yd. units. It is also believed by people in the industry that this increased activity due to the purchase of larger units will level off in 1975 when the majority of the small truck mixer fleets will be replaced.

These larger units while requiring innovations and development on the part of the truck chassis manufacturer require little in the way of change for the mixer manufacturer as it requires only an extra length and/or larger diameter in the mixer drum.

Some of this increased activity in mixer sales is due to the increased activity in the construction field in general (refer to Appendix II and the section on the economic determinants). This may be particularly important for Quebec with the new construction required for the approaching Olympic Games. However, mixer sales are for the most part due to the replacement of obsolete or worn-out units rather than general fleet expansions.

The average life of a mixer is approximately 7 years. It has been estimated that there are approximately 3,800 to 4,000 mixer units in existence across Canada which suggests that mixer sales due to normal replacement alone would be in the order of 550 units per year.

2. Import Considerations

a) General*

Approximate number of units imported per year	70
Dollar value of imports @ \$7,000 per unit	\$490,000
Dollar value of imports for parts used in Canadian manufacture of mixers	<u>230,000</u>
Total value of imports	<u>\$720,000**</u>

b) Imports by Region*

The following chart shows the distribution by region for 1970 and 1971 dollar imports of mixer units and parts.

	<u>% of Total Dollars Imported</u>
Newfoundland	1
New Brunswick	3
Quebec	6
Ontario	23
Manitoba	11
Saskatchewan	2
Alberta	11
British Columbia	<u>43</u>
	<u>100</u>

Some portion of the units imported by British Columbia are only assembled there and are destined eventually for Alberta and Saskatchewan.

c) History of Imports*

The following figures show the history of imports of truck mixer units and parts from 1964 to 1971.

* Based on figures provided by Statistics Canada

** FOB point of consignment transportation, insurance and duties not included.

Year	1964	1965	1966	1967	1968	1969	1970	1971
Total Dollar Value of Imports 000's	1,068	1,360	1,222	688	930	752	713	717

The above figures show that there has been some import market substitution by Canadian manufacturers. Imports were at a high of \$1,360,000 in 1965 and reduced to \$713,000 in 1970 and \$717,000 in 1971, the latter two years being a period during which total mixer unit sales increased.

d) Imports by Country of Origin

Virtually all imports of truck mixers and parts originate from the United States.

PRODUCTION

1. General

The purchase of the truck and the mixer unit are done separately and usual practice is for the mixer manufacturer to assemble the two in his shop.

While there can be many mixer options and sizes made available to customers the basic mixer structure can be sufficiently standardized so that many subcomponents can be batch produced. The manufacturing steps required in producing mixer units are as follows:

- Plate shearing and cutting
- Plate rolling and forming
- Submerged Arc welding
- Machining
- Painting
- Assembly

A detailed description of the fabrication of mixer units may be found in the article referenced below⁽¹⁾. Mixer drum fabrication requires the majority of work with some 1,500 inches of welding required for the average drum.

2. Some Economic Considerations

Profit margin appears to be 10 to 15% of factory cost.

The minimum economic production quantity is in the order of 20 units per run.

As a rough guide to manpower requirements approximately 25 direct labour and 25 indirect personnel are required to produce an annual production of 100 truck mixers.

Because of the long lead times required for some of the materials an investment in materials inventory can be a significant factor. However, with proper scheduling and judicious purchasing this investment could be minimized.

3. Material Requirements

The steel plate used in the manufacture of the drum offers 25% improvement in wear against aggregate abrasion compared to ordinary hot rolled plate. Stelcoloy, supplied by the Steel Co. of Canada or its equivalent is used.

Approximately 10% of the total material cost of a unit is imported. This is primarily for the hydraulic equipment required for mixer drum drive units.

(1) Novel Fixtures Help Cement-Truck Builder, R.L. Jerry, Canadian Machinery and Metal Working, V79 No.6, June 1968, p.109-112

RESEARCH AND DEVELOPMENT

1. General

Development of the truck mixer units in the near future will be centered around increasing the payload capacity of the mixer. This is particularly important to the ready mix concrete supplier as the concrete delivered to labour cost (truck driver) ratio increases as the payload increases. This is particularly important where large quantities of ready mix concrete are required and truck queues are inevitable.

The development of these larger units for the most part has to come from the truck chassis manufacturer as axle-combinations have to be designed to comply with road weight laws.

There does appear to be an opportunity for a Canadian mixer manufacturer to develop a unit which would compete with the Boost-A-Load^(R) units which at the present account for a high portion of the imports into Canada.

COSTS

1. Mixer Cost Breakdown

The major breakdown of costs are as follows:

	<u>% of Total Costs</u>
Raw Materials	50
Labour and Overhead	<u>50</u>
	<u>100</u>

2. Equipment

Estimated capital costs to set up operations for a plant with a capacity of at least 100 units from a new manufacturer is in the order of \$1,000,000. This excludes building costs.

3. Transportation

Transportation costs depend greatly on the distance between the supplier and the purchaser and therefore vary widely with each transaction. This can be an important consideration in selecting a plant location.

4. Tariffs

Import duty on concrete truck mixers and parts is 15%.

PLANT LOCATION CRITERIA

1. Market Orientation

Market orientation, with 70% of the Canadian market located in Ontario and Quebec and 20% located in British Columbia and Alberta, dictates that the producers be located in these areas. This is particularly true since a prime requirement for a manufacturer in this industry is to establish a reliable service function.

2. Resource and Labour Orientation

Welding, fabricating and machining are high labour components in the manufacture of cement truck mixers and the location of a new cement truck mixer manufacturer should be in a region with the available trade skills.

OPPORTUNITIES

1. Regional Opportunities

There appears to exist a strong opportunity for one manufacturing facility and possibility two to set up operations in Quebec.

At present there are no manufacturers of truck mixers in Quebec. With 100 to 200 units sold annually in Quebec and another 30 to 50 units sold in the Atlantic provinces the market would seem more than adequate to support these facilities. These plants could be located near Montreal where the market is concentrated and/or further east in Quebec where they could have access to the market in the Atlantic provinces as well as the Quebec market.

These locations would also seem to meet the criteria for labour and resource availability.

There is also a lesser possibility of a viable operation existing in the Atlantic provinces. This opportunity could become particularly attractive if the Quebec market could be penetrated from this area. This however would be difficult as the concentration of the market in the Atlantic provinces is in Halifax.

It would appear difficult to break into the market in Ontario as the two major suppliers Jaeger and London are well established there. Jaeger is currently in the process of expanding present facilities. In addition there is a third manufacturer (Patterson Industries) attempting to break into the market in this area.

With British Columbia and Alberta accounting for 20% of the total Canadian market (approximately 150 units) there appears to exist an opportunity for a manufacturing facility located in this area in addition to the Welding & Engineering Co. of Vancouver. There, however, are two manufacturers actively seeking the Alberta market at present. These are Willock Truck Co. Ltd. and the O&S Manufacturing Ltd. The addresses for these manufacturers were given in the section entitled Supply.

2. Other Opportunities

As mentioned previously, a large portion of the imported units at the present time appear to be the Boost-A-Load^(R) unit manufactured by Challenge-Cook Bros. of the United States. There is a need here for either a present Canadian manufacturer or a new manufacturer to compete for sales for this type of unit.

A limited opportunity may exist for decentralized operations whereby the existing or new manufacturers would produce parts and sub-assemblies in one location and do the final assembly and painting in another location. This however does may not prove to be a feasible opportunity since decentralization would not permit the degree of cost and quality control that is required to remain competitive in this industry.

3. Other Factors Affecting Opportunities

Because of the large capital outlay required to establish a new manufacturing facility the opportunities that exist in this industry would appeal more likely to people with existing facilities capable of heavy equipment manufacture. This would be particularly true for those facilities where there is a need to provide or add to a non highly-engineered standard product line.

In addition, because of the very competitive nature of this industry particularly with regard to price discounting it would seem necessary for anyone wishing to take profitable advantage of these opportunities to have familiarity with heavy equipment manufacturing.

GENERAL ECONOMIC INDICATORS

The following are some general economic indicators which may be used to give some indication of concrete truck mixer sales.

<u>Year</u>	<u>Ready-Mixed Concrete* (Thousands of cu.yds.)</u>	<u>Housing Starts** (Thousands of Units)</u>	<u>Expenditure+ on Residential Construction** (Millions of Dollars)</u>	<u>Expenditure on Non-Residential Construction** (Millions of Dollars)</u>
1971	18,000	233.7	4,437	5,931
1970	15,688	190.5	3,602	5,385
1969	16,631	210.4	3,845	4,772
1968	17,016	196.9	3,253	4,553
1967	14,991	164.1	2,809	4,548
1966	17,618	134.5	2,605	4,664
1965	15,906	166.6	2,634	3,840
1964	13,943	165.7	2,382	3,298
1963	11,918	148.6	1,959	2,760
1962	10,927	130.1	1,854	2,568
1961	8,871	125.6	1,789	2,611
Average Annual Growth Rate 1961-1971 %	10.0	8.5	14.0	12.5

* Statistics Canada

** Bank of Canada Review

+ Current Dollars

PARTIAL LIST OF MAJOR READY-MIXED
CONCRETE PRODUCERS IN CANADA

British Columbia

Ocean Cement Limited
Vancouver

Lafarge Concrete Ltd.
Vancouver

Metro Concrete Ltd.
Vancouver

Superior Construction Co. Ltd.
Vancouver

Thomson Ready-Mix
Vancouver

Alberta

Consolidated Concrete Limited
Calgary

Burnco Industries Ltd.
Calgary

Gallelli Construction Materials Ltd.
Calgary

Concrete Products Ltd.
Edmonton

Saskatchewan

Redi-Mix Limited
Regina

Cindercrete Products Ltd.
Regina

Rex Underwood Ltd.
Saskatoon

PARTIAL LIST OF MAJOR READY-MIXED
CONCRETE PRODUCERS IN CANADA

Manitoba

The Winnipeg Supply & Fuel Co. Limited
Winnipeg

Supercrete Ltd.
Winnipeg

Building Products and Concrete Supply Ltd.
Winnipeg

Ontario

Canada Building Materials Co.
Toronto, Sarnia

Dufferin Materials & Construction Ltd.
Toronto

Kilmer Van Nostrand Co. Ltd.
Toronto

McCord & Company
Toronto

Premier Concrete Products
Toronto

Red-D-Mix Concrete
Toronto and throughout Ontario

Teskey Ready-Mix Limited
Toronto

KW Ready Mix Limited
Kitchener

Permanent Concrete Ltd.
Kingston, Brockville
Belleville, Cobourg, Cornwall
Peterborough

Mobile Mix Concrete Products Ltd.
London

Mathews Group Limited
London

PARTIAL LIST OF MAJOR READY-MIXED
CONCRETE PRODUCERS IN CANADA

Ontario (Cont'd)

Spivak N.J. Limited
London

Marden Ready Mix Concrete
Guelph

Boehmer, H. & Co. Ltd.
Guelph, Woodstock

Canadian Gypsum Company
Toronto, Guelph

Cope, A. & Sons Limited
Hamilton

Delta Ready Mix Ltd.
Hamilton

Dominion Building Materials
Ottawa

Francon Limited
Ottawa

Ryancrete-Sterling Products
Windsor

Quebec

Compagnie Miron Ltee.
Montreal

Francon Limitee
Montreal

Simard et Beaudry Inc.
Montreal

Ciment Independant Inc.
Joliette

Ciment Quebec
Portneuf

PARTIAL LIST OF MAJOR READY-MIXED
CONCRETE PRODUCERS IN CANADA

New Brunswick

Brunswick Ready Mix
St. John

Likely, Jos. A., Limited
St. John

Strescon Limited
St. John

Nova Scotia

Atlantic Concrete Limited
Halifax

Transit Ready Mix
Halifax

READY-MIXED CONCRETE DELIVERED IN CANADA
FROM 1960 TO 1971*

	000's	<u>Quebec</u>	<u>Ontario</u>	<u>Alberta</u>	<u>British Columbia</u>	<u>Other</u>	<u>Total</u>
**1971	cu.yds.	4,320	8,460	1,620	1,620	1,980	18,000
	%	24	47	9	9	11	100
1970	cu.yds.	3,735	7,357	1,467	1,413	1,716	15,688
	%	24	47	9	9	11	100
1969	cu.yds.	3,530	7,431	1,774	1,813	2,084	16,631
	%	21	45	11	11	12	100
1968	cu.yds.	4,308	7,401	1,545	1,624	2,138	17,016
	%	25	44	9	10	12	100
1967	cu.yds.	3,741	5,943	1,516	1,632	2,158	14,991
	%	25	40	10	11	14	100
1966	cu.yds.	5,801	6,775	1,442	1,512	2,089	17,618
	%	33	38	8	9	12	100
1965	cu.yds.	5,240	6,391	1,367	1,300	1,610	15,906
	%	33	40	9	8	10	100
1964	cu.yds.	4,809	5,691	1,121	1,092	1,231	13,943
	%	34	41	8	8	9	100
1963	cu.yds.	4,151	4,733	988	910	1,136	11,918
	%	35	40	8	8	9	100
1962	cu.yds.	3,815	4,262	1,121	684	1,044	10,927
	%	35	39	10	6	10	100
1961	cu.yds.	2,992	3,528	865	534	951	8,871
	%	33	40	10	6	11	100
1960	cu.yds.	2,748	3,093	973	547	874	8,236
	%	33	38	12	7	10	100

* Statistics Canada

** Estimated total distributed by 1970 ratios