



**C-I-L Inc.
Annual Report 1980**

C-I-L- Inc.
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630 Dorchester Boulevard West
Montreal, Quebec
H3C 2R3

On peut se procurer le présent
rapport en français en s'adressant
au
Secrétaire, C-I-L- Inc., C.P. 10,
Montréal (Québec) H3C 2R3

The Company

C-I-L Inc. is a diversified organization conducting its business through operating divisions and subsidiary and associated companies. Its principal activities are related to the manufacturing and marketing of chemicals with major interests in agricultural chemicals and fertilizers, chloralkali products, sulphur products, explosives, paints, plastics and specialty chemicals. The company is also involved in the sale of chemical technology, property development, oil and gas exploration, the manufacturing and marketing of specialized mining equipment, and waste management. Its plants, warehouses and regional offices are located throughout Canada and its products and services are marketed in many parts of the world.

The company is federally incorporated with about 26% of its common stock held by about 4,000 shareholders, most of whom are residents of Canada. Imperial Chemical Industries Limited of the United Kingdom, one of the world's largest chemical companies, is the major shareholder.

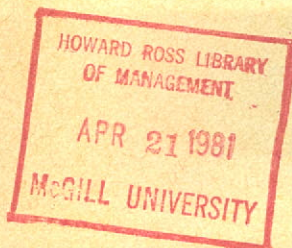
Of C-I-L Inc.'s 12 directors, nine are Canadian citizens, of whom three are officers of the company and five are leaders in other areas of Canadian business.

Sales increases

Cover: Brightly colored graph lines depict sales increases over the past seven years in the company's four main business segments—sales which, when consolidated, surpassed one billion dollars in 1980. The semi-abstract background is formed by pellets of polyethylene resin, a product for which capacity is now being doubled.

	1980	1979
Sales	\$ 1,004,195,000	\$ 879,968,000
Income before provision for income taxes	93,628,000	66,864,000
Net income before extraordinary items	51,475,000	36,309,000
Working capital at December 31	154,146,000	157,870,000
Capital expenditures	70,217,000	84,422,000
Common shares outstanding at December 31	9,794,161	9,794,161
Earnings a common share before extraordinary items	\$4.60	\$3.11
Dividends a common share	\$1.52	\$1.32
Number of shareholders at December 31		
Common	3,752	4,026
Preferred	452	471

Consolidated financial highlights





Above
(left to right):
P.R. Day,
senior vice president;
D.I.W. Braide,
senior vice president
and director;
W.J. Mandry,
president and chief
executive officer
and director;
A.T.G. Rodgers,
senior vice president;
L.H. Chant,
senior vice president;
C.H. Hantho,
senior vice president
and director.

Below
(left to right):
S.E. Mallett,
vice president and
general manager C-I-L
resources business
area;
J.G. Spence,
vice president and
general manager
explosives division;
H.C. Rowlinson
(seated),
vice president and
general manager
plastics division;
B.O. Winter,
vice president and
general manager
agricultural chemicals
division;

R.V. Ward,
vice president eastern
region and general
manager industrial
chemicals division;
A.C. Harlow,
vice president and
general manager
general chemicals
division.

C-I-L launched the decade of the eighties with one of the most demanding but exciting years of its history. For the first time, the company surpassed one billion dollars in annual sales, with increases in all major business areas despite the sluggish performance of the North American economy. In addition, the stage was set for further expansion and for entry into promising new business areas where our marketing, financial and technical strengths will contribute to our growth and future success.

Sales at \$1,004 million increased by 14% over 1979. Net income at \$51.5 million was higher by 42%. Earnings a common share before extraordinary items were \$4.60 compared with \$3.11 in 1979 and the dividend was increased in the third quarter from 36 cents to 40 cents a common share. Dividends declared on common shares for the year were \$1.52, compared to \$1.32 in 1979.

Income from operations at \$100.7 million was 34% higher than in 1979, reflecting not only the higher sales level but also a concentrated effort on achieving greater efficiencies in production and on controlling costs. The dedication of our people towards reaching productivity improvement goals has been exceptional and was an important ingredient in our improved results.

Plans and prospects

Planning for the future has always been an important function in C-I-L, but an increasingly competitive and complex business environment makes sound and responsive planning even more imperative. The challenge is to make use of the company's growing resources so as to realize their full potential. Our capital expenditure program has been geared to this end, and the next five years are expected to be ones of strong and broadly-based growth for the company.

Concerted attention has been given to the future shape of the company. For the most part C-I-L's business portfolio has been built upon activities related to the Canadian resource industries—as a supplier, a consumer, or a provider of services. Much of the strength of the company will continue to be concentrated in this role.

Our strategy in expanding traditional businesses is to place emphasis upon those which can benefit most from Canada's favourable energy position. In addition, the company plans to invest further resources in the oil and gas

To the shareholders



sector by increasing its involvement in exploration while seeking other direct ways of servicing the industry.

In total, the capital program of the company over the next five years amounts to some \$600 million. The largest current capital item is an expansion of our polyethylene plant at Edmonton, Alberta, as a result of which the site's capacity for low density polyethylene resin will be doubled by the end of 1981. Plans are being pursued for a further expansion on the same site, subject to the availability of ethylene, the principal natural gas-based raw material. However, there is serious concern at this time that adequate supplies of ethylene will be available in 1984 but negotiations to that end are continuing.

The company is proceeding also with engineering design for a new plant at C-I-L's fertilizer complex at Court-right near Sarnia, Ontario, which would produce 1,100 tonnes per day of ammonia from natural gas, more than doubling current capacity. Planned to be on stream in 1984, the plant would use a new process developed by ICI, which promises improved energy efficiency and reliability with lower capital and maintenance costs. The expanded capacity would enable C-I-L to strengthen its position in the market for this product and its derivatives in contiguous areas of the United States while providing also for growth in the Eastern Canadian market.

These two large potential capital undertakings in polyethylene and ammonia would represent a significant strengthening of C-I-L businesses that are based on Canada's energy resources.

Additional funds have been allocated to increasing C-I-L's more direct involvement in the energy industry itself. The full commitment of these funds will depend on a satisfactory resolution of the current federal/provincial confrontation on energy policy and needed improvements to the National Energy Policy. In 1976 C-I-L entered into a joint

venture in oil and gas exploration with Bralorne Resources Limited of Calgary, Alberta with a view to gaining not only financial returns but experience in the industry and an improved feedstock supply position. The exploration program resulted in significant discoveries of natural gas and C-I-L is now planning substantially increased commitment to this area.

In addition, we are studying opportunities to enter into the oil field services sector where our chemical and engineering technology could be applied. Proposals being developed involve fracturing and stimulation of oil and gas wells.

Associated with these moves is a plan for a research and technical centre in Edmonton near the Alberta Research Centre. The new facilities will support these businesses and, in addition, extend C-I-L's technology into the area of enhanced oil recovery.

Reorganization accompanied C-I-L's heightened activity in Western Canada in 1980 and the company established a new unit, the C-I-L Resources Business Area, under the direction of a vice president located in Calgary. As well as our ventures in oil and gas exploration and oil field services, this unit will be responsible for the continued development of High Impact Welding. This new process, developed by C-I-L, TransCanada PipeLines Limited and Stelco Inc., makes use of ring explosive charges for welding together lengths of large diameter pipe by pipeline contractors.

Early in 1980 C-I-L formed a new subsidiary, Douglasdale Estates Ltd., which also is included in the C-I-L Resources Business Area. The company will develop and sell about 1200 acres of property in southeast Calgary, the location of a former explosives manufacturing plant. The site is being prepared now for residential, commercial and industrial development. The realization of its potential over the next 8-10 years will depend upon conditions in the Calgary real estate market which are expected to remain favourable.

Our subsidiary companies continue to make a significant contribution to income and have an important role in our growth plans. One of them, Jarvis Clark Company Limited, has made rapid progress in penetrating international markets for underground mining equipment. We expect to spend about \$35 million over the next four years for facilities in support of this high potential business. To increase production capacity, a 125,000 sq. ft. plant building and offices in Burlington, Ontario, have been purchased and a parts warehouse to serve the export market is now under construction at Bramalea, Ontario.



Above are presidents of principal subsidiary and associated companies: Standing left to right, **J.S. King**, Chipman; **W.R. Simmons**, Alchem; **A.S. MacKinnon**, CXA; seated left to right, **R.S. Gray**, Jarvis Clark; **A. Séguin**, Hanson; **R.R. Reid**, Cornwall Chemicals;

M.G. Bradley, Paints; and **R.F. Day**, Tricil. Absent when the photo was taken, **J.D. Murdock**, Chemetics.

Financing growth

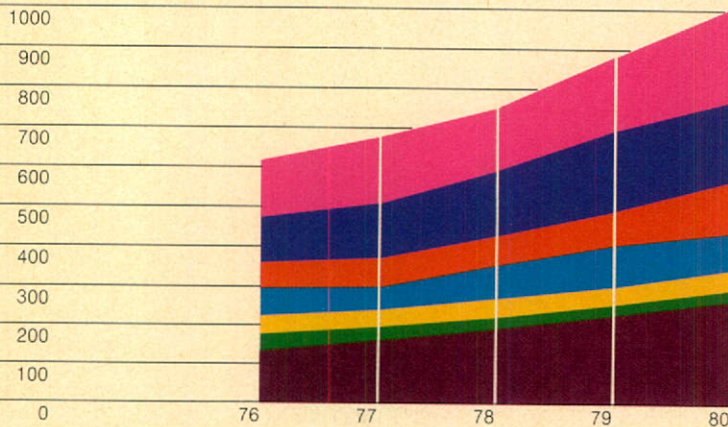
Our aggressive planning—encouraged by improved profitability and opportunities for growth—is made possible by the strong financial position of the company. Long-term financing is planned which will provide the capacity to take advantage of new opportunities as they arise. A more detailed account of the capital structure and financial position of the company appears in the Financial Review in this report.

Outlook

The declines in production that occurred in many segments of industry in 1980 now seem to be largely behind us, and the outlook for 1981 is one of modest overall growth with some improvement as the year progresses. Nevertheless, national output will at best be barely above the level of two years earlier.

This country does not lack for opportunities and is, with reason, still the envy of many other lands. But we seem at times to go to extraordinary lengths to impede our own progress. For example, two years or so ago there were signs that the harmful effects of excessive government intervention in and regulation of the economy were finally being recognized in government attitudes and policies. Unfortunately, this episode was short-lived; we are now witnessing renewed government efforts to expand its economic role. The federal-provincial dispute over energy is only the most dramatic example, jeopardizing as it does the prospect of achieving early self-sufficiency in petroleum supplies and the renewal of balanced economic growth throughout Canada. The dissension arising from this and even more importantly the constitutional controversy is also threatening to damage seriously the political and economic cohesion of the country—which after all is the basis of much of our prosperity.

1100 (Millions of dollars)



Sales by industry

- Mining
- Agricultural
- Pulp and paper
- Chemicals
- Construction
- Retail
- Other



In southeast Calgary, about 1200 acres of property will be developed for residential, commercial and industrial use by C-I-L subsidiary, Douglasdale Estates Ltd.

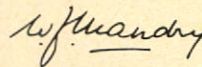
It can only be hoped that the increasing gravity of the situation will place governments under pressure that they cannot resist to find reasonable solutions to their differences. Our plans for the future assume this will happen, although belatedly and with an outcome far from ideal. Thus, although in the short run we may experience a pause in our rate of growth, the eighties should provide unprecedented opportunities for the company.

In August we announced our decision to consolidate most of our executive and administrative functions in Toronto, to establish the new western regional office in Calgary and to retain a strong corporate presence in Montreal which would include the headquarters of the industrial chemicals division and regional responsibility for C-I-L's affairs in Quebec and the Atlantic Provinces. These difficult decisions involved a conscious effort to recognize our corporate responsibilities to shareholders, employees and the public at large. They were designed to focus management efforts for maximum benefit in each region, while reducing the costs of time and travel now encountered by many employees in administering our business out of two main centres, Montreal and Toronto. The building under construction in Toronto will soon become the company's principal administrative headquarters with initial occupancy in the fall of 1981.

To add further strength to the manufacturing function, a manufacturing services department has been formed which will focus on productivity, safety, industrial hygiene, toxicology, energy conservation and environmental improvement. An important objective of the new unit is the deployment of resources to improve C-I-L's manpower and process productivity, maintenance control, industrial engineering and control of working capital through improved inventory management. Another is to ensure that the company's safety performance reaches the demanding standards to which management is committed.

Having just completed a very good year, our people are in good spirits and are assured that we have an exciting future ahead of us. The internal climate is one of progress, openness, vitality and determination. We look forward to the achievement of our goal to make the eighties C-I-L's outstanding decade.

On behalf of the Board,



W.J. Mandry
President and Chief Executive Officer
Montreal, Quebec, March 31, 1981



A significant discovery of natural gas was made at Donnelly, Alberta, in 1980 in a joint venture with Bralorne Resources Limited.

Agricultural and Industrial Chemicals

Sales of this business segment were 16% higher than in 1979.

Agricultural chemicals division

In 1980 the agricultural chemicals division operated its Lambton Works, the main manufacturing complex, at capacity, shipping a record volume of product, exceeding three quarters of a million tonnes.

A satisfactory level of selling prices was achieved which, when coupled with improved efficiencies and cost control, led to a significant improvement in returns from this business.

The Lambton site, at Courtright, near Sarnia, Ontario, is the company's highest consumer of natural gas at a cost of about \$35 million in 1980. Its world-scale ammonia plant, which uses natural gas as feedstock, is one of the most efficient of its generation. Nevertheless, the division was able to make further technological improvements in 1980 which resulted in substantial savings in energy use. By 1985, the Works expects to have achieved a 25% reduction in energy consumption per tonne of product from 1972 levels.

Growth in demand for fertilizers and industrial chemicals in the domestic market has resulted in a smaller percentage of the division's products being sold in the United States over recent years; in 1980, only about 12%.

C-I-L is proceeding with plans for the design and construction of a 1,100 tonne per day ammonia plant at its Lambton site. ICI has developed a new process which has been tested under operating conditions in an existing plant and which will have the advantage of being less costly to install and to maintain, while being 25% more energy-efficient than existing processes. The plant is planned to be on stream late in 1984 at an estimated cost of \$175 million.

By expanding ammonia capacity the company plans to be in a position to increase U.S. sales and to reinforce its position as a major supplier to its market in Eastern Canada and the U.S. north central states. Without added capacity customers in Eastern Canada would become dependent upon ammonia imports before the mid-1980s.

Ammonia is used by a number of industries but its main use is to provide the nitrogen nutrient in a range of fertilizer materials. Nitrogen represents about one half of the total plant nutrients in fertilizers in North America.

The division's third lawn and garden products blending plant will begin operations early in 1981 in Calgary, others being in Laval, Quebec and Ingersoll, Ontario. The new facilities will support a growing business in these products in Western Canada.

There are now 58 C-I-L "Agromart" farm supply centres throughout Eastern Canada. Some rationalization of "Agromart" locations was carried out in 1980, and improvements are being made to blending and shipping facilities of others to help provide faster service to farmers during the busy spring season.

With respect to the short term outlook, the division expects that costs will increase much faster than prices, resulting in a slight decline in the rate of return for this business in 1981. The cost of phosphate rock and natural gas in total is expected to increase by about 25% or \$13 million over 1980. The federal government's recognition of the need to separate the price per unit of energy in oil and in gas is important to Canadian ammonia producers who must rely on natural gas for process feedstock and must compete with U.S. manufacturers in both the Canadian and the U.S. markets.

In 1980 there were 765 persons employed in the agricultural chemicals division.

Industrial chemicals division

Industrial chemicals division was able to move larger volumes of product and to continue penetration of new markets in 1980. However, much higher costs for freight and for manufacturing, particularly for chloralkali products, prevented the division from increasing income in line with sales.

The chloralkali manufacturing process produces chlorine and caustic soda in nearly equal amounts, presenting the problem of selling these products in balance. In 1980, the generally slow economy adversely affected sales of chlorine compounds to the automotive, construction and chemical industries, thus discouraging needed price increases in a highly competitive market for chlorine. On the other hand, demand for caustic soda, used in pulp and paper, aluminum, textile and other industries, remained fairly stable but production was temporarily limited by the lower than expected demand for chlorine.

The division was successful in developing a larger share of the market for chloralkali products but awaits an expected improvement in the general economy in 1982 to be able to pass through the much higher costs of production and distribution.

The division's other major business, sulphuric acid produced from off-gases from the smelting of metallurgical ores, continued to grow in 1980.

The business has been gradually evolving from being based on company-owned production facilities to being largely a marketing and distribution service to sulphuric acid producers throughout North America whose production of sulphuric acid minimizes their emissions of sulphur dioxide.

Important to the changing direction of this C-I-L business and in keeping with long-term strategy is an agreement in principle for the sale of production facilities for sulphuric acid and liquid sulphur dioxide at Copper Cliff, Ontario, to Inco Metals Company, effective in January 1981. Coinciding with the sale agreement is a long-term marketing agreement with Inco, providing for the purchase for resale by C-I-L of all of the site's sulphuric acid production which is not used by Inco. Negotiations had been underway with Inco throughout 1980, since the contract for the supply of smelter gas for C-I-L production of sulphuric acid was due to expire at the end of the

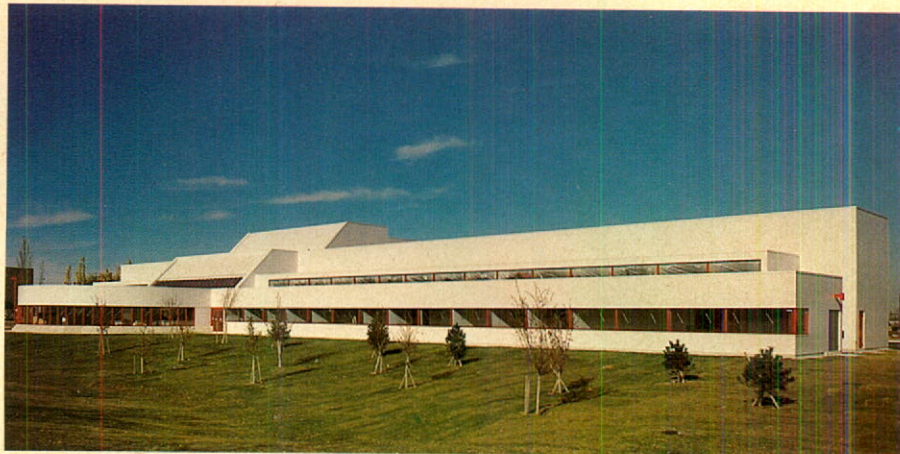
year. A plant on the same site which produces liquid xanthates for processing ore, will still be owned by C-I-L but will be operated by Inco.

About half of the volume of sulphuric acid currently being handled by C-I-L is produced at Copper Cliff and the sale and marketing arrangement with Inco will ensure that this output will continue to be included in C-I-L's sources of supply. Having available sulphuric acid based on smelter gases from different metals, and located conveniently to C-I-L's various depots, enhances the company's reliability as a supplier to the North American market.

The division has developed considerable expertise in marketing and distribution of sulphuric acid over the past 10 years, moving not only its own acid but also that purchased under long-term contracts from Texasgulf, Falconbridge, Canadian Electrolytic Zinc and other producers.

C-I-L's technical expertise will continue to be a major strength in the marketplace, being available to support producers of metallurgical acid. In addition, C-I-L's wholly-owned subsidiary, Chemetics International Ltd. remains a strong technical resource with access to knowhow world-wide. A sulphuric acid pilot plant and testing facilities for Chemetics are included in the new \$5 million Chemicals Research Laboratory completed in 1980 at the Sheridan Park Research Centre at Mississauga, Ontario.

C-I-L's new \$5 million chemicals research laboratory was completed in 1980 at the Sheridan Park Research Centre in Mississauga. In total, the company's research and development operations in 1980 exceeded \$22 million in operating expenditures and employed 545 people including 188 university graduates.



The use of anthraquinone in alkaline pulping is an important new patented technology for the pulp and paper industry which was recently developed in the division's laboratories. During 1980, the U.S. Food and Drug Administration gave approval of paper materials for food packaging which are made from pulp produced by using anthraquinone, and major mill trials using anthraquinone are now proceeding. In 1981, the division will continue to develop a position in this high potential business in North America.

Another major development at the Chemicals Research Laboratory in 1980 has focussed on the utilization of chlorine in pulp bleaching. The results of this project should be instrumental in slowing or even halting the erosion of chlorine markets by chlorine dioxide in the pulp and paper industry.

The headquarters of the industrial chemicals division will remain based in Montreal. C-I-L's principal chloralkali manufacturing plants and many chloralkali customers are in Eastern Canada; others are in the northeastern United States.

Following the sale of facilities at Copper Cliff, about 650 persons will be employed in the industrial chemicals division, most of them being located in Quebec and Ontario. Those employees at Copper Cliff who are not retained by C-I-L will be offered employment by Inco under the terms of the sale agreement.

Sales of the Western-based wholly-owned subsidiary, Inland Chemicals Ltd., were up 38% over 1979, reflecting in part the rapidly growing business in aluminum sulphate (alum) used mainly for water treatment. Upgrading of alum production facilities and construction of a new office building contributed to the further development of one of the company's sites, which is at Fort Saskatchewan, Alberta. Also, a new plant to package compressed gases was opened on the same site by the general chemicals division. In 1981 and 1982, \$4 million will be spent upgrading sulphuric acid production facilities to comply with environmental regulations in Alberta.

C-I-L Chemicals, Inc.

Having completed five busy formative years, C-I-L Chemicals, Inc. has established itself as a profitable growing business unit. This wholly-owned U.S. subsidiary exceeded \$50 million in sales in 1980, representing an increase of 37% over those of 1979. Sales of sulphur products and chloralkali products alone, its two main businesses, were up 49%.

C-I-L Chemicals' first subsidiary was formed in July 1980 to market and distribute in the United States the herbicides produced by C-I-L's Canadian subsidiary, Chipman Inc. Named Chipman Chemicals Inc., this new company surpassed expectations for sales during the balance of 1980 and is expected to continue to perform well in 1981.

C-I-L Chemicals will bring its third and largest sulphuric acid terminal on stream in 1982 at Chicago. Under construction now, this terminal will complete the basic distribution system for moving sulphuric acid by ship and by unit train which includes terminals at Cleveland and Detroit. All three terminals will be capable of being supplied by ship from C-I-L Inc.'s terminal on Georgian Bay, Ontario.

Besides chloralkali products, sulphur products and those of Chipman, C-I-L Chemicals' businesses include agricultural chemicals, plastics, explosives and a share in producing oil wells. Employees of this growing company now number more than 80.

Explosives division

The steady upward trend begun in 1977 in the explosives business was accentuated in 1980, making it one of the best years in the division's history. Sales increases were due mainly to higher volumes of bulk explosives being required by the mining industry and to continuing increases in offshore sales of explosives materials. About 20% of total sales of explosives and materials were export sales.

The division was able to improve its profitability, mainly by tighter control of costs and a better mix of products. Its reorganization into separate business units early in 1979 is credited with being a continuing strong factor in improving performance – concentrating and maximizing team management skills for running the various business units more effectively.

Other factors include some product reformulation to meet the challenges of the marketplace better, some rationalization, and continued upgrading and modernization of production facilities.

The explosives manufacturing plant at Calgary was closed down in September to make way for the City of Calgary's Deerfoot Trail, and a new site, for blending, packaging and storing explosives, was opened at Blackie, a few miles distant. Materials are supplied from other C-I-L manufacturing locations for the Blackie operations.

Slow but steady progress was made in the development of High Impact Welding, which uses ring explosives charges for welding together large diameter pipes used in pipeline construction. The process is working well technically and a five-mile length of pipeline using the High Impact concept is planned for the spring of 1981. Division management is enthusiastic about the advantages of the new concept for pipeline contractors, in that it provides quality joints in all temperatures quickly and more economically than current welding methods. This business will continue to be developed by the new C-I-L Resources Business Area based in Calgary.

The outlook for the division in the near future is favorable although growth could be slowed somewhat in the first six months of 1981 by the recessive economy in North America. However, overall, as a major supplier to mining, the division expects continuing strong growth in sales of bulk explosives, particularly in Western Canada. The renewed interest in coal mining is expected to provide new market opportunities in the near future.

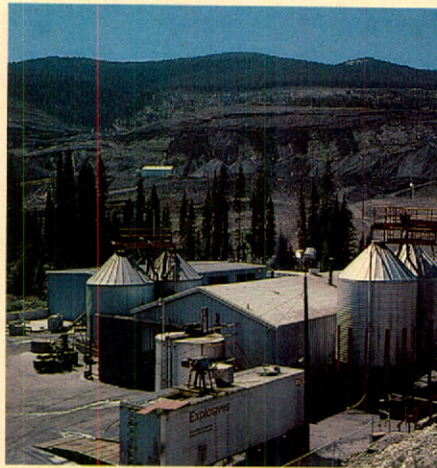
Some improvement is expected in sales to the construction industry which has been at a low level of activity, including sales of explosives for construction of roadways to open up new mines, particularly in Western Canada.

Export sales of explosives and materials are expected to develop further through participation in ICI Explosives International Ltd. This marketing company, set up by C-I-L and four other members of the ICI Group of companies, is in its first formative year.

Based in Singapore, ICI Explosives International has a world-wide network of 80 sales agents and regional offices which will service mining, construction, civil engineering, seismic exploration and other industries. The greatest growth area is expected to be Southeast Asia.

ICI Explosives International is supported by a total of 17 manufacturing plants located around the world, providing ample resources to suit customer product preferences, flexibility with regard to capacity, and opportunities to economize on transportation costs.

There are about 1250 employees in the explosives division.



This C-I-L blending plant for commercial explosives on the Fording Coal Limited site at Elkford, B.C., is one of 24 such C-I-L on-site plants serving open pit mines across Canada.

CXA Ltd.

Sales and income of CXA Ltd., a 70%-owned subsidiary of C-I-L, were well ahead of those of 1979, in line with increased sales of explosives to the mining industry. This company makes a complete range of blasting accessories in Brownsburg, Quebec, and in Tappen, B.C., which are sold through C-I-L and other explosives suppliers in Canada.

In the Brownsburg technical and development laboratories, new products and technological advances are evaluated to ensure that the most cost effective and safe initiating systems are available to customers. The company employs more than 580 persons.

Explosives and Mining Equipment

Sales of this business segment were 20% higher than in 1979.

Jarvis Clark Company Limited

Export sales of underground mining equipment continued to climb in 1980, pushing total sales of Jarvis Clark Company Limited up 40% from 1979. Canada's leading manufacturer of equipment for underground mining, this wholly-owned subsidiary has had to expand rapidly its manufacturing and warehousing facilities to support its drive into international markets, while continuing to maintain its 80% share of the domestic market. About 50% of the company's equipment sales are export sales.

Early in 1980 a 50,000 sq. ft. expansion of its North Bay plant went into production. Later in the year the company agreed to purchase a 125,000 sq. ft. plant building and offices in Burlington, Ontario.

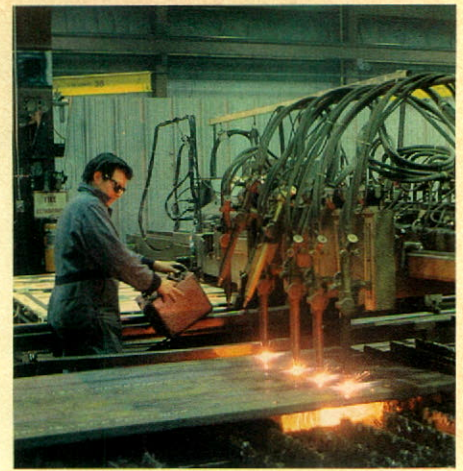
Jarvis Clark will occupy the Burlington property early in 1981 and commence assembly operations, for equipment of its own design. Production machinery will be installed to manufacture its line of specialized equipment which includes drill jumbos, scoops and dump trucks, powered by diesel or electric motors.

Together with a \$1.5 million consolidated international parts warehouse being built at Bramalea, Ontario the new facilities will assist the company to give faster, more reliable service to its customer mines in other countries. These include Africa, Ireland, Mexico, Brazil, Sri Lanka, Peru, India and Saudi Arabia. The additional production capacity will also permit the company to improve its delivery service to Canadian customers from its North Bay plant.

In December, the company acquired an interest in Stromnes AB, a manufacturer of specialized drilling equipment, located in Sweden. Other acquisitions of parts suppliers are being studied in view of this business' high potential for continued rapid growth.

Jarvis Clark now employs more than 650 people, of whom 500 are located at North Bay. It is expected that the new facilities in Burlington will eventually employ an additional 200 people. About 25 employees will be located at the Bramalea parts warehouse, scheduled to be opened April 1981.

Operations in Denver, Colorado, owned and operated by an associated company, Jarvis Clark Inc., were set up in 1977.



In the North Bay manufacturing plant of Jarvis Clark Company Ltd. frame pieces of underground mining equipment are cut on electric eye flame cutters capable of handling three 8-inch plates with eight cutting heads working together.

West African Explosives and Chemicals Ltd.

Due mainly to disruptions related to the military coup in Liberia in 1980 and the weaker market in the iron ore industry, sales of West African Explosives and Chemicals Ltd. were down about 7% from 1979. Activity in iron ore mining, the company's principal market, was reduced for a period but now has returned to near normal levels.

Export sales to neighboring countries were higher than expected and amounted to 12% of total sales. Mining in Sierra Leone, Niger and Guinea and construction in Ivory Coast and Mali present strong potential for growth in the explosives business.

In 1980 a company was formed jointly by C-I-L and the Government of Guinea, named Société de Produits explosifs et chimiques (SOPEC). It will establish explosives manufacturing facilities in Guinea. Negotiations are now underway with the Government of Niger to form a similar joint venture in Niger. This country is a new market for the company with the first sales of explosives being made there in 1980.

West African Chemicals and Explosives Ltd., based at Harbel, Liberia, is owned 61% by C-I-L. It employs 145 persons.

Plastics division

1980 sales of plastics division were increased significantly with highest gains being made in polyethylene resins. Annual production of resins at Edmonton reached an all-time high.

The Edmonton plant was Canada's first producer of polyethylene in 1953; today it has a major expansion program underway. A project now under construction will be on stream late in 1981 and work is continuing on engineering plans for another expansion which would be completed in 1984.

The current \$55 million project nearing completion will bring the plant's capacity in low density polyethylene to 75,000 tonnes annually, while the planned further \$120 million expansion would produce high and medium density polyethylene, augmenting total capacity by 100,000 tonnes. The company has applied to the Energy Resources Conservation Board of Alberta for an industrial development permit to produce high density polyethylene and expects to be in a position to make a final decision on the project by the end of 1981.

Negotiations to obtain a supply of ethylene, the essential feedstock, are being carried on but there is serious concern that adequate supplies will be available in 1984.

Exports of some specialty products – 'Milpac' industrial shipping sacks and greenhouse films – remained strong although overall sales of polyethylene films declined somewhat, due to generally slow economic conditions. Capacity of 'Milpac' was increased at the Brampton plant in 1980 to support continuing growth in U.S. sales which are assisted by the favorable \$ Canadian/U.S. exchange rate.

The division expects to maintain its present high level of performance in 1981 while building towards the increasing growth associated with the new capacity coming on stream late in the year. It employs about 500 persons, most of them being located at the Edmonton and Brampton manufacturing sites.

C-I-L Paints Inc.

In 1980, its first formative year as a subsidiary, C-I-L Paints Inc. lived up to expectations expressed in the 1979 report. The new wholly-owned company, formerly a division of C-I-L, enjoyed its best growth in the decorative products sector (home and commercial paints). The new decorative color system introduced a year ago, improved distribution, advertising and merchandising programs, and better customer service were major factors in improving sales. Industrial and refinish sales also were well ahead of 1979, while automotive sales were affected by depressed conditions in that industry.

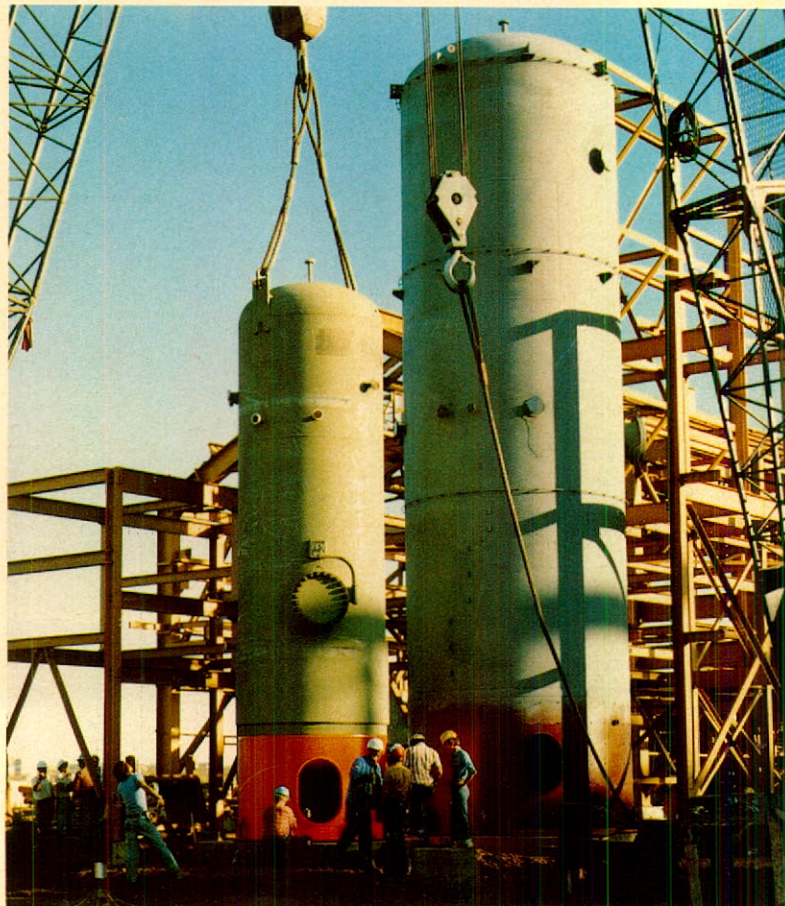
Close control of costs in all sectors and realistic pricing contributed to the favorable overall results.

The operation of this business as a subsidiary has resulted in a sharper focus of management skills and has expedited decision making. During the year the company moved its administrative offices to the site of its largest industrial finishes manufacturing plant and research laboratory, furthering a sense of unity and drive, both important to future business success.

The company will be upgrading its computerized order entry and warehousing system in 1981 to help

Paints and Plastics
Sales of this business segment were 15% higher than in 1979.

An expansion doubling low density polyethylene capacity at C-I-L's Edmonton plant is now under construction and will be on stream late in 1981.



maintain its strong position as a paints supplier in Canada. Among this subsidiary's most important assets are the experience and technical expertise gained over 60 years in the business, and the dedication of more than 1,000 employees located across Canada.

The difficulties facing the paints industry during recent years – low growth in the market, rapid increases in raw material costs and severe competition – are expected to continue. However, C-I-L- Paints Inc. has established an upward trend in performance, which it expects to maintain.

Alchem Inc.

Alchem Inc., a producer and distributor of chemicals for specialized industrial applications, made substantial gains in both sales and income in 1980. Strong growth in oil field and refinery process chemicals helped to put sales of this 51%-owned subsidiary nearly 20% above 1979 levels. Sales of water treatment chemicals also increased significantly, particularly in Ontario and Alberta.

Expansion of manufacturing facilities at both Burlington and Edmonton is currently underway and further expansion of warehouse, manufacturing and office facilities is planned for 1981 and 1982. About half of the company's 300 employees are located at Burlington, site of its administrative headquarters and largest plant.

Hanson Inc.

Hanson Inc. is an 85%-owned subsidiary of C-I-L, which is engaged primarily in the manufacture and distribution of products and equipment to the industrial surface finishing industry. Two other areas of interest are the manufacture of rigid urethane foam insulation board and the sale of supplies to the foundry industry.

Slowdowns in the automotive and construction industries as well as the complete shutdown of a number of customers' operations in 1980 resulted in a 5% reduction in sales as compared to 1979. Operating profit was nevertheless ahead of last year as a consequence of close monitoring of period costs and margins.

The outlook for 1981 is for a slight volume increase as key customer industries become more active although the continuation of high interest rates could dampen the recovery. It is also expected that the competitive pressures could adversely affect margins and operating profit.

Nearly 200 persons are employed by Hanson Inc.

General chemicals division

While sales of the urethanes business area declined slightly with depressed conditions in the construction industry, sales of all other business units of the general chemicals division increased.

The division supplies a broad spectrum of mainly packaged commodity and specialty chemicals to nearly every segment of the Canadian economy, and thus has some buffer against economic downturns in limited areas of the marketplace.

A new plant to package ammonia and chlorine at Fort Saskatchewan, Alberta, went on stream in 1980, enlarging the division's coast-to-coast distribution facilities for supplying compressed gases, and improving service to the fast growing market in Western Canada.

The division was reorganized in 1980 to concentrate management skills in specific business areas and to set up a new business development unit to focus on further growth. Opportunities which will permit the division to capitalize on its expertise and other assets, are being evaluated.

Employees of the division number about 120, most of them being directly engaged in marketing and distribution.

Cornwall Chemicals Limited

A chemicals manufacturing company owned 50% by C-I-L, Cornwall Chemicals Limited increased both sales and earnings in most sectors during 1980. Outlook for 1981 continues to be favorable. This company, which has been associated with C-I-L since 1941, is managed and operated by C-I-L. It produces carbon bisulphide, carbon tetrachloride and sodium hydrosulphide at Cornwall, Ontario. These products are used in the manufacture of rayon, cellophane, xanthates, fluorocarbons, pesticides, pulp and paper, as well as in metallurgical processing and refining.

Specialty Chemicals and Services
Sales of this business segment were 4% higher than in 1979.

Chipman Inc.

Sales of Chipman Inc. in Central and Eastern Canada in 1980 were well ahead of the previous year with a major increase occurring in Home & Garden products. In Western Canada, severe drought conditions and a reduction in the acreage of oil seed crops adversely affected sales of agricultural products. However, export sales of seed treatments to the United States, combined with the increases in Eastern Canada, held 1980 sales overall at the 1979 levels. Earnings were lower due to higher operating costs and interest on working capital.

Chipman is forecasting a significant recovery in sales and earnings in 1981 as the outlook for the agricultural industry in Canada is promising. The company will maintain its extensive field evaluation technical program, testing new and more commercially promising chemicals. During the year, building on Chipman's position as Canada's largest formulator and distributor of crop protection products, a subsidiary of C-I-L Chemicals Inc., Chipman Chemicals Inc., was established with headquarters in River Rouge, Michigan, U.S.A., to direct the sales of Chipman products in the U.S. agricultural chemical market.

In 1980, Chipman achieved a safety record at its Stoney Creek / Hamilton site of 26 years of manufacturing operation without a disabling injury. The company has about 190 employees across Canada.

Chemetics International Ltd.

Chemetics International Ltd., a wholly-owned subsidiary which sells chemical process technology around the world, ended the year 1980 with \$100 million in unfilled contracts. Continuing active in the export market throughout the year, the company obtained contracts in New Zealand, South Africa, Mexico, Tunisia and other countries, as well as in the United States and Canada.

The company's acid technology division which is based in Toronto, has developed a new sulphuric acid process that features maximum generation of energy. The technology was introduced to the industry in 1980 and the first contract obtained. A 1,200-ton per day plant is now being built on a turnkey basis for Western Co-operative Fertilizers Ltd. at Medicine Hat, Alberta.

The chemical plant division's main research effort has been the development of a new process for the manufacture of sodium chlorate. This process operates at a higher temper-

Eco-Research Inc.

Formerly the environmental services division of Eco-Research Ltd., Eco-Research Inc. was formed late in 1980 as a wholly-owned subsidiary. This business unit continued to grow during 1980, expanding its laboratories in Pointe Claire, Quebec. When the new subsidiary was formed, the Deep Shaft business of Eco-Research Ltd. remained a part of C-I-L's environmental improvement business area. No new contracts were obtained in 1980 for Deep Shaft waste treatment plants, largely because of sluggish activity in the market and slow progress in bringing existing Deep Shaft plants on stream.

Eco-Research Inc. employs about 50 persons.

ature resulting in reduced power consumption. A first plant of this design is now being built for Canadian Occidental Petroleum at Nanaimo, B.C.

Modo-Chemetics Ltd., a wholly-owned subsidiary of Chemetics, was successful in establishing itself as a supplier for computer control of digester, bleach plants and other operations in pulp mills.

Chemetics' administrative headquarters is in Vancouver and its chemical plant division is based there. The total number of its employees was 400 in 1980.

Tricil Limited

Tricil Limited of Mississauga, Ontario, C-I-L's joint venture with Trimac Limited of Calgary, had another outstanding year in 1980, with sales and earnings up 50% over 1979.

The construction of three solid waste transfer stations by Tricil and the start-up of the complete waste management program for the Region of Hamilton-Wentworth was a major contributor to the excellent results in 1980. The contract between Tricil and the Region includes the operation of the Hamilton incineration plant which removes ferrous metals from municipal solid waste and produces steam by incineration of the remaining waste; the operation of three transfer stations; the bulk hauling of solid waste from the transfer stations to the new Glanbrook landfill site some 14 miles away; and the operation of the landfill site. Approximately 70 people are employed by Tricil on this particular contract alone.

The ability of Tricil to accept wastes at its Sarnia facility, under strict environmental procedures, and the geographic expansion of its solid waste collection activities also enhanced the positive results.

Significant progress has been made in the waste-to-energy field, with a number of negotiations nearing completion for the design, construction and operation by Tricil of these waste-to-energy facilities. An office has been established in Atlanta, Georgia to pursue this market in the United States.

Employing more than 350 people in Canada and the United States, Tricil is one of North America's largest totally integrated waste management companies.

Oil and gas exploration

In 1980 C-I-L substantially extended its joint venture with Bralorne Resources Limited in oil and gas exploration and negotiated a new agreement which includes two other participants, with Bralorne continuing as managing operator. It is planned that exploration will be carried out over the next five years principally in Alberta in a search for Canadian petroleum resources. Spending on the program has proceeded at a lower than planned rate pending a favorable resolution of the federal/provincial debate on energy policy.

The original five-year C-I-L/ Bralorne joint venture, in which C-I-L had invested about \$11 million by year-end 1980, resulted in discoveries of natural gas in Alberta at Donnelly, Tower/Agnes, Windfall, Goose River and Parkland. All gas discoveries have been capped until marketing efforts generate opportunities for delivery. C-I-L's share of the capital cost of the new exploration program would be about \$33.5 million over a five-year period.

Douglasdale Estates Ltd.

In January 1980 Douglasdale Estates Ltd. was formed as a wholly-owned subsidiary of C-I-L to purchase and develop and sell some 1200 acres of C-I-L property in southeast Calgary.

Formerly the site of one of the company's explosives manufacturing plants since the early fifties, the property had become no longer suitable for these operations owing to the rapid expansion of the City of Calgary and subsequent rezoning. The plant was closed in September 1980 and extensive work has been done to prepare the site for development by Douglasdale for residential, commercial and industrial use. With the real estate market continuing strong in Calgary, the property has good potential for gain over the next 8-10 years.



Principal members of C-I-L's occupational health team are: left to right, Elizabeth Kaegi, toxicologist; Peter Nicholl, industrial hygienist; Pete McKay, manager; and Dr. Marcel Sylvestre, chief medical officer.

Employees

Occupational Health

In keeping with recent advances in knowledge and techniques for industrial hygiene, toxicology and medical surveillance of employees at work, C-I-L initiated a complete review of its occupational health program in 1980. Specialist resources were added to the central group to review all practices and procedures, to develop appropriate standards, and to provide support and guidance for management and occupational health professionals at all locations.

A comprehensive survey is being undertaken at each location to provide the fullest possible protection of the health of employees and routine monitoring is carried out to identify and evaluate any potential health hazards.

Safety

Parallel to the new occupational health program is an action plan concerned with safety, which was adopted in 1980.

C-I-L's safety performance is better than that of the chemical industry as a whole; nevertheless it has fallen short of company objectives, with little improvement in 1980 over 1979. Under the plan new minimum safety standards will be established, safety auditing systems will be emphasized, and better techniques for analyzing accident causes will be studied. On the basis of these initiatives and recent performance trends, an objective of 10% improvement for 1981 has been set, applying to both on- and off-the-job safety performance.

Labor Agreements

Approximately 33% of employees are represented by 12 unions in 36 separate bargaining units. Twenty-nine collective agreements were open for renegotiation in 1980 including those carried over from the previous year. Twenty-three agreements were reached during the year and six negotiations, scheduled in the last quarter, were carried over into 1981. All but one of the 23 agreements were achieved without work stoppages.

Relocation

The decision to move the company's administrative headquarters resulted in 38 positions being relocated to Toronto in 1980, mostly in the systems and management information department, and a further 342 positions will be relocated in late 1981. Appropriate programs have been established to ensure that employees receive sufficient information on such matters as housing and rental accommodation, education and available financial and other assistance for relocating. Familiarization visits to Toronto for interested employees and their spouses have been organized and special moving policies adopted to ensure the relocation is carried out with minimum disruption to employees and the business. Assistance will be provided to those employees who decide not to relocate to Toronto in finding alternative employment in C-I-L or, if that is not possible, outside the company.

The number of regular employees in the company and its subsidiaries at year end was 8,315.

Employees and Directors

Directors

During the year D. M. Coyle resigned from the board and Christopher Hampson was appointed to fill the vacancy.

Mr. Coyle, who retired on June 30, 1980 joined the company in 1946 and thereafter held a number of management positions. From 1966 to 1969 he was on loan to ICI (India) as finance director and on return became a vice president of the company. He had been a director since 1975 and his contributions to both the deliberations of the board and to the operations of the company through his knowledge and experience in the financial area will be missed by his colleagues on the board.

Mr. Hampson had been a director and a vice president prior to 1978 when he was seconded to Imperial Chemical Industries Limited in London, England.

Board of directors

J. D. Allan
President and
Chief Operating Officer
Stelco Inc.
Toronto, Ontario

D. I. W. Braide
Senior Vice President
C-I-L Inc.
Montreal, Quebec

F. S. Burbidge
President
Canadian Pacific Limited
Montreal, Quebec

Roger DeSerres
President
Omer DeSerres Limitée
Montreal, Quebec

A. G. S. Griffin
Corporation Director
Toronto, Ontario

Christopher Hampson
General Manager Planning
Imperial Chemical Industries
Limited
London, England

C. H. Hantho
Senior Vice President
C-I-L Inc.
Montreal, Quebec

R. Haslam
Deputy Chairman
Imperial Chemical Industries
Limited
London, England

Egerton W. King
President and
Chief Executive Officer
Canadian Utilities Limited
Edmonton, Alberta

R. I. Lindsell
Chairman, Mond Division
Imperial Chemical Industries
Limited
Runcorn, Cheshire, England

W. J. Mandry
President and
Chief Executive Officer
C-I-L Inc.
Montreal, Quebec

F. Whiteley
Director
Imperial Chemical Industries
Limited
London, England

Audit Committee
A. G. S. Griffin, Chairman
F. S. Burbidge
E. W. King



Montreal employees planning to relocate view models of new Toronto office facilities. Information pieces and familiarization tours in Toronto are being provided as well.

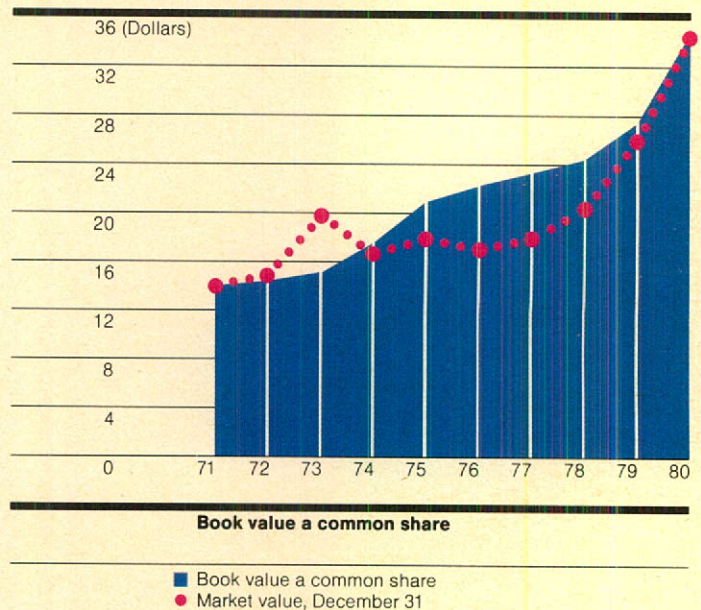
Sales and earnings

Sales of C-I-L and its subsidiaries for the year totalled \$1,004 million, an increase of 14% over the 1979 level of \$880 million. Consolidated net income before extraordinary items at \$51.5 million was \$15.2 million or 42% above the previous year.

Sales increases were recorded by all major business units of the company. Significant gains were achieved by agricultural and industrial chemicals, explosives and mining equipment and in paints and plastics. Record sales of agricultural chemicals were attributed mainly to a firming of market prices. Urea sales volume increased, as well, following commissioning of facilities for additional production capacity at Courtright, Ontario in late 1979. The industrial chemicals operations included uninterrupted production from the sulphuric acid and sulphur dioxide plants at the Copper Cliff site which were closed for most of the first half of 1979 due to a strike at Inco Metals Company. Sales of chloralkali products advanced, reflecting strong demand for caustic soda from the pulp and paper industry. Sales of explosives and mining equipment increased by 20% over the previous year; a general increase in mining activity, additional manufacturing capacity for trackless mining equipment, greater export shipments and higher selling prices contributed to the improvement.

Income from operations for 1980 at \$100.7 million increased by \$25.7 million or 34% over the previous year. Higher selling prices combined with improved operating efficiencies more than offset increases in employment costs and in raw material prices, particularly for natural gas, phosphate rock, ethylene and power.

Depreciation of \$39.8 million was provided during 1980, an increase of \$7.9 million over 1979. The policy of the company is to write off the cost of depreciable assets on a



Financial review and
analysis of 1980 operations

straight line basis over their estimated useful lives. Annual reviews are made of the residual lives of all productive assets taking into account technological and commercial obsolescence as well as current physical condition. The increase in depreciation expense from 1979 reflects the new facilities brought into operation, primarily the chloralkali plant expansion brought on stream at Bécancour, Quebec in the latter part of 1979 and additional urea capacity at Courtright, Ontario.

Short-term interest expense in 1980 was \$3.6 million compared to \$3.5 million in 1979. The increase reflects higher interest rates on seasonal bank borrowings offset partially by a reduction in borrowings during the last quarter of 1980. Dividends on the floating rate Second Preferred Shares, which are linked to banks' prime lending rates, increased by \$586,000 also reflecting the higher interest rates.

Earnings of \$4.60 a common share, before extraordinary items, were 48% above the \$3.11 earned last year. An extraordinary expense of \$729,000, after income taxes, was provided in 1980 for additional costs to be incurred to remove buildings and equipment and clean-up the site of a former chloralkali plant in Shawinigan, Quebec. Earnings a common share after extraordinary items were equivalent to \$4.53 a share compared to \$4.33 in 1979.

Net return on common shareholders' equity, before extraordinary items, rose from 11.9% in 1979 to 14.6% in 1980, and net return on total investment increased from 7.4% to 9.4%. Net income before extraordinary items as a percentage of sales increased from 4.1% to 5.1% for the year 1980. The quarterly dividend on common shares was increased in the third quarter from \$0.36 a share to \$0.40 a share. Total dividends for the year were \$1.52 a share compared to \$1.32 in 1979.

Land held for sale

An explosives plant located in Calgary, Alberta was closed during the year and clearing of the site is in progress. The land has been sold at estimated market value to a wholly-owned subsidiary company, Douglasdale Estates Ltd., for the purpose of preparing the approximately 1,200 acre site for sale for residential, commercial and industrial use. After providing for capital gains tax on the sale, and the costs of clearing the property, a revaluation gain of \$43.2 million was recorded as an addition to shareholders' equity, and will be recognized as income in future years as the property is sold to third parties.

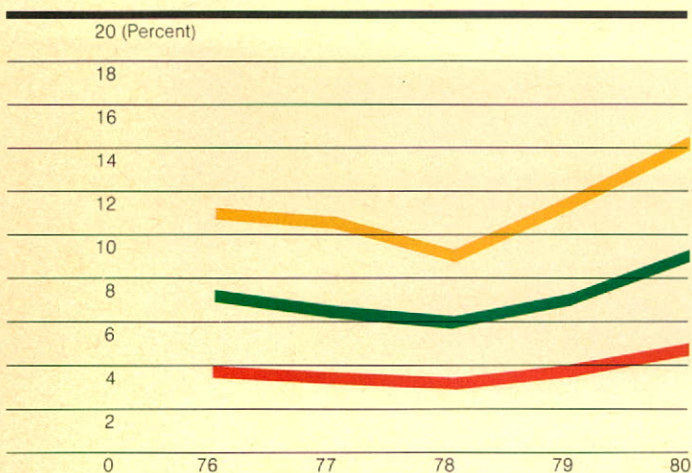
Funds generation and application

Net funds generated for the year totalled \$17.2 million compared to a decrease in funds of \$36.3 million in 1979. Short-term borrowing exceeded funds on hand at December 31, 1980 by \$1.9 million compared to a deficit of \$19.2 million at the end of 1979.

Funds generated

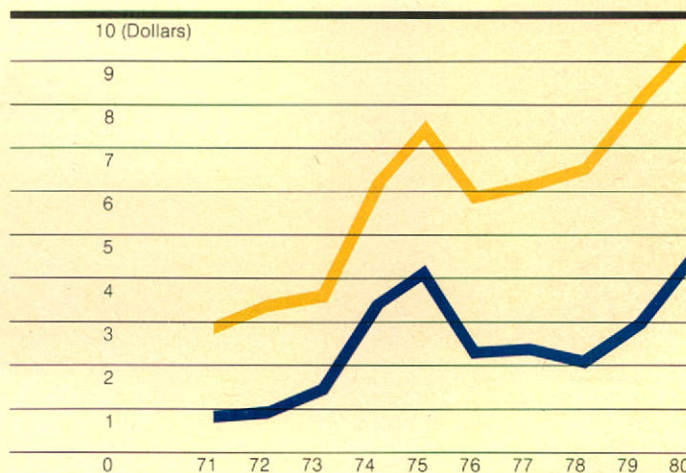
Funds generated from operations in 1980 increased by 16% to \$92.9 million. In addition, the company recorded investment tax credits of \$12.3 million available but unclaimed in previous years, and received DREE grants totalling \$3.1 million.

Working capital, excluding cash, decreased by \$20.9 million during the year. The reduction reflects continuing efforts to monitor and reduce the amount of funds invested in working capital as well as an increase in income taxes payable on the higher earnings and the capital gain arising from the sale of the Calgary land to Douglasdale Estates Ltd.



Profitability

- Net return on common equity
- Net return on total investment
- Net income as % of sales



Earnings and cash flow a common share

- Cash generated from operations
- Earnings

Funds applied

During 1980, the company invested \$70.2 million in capital expenditures. One of the major items of expenditure is the project to double the capacity of the low density polyethylene resin plant at Edmonton, Alberta, expected to be completed by the end of 1981. Other significant items included a new research laboratory at Mississauga, Ontario completed in the fourth quarter of 1980, and expenditures on oil and gas exploration. Costs associated with the Calgary land held for sale by Douglasdale Estates Ltd., principally the capital gains tax and site preparation costs, amounted to \$21.3 million.

Financing growth

The unexpended balance at December 31, 1980 on projects which have been authorized is estimated at \$72 million including \$25 million to complete construction of the low density polyethylene plant at Edmonton, Alberta.

The company expects to sanction capital expenditures during the period 1981 to 1985 of about \$600 million, of which approximately \$400 million will be for expansion and the remainder for various improvements to effect cost savings, efficiencies in production and greater safety. In addition, increased levels of working capital associated with the high volume of business activity will require financing.

In preparation for this period of high growth and to meet requirements for the current year, the company is planning a debenture issue in 1981, providing market conditions are appropriate, to ensure that adequate longer term capital is in place. At December 31, 1980 long-term debt accounted for only 14% of total investment.

Segmented information

The directors of the company have determined the major classes or segments of business based on similarity of products, markets and production processes. The segments reported herein are the result of a review carried out in 1980 and vary in some respects from the business area classifications previously reported. The principal products contained in each segment and the markets served are as follows:

a) Agricultural and industrial chemicals –

The principal manufactured products are: anhydrous ammonia, mixed fertilizers, ammonium phosphates, ammonium nitrate, nitrogen solutions, urea, sulphur coated urea, hydrochloric acid, caustic soda, chlorine, chlorinated solvents, sulphuric acid and aluminum sulphate. The markets served by this segment include the fertilizer market, the pulp and paper industries and chemical and fertilizer manufacturing industries.

b) Explosives and mining equipment –

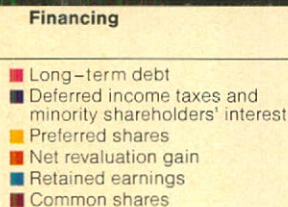
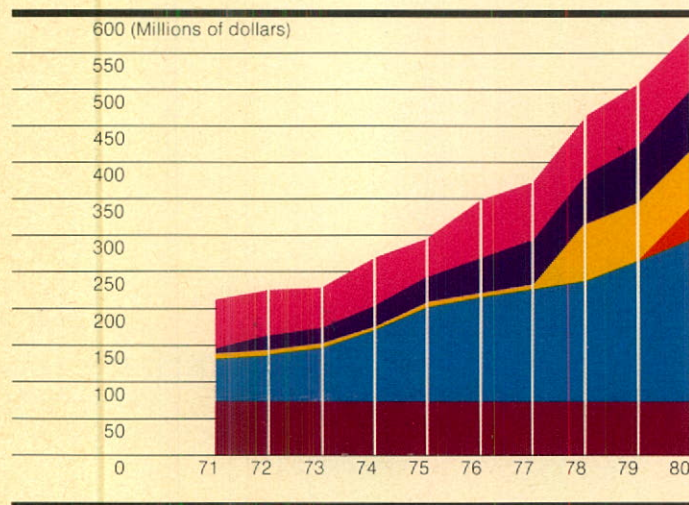
The principal manufactured products are: packaged and bulk commercial explosives, blasting accessories, detonators, ammonium nitrate and trackless mining equipment. This segment primarily serves the mining and construction industries.

c) Paints and plastics –

The principal manufactured products are: paints, including a wide range of decorative, automotive and general industrial finishes, and polyethylene resin, films, bags and shipping sacks. Polyethylene resins are used for food packaging films, insulation for wire and cable, paper coatings and pipe and molding applications. Polyethylene films are primarily sold for construction and agricultural uses.

d) Specialty chemicals and services –

Major products manufactured or resold are: packaged chemicals, water treatment and process chemicals, supplies and equipment for metal finishing and crop protection products. This segment also includes the sale of chemical process technology in the form of fully engineered systems, the oil and gas joint venture program and the environmental improvement business area.



The sales, operating profit, net assets, capital expenditures and depreciation by business segment are presented on pages 22 and 23. All business segments showed improved operating profits over 1979 except for specialty chemicals and services. Two subsidiaries in that segment, Chipman Inc., a formulator and distributor of crop protection products and Chemetics International Ltd., which markets chemical process technology, experienced reductions in operating profit in 1980.

Impact of inflation

In 1980 Canadian companies experienced an environment of double digit inflation and historically high and volatile interest rates. Conventional accounting does not identify the negative impact of inflation on real income, while existing income tax laws and reporting methods impose a significantly higher tax burden than is apparent. In these circumstances industry's ability to retain adequate funds to replace or modernize old assets and to finance growth is severely hampered. While the federal government has taken some steps in recognition of the problem, such as the 3% inventory allowance, investment tax credits and accelerated capital cost allowances on manufacturing and processing facilities, the extent of this tax relief is not sufficient to prevent continuing erosion of the capital base of Canadian industry. For example, C-I-L's effective tax rate in 1980 calculated on inflation adjusted (current cost) income was 55% compared to 42% in conventional historic accounting terms.

Another factor not readily apparent in conventional reporting of financial results is the extent to which real earnings are distributed to shareholders. Dividends declared on C-I-L's common stock in 1980 were equivalent to 59% of the current cost income attributable to these shareholders. On the reported historic cost basis, only one-third of the earnings were declared as dividends.

Such high effective tax rates and dividend payout in real terms make it very difficult for management to discharge its responsibility for generating and retaining sufficient funds from operations to maintain the company's productive capacity and at the same time provide shareholders with an adequate return on their investment.

The current cost accounting system employed by C-I-L to adjust for the inadequacies in reported earnings caused by inflation has evolved over the past several years. The techniques currently used parallel in most respects those recommended in the Canadian Institute of Chartered Accountants exposure draft on inflation accounting issued in December 1979.

The net adverse effect of the current cost adjustments to depreciation, cost of goods sold and net productive monetary items less the financing adjustment, totalled \$20.4 million in 1980 compared to \$10.1 million in 1979. The increase reflects primarily the effects of escalating inflation in 1980 in the prices of the particular assets consumed by C-I-L through sale or use, and the generally increased level of business over 1979.

Reconciliation of historical cost income to current cost income

	December 31, 1980	December 31, 1979	
Millions of dollars			
Historical cost income before interest and income taxes	\$104.4		\$77.6
Current cost adjustments			
Depreciation (Note 1)	\$22.2		\$16.8
Cost of goods sold (Note II)	17.9		8.1
Net productive monetary items (Note III)	8.4	48.5	3.9
Current cost income		55.9	48.8
Financing adjustment (Note IV)	28.1		18.7
Less: Interest expense and preferred dividends	17.2	10.9	16.5
Current cost income before income taxes		66.8	51.0
Income taxes	38.1		26.8
Minority interest	3.5	41.6	3.5
Current cost income attributable to common shareholders		\$ 25.2*	\$20.7*
Current cost income per share (dollars)		\$ 2.57*	\$2.11*

* Before extraordinary items

Note I:

Supplementary current cost depreciation is based on the estimated unexpired service potential of all plants, buildings and equipment revalued on the basis of replacing productive capacity at current dollars and taking into account factors such as economies of scale and changing technology. In 1979 engineering appraisals were carried out for all major manufacturing facilities to obtain asset replacement costs and an estimate of each asset's remaining service life, with 1980 values being indexed upward.

Note II:

Adjustment to the cost of sales provides the additional cost of replacing goods sold at the date of sale rather than at their historic average costs.

Note III:

This adjustment is an estimate of the loss of purchasing power (caused by inflation) of the funds dedicated to accounts receivable less accounts payable.

Note IV:

The financing adjustment reflects mainly that portion of the current year's appreciation in the value of operating assets which is financed by long-term borrowing. C-I-L's method of calculating this adjustment, revised to include the floating rate second preferred shares as long term borrowings, differs somewhat from the method suggested by the CICA Exposure Draft of December 1979.

	Agricultural & Industrial Chemicals		Explosives & Mining Equipment	
	1980	1979	1980	1979
Millions of dollars				
Sales to customers	\$348.3	\$299.2	\$270.2	\$225.4
Inter segment sales	15.7	14.5	3.0	1.7
Total revenue	\$364.0	\$313.7	\$273.2	\$227.1
Segment operating profit	\$ 41.1	\$ 27.7	\$ 36.2	\$ 25.7
Miscellaneous expense—net				
Total income from operations				
Interest expense—net				
Share in earnings of associated corporations				
Long-term debt interest, discount and expense				
Provision for income taxes				
Minority interest				
Net income before extraordinary items				
Identifiable assets—net	\$238.8	\$243.3	\$186.8	\$171.8
Corporate assets (liabilities)—net				
Total investment				
Capital expenditures	\$ 18.5	\$ 56.8	\$ 12.2	\$ 12.4
Depreciation and amortization	\$ 19.0	\$ 12.0	\$ 14.2	\$ 12.5

1. Inter segment sales are accounted for at prices comparable to open market prices for similar products and services.

2. Export sales amounted to \$144.8 million (1979—\$116.2 million)

Statement of segmented information

For the year ended December 31

Paints & Plastics		Specialty Chemicals & Services		Eliminations		Consolidated	
1980	1979	1980	1979	1980	1979	1980	1979
\$158.5	\$138.0	\$227.2	\$217.4			\$1,004.2	\$880.0
3.6	2.7	6.9	7.9	\$(29.2)	\$(26.8)	-	-
\$162.1	\$140.7	\$234.1	\$225.3	\$(29.2)	\$(26.8)	\$1,004.2	\$880.0
\$ 13.7	\$ 8.3	\$ 11.0	\$ 15.0			\$ 102.0	\$ 76.7
						(1.3)	(1.8)
						100.7	74.9
						(3.6)	(3.5)
						3.8	2.6
						(7.2)	(7.2)
						(38.1)	(26.8)
						(4.1)	(3.7)
						\$ 51.5	\$ 36.3
\$ 69.3	\$ 53.5	\$ 65.4	\$ 55.3			\$ 560.3	\$523.9
						26.1	(13.2)
						\$ 586.4	\$510.7
\$ 23.9	\$ 7.1	\$ 13.0	\$ 5.5				
\$ 1.1	\$ 3.6	\$ 2.6	\$ 2.5				

139
363
376

	1980	1979
	Thousands of dollars	
Sales	\$ 1,004,195	\$ 879,968
Costs and expenses		
Operating costs excluding depreciation	863,707	773,089
Provision for depreciation	39,811	31,941
	903,518	805,030
Income from operations	100,677	74,938
Long-term debt interest, discount and expense	(7,181)	(7,160)
Other interest expense—net	(3,626)	(3,493)
Share in earnings of associated corporations	3,758	2,579
Income before provision for income taxes	93,628	66,864
Provision for income taxes	38,100	26,800
Net income including minority interest	55,528	40,064
Minority shareholders' interest in the net income of subsidiary corporations	4,053	3,755
Net income before extraordinary items	51,475	36,309
Extraordinary items—net (Note 8)	(729)	11,977
Net income after extraordinary items	50,746	48,286
Retained earnings at beginning of year	197,800	168,283
Deduct: Dividends		
Preferred	6,427	5,841
Common	14,887	12,928
	21,314	18,769
Retained earnings at end of year	\$ 227,232	\$ 197,800
Earnings a common share, after preferred dividends		
Before extraordinary items	\$4.60	\$3.11
After extraordinary items	\$4.53	\$4.33

Consolidated statement of income and retained earnings

For the year ended December 31

1980

1979

Thousands of dollars

Current assets

Cash and deposits at interest	\$	12,777	\$	5,230
Accounts receivable (Note 2)		148,320		147,103
Inventories (Note 3)		185,356		154,507
Prepaid expenses		2,622		2,635
Total		<u>349,075</u>		<u>309,475</u>

Deduct:

Current liabilities

Bank loans		2,254		24,395
Loan from affiliated corporation		12,463		—
Accounts payable and accrued liabilities				
Trade and other		145,282		113,387
Affiliated corporations		7,210		6,009
Income taxes payable		23,097		3,525
Dividends payable		4,623		4,289
Total		<u>194,929</u>		<u>151,605</u>

Working capital

Working capital		154,146		157,870
Investment in associated corporations		10,987		9,987
Land, buildings and equipment (Note 4)		354,714		341,733
Land held for sale (Note 5)		65,553		—
Unamortized debenture discount and expense		1,014		1,107
Total investment	\$	<u>586,414</u>	\$	<u>510,697</u>

Financed by:

Long-term debt (Note 6)	\$	80,915	\$	81,275
Deferred income taxes		72,762		69,798
Minority shareholders' interest in subsidiary corporations		11,114		10,633
Preferred shares (Note 7)		77,325		77,325
Common shareholders' equity				
Common shares—9,794,161 issued		73,866		73,866
Revaluation gain on land held for sale—net (Note 5)		43,200		—
Retained earnings		227,232		197,800
Total		<u>344,298</u>		<u>271,666</u>
	\$	<u>586,414</u>	\$	<u>510,697</u>

On behalf of the Board:

W. J. Mandry
DirectorF. S. Burbidge
Director**Consolidated balance sheet**

At December 31

	1980	1979
	Thousands of dollars	

Source of funds

Funds from operations		
Net income before extraordinary items	\$ 51,475	\$ 36,309
Depreciation and amortization	39,904	32,537
Deferred income taxes	2,964	12,722
Share in earnings of associated corporations in excess of dividends received	(1,418)	(1,115)
	<u>92,925</u>	<u>80,453</u>
Sale of fixed assets	972	1,294
Proceeds from disposal of investment in Canadian Freehold Properties Ltd.	—	32,521
Investment tax credits and grants	15,430	1,077
Minority share of net income in subsidiary corporations, less dividends paid	540	1,133
Issue of long-term debt—net	—	793
Net decrease in working capital excluding cash and short-term loans	20,949	—
Total	<u>130,816</u>	<u>117,271</u>

Application of funds

Dividends	21,314	18,769
Additions to fixed assets	70,217	84,422
Costs associated with land held for sale	21,330	—
Acquisition of assets in subsidiaries and net additions to investments in associated corporations	—	5,525
Other	730	1,685
Net increase in working capital excluding cash and short-term loans	—	43,131
Total	<u>113,591</u>	<u>153,532</u>
Increase (reduction) in funds for year	17,225	(36,261)
Funds on hand less short-term loans (deficiency) January 1	(19,165)	17,096
Excess of short-term loans over funds on hand December 31	\$ (1,940)	\$ (19,165)

Consolidated statement of changes in financial position

For the year ended December 31

1. Accounting policies

Basis of consolidation

The accounts include C-I-L Inc. and all its subsidiaries except one foreign subsidiary for which the investment has been written off.

The Corporation accounts for acquisitions on the purchase method. Under this method, the difference between the cost and the book value of net assets acquired is added to or deducted from consolidated fixed assets and amortized over ten years or written off when the value no longer exists.

Foreign currencies

Current assets and liabilities and income accounts for those foreign subsidiaries included in the consolidation are converted into Canadian dollars at exchange rates in effect at the end of the respective reporting periods. Fixed assets, long-term liabilities and shareholders' equity are converted at rates of exchange in effect when first acquired, incurred or issued.

Inventories

Inventories are valued at the lower of average cost and net realizable value. Goods in process and manufactured goods include the cost of raw material, direct labour and manufacturing overheads.

Investment in associated corporations

Investments in associated corporations have been accounted for on the equity method. Under this method, the Corporation's share of net income of these associated corporations is included in the consolidated statement of income and retained earnings, rather than when realized through dividends. The investments are carried in the consolidated balance sheet at original cost plus the Corporation's share of earnings from January 1, 1974, less dividends received and less amounts written off where the underlying value of the assets no longer exists.

Fixed assets and depreciation

Buildings and equipment are carried at cost less accumulated depreciation. It is the policy to write off the book value of each fixed asset evenly over its estimated remaining life; annual reviews are made of the residual lives of all productive assets, taking account of commercial and technological obsolescence as well as physical condition. Depreciation is not charged on construction in progress.

Research and development

All expenditures for research and development, except buildings and major items of equipment used for this purpose, are charged to income as incurred.

Pension costs

The great majority of employees are covered by Corporation pension plans. Current contributions and past service funding requirements are charged against income in the year they become payable. Past service costs in trustee'd plans are being amortized within the requirements of the regulations of the Provinces in which the plans are registered.

Income taxes

The tax allocation method of providing for income taxes is followed. Under this method, income taxes currently payable may differ from the total income tax provision for the year as a result of timing differences between recognition of expenditures for accounting purposes and tax purposes. Such differences largely arise from claiming maximum capital cost allowances for tax purposes, which are higher than depreciation charged for determining reported income and investment tax credits which are charged to fixed assets and amortized over a ten year period. The tax effect of these timing differences is reflected in the accounts as deferred income taxes.

Oil and gas exploration

Expenditures for oil and gas exploration are accounted for by the successful efforts method. Under this method the initial acquisition costs for oil and gas properties together with the costs of drilling successful wells are capitalized. Exploration expenditures including geological and geophysical surveys, administration and unsuccessful drilling and associated acquisition costs are charged to expense.

Leases

As from January 1, 1979, leases have been classified as capital or operating leases. A lease entered into on or after that date, which transfers substantially all of the benefits and risks incidental to the ownership of property is accounted for as if it were an acquisition of an asset and the incurrence of an obligation at the inception of the lease. All other leases are accounted for as operating leases wherein rental payments are expensed as incurred. Assets recorded under capital leases are amortized on a straight-line basis over their useful lives.

2. Accounts receivable

	December 31, 1980	December 31, 1979
Thousands of dollars		
Customer	\$ 136,392	\$ 127,767
Affiliated corporations	698	1,146
Associated corporations	4,277	3,215
Other	6,953	14,975
\$	148,320	\$ 147,103

3. Inventories

	December 31, 1980	December 31, 1979
Thousands of dollars		
Raw materials	\$ 47,575	\$ 44,668
Goods in process and finished goods	134,021	106,874
Stores and supplies	3,760	2,965
\$	185,356	\$ 154,507

4. Land, buildings and equipment

	December 31, 1980	December 31, 1979
Thousands of dollars		
Buildings and equipment	\$ 620,006	\$ 596,353
Less: Accumulated depreciation	323,196	290,110
	296,810	306,243
Construction in progress	34,444	20,539
Land	12,412	11,869
Oil and gas ventures (net of accumulated depletion, \$102,000; 1979—\$8,000)	11,048	3,082
\$	354,714	\$ 341,733

It is estimated that expenditures of \$72,000,000 will be required to complete projects authorized prior to December 31, 1980.

5. Land revaluation

On March 15, 1980, the Corporation received an appraisal by Klaasen Eagleson Associates Limited of the current market valuation for the former explosives site in Calgary, Alberta. Based on the appraisal, the land was sold for \$65,000,000 to a subsidiary company, Douglasdale Estates Ltd. The land is reflected at the transaction price plus capitalized development expenditures. After providing for capital gains tax on the sale to Douglasdale Estates Ltd., and the estimated costs of preparation of the site for residential, commercial and industrial development, the Corporation has set aside a net revaluation gain of \$43,200,000, which will be recognized as income as the property is sold.

6. Long-term debt

	December 31, 1980	December 31, 1979
Thousands of dollars		
5% debentures due December 1, 1984	\$ 30,000	\$ 30,000
10% sinking fund debentures due July 15, 1996	50,000	50,000
Other (net of current portion, \$324,000; 1979—\$345,000)	915	1,275
	\$ 80,915	\$ 81,275

Sinking fund provisions of the 10% debentures require the Corporation to make payments to the trustee sufficient to retire \$2,000,000 principal amount on July 15 in each of the years 1982 to 1995 inclusive.

7. Preferred shares

	Shares	December 31, 1980	December 31, 1979
Thousands of dollars			
First preferred— cumulative dividend of \$3.75 per annum	46,500	\$ 2,325	\$ 2,325
Second preferred— Authorized	8,000,000		
Issued— Series A cumulative floating dividend	3,000,000	75,000	75,000
		\$ 77,325	\$ 77,325

The cumulative dividend on the floating rate Second Preferred Shares, Series A, is payable quarterly at a rate equal to one half of a sum of the average prime lending rate of four leading Canadian banks plus 2½% per annum. The shares will be retractable at the option of the holder on February 21, 1988 and redeemable at the option of the Corporation commencing in 1981.

8. Extraordinary item

The extraordinary item represents additional expenses of \$1,350,000 (less income taxes of \$621,000) associated with the 1979 closure of the chloralkali operation at Shawinigan, Quebec.

9. Pension plan

The contributions made by the Corporations and their employees are deposited in an irrevocable trust fund in accordance with the terms of the plan. There remains an unfunded liability at December 31, 1980 with respect to past services of \$26,068,000 based on an actuarial valuation received in 1979. This amount will be paid in instalments, in accordance with the regulations of the Provinces in which the plans are registered.

10. Contingent liabilities

Sono-Hemijski Kombinat Soda-So of Tuzla, Yugoslavia has instituted arbitration proceedings against a subsidiary, Chemetics International Ltd. (Chemetics), arising out of contracts between the parties dated June 24, 1972, in the International Chamber of Commerce Court of Arbitration in Paris, France, by a preliminary request for legal proceedings dated August 10, 1980. Sono-Hemijski Kombinat Soda-So claims the sum of \$7,084,069 with 8% interest from July 1, 1977, and an unspecified amount of damages. Chemetics' liability under the contracts should not exceed \$560,000 provided the contracts, including the clause limiting Chemetics' liability, are enforceable. Chemetics has instructed its counsel to prepare and file an answer and counterclaim for \$2,212,000 and an unspecified amount of damages for violation of a secrecy agreement concerning proprietary patented technology of Chemetics. The arbitrators are in the process of being appointed.

Trace-X Chemical, Inc. and John F. Arens have filed a complaint on February 6, 1981 in the United States District Court for the Western District of Arkansas, Fayetteville Division, against Canadian Industries, Ltd. (sic), C.I.L. Ammunition, Inc., I.C.I. America, Inc. (sic), and Imperial Chemical Industries Ltd. The action alleges violation of the U.S. antitrust laws in connection with the sale of TNT in the United States. Damages of US \$23,000,000 before trebling, are claimed by the plaintiffs. A reasonable assessment of exposure has not yet been made. The Corporation intends to contest these proceedings.

In addition the Corporation had contingent liabilities as at December 31, 1980 of \$691,000 with respect to guarantees on behalf of other corporations and other contingent liabilities of \$2,508,000.

11. Lease commitments

The future minimum lease payments under the capitalized and operating leases of the Corporation, together with the present value of the net minimum lease payments on the capitalized lease, are as follows:

	Capitalized Lease	Operating Leases
	Thousands of dollars	
1981	\$ 47.1	\$ 9,959
1982	47.1	9,231
1983	47.1	8,216
1984	52.1	7,157
1985	52.1	5,413
Subsequent to 1985	1,052.3	21,224
Total minimum lease payments	<u>1,297.8</u>	<u>\$ 61,200</u>
Less: Amount representing interest	831.8	
Present value of net minimum lease payments	<u>\$ 466.0</u>	

The major portion of the operating leases are for transportation equipment.

The Corporation is committed to enter into a capital lease for the rental of an administrative office complex in Toronto which is expected to be completed in 1981.

12. Investment tax credits

At December 31, 1980 the Corporation had investment tax credits of approximately \$3,800,000 available to reduce future income taxes otherwise payable.

13. Directors' and officers' remuneration

Remuneration of directors and senior officers of this Corporation during the year.

	1980		1979	
	Number	Amount	Number	Amount
As directors	12	\$ 104,000	12	\$ 64,000
As officers	19	2,009,000	13	1,303,000

14. Segmented information

Segmented information is presented on pages 20 to 23.

The Shareholders, C-I-L Inc.

We have examined the consolidated balance sheet of C-I-L Inc. as at December 31, 1980 and the consolidated statements of income and retained earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the Corporation as at December 31, 1980 and the results of its operations and the changes in financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Tanche Ross & Co.
Chartered Accountants

Montreal, Canada
February 13, 1981

Auditors' report

1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
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Millions of dollars

Consolidated Income Statement Items

Sales	1004.2	880.0	746.9	667.8	613.9	594.9	517.6	383.3	324.5	349.2
Depreciation	39.8	31.9	30.7	27.2	25.4	26.7	21.8	18.6	17.6	19.7
Income from operations	100.7	74.9	51.9	54.6	50.4	86.6	65.6	33.0	23.9	25.3
Long-term debt interest, discount and expense	7.2	7.2	7.2	7.8	5.2	2.9	3.1	3.2	3.4	4.2
Provision for income taxes	38.1	26.8	19.5	21.1	20.5	39.5	28.9	14.9	10.1	9.9
Net income*	51.5	36.3	26.4	24.9	24.4	42.6	34.8	16.0	10.5	9.5
Dividends	21.3	18.8	16.6	12.7	12.3	11.9	11.4	8.5	6.1	6.1

Millions of dollars

Consolidated Balance Sheet Items

Working capital	154.1	157.9	151.0	128.4	136.0	120.6	110.0	107.3	111.2	87.0
Fixed assets	678.0	631.9	566.2	476.6	420.4	366.5	316.4	280.0	262.3	253.0
Accumulated depreciation	323.3	290.1	271.7	249.4	224.5	206.1	183.6	164.5	148.6	132.7
Capital expenditures	70.2	84.4	97.6	59.8	63.7	54.3	47.6	21.5	12.8	16.8
Long-term debt	80.9	81.3	80.5	80.7	80.5	51.1	51.7	55.5	63.1	66.1
Preferred shares	77.3	77.3	77.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Common shareholders' equity	344.3	271.7	242.1	232.2	220.1	208.0	173.7	150.0	142.8	138.3

Dollars per share

Per Share of Common Stock

Earnings*	4.60	3.11	2.28	2.52	2.47	4.34	3.54	1.61	1.06	0.95
Dividends	1.52	1.32	1.28	1.28	1.24	1.20	1.15	0.85	0.60	0.60
Equity	35.15	27.74	24.72	23.71	22.47	21.24	17.74	15.35	14.58	14.12
Quarterly earnings*										
1st Quarter	0.80	0.26								
2nd Quarter	1.81	1.54								
3rd Quarter	1.08	0.76								
4th Quarter	0.91	0.55								
Year	4.60	3.11								

*Before extraordinary items

Consolidated financial review

Officers

W. J. Mandry

President and
Chief Executive Officer

D. I. W. Braide

Senior Vice President

L. H. Chant

Senior Vice President

P. R. Day

Senior Vice President

C. H. Hantho

Senior Vice President

A. T. G. Rodgers

Senior Vice President

A. C. Harlow

Vice President and
General Manager,
General Chemicals Division

S. E. Mallett

Vice President and
General Manager,
C-I-L Resources Business Area

H. C. Rowlinson

Vice President and
General Manager,
Plastics Division

J. G. Spence

Vice President and
General Manager,
Explosives Division

R. V. Ward

Vice President Eastern region
and General manager,
Industrial Chemicals Division

B. O. Winter

Vice President and
General Manager,
Agricultural Chemicals Division

L. A. Wheable

Secretary

M. C. Fitzsimmons

Treasurer

M. E. Johnson

Controller

D. E. Fletcher

Assistant Secretary

Elizabeth Newman

Assistant Secretary

S. E. Hunt

Assistant Secretary

C. McLaughlin

Assistant Treasurer

Principal operating subsidiaries

Alchem Inc.

Water treatment and specialty chemicals

Chemetics International Ltd.

Chemical plant, equipment, processes and design

Chipman Inc.

Insecticides, herbicides, fungicides

C-I-L Chemicals, Inc.

Chemicals marketing and distribution

C-I-L Paints Inc.

Decorative and industrial coatings

Continental Explosives Limited

Explosives distribution

CXA Ltd.

Detonators, detonating cord and fuses

Douglasdale Estates Ltd.

Property development

Eco-Research Inc.

Environmental survey and measurement services

Explosives Sales (1970) Limited

Explosives distribution

Hanson Inc.

Electroplating supplies

Inland Chemicals Ltd.

Sulphuric acid, alum

Jarvis Clark Company Limited

Underground mining and construction equipment

West African Explosives and Chemicals Ltd., Liberia

Explosives

Principal associated companies

Canso Chemicals Limited

Caustic soda, chlorine and sodium chlorate

Cornwall Chemicals Limited

Carbon tetrachloride and bisulphide

Tricil Limited

Waste management and disposal

