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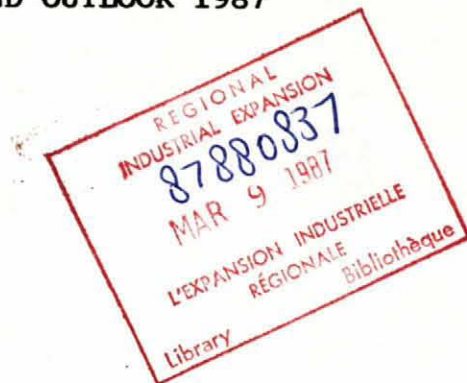
**CANADIAN MACHINERY AND ELECTRICAL EQUIPMENT INDUSTRY**

**PERFORMANCE 1986 AND OUTLOOK 1987**



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**Machinery & Electrical Equipment Branch**

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## MACHINERY AND ELECTRICAL EQUIPMENT PERFORMANCE 1986 AND OUTLOOK 1987

### SUMMARY

Canadian production of machinery and electrical equipment reached \$17.7 billion in 1986 of which \$6.0 billion was shipped to export markets. This represents an increase of 2.3 percent in real terms over 1985 levels. Overall, most manufacturers of both non-electrical and electrical machinery and equipment expect relatively slow growth to continue in 1987.

These projections summarize the performance and outlook for a wide range of machinery and electrical equipment manufactured in Canada to serve both renewable and non-renewable resources, industrial, utility and commercial service markets (excluding transportation equipment). Estimates are based on year-to-date Statistics Canada information, together with a representative sampling of activity levels for companies in all market sectors of the industry.

### MACHINERY AND EQUIPMENT (Non-electrical)

Production of non-electrical industrial machinery and equipment including mechanical power equipment continued to expand in 1986 but at a sharply reduced rate from that experienced in the 1983 to 1985 period. Both 1986 production and estimates for 1987 represent a marked slowdown in output from the rates forecast a year earlier. Based on current estimates production of non-electrical machinery and equipment is now expected to increase by approximately five percent in both 1986 and 1987 (just over two percent real terms after allowing for price inflation of 2.7 percent), reaching \$12.8 billion in 1986. This compares with a revised 1985 Statistics Canada estimate of \$12.2 billion (Appendix I). Longer term growth rates for the industry are now estimated to average five to six percent in the 1987-91 time frame, based on available estimates of new business investment spending through the late 1980s.

Major factors which are contributing to slower growth in 1986 and which are expected to affect 1987 include:

- The deterioration of the agricultural economy which has resulted in a sharp drop in farm machinery production (twenty-three percent) from already depressed 1985 levels. Both of Canada's two remaining major equipment firms (Massey-Ferguson Combines and Versatile) have been shut down or operating at very low levels for much of the last year.
- The sudden collapse in oil and gas pricing which has severely restricted spending by producers and which has already resulted in sharply reduced output for a wide range of energy equipment such as valves, pumps, compressors, oil field drilling and production equipment, and pipeline equipment.
- Some slowdown in the U.S.A. market - which now accounts for up to thirty-three percent of total Canadian machinery shipments.
- The failure of business investment in non-energy sectors to reach expected levels for this stage of the business cycle.

But while overall growth has slowed, export performance has remained strong increasing to \$5.1 billion in 1986, up approximately eight percent over revised 1985 figures, to maintain an export orientation of approximately forty percent, for the industry as a whole. Export activity in 1986 continued to be based on strong markets in the U.S.A., particularly in the first half of the year.

Imports of machinery and equipment also continued to increase sharply, reaching \$14.4 billion or sixty-five percent of the Canadian market (\$22.0 billion). Both increased imports and exports in 1986 reflect the continuing trend to specialization of production aimed at meeting international competition in foreign markets. While resulting in increased exports, this adjustment process had led to a narrowing of the product base in Canada, opening the way to imports of products no longer manufactured in Canada. In addition, Canadian manufacturers are facing continued import pressure from lower cost offshore manufacturers, often with the assistance of very soft financing.

Apart from a very sharp drop in the output of agricultural machinery and equipment for energy markets, performance in other industry sectors was mixed. Highlights follow.

Shipments of **power generation** equipment were up in the first half of 1986 and should show a total year increase over 1985, based primarily on deliveries made against earlier export orders, particularly for projects in Indonesia, Thailand, and China. Currently, demand for power boilers is improving but almost all business is coming from offshore markets and manufacturers are still operating at fifty percent capacity. Manufacturers of **engines and turbines** report that demand is currently very low in Canada with most orders coming from the U.S.A. This sector continues to suffer from extremely tight bid pricing due to worldwide excess capacity. Conditions are expected to remain generally slow for most of 1987.

Sales of most types of **forestry equipment** continued steady in 1986 based on very strong forest harvesting activity, particularly in B.C. Manufacturers of **pulp and paper equipment** experienced a very good year in 1986 as pulp and paper producers responded to buoyant markets and good margins by undertaking mill modernization and rebuilding projects.

Demand for **sawmill machinery** in Eastern Canada was good mainly for mill improvements but no large projects are underway or expected. In Western Canada demand for equipment in the coastal forest region suffered from the uncertainty created by prolonged strikes by the International Woodworkers of America. Forest equipment firms remain concerned that current U.S. protectionist measures against Canadian lumber products is causing buyer uncertainty that will lead to sharply reduced new equipment orders unless the issue is resolved.

Markets for the limited range of **construction equipment** manufactured in Canada such as earth moving and road maintenance equipment experienced mildly improved demand in 1986, particularly in Central Canada. Exports to the U.S.A. also continued to expand and manufacturers also reported some improvement in profits as pressure from Japanese competition eased somewhat with increases in the value of the Yen. Most North American firms in this sector continue to streamline and consolidate their operations however.

**Mining equipment** manufacturers had another generally poor year in 1986 as there was little improvement in commodity prices to support higher levels of activity by their major customers. The market for underground equipment was flat in 1986 and little improvement is predicted for 1987. The majority of new business was in export markets, with domestic sales remaining poor except to precious metal markets, especially gold. Sales of coal processing equipment also improved somewhat.

Demand for **material handling equipment** which serves industrial markets continued to improve in 1986 while that related to resource areas remained stagnant. Manufacturers of hoisting machinery such as bridge cranes and monorail hoists have benefitted from steel mill modernizations and automotive related opportunities. Sales by Canadian manufacturers of **elevators and escalators** remain steady, based on strong building construction markets in Ontario and Quebec. Manufacturers of **conveying equipment** report mixed conditions in 1986.

Sales of **bulk conveyors** have been slow as a result of the limited number of resource development projects and there are no major projects expected to come on stream over the next year. **Unit handling systems** on the other hand have experienced strong demand, mainly from automotive projects and sales to the food and beverage sector. Demand for **fork lift trucks** also improved in 1986, largely due to better construction, industrial storage and warehousing markets. The North American manufacturing base in this sector has continued to shrink, however, as a result of worldwide product rationalization trends in the face of severe Asian competition. Both Hyster and Clark have closed their Canadian operations over the past six months and remaining Canadian production is concentrated on the more specialized equipment lines. Increasingly, production of these products is being transferred to Mexico, Brazil and Ireland.

The **machine tool and tooling sector** continued to experience strong markets in 1986 based mainly on automotive investment. New orders slowed significantly, however, through the fourth quarter 1986 and the outlook for 1987 is for further reduction. Anticipated reductions in capital spending for engines and transmissions will reduce demand for

specialized custom built metal cutting transfer line machine tools and tooling which is the major strength of this sector in Canada. Two major firms, Cross-LaSalle Machine Tool of Canada Ltd. and Ex-Cell-O Corp. Ltd., ceased operations during the year and all remaining manufacturers expect reduced new orders.

Manufacturers of **plastics and rubberworking machinery, printing equipment and packaging equipment** all report shipments in 1986 up significantly over 1985. Packaging equipment firms in particular considered 1986 to have been a record year and see no downturn in 1987. Exports continue to provide the major growth and in addition to the U.S.A. and Europe, the appreciation in the Yen is providing some opportunities in the Japanese market.

Most manufacturers of equipment for the commercial service sectors have enjoyed strong markets in 1986 and these conditions are expected to continue in 1987. Canadian manufacturers of **lawn mowers, snow blowers and garden tractors** report production up sharply in 1986 and 1987 will be another good year. 1986 was also an excellent year for **hardware products firms** due to record high levels of new housing and commercial building starts, as well as high levels of consumer spending. Markets for **air conditioning and refrigeration equipment** continue to expand modestly but the cool wet summer in Eastern Canada restricted sales to some extent. Canadian manufacturers of both **retail food store and food service equipment** indicate steadily improving markets based largely on shipments to expanding U.S.A. markets.

### Outlook

Overall, the outlook for machinery and equipment sales is weakening and output is now expected to grow more slowly in the months ahead. However, while demand is slowing generally, there is considerable unevenness in the picture by industry sector. Most notably, the devastation in energy markets will continue to affect orders for oil field and pipeline equipment as well as pumps, valves, and ancillary equipment serving this market. However, while energy investment is now likely to remain weak throughout the forecast period, it is hoped that recent indications of somewhat higher and more stable oil prices may allow some projects to go

forward and at the same time remove some of the uncertainty that is currently affecting sales in this area. Farm machinery sales are also expected to remain very depressed over the next year as low commodity prices and high debt levels continue to prevent spending at least for the large equipment items. Markets for most other resource based equipment are also expected to remain slow. The outlook for equipment needed for mining and ore processing of most commodities, i.e. coal, industrial minerals, lead and zinc is expected to remain below normal through most of the next year. Equipment markets for processing of precious metals (particularly gold) are expected to be more buoyant.

At the same time, new investment by the transportation sector (mainly autos) is expected to hold up reasonably well in 1987, following very strong spending in 1986. But investments are shifting from engines and major components (reducing the outlook for specialized machine tools and metal working equipment) to assembly investments (supporting orders for industrial material handling and painting equipment). Most areas of forestry equipment are expected to show gains in 1987, particularly pulp and paper equipment, as mill modernizations continue. Continued strength in non-residential construction expenditures by the manufacturing and service sectors as well as increased spending by the commercial services sector should provide strength to a wide range of secondary and service machinery and equipment.

In addition to the outlook for markets, overall industry performance will continue to be influenced by a number of supply side factors and structural issues. Recovery from the recession, while fairly robust, has been strongest in selective product areas which are increasingly based on specialization and exports. In several mature product areas (e.g. construction equipment, mining equipment, and heavy custom equipment) forced rationalization and consolidation has resulted in "gaps" in the production base, leading to increased imports. Profits remain squeezed in a number of equipment sectors largely as a result of price pressure from offshore competition and this, in turn, is restraining new investment for product development and modernization. Those investments which are being made are predominantly for productivity improvements rather than expansion as capacity utilization rates have remained at low levels (sixty-three per cent). Labour unrest is affecting some



major equipment firms as employees attempt to recapture wage increases lost during the recessionary period, while labour shortages are starting to occur in some skilled trades.

#### **ELECTRICAL EQUIPMENT**

The Canadian electrical equipment industry is expected to produce \$4.9 billion of manufactured goods in 1986 of which approximately sixteen percent or \$775 million will be to export markets. This is an increase of approximately 1.4 percent in real terms over 1985 levels (Appendix II). The industry in Canada produces heavy electrical power generating equipment for utility markets, power and distribution transformers, switchgear and protective equipment, motors and industrial controls as well as electric wire and cable, batteries and miscellaneous electrical products including lighting fixtures and lamps.

While the overall output of electrical equipment grew slowly in 1986, results were somewhat uneven across key sectors in the group. Activity in sectors closely tied to residential and commercial construction activity was more buoyant, while those sectors which rely almost exclusively on capital investment in the expansion of electrical generating capacity grew much more slowly. More detailed comments by sector follow.

Manufacturers of **large utility generators** report that order backlogs are again growing slowly in line with some new utility investments which have been put in place to respond to increasing electrical load growth rates as a result of continued North American economic expansion. Refit business coming primarily from U.S. utilities is a major factor supporting new orders in this area, together with some investments by Canadian utilities to service increased demand for exports of power to the U.S.A. But while equipment manufacturers experienced some improvement in 1986 and expect this to continue in 1987, continuing high utility generating reserves, together with load growth rates significantly below historical experience have resulted in capacity utilization rates for large electrical generating equipment manufacturers of approximately forty percent. Some improvement is expected over the longer term but increasingly, manufacturers will be looking to export markets in the U.S. and third world countries for new business.

The major impetus in the market demand for large **power transformers** occurs during the latter stages of, and after, expansions to generating capacity and accordingly, Canadian production of this equipment remained flat in 1986. Canada continued, however, to be a major supplier to the U.S.A. of power transformers in the small and medium size range. Overall, current projections indicate little improvement in market conditions in this sector before 1990.

Manufacturing activity related to **distribution transformers**, on the other hand, improved significantly in 1986 as increased residential construction, primarily in Central Canada, boosted further expansion of distribution programs by the electrical utilities. Since utilities require relatively little lead time to install distribution networks, local increases in electrical load growth reflect quickly on increased market demand for distribution transformers and related equipment.

Shipments by manufacturers of **switchgear and protective equipment** increased somewhat in 1986 but year-end backlogs were lower than a year earlier. Switchgear products produced by Canadian firms include switches, relays, fuses, panelboards and circuit breakers. Increased output was largely confined to low voltage switchgear which is responding to improved demand from higher residential construction activity as well as moderately improved markets related to industrial and commercial power systems.

Manufacturers of **electric motors** report that the overall increase in demand seen in 1986 (about ten percent) will likely be repeated in 1987, in line with improvements in the automotive, durable goods and resource industries, which absorb the majority of fractional and integral induction motors. In addition, recent North American consolidation of the production of larger motors by both General Electric and Westinghouse is expected to result in increased manufacturing activity by the Canadian subsidiaries of these firms in 1987 and beyond.

Demand for **industrial controls** increased moderately in accordance with the increase in the level of investment in new plant and equipment and 1987 should see a continuation of this moderate increase (about four percent). Industrial controls

are used for starting, stopping, and protecting electric motors. Demand for drive systems used for speed regulating the motors, reportedly increased by ten percent overall in 1986 and continued growth is expected in 1987 due to technological improvements in energy sourcing drives, and capital expansions in the pulp and paper industry which is a prime user of the larger drive systems.

Manufacturers of electric **wire and cable** report production levels overall about the same as in 1985 with some modest improvement expected in 1987. Demand for power cables has been relatively steady following closely the expansion of electrical distribution networks and there has been strong demand for most types of building wires based on the increased level of new residential and commercial building construction. Output of communication cables in 1986 was about the same as 1985 but Canadian manufacturers continue to increase sales to the U.S.A. Some slowdown in the U.S. market for **communication cables** is expected, however, as fibre optics cables with much higher carrying capacities are making strong inroads into this segment of the market. Overall, **wire and cable** manufacturers expect 1987 to be much the same as 1986 as far as volume and demand are concerned. However, there are hopes that thin margins will strengthen in 1987 as production efficiencies are introduced, even though significant over-capacity remains in several areas of the sector.

Production of **batteries** in 1986 is expected to increase marginally over 1985 levels, particularly storage batteries. Manufacturers of alkaline batteries are experiencing some loss in sales due to cheaper imports from Europe. No major change is expected in the overall outlook for batteries in 1987. Canadian manufacturers of **lighting fixtures** on the other hand (including incandescent, fluorescent, commercial and street lights) experienced relatively strong growth in 1986, up over six per cent, based on high levels of residential and commercial construction, particularly in the large Toronto and Montreal markets.

PERFORMANCE AND OUTLOOK

MACHINERY AND EQUIPMENT INDUSTRY (NON-ELECTRICAL)  
1986-1987

	Shipments			Exports			Imports		
	1985 Millions \$	1986 Millions \$	% of Change	1985 Millions \$	1986 Millions \$	% of Change	1985 Millions \$	1986 Millions \$	% of Change
Agricultural Machinery	806.2	623.2	-23%	522.1	495.0	- 5%	1 573.7	1 817.2	15%
Mechanical Power Generation	1 112.9	1 190.9	7%	289.4	409.4	41%	797.7	833.7	5%
Forestry Machinery	701.9	743.8	6%	401.6	299.2	-25%	601.1	734.9	22%
Construction Equipment	755.9	808.8	7%	378.2	407.2	8%	1 166.4	1 465.5	26%
Mining Machinery	318.0	333.9	5%	231.8	229.4	- 1%	413.2	400.7	- 3%
Special Industry Machinery	1 464.2	1 628.0	11%	599.8	675.4	13%	1 768.8	2 176.4	23%
Material Handling Equipment	1 092.7	1 155.6	6%	322.3	327.5	2%	547.5	672.2	23%
Rolling Mill and Met. Work. Equipment	524.2	551.3	5%	107.7	91.8	-15%	346.0	456.6	32%
Machine Tools and Tooling	617.4	681.7	10%	197.3	272.0	38%	720.0	853.3	19%
Pumps, Compressors, Fans & Blowers	459.0	472.8	3%	115.6	107.3	- 7%	378.3	395.7	5%
Misc. Industrial Machinery	1 221.7	1 243.3	2%	303.7	361.3	19%	1 169.2	1 169.3	0%
Commercial Refrige. & Air Cond.	433.2	446.2	3%	102.4	118.5	16%	361.3	404.2	12%
Heating Equipment	311.1	279.4	-10%	57.8	60.4	4%	79.1	66.2	-16%
Plumbing & Hardware	555.3	638.6	15%	199.4	226.8	14%	559.2	603.8	8%
House Hand & Power Hand Tools	462.6	494.2	7%	116.4	158.9	37%	641.5	811.7	27%
Instruments & Related Products	878.2	979.5	12%	493.0	563.1	14%	790.0	837.4	6%
Other Service Equipment	468.1	502.2	7%	292.2	311.1	6%	637.1	685.0	8%
TOTAL MACHINERY	12 182.6	12 773.4	5%	4 730.7	5 114.3	8%	12 550.1	14 383.8	15%

PERFORMANCE AND OUTLOOK

ELECTRICAL EQUIPMENT INDUSTRY  
1986-1987

	Shipments			Exports			Imports		
	1985 Millions \$	1986 Millions \$	% of Change	1985 Millions \$	1986 Millions \$	% of Change	1985 Millions \$	1986 Millions \$	% of Change
Lighting Fixtures	360.0	406.0	13%	37.5	37.6	0%	108.7	127.8	18%
Power Generation Conversion and Distribution Equipment	1 986.8	2 096.7	6%	363.2	394.2	9%	849.0	974.4	15%
Electric Wire and Cable	1 282.4	1 328.7	4%	168.7	179.3	6%	155.6	167.0	7%
Batteries	254.7	266.8	5%	24.0	28.6	19%	155.4	154.6	-1%
Misc. Electrical Products	775.8	838.1	8%	181.2	205.2	13%	555.0	635.2	14%
<b>TOTAL ELECTRICAL EQUIPMENT</b>	<b>4 659.7</b>	<b>4 936.3</b>	<b>6%</b>	<b>774.6</b>	<b>844.9</b>	<b>9%</b>	<b>1 823.7</b>	<b>2 059.0</b>	<b>12%</b>

