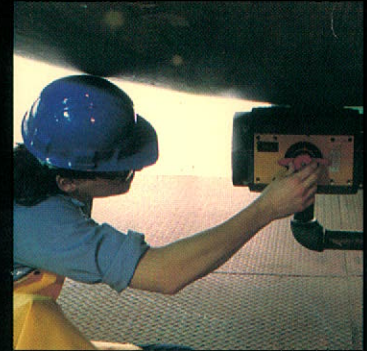


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C-I-L Inc. Annual Review 1988



GROWING WITH CANADA – THE C-I-L STORY

The year – 1862. A collection of colonies stretches across the top half of North America. A few far-sighted individuals see in this undeveloped, lightly populated, largely unexplored region the makings of something more – not yet a nation, perhaps, but a union of communities with some common goals and ideals, a place where men and women can build new lives, new homes, new futures. Everything is possible, if only the scattered settlements can be linked together, if only communications can be improved.

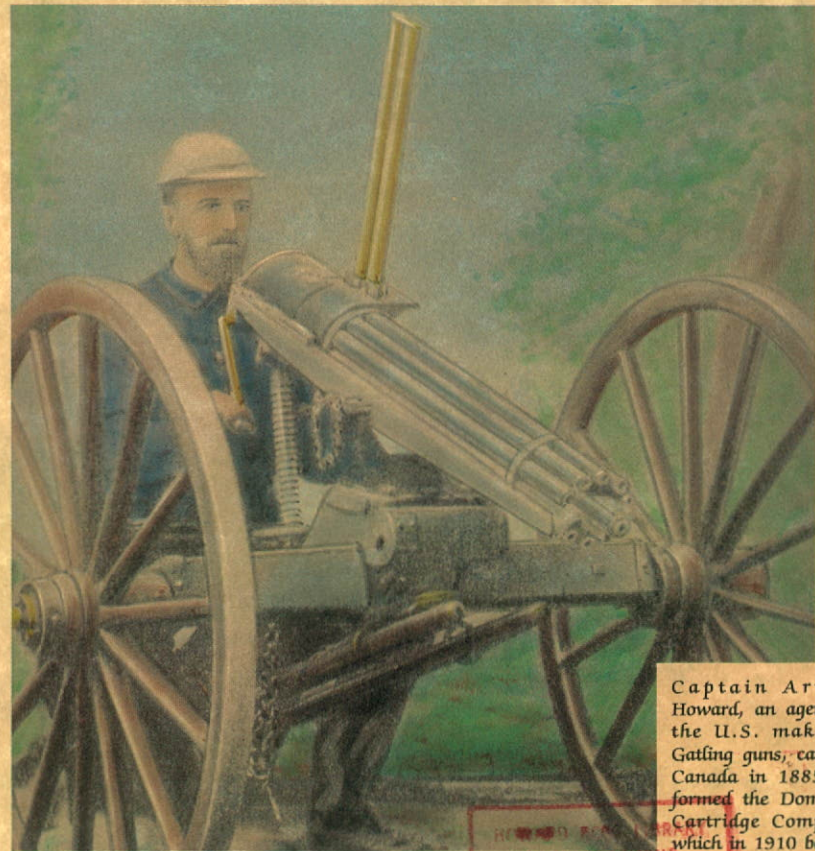
That year, 1862, saw the beginnings of what in 1989 we know as C-I-L. The Hamilton Powder Company was incorporated. Its founders saw an opportunity, and a need.

To clear land, build roads and construct railways, obstacles would have to be blasted away. Explosives were key materials required to build a new nation.

The main explosive of the day, known as black powder, was not powerful enough to rip apart the rocky mountains and the Canadian Shield. The technology to produce the newer and more powerful explosives, dynamite and nitro-glycerine, was acquired.

And dynamite and nitro-glycerine are chemical products. The new company was in the chemical business, even though that may not have been obvious in the early days.

To know the C-I-L of today, and to understand the decisions of 1988, it is necessary to look at the company's past. It is not a tale of gradual, steady evolution. It is a sequence of changes, dynamic



Captain Arthur Howard, an agent for the U.S. maker of Gatling guns, came to Canada in 1885. He formed the Dominion Cartridge Company, which in 1910 became part of Canadian Explosives Limited, now C-I-L.



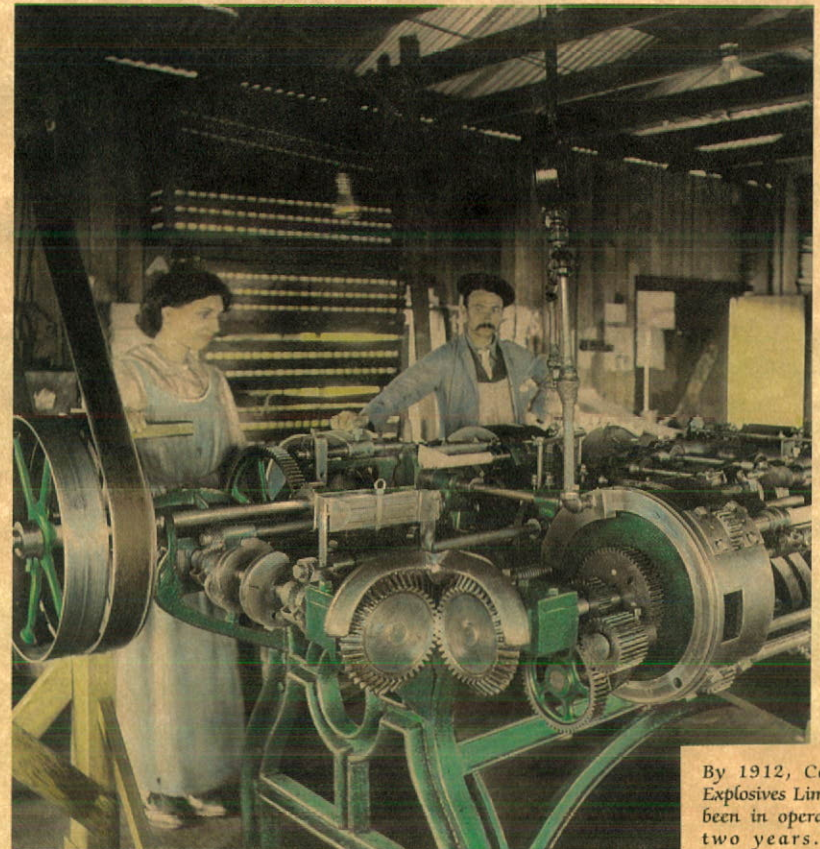
and often wrenchingly abrupt; of new directions; of acquisition and divestiture. In the early 1950s the company was split in two, half remaining and the other going its separate way to become a great company itself. Some businesses have faded away and others have ceased to be part of C-I-L because markets, technology or economics have dictated change.

All of this, like the future of the embryonic country itself, was unforeseeable in 1862.

Fifteen years after its founding, Hamilton Powder was bought by Dr. Thomas Brainerd. Brainerd had served as a surgeon in the Union Army during the U.S. Civil War, and later was in the explosives business in the United States. He had the financial backing of Lamont du Pont. The company prospered and in 1880 built a dynamite plant at Beloeil, Quebec – still the main site of C-I-L's explosives operations.

The transcontinental railway was completed in 1885, with the company's products playing a big part. So were countless other projects that opened up Canada and created new enterprises.

In 1890, Hamilton Powder built a black powder mill at Nanaimo, B.C., and a high explosives plant nearby. Meanwhile, two other companies that were later to become part of the same group were founded. They were Dominion Cartridge Company of Brownsburg, Quebec, and the Victoria Chemical Company at Victoria, B.C. The Victoria plant provided acids required at the



By 1912, Canadian Explosives Limited had been in operation for two years. Here, employees are working in the shell house of an explosives plant in British Columbia.

Nanaimo plant and used waste acids to manufacture fertilizers and hydrochloric acid.

Just before the end of the century, Nobel's Explosives Company of the United Kingdom, a predecessor of ICI, acquired a controlling interest in Hamilton Powder. Eleven years later, the Canadian explosives interests of Nobel's Explosives and of the du Pont de Nemours company of the United States were merged to form Canadian Explosives Limited. The alliance, with its counterparts in other countries, was to last four decades.

Canadian Explosives, with its history of peacetime development, transformed itself into a supplier of explosives, propellants and ammunition for the Allies in World War I. After the war, the company entered a period of rapid growth and diversification. Coated fabrics, mainly for use in the automobile industry, were introduced, as were paints and plastics. In partnership with another company, the Canadian Safety Fuse Company – now CXA Limited – was formed. Plants were acquired or established through the 1920s and 1930s to produce ammonia for fertilizers, salt, chlorine, caustic soda and sulphuric acid as well as other products. The mining, metal refining and agricultural industries became increasingly important customers.

The old name, Canadian Explosives, no longer adequately described the rapidly diversifying company. It was changed in 1927 to Canadian Industries Limited.

World War II brought further rapid expansion. A subsidiary, Defence Industries Limited, was established to build and operate government-owned munitions plants. D-I-L, later in the war, designed and built the atomic energy project at Chalk River.

After the war, restructuring took place. Some businesses were sold, including, in 1951, the Canadian Salt Company. Nylon became a major product. C-I-L, from its small beginnings in the 1860s, had become one of Canada's best-known corporations.

Then came the biggest change of all. Du Pont and ICI were required, by court order, to end their long-standing joint ownership of C-I-L. When the separation became effective in 1954, half the assets remained under majority control of ICI. The other half became Du Pont of Canada.

In the division of assets, the pared-down C-I-L retained the agricultural chemicals, ammunition, chemicals, explosives, paints, coated fabrics and plastics businesses. With Nylon gone, C-I-L acquired from ICI the Terylene polyester plant at Maitland, Ontario, which was then under construction.

Growth and diversification, including the occasional divestment or closing of some of the businesses, have continued ever since. In the 1950s, there were expansions in crop protection chemicals and ammonia, and a growing emphasis on research. In the 1960s, there were major developments in paints, plastic films, explosives and fertilizers.



In the 1940s, C·I·L's plant in Regina manufactured automotive paint. Here a worker tints a batch of paint, checking it visually by a standard sample.

Chipman Chemicals, 50 percent owned, became a wholly-owned subsidiary. The coated fabrics business was sold. The new 1,000-ton-a-day ammonia plant and fertilizer chemical plants at Sarnia, Ontario, went into production and the Millhaven plant was shut down. The Hamilton plant site was sold.

The changes accelerated in the 70s and early 80s. The ammunition business was sold, as was Jarvis Clark, the mining equipment manufacturer. Paints and chemicals expanded. The oil and gas industries became a focus of interest. The head office was moved to Toronto from Montreal. The first manufacturing facility in the United States, a sulphuric acid plant, was acquired. The company entered the waste management field. New water-based paints for the automotive industry were developed. In 1987, in a joint venture with TRW Canada Limited, the manufacture of gas generant for automobile safety airbags was begun.

Then in 1988, another major change: C·I·L became a wholly-owned subsidiary of ICI and an even more significant element in the international ICI Group. Following the share buyout, the decision to divest approximately one quarter of the company's assets was made for strategic reasons. In 1989, the people of C·I·L face new challenges, not as daunting as in 1954, but again of major proportions: an ending of some old relationships, but at the same time a significant and positive step into a promising future for both those who remain and those who leave the ICI Group.

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THE COMPANY

C·I·L Inc., a wholly-owned subsidiary of Imperial Chemical Industries PLC (ICI), is a Canadian company serving primarily North American markets with high quality chemical products and services based on the Group's commercial and technical strengths. C·I·L produces explosives for use in the mining, construction and other industries; fertilizers and plant protection chemicals for agriculture; color and clear coatings for the automotive industry and decorative paints for industry and consumers. It also provides a wide range of chemicals to the pulp and paper, the oil and gas and other industries.

The company is strongly research-oriented. It operates a central corporate laboratory and, in addition, many of the individual business units have their own laboratories.

C·I·L and its subsidiary and associated companies employ more than 8,600 people. Following divestiture of certain operations as outlined in this annual review, employees will total 6,800 and 17 major manufacturing plants will be in operation.

The company is an important member of the ICI Group, which manufactures in more than 40 countries and markets products in more than 150.

PRESIDENT'S MESSAGE

This 1988 Annual Review of C·I·L operations deals with a company undergoing fundamental changes in its structure and its business activities. They are positive changes, emphasizing new opportunities and a strong commitment to continuing growth. As in the past, we look back at the year just ended, but we also look ahead to new challenges in 1989 and beyond.

The fundamental changes of 1988 include decisions to strengthen and expand certain of C·I·L's businesses and to divest others. There are plans for further development of the company's paints, agriculture, forest products and explosives businesses. Imperial Chemical Industries PLC, of which C·I·L in 1988 became a wholly-owned subsidiary, has designated Canada as headquarters of its world-wide explosives business.

Businesses being divested include Plastics, Sulphur Products, Oil-field Services and Chemetics International. They make up approximately 25 percent of C·I·L's operations. We are confident that under new ownership the businesses will have the opportunity to continue to grow and prosper.

The restructuring of the company's operations reflects a changing vision of C·I·L's goals and long-term opportunities. It reflects also a closer involvement and co-ordination of activities and strategies with ICI's international operations.

In April, 1988, ICI bought out the 27 percent minority interest in C·I·L. As a wholly-owned subsidiary, C·I·L is now in a good position to

work more closely and effectively with the ICI global network of companies. While there will be integration with ICI's international strategies, C·I·L remains a Canadian company with primary responsibilities within the Canadian economy and business scene.

Following designation of Canada as the headquarters for ICI's International Explosives business, R.W. Clark was appointed as its principal executive officer. In addition, as president of the C·I·L Explosives Group, Mr. Clark will oversee the operations of C·I·L's explosives business and of CXA Ltd.

For C·I·L as a whole, net earnings in 1988 were substantially higher than they were in the preceding year as the Canadian economy enjoyed its sixth straight year of growth. Company sales rose by 15 percent. In three sectors – Forest Products, Explosives and Plastics – the improvements were especially strong. Further discussion of the businesses being retained by C·I·L appears in the operations section of this review.

Canadian deregulation policies, particularly with regard to energy and transportation, have continued to bring important benefits to the company. Natural gas feedstocks, responding to market forces, moved down in cost in 1988. Freight costs, a significant factor for C·I·L, were also lower.

During 1988, the company's safety record was tarnished by the occurrence of two serious accidents. Tragically, one resulted in the death of four people at the Beloeil research laboratory. All C·I·L

directors, management and staff extend their deepest regrets to the families and friends of these valued employees.

The outlook for 1989 is for a continuation of economic growth in Canada, at a pace somewhat slower than in the past few years.

The company anticipates that implementation of the Canada-U.S. Free Trade Agreement will further strengthen C-I-L's ability to compete in the U.S. market, where it is already active. Free trade will also benefit many of the industries in Canada that are users of C-I-L products, thereby further expanding C-I-L's business. At the same time, competition will undoubtedly intensify within Canada, underlining the need for efficiency, good management and quality products.

Organizationally, the company as it enters 1989 is significantly different from the C-I-L of a year ago. Because of the decentralized operation of the C-I-L businesses, it has been possible to avoid serious disruption of the businesses being retained or of those being divested. However, these major changes have been challenging for all staff. Still, we are confident that the restructuring undertaken in 1988 will serve the best interests of all employees, those who remain as well as those employed in the divested operations.

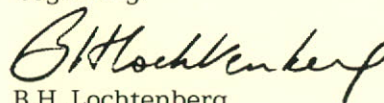
As a public company, C-I-L benefitted from the participation of its minority shareholders. They brought to the company – in addition to their capital investment – vitality, support and critical scrutiny. Elsewhere in this review, tribute is paid to departing directors. We

wish to mention especially C.H. Hantho, chief executive officer from 1982 to 1988, who provided strong, far-sighted leadership through a challenging period.

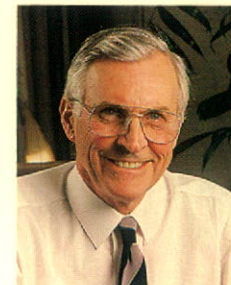
The historical sketch that appears in this review clearly shows that change, gradual or sudden, modest or fundamental, has been a consistent element in the C-I-L story. The people of C-I-L have always rallied and adjusted to new situations and moved forward to fresh successes, as they are doing now.

This annual review is a transitional document. In times of transition we look back, with satisfaction, appreciation and, inevitably, a degree of nostalgia. But change has to do primarily with the future. In facing that future – bright with promise, challenging in its uncertainties and invigorating in its opportunities – the people of C-I-L will demonstrate again the confidence and the capacity for innovation and co-operative effort that have brought the company to its present level of development and success.

In 1988, C-I-L changed greatly – marking not an end, but a new beginning.



B.H. Lochtenberg
President and
Chief Executive Officer
March 9, 1989



IMPERIAL CHEMICAL INDUSTRIES PLC



The products of ICI Agrochemicals worldwide business are tailored to specific crops and growing conditions. Effects of new herbicides on a range of weeds are being studied at this research station in the U.K.

World leader in paints and explosives. Number three in agrochemicals. A major force in pharmaceuticals, fibres, petrochemicals, fertilizers, plant breeding and other businesses. That is ICI, the international chemicals group of which C·I·L is the Canadian member.

The parent company, Imperial Chemical Industries PLC, is headquartered in London. It manufactures, directly or through subsidiaries, in more than 40 countries. Products number more than 15,000 and are sold in more than 150 countries, from Albania to Zimbabwe. ICI worldwide sales last year totalled \$25 billion.

The initials ICI not only stand for the full name of the company but also represent its dominant characteristics as well: International; Competitive; Innovative.

Imperial Chemical Industries came into being in 1926 through the merger of four companies in the United Kingdom, all of them with strong chemical operations and product lines. But the Group's involvement with C·I·L preceded the 1926 merger by many years, going back to the acquisition of control of C·I·L's predecessor company, the Hamilton Powder Company, in 1899. There were technological and other business links even earlier.

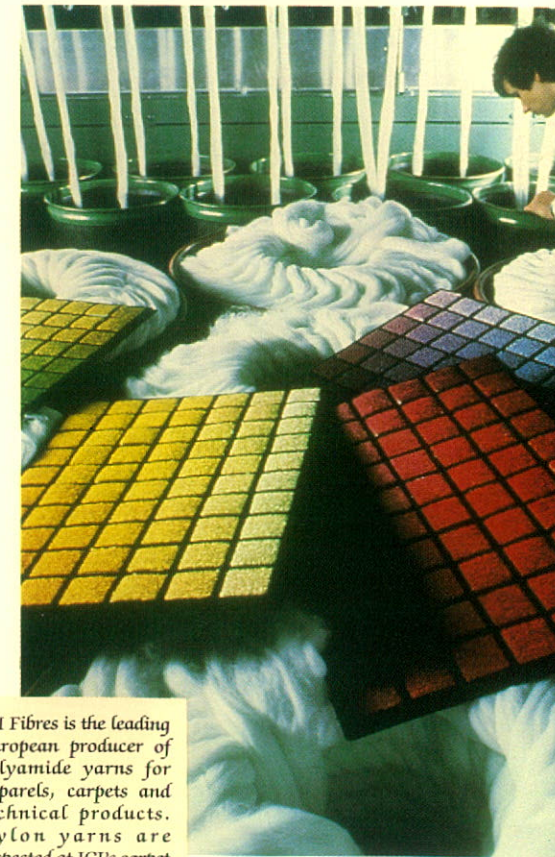
The breaking down of business boundaries between the countries of the world resulted in ICI's international outlook, international commercial skills and strong management as well as a strong presence and clear national identity in each of the countries in which business is developed. ICI is continuing this international growth.

A company is primarily people serving customer needs. ICI has 130,400 employees around the world. Each country's operations are staffed primarily by nationals of that country. Senior level opportunities exist internationally regardless of nationality. While ICI's headquarters are in the United Kingdom, 60 of the 160 most senior posts in the ICI Group are filled by persons who are not UK nationals. Of its Board of Directors of 16, five are non-British. One, a Canadian, Chris Hampson, started his career with C·I·L and is the first non-British executive director of the company.

The watchwords of the organization are teamwork, opportunity for individuals and good citizenship. Business units are expected and encouraged to play a full part in the communities where they are located. Local as well as group managements carry responsibility for maintaining rigorous safety, health and environmental standards. Worthy community causes – education, health, welfare, the arts, sports, conservation, research and others – receive financial support and employees are encouraged to add personal support.

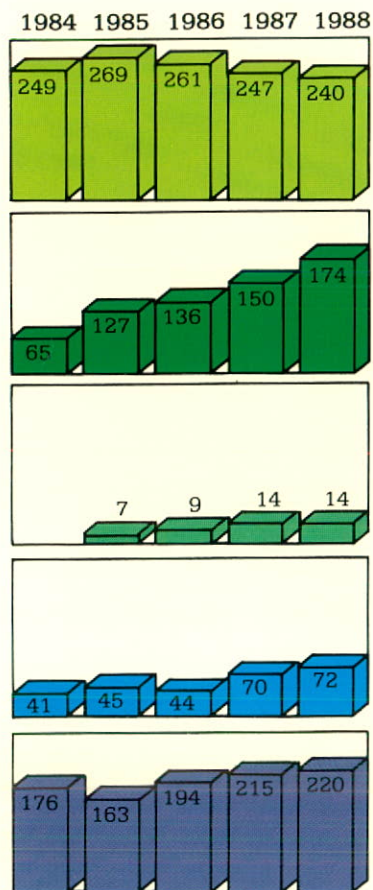
In no two countries is the ICI presence identical. Product lines and services respond to local demand and competitive situations. ICI seeks to be a good corporate citizen of the many countries in which it operates – a contributor to growth and to the creation of wealth.

The ICI Group emphasizes research and new product development, offering, along with services and products, technical advice and assistance in the industrial application of its products.



ICI Fibres is the leading European producer of polyamide yarns for apparels, carpets and technical products. Nylon yarns are inspected at ICI's carpet development centre in West Germany.

SALES BY CUSTOMER INDUSTRY (\$ Millions)



AGRICULTURAL

Ammonium nitrate, anhydrous ammonia, animal feed supplements, computer-based decision support systems, crop protection products, home and garden products, nitrogen solutions, potassium hydroxide, seed treatments, soil analysis, turf fertilizers, urea.

PULP AND PAPER

Ammonia, analytical services, anthraquinone, caustic soda, chlorine, dyestuffs, hydrochloric acid, hydrogen peroxide, liquid sulphur dioxide, salt cake, sodium hypochlorite, sulphuric acid, water treatment chemicals.

PLASTICS

Active solvents, caustic soda, chemical plasticizers and polyols, chlorinated paraffins, chlorine.

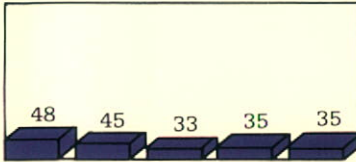
AUTOMOTIVE

Automotive paint both original and refinish, organic solvents and pigments, specialty chemicals.

MINING

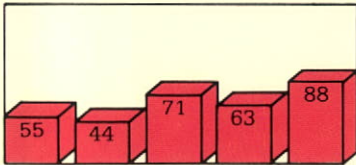
Ammonium nitrate, blasting accessories, commercial explosives, dust control chemicals, seismic explosives, technical and analytic services, various chemicals for extraction of mineral values.

1984 1985 1986 1987 1988



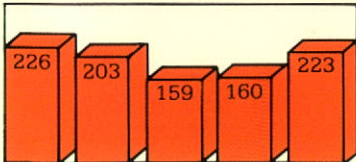
CONSTRUCTION

Concrete curing chemicals, explosives and blasting accessories, insulation, muriatic acid, solvents, surfactants.



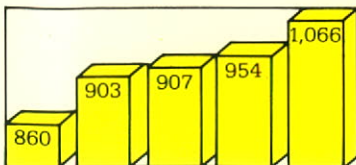
CHEMICALS

Acids, acrylates, alcohols, aldehydes, aliphatics and aromatics, alkalis and salts, amines, benzenoid chemicals, chlorinated organic products, chlorinated solvents, glycols, ketones, organic acids, phenols, polycyclic organics.



OTHER

Decorative paints, distribution services, dust control and concrete curing chemicals, industrial finishes, specialty chemicals for the oil and gas industry, property development, swimming pool chemicals, water purification chemicals.



TOTAL SALES

Annual sales for continuing businesses are shown in the bar charts.
1988 sales for the businesses being divested totalled \$476 million.

REVIEW OF CONTINUING OPERATIONS



Anhydrous ammonia, used for agricultural and industrial purposes, is produced at the Lambton Works in Courtright, Ont. An employee checks safety valves on the ammonia storage tank.

AGRICULTURE

Considerable progress was made during 1988 in reducing the losses sustained in recent years in the fertilizer segment of C-I-L's business. In spite of the increased strength of the Canadian dollar against the U.S. dollar, sales rose by 11 percent, reflecting volume increases and improved nitrogen prices. Success was achieved in controlling costs.

Approximately half the nitrogen products manufactured at the C-I-L Courtright, Ontario plant are sold in the United States.

Early indications are that demand for fertilizers will expand in 1989. Grain stocks are reduced due to the drought that affected much

of North America in 1988 and farmers are expected to increase 1989 plantings.

C-I-L AGROMART retail outlets, which are jointly owned by the company and local operators, increased their sales by 14 percent in 1988. Profits from operations rose by 35 percent. AGROMART farm service centres sell C-I-L fertilizers and Chipman agricultural chemicals as well as products of other manufacturers.

CHIPMAN INC.

The agrochemicals industry in Canada had a difficult year in 1988, with resulting declines in sales and profits of Chipman. A combination of low farm commodity prices and severe drought



AS A PARTICIPANT IN COMMUNITY LIFE, C-I-L AND ITS BUSINESSES ARE INVOLVED IN A VARIETY OF SPONSORSHIPS THAT INCLUDE SPORTS TEAMS, AGRICULTURAL EVENTS AND UNIVERSITY LECTURE PROGRAMS.



At Chipman's research and development lab in Stoney Creek, Ont., tests are being carried out to develop formulations for dry pesticides.

conditions depressed sales, particularly in the Western Canadian herbicide market.

During 1988, Chipman implemented marketing programs for the range of Stauffer agrochemical products, following the ICI acquisition of Stauffer Chemical Company in 1987. The company was successful in increasing its share in the corn market, though volumes were down because of acreage reductions.

Market share in the competitive home, lawn and garden business grew in 1988.

In 1988, Chipman expanded its already extensive new product development activities. Steps were taken to register ACHIEVE, a cereal herbicide.

EXPLOSIVES

C-I-L's explosives business in 1988 experienced strong profit growth. The mining and construction industries, the main markets for explosives, both had excellent years and this is reflected in C-I-L's results. The logging and seismic (oil and gas) industries, which are significant users of explosives, also performed well in 1988.

Competition in explosives markets was intense. In spite of this, combined sales for C-I-L Explosives, CXA Ltd. and distribution and associated companies grew by 11 percent. Reflecting the competitive situation, profit grew at a lower but still satisfactory rate. The company regained its position in the

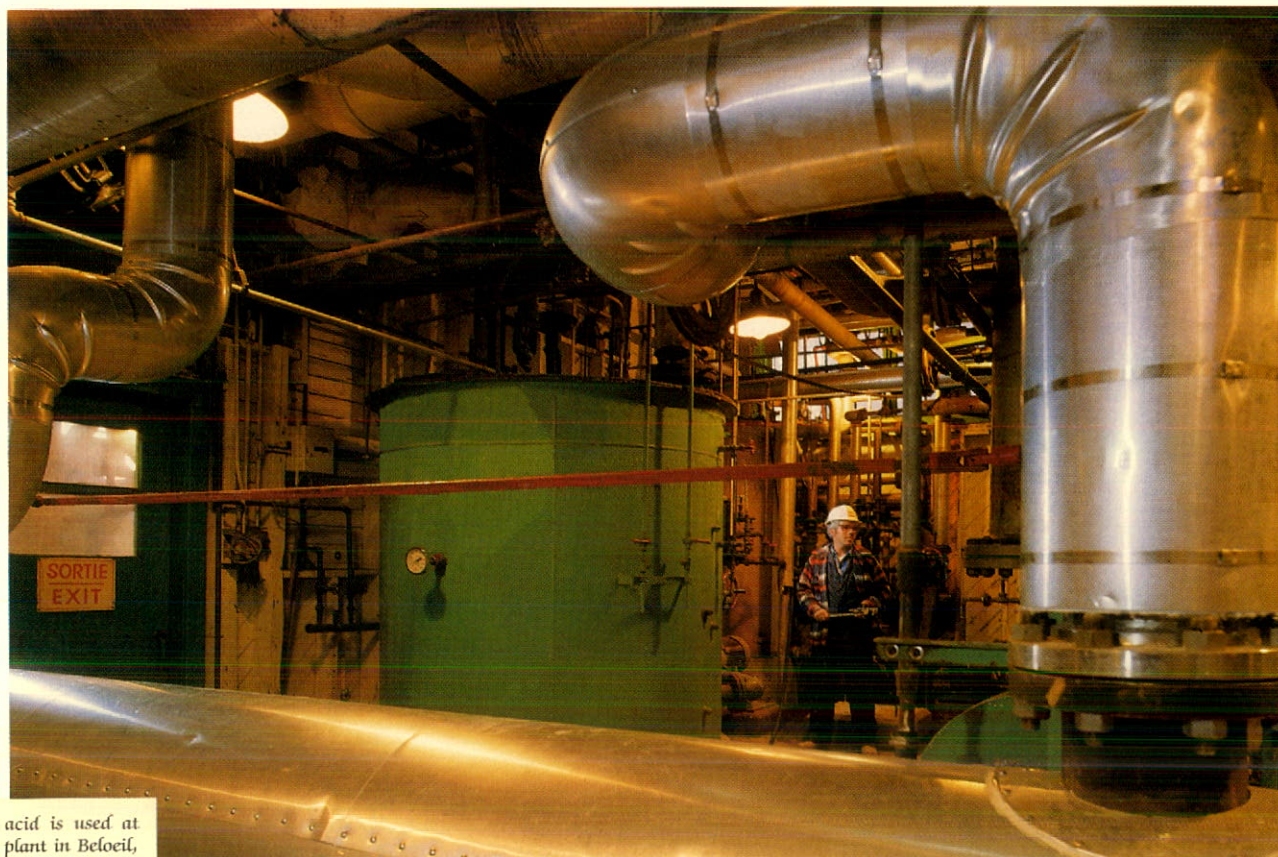
bulk explosives market, partly through its provision of strong technical support to customers.

Ammonium nitrate plants operated at capacity through the year. Heavy demand from the agricultural and industrial sectors contributed to this, along with effective marketing.

SABAG Inc., a joint venture between C-I-L and TRW Canada Limited, commenced operations in 1988. SABAG Inc. is involved in the development of gas generants for automobile air bags. This safety device is seen by the automobile industry as the preferred route to meet mandatory passive restraint regulations now being phased in.



AT C-I-L, QUALITY CONTROL IS FUNDAMENTAL. ORGANIC PIGMENT FOR PAINT IS TESTED FOR CONFORMITY TO SPECIFICATIONS.



Nitric acid is used at C-I-L's plant in Beloeil, Que., to make ammonium nitrate for explosives.

Demand in this field is expected to be very strong, and SABAG is the leading supplier. In addition, C-I-L is the sole North American supplier of sodium azide, which is essential in the production of gas generant grains.

PAINTS

The paint businesses of C-I-L include BAPCO, Canada's largest supplier of decorative finishes, and C-I-L Paints, which concentrates on the automotive market. Together, they make C-I-L the largest producer of paints in Canada. For 1988, combined sales were virtually unchanged compared with 1987.

C-I-L became sole owner of

BAPCO in 1988, acquiring the 50 percent interest previously held by The Sherwin-Williams Company of Cleveland, Ohio. Decorative and industrial coating operations of The Glidden Company of Canada Limited are being integrated with those of BAPCO. In 1986, ICI acquired the Glidden Company in the U.S., parent of Glidden of Canada, an acquisition that made the international ICI Group the world's largest producer of paints.

To serve the needs of Quebec customers, the new plant at Boucherville, Quebec, reached full production status in early 1988. There was strong emphasis on improvements in product quality and customer ser-

vice. An innovation was the development of scented decorative paints, which are being marketed under the CILUX brand name. The home decorating market in Canada did not grow as anticipated, affecting BAPCO's sales.

Over the two-year period ended December 31, more than 330,000 trucks were successfully finished with C·I·L Paints AQUABASE automotive paint at the General Motors plant at Oshawa, Ontario. AQUABASE is a waterborne colour system with significant advantages in the automotive industry. It reduces solvent emissions during the spraying process and provides a finish with superior appearance.



An improved resin formula is developed at C·I·L's paint research laboratory.



In the latex paint-making area at BAPCO, in Concord, Ont., an employee adds pigment to the initial blend of raw material.

Substantial expenditures were made in 1988 to upgrade manufacturing facilities and to expand technical resources to meet the growing demands of customers. A new automotive refinishing training centre, similar to the facility that the company operates in Toronto, was established in Edmonton, Alberta.

A technical agreement signed with Nippon Oil & Fats Co. Ltd. led to new business with Honda Canada and has created opportunities for possible future sales to other Japanese automotive assembly plants in both Canada and the United States.

FOREST PRODUCTS
C-I-L sells to the forest, pulp

and paper and other industries a variety of chemical products, including chlorine, caustic soda and chloralkali derivatives. During 1988, the demand for caustic soda and chlorine was particularly strong. The total sales by Forest Products rose 21 percent over 1987 results and operating profit increased substantially.

A pulping additive, PSR 2000, was added to the product line. In a joint venture with Eaglebrook International, a ferric chloride manufacturing plant was started up at Varennes, Quebec. The company's capacity for producing muriatic acid and sodium hypochlorite was expanded to take advantage of market growth in



AFTER 27 YEARS WITH C-I-L, GERRY COLL RETIRED IN 1980. COMPANY COMMUNICATIONS AND LOCAL EVENTS HELP THE COLLS AND OTHER PENSIONERS KEEP IN TOUCH WITH FORMER COLLEAGUES.



At Becancour, Que., electrolytic cells are used in the production of chlorine for the pulp and paper industry. Without interrupting the process, worn cells are removed and replaced.

eastern North America.

The C-I-L-managed Oxychem hydrogen peroxide plant at Becancour, Quebec, which opened in 1987, became fully operational in 1988 and sales performance was well above plan.

Forest Products in 1988 launched a diversification strategy with the objective of offering new products to its principal markets in the forest and pulp and paper sectors. Trials of new papermaking chemicals have begun. Test tracts of forests in Quebec, Ontario and New Brunswick were sprayed with a C-I-L-developed bacterial strain to combat insect damage.

A commitment to continuing improvement is embod-

ied in the Total Quality Management program adopted in early 1989. This program seeks to involve all employees in an integrated system of quality improvement and assurance in all aspects of operations.

CORNWALL CHEMICALS LIMITED
CANSO CHEMICALS LIMITED

Cornwall Chemicals is 50 percent owned by C-I-L and 50 percent by Akzo Chemie B.V. Sales of carbon bisulphide, carbon tetrachloride and sodium hydrosulphide to the chemical, textile, pulp and paper, leather and mining industries were up in 1988 by 18 percent, while profits rose at an even higher rate. Markets in the textile, pulp and paper and



Stanchem, in Malton, Ont., is the distributor of many products. Shown here, C-I-L products for use in the drug, automotive and paint industries are sorted and loaded for shipment.

chemicals industries were particularly strong, but there was some weakness in the mining sector market.

C-I-L is a one-third participant in Canso Chemicals, a joint venture with two Nova Scotia-based pulp and paper firms. C-I-L manages the chloralkali manufacturing facility, of which the two pulp and paper companies are the main customers. While 1988 sales rose modestly, profits declined due to lower operating rates.

STANCHEM

Stanchem is Canada's largest distributor of chemical products. Both sales and operating profits in 1988 set new records for the business unit. Prices rose substan-

tially during the year, particularly in the first six months.

Business was strong in all regions but was affected by some product shortages, especially of sodium cyanide for the mining industry and of MDI (diphenylmethane diisocyanate) for the urethanes business.

Stanchem distributes chemicals for polyurethanes and has a large resale business in chemicals, polymers and other products supplied by C-I-L and ICI. It also distributes products from other manufacturers.

In 1988, three Stanchem plants were among seven packaging plants in North America recognized by the Chlorine Institute for their outstanding safety record.



C-I-L IS COMMITTED TO THE HIGHEST STANDARD OF SAFETY. HERE, EMPLOYEES IN FIRE-RESISTANT ENCAPSULATING SUITS PRACTICE AN EMERGENCY PROCEDURE.



A remote control valve on an activation tank for latex emulsion polymers is checked. The polymers are produced at the Alchem plant in Burlington, Ont., and are used in the pulp and paper industry.

ALCHEM INC.

Alchem, 51 percent owned by C-I-L in a joint venture with Nalco Inc., is a producer and marketer of water treatment chemicals and other specialty chemicals for a wide range of industries. With technological change reducing opportunities in its traditional markets, Alchem is placing increasing emphasis on serving other industries, particularly pulp and paper and petroleum refining. Over the past two years, Alchem has had success in repositioning itself to meet the changed market conditions and in developing new products.

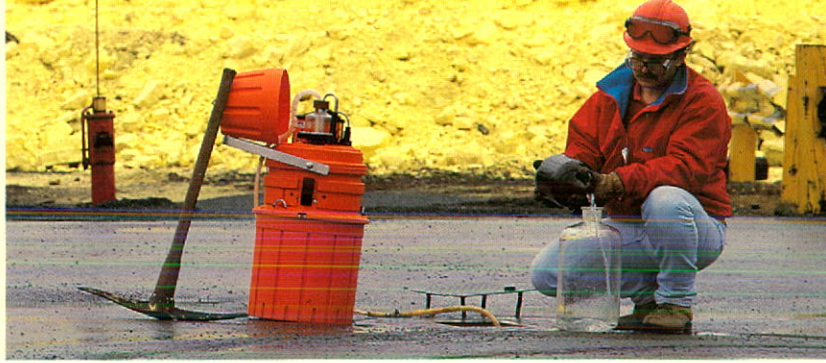
Sales in 1988 were 8 percent higher than in the previous year; profits were

essentially unchanged. A strike that reduced requirements at one major customer affected total sales.

TRICIL LIMITED

Tricil, a waste management company in which C-I-L and Trimac Limited each have a 50 percent interest, made excellent progress in 1988. As a result of acquisitions combined with internal growth, sales were up more than 17 percent over 1987 levels and operating profit improved significantly.

Tricil's activities include chemical treatment of liquid wastes, collection and disposal of solid municipal, industrial and commercial waste and the generation of energy from waste.



TO MEET ENVIRONMENTAL PROTECTION STANDARDS, SAMPLES OF EFFLUENT ARE COLLECTED FOR ANALYSIS IN PARTS PER BILLION BY SOPHISTICATED IN-PLANT EQUIPMENT.

C·I·L is seeking to acquire sole ownership of Tricil and, as a result, is involved in a legal action. Court hearings in this action began in November, 1988.

The company has operations in Canada and the United States. Tricil Environmental Response Inc. (T.E.R.I.), which is a subsidiary of Tricil, was recently awarded two projects in the U.S. Northeast totalling \$24 million in value.

There were five acquisitions during the year, of companies in Ontario, British Columbia, Texas, Tennessee and New York.

Environmental issues were prominent in federal election campaigns in both Canada and the United

States in 1988, and public interest and concern remain high. As an important contributor to the solution of environmental problems, Tricil and the waste management industry in general have excellent prospects in the years ahead.

DOUGLASDALE ESTATES

Douglasdale Estates is a property development subsidiary formed to develop and market land at a former C·I·L manufacturing site in Calgary, Alberta.

Improved market demand for serviced lots late in 1987 significantly reduced inventory by year end. Additional lots were not processed and available for sale until mid-1988, with the result that

overall sales were down for the year. Entering 1989, however, Douglasdale had a supply of served lots available for sale.

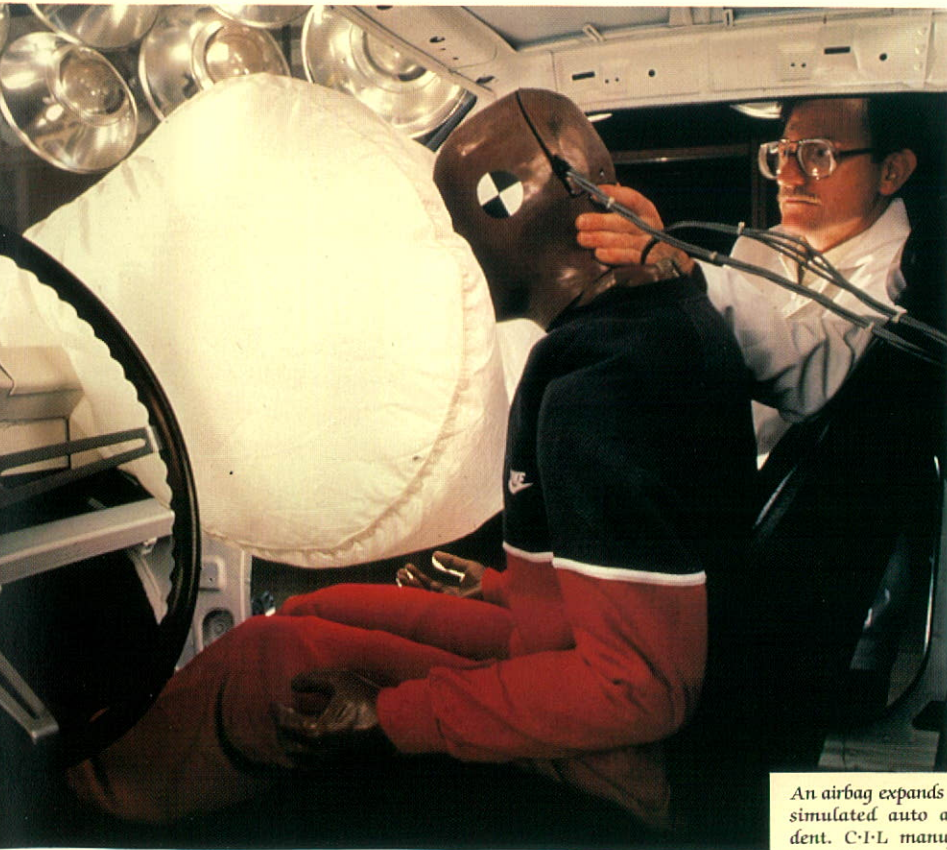
As noted in the president's message, a thorough assessment of the company's operations was undertaken following the acquisition by ICI of all of the common shares of C·I·L. Certain C·I·L businesses, while successful and profitable, were found not to fit within the framework of the long term ICI Group international strategies for business growth and development. Plans were therefore made to divest these businesses and the divestiture process began in 1988.

The operations that are

being divested include C·I·L Plastics (Polymers, Films and Packaging), C·I·L Sulphur Products, Chemetics International Company and Oilfield Services. The continuing activities of C·I·L Corporation of America will be transferred to ICI Americas.

As a group, the businesses being divested had a successful year in 1988 with sales up very substantially. Profits were also higher. It is anticipated that, under new ownership, these operations will continue to grow.

ON THE LEADING EDGE – INNOVATION AND TECHNOLOGY



An airbag expands in a simulated auto accident. C-I-L manufactures the gas generant for airbag systems, which are coming into widespread use.

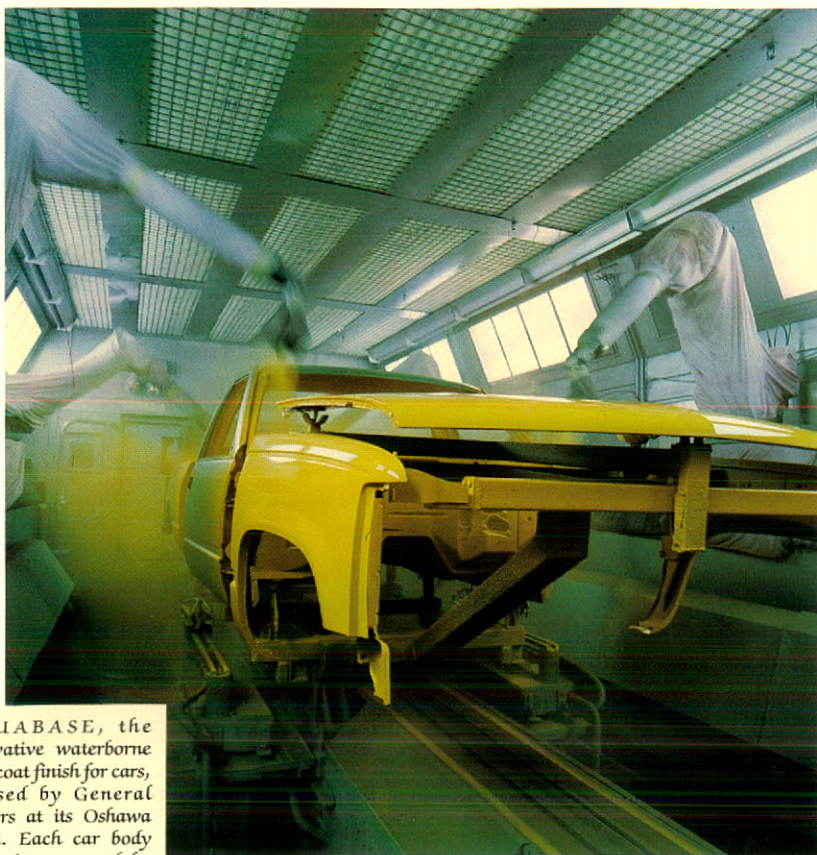
Innovation is a critical force driving C-I-L. In technology, in marketing, and in the management of resources and people, success largely depends on finding new things that satisfy needs, and better ways to operate. In a knowledge-based, highly competitive industry, it could hardly be otherwise.

And innovation does not just happen. At C-I-L, there are programs throughout the organization, reaching all levels of employees, stimulating and encouraging new thinking to improve the business.

Some of the company's innovations grow from dedicated technical and scientific research, pure or applied, carried out in the C-I-L Technical Centre or in laboratories operated by the individual business units.

While home-grown technologies and other innovative developments are important, they are really part of ICI's worldwide search for new products and methods. In the ICI Group there is a constant interchange of ideas and co-operation in developing them and adapting them to specific customer and industry needs in other countries.

An insecticide that is effective in Australia or Europe may not be as effective in Canada, but with some adaptation it may fit Canadian conditions and create a new marketing opportunity. Similarly, an explosive designed to meet a specific need in the Canadian mining industry may, with some adaptations in chem-



AQUABASE, the innovative waterborne base coat finish for cars, is used by General Motors at its Oshawa plant. Each car body sits in its own module, while four robotic arms spray it with AQUABASE.

istry or application, satisfy a market need elsewhere in the world. ICI teamwork and the international organization's technical and marketing know-how make this possible.

At C-I-L, incentives to innovate include recognition through the annual Innovation Awards Program.

Three examples of particularly significant innovation and change relate to C-I-L Paints, the Explosives business and Information Technology.

AUTOMOTIVE PAINTS

C-I-L personnel were members of the international ICI team that developed AQUABASE automotive base coat paint. Working with General Motors of Canada at the GM plant in Oshawa, Ontario, they helped launch the first full production line use of AQUABASE anywhere in the world.

AQUABASE is a waterborne base coat system for automotive finishing. Automotive paints have traditionally all used solvents. Solvent emissions in the vehicle-painting process are a major concern for car manufacturers, creating workplace environmental problems that require costly solutions. In the 1970s, ICI had pioneered the development of the organic microgels dispersion technology. Building on this research, the aqueous microgels that made AQUABASE paints possible were developed.

The international, innovative teamwork that brought the



C·I·L'S EXTENSIVE ART COLLECTION HAS REPRESENTATIVE WORKS BY CONTEMPORARY CANADIAN ARTISTS. EACH YEAR A NUMBER OF THE WORKS TOUR CANADA.

product to market continues. A product that works well in test conditions inevitably requires development and refinement in a manufacturing setting. C·I·L people and their international colleagues are closely involved with General Motors personnel in assuring the highest quality standards and the ultimate in economy and efficiency in the application of the new product. Innovations, small or large, are a regular occurrence. For example, improved spraying techniques have been developed to suit the different flow characteristics of the water-based paint.

AQUABASE is not the only new story at C·I·L Paints. Work is under way, with ICI, on clear coat finishes of reduced toxicity for application over base colour coats. And C·I·L is closely involved with ICI in a new co-operative venture with Nippon Oil & Fats Co. Ltd., a major supplier to the Japanese automotive industry. Nippon has been licensed to produce AQUABASE in Japan, while C·I·L and ICI received access to Nippon technology and products used on Japanese cars. With Japanese automakers expanding production in North America, opportunities are opening up for C·I·L Paints at the new Honda plant at Alliston, Ontario and at a Suzuki - General Motors joint venture plant at Ingersoll, Ontario.

EXPLOSIVES

In the case of explosives, as with most chemical products, it is important to know what to use and how to use it. To the unin-

tiated, the process of making big rocks into little rocks may seem an imprecise and unpredictable kind of activity. In fact, modern users of high explosives employ complex computer models to plan the location of charges, quantity and type of explosives to be used, and sequence of detonations within elaborate blast patterns.

This kind of know-how enables users to operate safely and with maximum economy and effectiveness. Much of the know-how comes as a result of C·I·L research and of hands-on assistance provided by C·I·L to customers.

At McMasterville, Quebec, C·I·L Explosives operates one of the world's largest commercial explosives research laboratories in the Western world. The company benefits as well from research done by the ICI Group Technical Centre, which also has a major facility located at McMasterville.

An example of the benefit of the joint research facilities is the development of SABREX blast modelling system software, which is widely used in Canada and other countries. It allows the customer to optimize blasting performance at minimum cost.

Explosives still make big rocks into little rocks. More and more, as innovation proceeds and technology improves, it is possible to decide in advance what size of rocks to make and where they should land, for maximum safety and for convenient removal and processing after the blast.

And besides the big explosions, C·I·L's researchers have helped

develop ways to use small, controlled blasts to weld oil and gas pipelines. They have also developed ways to use explosives to join heavy electric cables. That's innovation.

INFORMATION TECHNOLOGY

Computers play a part in almost everything C·I·L does. And C·I·L is an innovator in using computers to do the new things a rapidly changing business requires, whether for its own operations or those of its customers.

A pork farmer wants to know when to breed a sow. C·I·L's Pork Manager software helps him decide. Another program, Pork Finisher, helps manage the feeding and marketing of hogs and tracks data on weight gains and ready-for-market timing. Yet another program helps golf course managers determine the best way to keep the greens green.

If information technology is useful on the average farm, it is vital in the running of a large, multi-faceted, internationally linked business like C·I·L. Existing systems are giving way to ever more sophisticated approaches. Co-ordination is the order of the day, as innovations designed to integrate C·I·L's information technology activities are developed and implemented.

The basis for a big leap forward in information technology in C·I·L originated in Germany with the development of the SAP software. SAP stands for Systems, Applications and Products in

Data Processing.

In lay terms, this means that most of the existing systems and processes are being made to work together instantaneously in one linked system, instead of working separately and then being brought together one by one to produce the range of information needed to run C·I·L's businesses.

Introduction of SAP began in C·I·L in 1983 and will be operational in all C·I·L businesses by 1990. It would not be correct to say the process will be completed then, because it will never really be completed. Improvements – innovations – will continue. SAP is itself an innovative concept, but making it work in the C·I·L context, and harmonizing it with other ICI international operations which are using it, has involved a great deal of inventiveness by C·I·L's information technology staff.

For C·I·L, the effects of the SAP development are already impressive. The integrated system, for example, ties together information on product prices in both Canadian and U.S. currencies; inventories including location of goods, which affects freight costs for deliveries; quantities in a variety of measurements (litres, U.S. and Imperial gallons, long tons, short tons, metric tonnes); and sales tax factors in different provinces and countries.

The impact of a single order on cash flow, working capital, profit and loss and a number of other key indices is automatically and simultaneously calculated. And all of it can be done in



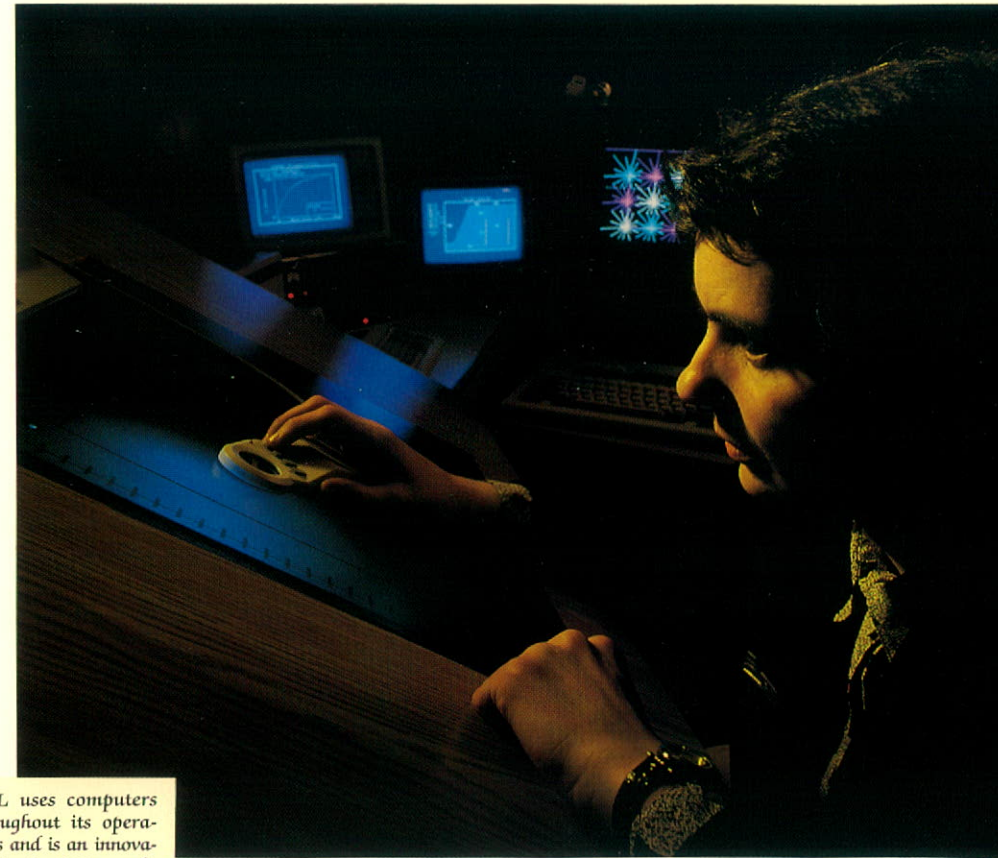
SPECIAL OPEN HOUSE EVENTS SUCH AS THIS AT C-I-L'S PLANT IN COURTRIGHT, ONT. , PROVIDE INFORMATION TO THE PUBLIC ABOUT OPERATIONS AND FACILITIES.

Canada's two official languages, with the capability of doing it in three additional languages.

The same results could be obtained previously – but step by step, much more slowly and less coherently, with greater chance of error and at greater cost.

If SAP is the most prominent of C-I-L's information technology innovations, it still is only one of many. In a collaborative effort involving C-I-L and other ICI companies, the Electronic Document Transfer system was enhanced in 1988. Custom-designed software enables the ICI companies to talk to each other across the barriers of distance, of language and of different operating systems. Messages originating in one technology come through in another. For example, C-I-L recently transmitted a 25-page document to 50 destinations around the world. With the push of a button it went out to all of them, automatically adapted to each of their systems, many quite different from C-I-L's own.

Sometimes C-I-L people feel they are already living in tomorrow's world. In some ways they are.



C-I-L uses computers throughout its operations and is an innovator in developing software systems for its own and customer use.

CORPORATE DIRECTORY



C-I-L's executive team: from left, Bob Clark, principal executive officer, ICI International Explosives business, and president, Explosives Group; Ben Lochtenberg, president and chief executive officer; John Howell, senior vice-president; Jim Spence, senior vice-president; and Ian Young, senior vice-president.

DIRECTORS

- *† J. D. Allan
Chairman and Chief Executive Officer
Stelco Inc.
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- Robert Gratton
Chairman, President and Chief Executive Officer
Montreal Trust Company
Montreal, Quebec
- * R. C. Hampel
Director
Imperial Chemical Industries PLC
London, England
- † J. T. Harrison
Chief Financial Officer
Imperial Chemical Industries PLC
London, England
- † E. W. King
Corporate Director
Edmonton, Alberta
- B. H. Lochtenberg
President and Chief Executive Officer
C-I-L Inc.
North York, Ontario
- C. D. Reekie
Vice-Chairman of the Board
CAE Industries Ltd.
Toronto, Ontario

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Chairman

* B. H. Lochtenberg
President and Chief
Executive Officer

J. A. Howell
Senior Vice-President

J. G. Spence
Senior Vice-President

* Member of the
Administrative Committee

† Member of the Audit
Committee

I. M. Young
Senior Vice President

R. W. Clark
President, Explosives Group

S. E. Hunt
Corporate Secretary

M. C. Fitzsimmons
Treasurer

R. W. Savage
Controller

C. H. Eyssen
Assistant Treasurer

A. N. Mitchell
Assistant Controller

REGISTRAR AND TRANSFER AGENT FOR DEBENTURES

The Royal Trust Company
Montreal, Toronto,
Winnipeg, Vancouver

CORPORATE OFFICE

C·I·L Inc.
C·I·L House
P. O. Box 200, Station "A"
North York, Ontario
M2N 6H2

On peut se procurer le
présent rapport en français
en écrivant à l'adresse
suivante:
Affaires générales
C·I·L Inc.
C·I·L House
Boîte postale 200,
succursale A
North York, Ontario
M2N 6H2

ACKNOWLEDGEMENT

The acquisition by ICI of all the common shares of C·I·L transformed C·I·L from a public company into a private one. One result of this has been a change in the role of the Board of Directors and, following a period of transition, a change in the composition of the board. C·I·L has been well and faithfully served by the outstanding group of senior business people who made up the board. The company expresses its gratitude to them. Those who resigned their directorships early in 1989 include the following:

R.A. Banteen, President and Chief Executive Officer, Cluny Corporation, a director since April, 1983, and a member of the audit committee since May, 1985;

F.S. Burbidge, former Chairman and Chief Executive Officer of Canadian Pacific Limited, a director since April, 1975, a member of the audit committee from 1975 to 1988, a member of the administration committee since 1979 and its chairman since 1980;

Harry Corless, Chairman, ICI Americas Inc., a director since March, 1983;

C.H. Hantho, a director from 1973 to 1976 and again from 1978 to 1989, and chief executive officer and a member of the administration committee from 1982 to 1988;

Alan Hayes, Principal Executive Officer, ICI Agrochemicals and ICI Seeds, a director since May, 1985.

Their significant contributions to the success of C·I·L are greatly appreciated.

