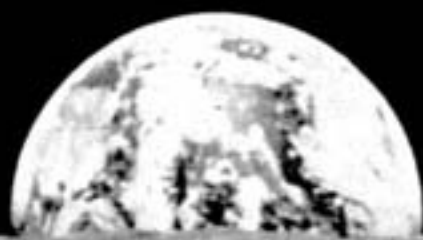


INCO Triangle

MARCH, 1981



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Triangle

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On the cover

In keeping with the extra-terrestrial flavour of our story on the meteorite impact theory (see page 16), the cover photo this month is a dramatic depiction of the earth rising over the moon's horizon. The photo, courtesy of the National Aeronautics and Space Administration (NASA), was taken during the flight of Apollo 11.

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New job responsibilities announced



Norm Hillier

Norman C. Hillier has been appointed to the position of assistant to the director, human resources and environmental services. He will assist the director, Albert Magee, in the administration of safety, employee relations, occupational health and environmental control activities in the Ontario division.

A native of Wesleyville, Newfoundland, Norm attended Grand Falls Academy and Mount Allison University.

He joined Inco in 1948 as a research chemist at Port Colborne. He held positions of increasing responsibility, becoming assistant to the refinery manager in 1969. In 1971 he transferred to Copper Cliff as assistant manager, copper refinery and was appointed manager, safety and plant protection in 1974.

Norm and his wife Esther have three children; Roderick, John and Diana.

Bill Collis

William D. Collis has been appointed manager, safety and plant protection. Bill Collis, formerly manager of the Froid Stobie complex, will be responsible for the development and implementation of safety and protection policies and procedures for the Ontario division.

A native of Barrie, Ontario, Bill attended Vaughan Road Collegiate School in Toronto and graduated from



the University of Toronto with a degree in mining engineering.

Bill joined Inco in the Creighton mine engineering department in 1951 as a mining engineer. He has held positions of increasing responsibility in safety and operations which included assignments at many of the Ontario division mines. Bill became manager of the Froid Stobie complex in 1972.

Bill and his wife, Bernice, have two children; Brian, 25, and Janet Lee, 21.

John Smith

John W. Smith has been appointed the manager of the Levack complex. John was formerly superintendent of safety for the mining and milling section.

A native of Sudbury, Ontario, John attended Sudbury High School and Scollard Hall in North Bay. He later



studied at the Haileybury School of Mines and Michigan Technological University.

John graduated with a degree in Geological Engineering in 1958 and joined Inco as a geologist at Frood mine in 1959. He has held positions of increasing responsibility in mines exploration and mines operations. John was appointed superintendent of safety for the mining and milling section in 1976.

John and his wife Jean have four children; Valerie, 22, Brian, 21, Vicki, 18, and Lee, 17.

Eric Kossatz

M.C. (Eric) Kossatz has been appointed the manager of the Frood-Stobie complex. Eric was formerly the manager of the Levack complex.

Born in Chalk River, Ontario, Eric attended Pembroke Collegiate. He later studied at the University of Toronto where he obtained a Bachelor of Science degree in Mining.

Eric joined Inco as a contract engineer at Creighton mine in 1953. He held positions of increasing responsibility in mines operations and from 1970 to 1974 was manager, safety and plant protection. He became manager, Shebandowan Area in 1974 until his appointment as manager, Levack complex in 1977.

Eric and his wife Elsie have one daughter; Anne.



Inco Limited 4th Quarter Earnings

Inco Limited announced its net earnings for the fourth quarter and year 1980. Estimated fourth quarter 1980 earnings were \$36.9 million, or 40 cents a common share, compared with earnings of \$69.2 million or 84 cents a share, for the fourth quarter of 1979. The Company's estimated earnings for the year 1980 were \$219.4 million, or \$2.56 a common share, compared with earnings of \$141.7 million, or \$1.58 a share, in

1979. Earnings per common share are after allowances for preferred dividends which totalled \$26.2 million in 1980 and \$23.3 million in 1979.

Net sales for the fourth quarter were \$805 million, compared with \$755 million for the fourth quarter of 1979. Sales for the year 1980 totalled \$3.04 billion, compared with \$2.49 billion for the previous year. Net sales to customers in these periods were as follows (in millions of dollars):

	Fourth Quarter		Year	
	1980	1979	1980	1979
Inco Metals Company	\$345	\$321	\$1,407	\$1,054
Inco ElectroEnergy Corporation*	250	260	856	842
Inco Alloy Products Company**	199	163	731	553
Other business	11	11	42	40
	<u>\$805</u>	<u>\$755</u>	<u>\$3,036</u>	<u>\$2,489</u>

* Includes batteries and related products and electric motors.

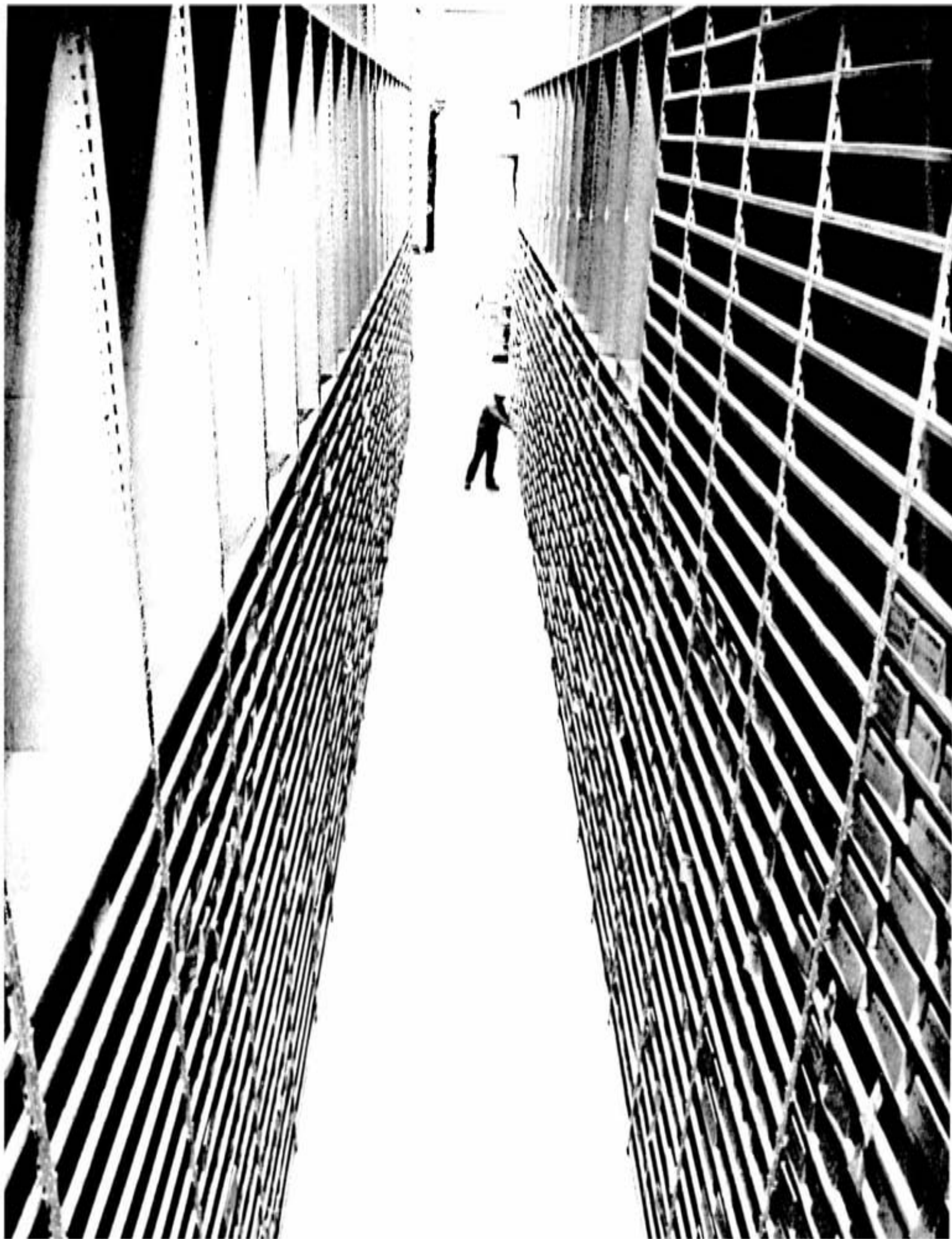
**Formerly the Formed Metal Products Group.

Note: All dollar figures are expressed in U.S. Currency.

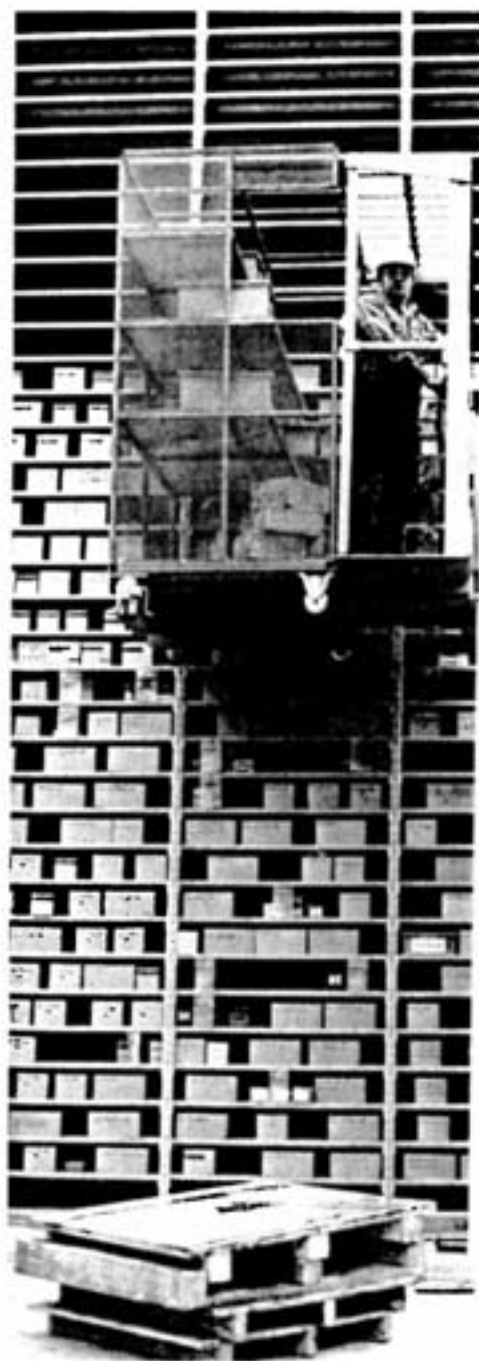
For the year, deliveries of nickel in all forms amounted to 345 million pounds, compared with 394 million pounds delivered in 1979. Copper deliveries were 288 million pounds in 1980, compared with 129 million pounds in 1979. Copper was not available for sale during the first five months of 1979 due to the Sudbury strike. The Company's average net realized price for its primary nickel products, including intermediate products, was \$3.14 a pound in 1980

as compared with \$2.43 a pound in 1979. The average realized price for copper was \$1.00 a pound in 1980 as compared to 91 cents a pound in 1979.

The Company's nickel production in 1980 was 394 million pounds, compared with 255 million pounds in the strike-affected prior year. The Company's finished nickel inventories at December 31, 1980 totalled 155 million pounds, compared with 89 million pounds at year-end 1979.



Divisional shops warehouse offers modern services to Ontario division



Storeman Ray Duval removes items from the small parts storage area with the help of a caged order picker.

Stocking thousands of mechanical parts on shelves some 30 feet high and 100 feet long seems like a taxing job, but in the Ontario division's newest and most modern warehouse at the divisional shops complex, it's a fast, safe and efficient procedure.

Driver controlled, mechanized equipment moves up and down vertical rows of shelving, stopping at different levels to stock or issue commodities, while other equipment travels in and out aisles of racking in the process of transporting goods to the departments within the complex.

"We are here to provide service to the shops complex, to accommodate each department as much as we possibly can," explained Ron Hewitt, a foreman in the warehouse. "We stock a large number of parts that are used exclusively by the divisional shops."

Over 10,000 items worth some \$3 million are stocked at the warehouse, according to Ron.

The word "modern" is inextricably yet appropriately linked to the warehouse and the services it provides. According to Ron, the shops' warehouse is the first one in the Ontario division to offer the many up-to-date services, all of which contribute to inventory efficiency and improved customer service.

The warehouse is responsible for the shipping and receiving of goods for all the departments within the complex; the component repair centre, the winding shop and the machine shop. The warehouse also makes arrangements for the transportation of material to all areas within the Ontario division.

Not only does the warehouse stock planned work order material, it also controls all the complex's bad order material, material which requires repair. Once the bad order material is identified by a work order number and recorded, the material is stored until the repair job has been scheduled in the divisional shops.

Soon to be implemented as part of this service will be the allocation system, a computerized material reservation system for scheduled work orders. Once the bad order unit has been recorded and stored in the warehouse, the work order is sent to the complex's maintenance planners who determine what material will be required to make the repair.

The information is then fed into the computer which reserves the necessary material until the repair job begins. "Through the allocation system, all the material needed to make the repair will be available," Ron said. "With this system, we'll be providing the shops with 100 per cent service on planned work orders."

At the divisional shops, the purchasing and inventory control departments have undergone decentralization, which, Ron said, "provides a more personalized and quicker response to the requests for material." A customer usually has to deal with inventory control people and buyers who handle specialized commodities. The divisional shops' warehouse, he pointed out, has one buyer responsible for the purchase of all non-stock items (those

continued on next page

warehouse . . .



Storeman Barry MacDonald, right, and Ray Duval locate work order material in the cantilever storage area.

which are purchased and sent directly to the requestor); two inventory control people responsible for expediting stock (items purchased and stored in the warehouse) and controlling inventory levels; one senior purchasing clerk whose responsibilities include non-stock expediting.

Perhaps the most fascinating feature of the warehouse is the method by which goods of all sizes and shapes are stored in some 800,000 cubic feet of storage space.

Because of the complex's height, which the warehouse shares, the concept of cubed storage was implemented. The warehouse almost completely utilizes the storage space available. "It's a practical way to fill the storage space," Ron explained. "We have more room that way."

The storage areas are divided according to the types of racking; palletized storage, as the term suggests, involves the stocking of large, heavy parts on pallets; small parts storage refers to the stocking of small machinery parts such as nuts and bearings in steel bins; cantilever storage refers to the stocking of long mechanical tubing such as pipe on horizontal, balcony-like racks.

The items are stocked by a small fleet of battery-operated vehicles consisting of forklifts, side loaders and order pickers. The warehouse has the distinct honor of being the first in the Ontario division to use side loaders and order pickers.

Both these types of vehicles operate on a wire guidance system which provides automatic steering in the storage aisles. The wire, imbedded in the centre of the aisles on the cement floor, sends direction signals to impulse receivers on the vehicles, which in turn help keep the vehicles in the centre of the aisles. Warehouse personnel must complete a training program to operate all mobile equipment.

The vehicles flash their red lights and beep their safety signals as they travel up and down and in and out.

"We're excited about the idea of servicing the divisional shops," Ron concluded. "We're learning more ways to improve our service to the shops. We can bend and change to meet their needs."



Operating a side loader, storeman J.P. Lauzon stocks steel piping in the cantilever storage area.



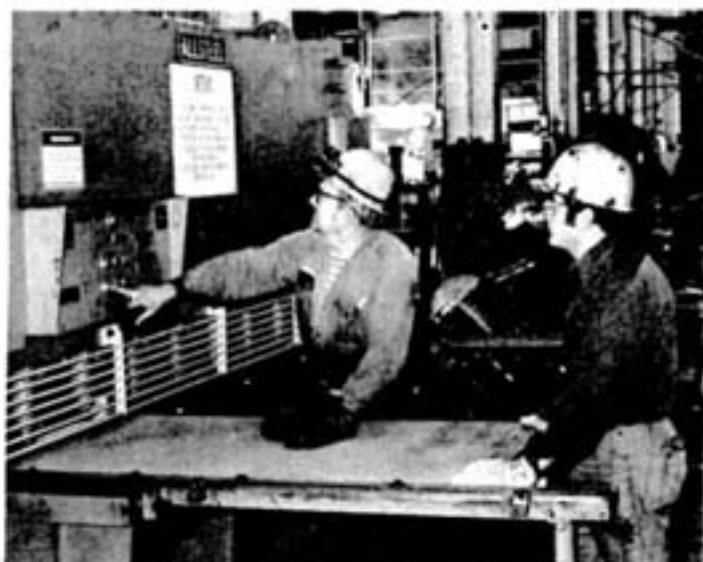
Warehouse foreman Terry True records work order numbers on machine parts in the palletized storage area.

AROUND THE PORT

news and views from the Port Colborne nickel refinery



Zoli Bendes, supervisor of shipping, order entry and billing at the Port Colborne nickel refinery, is shown sending a message to the marketing department at Inco's office in New York. By communicating with the use of a computer, a permanent record results and the possibility of error is greatly reduced. At the present time, Zoli can communicate with several departments in both the Toronto and New York offices of the company from his office in the warehouse building.



A new metal shear has been recently installed in the iron-workers section of the maintenance shop at the Port Colborne nickel refinery. The new shear can cut metal of greater thickness and larger widths and is much easier to operate than the older shear. In the photo are ironworkers, **Roger Laporte** and **Tommy Pietrelli**. They are cutting stainless steel plates that will be made into ditch covers for the nickel refinery tank house.



Donald Marr of the Port Colborne nickel refinery has joined the Wise Owl Club of Canada. Safety foreman **Bob Bozzato** said that Don saved his eyes from serious injury through the conscientious use of safety eye wear. The incident occurred when a spatter of hot metal flew up and dropped in behind his welding shield, striking the lens of his safety glasses. The spatter was hot enough to melt half way through the safety lens. Don's foreman, **George Sathmary**, feels that the safety glasses worn under the welding helmet saved Don's eyes. In photo, George Sathmary, left, and Bob Bozzato, right, extend congratulations to Don on his recent membership into the Wise Owl Club of Canada.



The addition of modern equipment usually leads to a more efficient operation with less manual labor involved. An example of this is the replacement of one of the cranes used to move nickel in the warehouse at the Port Colborne nickel refinery. **Bob Conley** is shown at the controls of the new Secord 5-ton crane. The S-crane's controls are easier to operate than the old one and the crane's movements are much smoother and safer.

mill, matte processing — safety

All mills safety winners



This group represents all the employees of the Copper Cliff mill, All Mills Safety Award winners for 1980. Luc Chenard, front and center, accepts the trophy emblematic of the All Mills Safety championship from Erwin Tubman, general foreman, left, and Harry Bellay, maintenance general foreman, right. Standing in the second row, from left, are Joe Stelmach, Charles Tuttle, William Gunn, Peter Yannacoureas, Bill Gaba, William Loughren and Rocco Decata; back row, from left, Eric Dunn, Yvon Nadeau, Roy Fisher, Alberto Valentini, and Art Vautier.

Employees at the Copper Cliff mill repeated their feat of last year and captured the All Mills Safety Award. They posted a medical rating of 69, considerably less than the all mills average of 89. The rating takes into account the frequency of disabling injuries and the severity of injuries.

John Murray, safety supervisor of central mills, noted that co-operation between everyone concerned at the Copper Cliff mill accounted for the excellent showing this year. A good attitude was also important, he said. The Copper Cliff mill's occupational safety and health committee, he added, is particularly effective.

Staff Appointments

Richard Bale, superintendent NRC, Copper Cliff nickel refinery

Blair Buchanan, senior process assistant, Copper Cliff nickel refinery

Robert Cacciotti, planner, mines engineering, Garson mine

Homer Carr, general foreman, Copper Cliff smelter

Joseph Dippong, safety foreman, Copper Cliff nickel refinery

William Flora, project leader, Copper Cliff smelter

Larry Foster, maintenance general foreman, Port Colborne nickel refinery

Gaston Giroux, contract administrator, central maintenance

Robert Hay, packaging/shipping foreman, Iron Ore Recovery Plant

Norman Hore, shift foreman IPC, Copper Cliff nickel refinery

Ralph Lamacraft, senior industrial evaluator, industrial engineering, Copper Cliff

Gaetan Levac, draftsman, engineering, Copper Cliff

Clive Lewis, superintendent IPC, Copper Cliff nickel refinery

Elwood MacNeil, concept design specialist, engineering, Copper Cliff
Michael Mayhew, project leader, Frood-Stobie mill

Richard Ross, rock mechanics technician, mines research, Copper Cliff

Salvatore Scola, surveyor, mines engineering, Little Stobie mine

Glen Sevenpifer, maintenance planner, Port Colborne nickel refinery

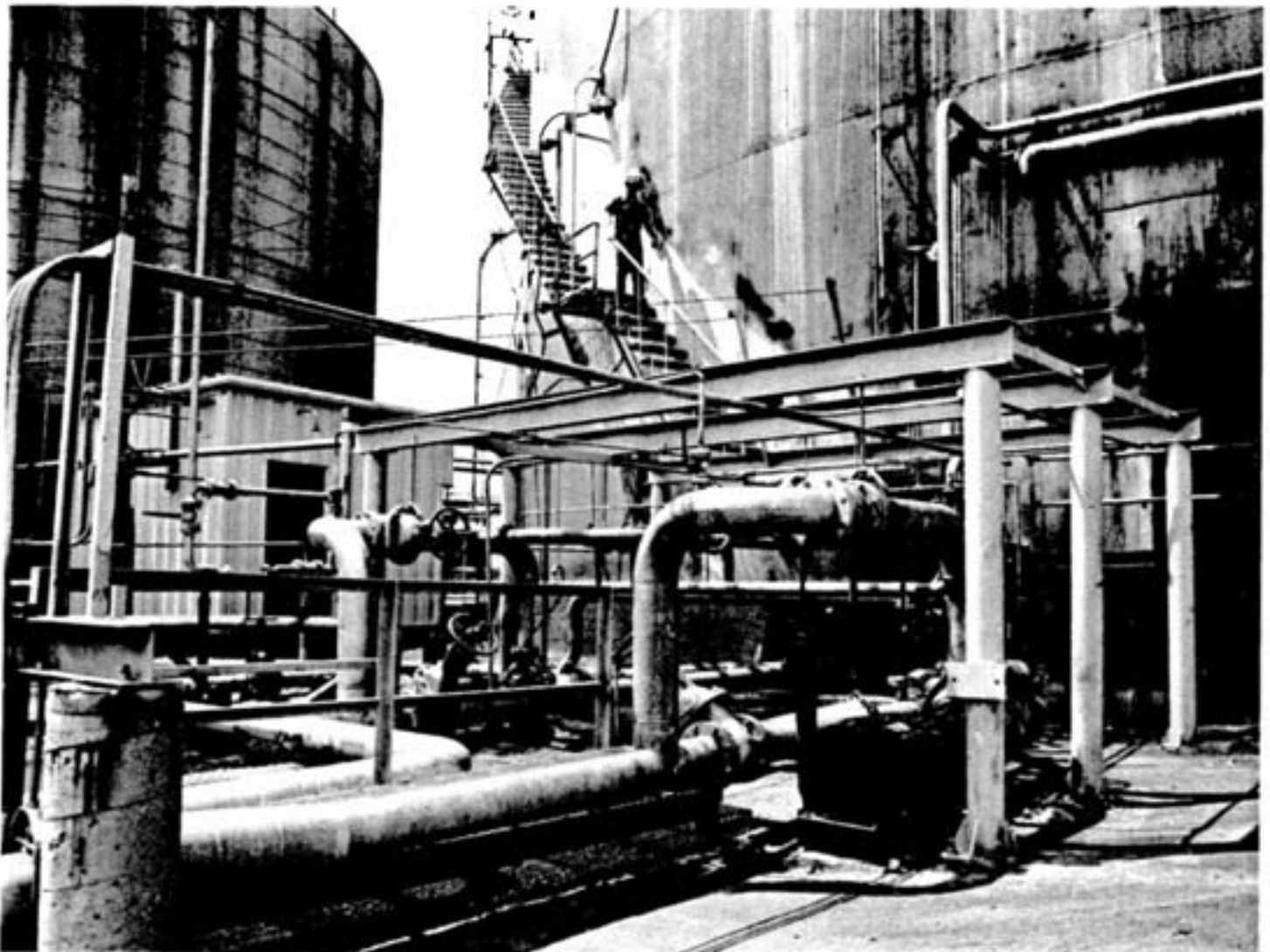
Stanley Snider, general foreman safety, Levack mine

Alfredo Villazor, general foreman, Port Colborne nickel refinery

Nicolae Volf, senior design engineer, engineering, Copper Cliff

David Wilson, safety foreman, Copper Cliff South mine

Harold Wood, mine foreman, Levack mine



The sulphuric acid and liquid sulphur dioxide produced at Copper Cliff finds its way into the marketplace throughout North America. Principal consumers of these products are the fertilizer industry, the steel industry, and the pulp and paper industry.

Recently Inco Metals Company and CIL Inc. announced that they had reached an agreement in principle for Inco to acquire three sulphuric acid plants and a liquid sulphur dioxide plant owned and operated by CIL Inc. These plants, located adjacent to the smelter and the Iron Ore Recovery Plant at Copper Cliff, will be owned and operated by Inco and 165 CIL employees will join the Inco family.

The CIL operation near the smelter, referred to as the number one site, includes the liquid sulphur dioxide plant, the Copper Cliff works office, the machine shop and stores. The original sulphuric acid plant was built in 1930 on this site and was CIL's first smelter-based contact process plant. Producing 150 tons of sulphuric

acid a day, this plant remained in service for 37 years before it was retired.

The liquid sulphur dioxide (SO_2) plant that exists today was built in 1952. The process, which has a rated capacity of some 350 tons of liquid SO_2 per day, begins when "wet" gas containing 70 to 80 per cent sulphur dioxide is piped from the flash furnace in the smelter to a tower located north of the old number one acid plant. Here moisture is removed from the gas by treating it with strong sulphuric acid.

The gas then passes on to the SO_2 plant where it is compressed, cooled into liquid form, separated and put into storage. Gas remaining after this

process, is compressed once more at a greater pressure, cooled with watered freon (an inert gas) into liquid form. The liquid is separated and put into storage. The "Tail" gas that is left from the process is returned to the smelter. The entire operation is automated and overseen by two men in a control room.

Liquid SO_2 has a number of end uses including bleaching and is sold to a wide variety of customers including those in the textile industry, pulp and paper, water purification, food processing and metallurgical industry. Under the agreement reached by Inco Metals and CIL, CIL will continue to market and distribute the liquid SO_2 and sulphuric acid produced.

A look at CIL

Newest member of Inco family

Located across the highway near the Iron Ore Recovery Plant are the number two, three and four acid plants producing a combined rated capacity of 3,000 tons of sulphuric acid each day. On its completion in April, 1967, the number four plant was the largest metallurgical gas based acid plant in the non-communist world.

Acid production begins with sulphur dioxide gas coming from the fluid bed roasting of pyrrhotite concentrate at the Iron Ore Recovery Plant. The wet gas is dried in a tower by direct contact with 93 per cent sulphuric acid and a blower then forces the gas through a series of heat exchangers and converter beds where the sulphur dioxide is converted to sulphur trioxide. The converters contain vanadium pentoxide which catalyzes the reaction of sulphur dioxide and oxygen to form sulphur trioxide (SO_3).

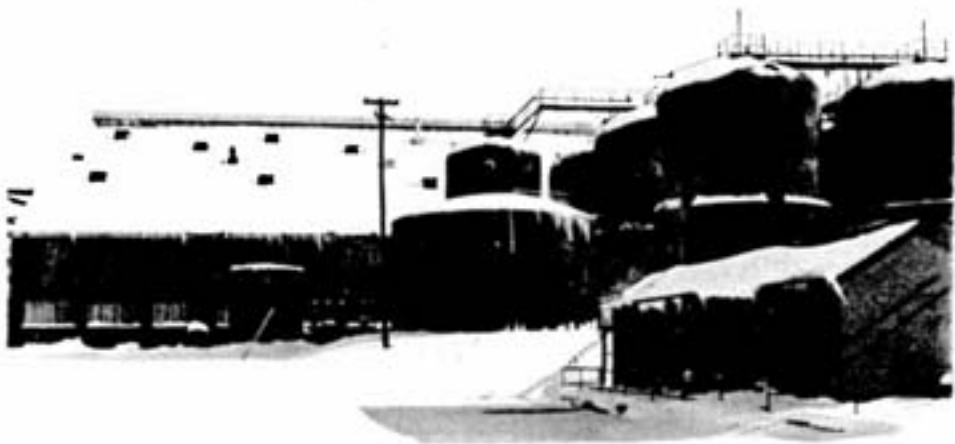
The SO_3 then passes through an absorbing tower where it combines with water in 99% sulphuric acid to make more sulphuric acid. The sulphuric acid product then passes from this tower into storage tanks after the dissolved SO_2 is removed. The product can also be drawn directly from the absorption tower and stored as 98 or 99 per cent acid.

Sulphuric acid is used in many ways by the fertilizer, pulp and paper, explosives, steel and mining industries. Elliot Lake uranium mines are among CIL's largest sulphuric acid customers using the chemical in a leaching process which recovers uranium.

In February 1973, an oleum producing unit was added to the Number Two acid plant. Oleum is an acid supersaturated with sulphur trioxide and is used in soap production as well as in the production of explosives.



The flow of gas from the smelter to the liquid sulphur dioxide plant is regulated in this control room by an operator and his helper, in this case, John Hurtubise, foreground, and John Lindfield.



Part of CIL's site number one liquid sulphur dioxide complex includes these storage tanks adjacent to the old acid plant building near the smelter.

"Sasha" — Sudbury's Super Swimmer

A gathering of the international competitive swimming elite in Gainesville, Florida in January was astounded by the performance of young Sudburian, Alex Baumann. Though he has served notice of his superstar potential over the last couple of seasons, it was at the Gainesville meet that he cracked the magic circle of world record holders.

He accomplished the feat in superb fashion in the 400 meter individual medley, defeating world record holder Jesse Vassallo of the United States and Olympic gold medalist Alexander Sidorenko of the Soviet Union. Alex prevailed in a close duel and finished three seconds ahead of second place Vassallo.

His world record time of four minutes, 15.11 seconds was almost two seconds better than Vassallo's short course mark. The record remains unofficial because the race was run in a 25 meter pool.

The saga of "Sasha", as he is known to family and friends, began at the tender age of nine when he joined Dr. Jeno Tihanyi's Laurentian University Swim Club. At the time he knew "a little but not much" when it came to swimming.

Under the tutelage of Dr. Tihanyi and with immense amounts of work and personal sacrifice, Alex has blossomed into one of the best swimmers on the globe. Alex credits his long-time coach for his success: "He's helped me so much. He's a great coach. I don't think I would be this far without him."

Dr. Tihanyi, a professor of human physical growth and development at Laurentian University, says he wasn't looking for the "mark" of a champion

when Alex launched himself into competitive swimming. "I wasn't looking for it myself," he comments. "I was looking for attitude and attitude to training."

An experienced instructor who has coached high calibre swimmers such as Graham Smith when he lived in Western Canada, Dr. Tihanyi thinks young athletes realize their potential through self-discipline, pride in themselves and their sport, and setting high goals. "I think his (Alex) potential as an athlete was brought



Super-swimmer Alex Baumann.

forth by his attitude and his relentless goal seeking thrust," he says. "I've never seen him bow once to a challenge."

There is no doubt that Alex pours tremendous amounts of energy into his chosen sport. Six days a week through 12,000 meters of water in training. When preparing himself for meets he puts himself through three-a-day workouts.

The time Alex spends in the pool necessarily curtails other activities. "I can't enjoy the social life as much; I go to bed earlier than most," he concedes. "I think it's all worth it in the end. When you win something it's a pretty good feeling. It's hard to describe."

Besides the Gainesville meet and other international competitions where Alex has fared well, he counts his bronze medal performance in the Pan-American Games in Puerto Rico in 1979 among his most exciting moments.

Still training diligently, the soft-spoken 16 year old faces a fairly lean swim season in terms of major competitions. He was selected to represent Canada at an international meet in New Zealand in January where he captured a pair of gold medals. Alex is also preparing for the Nationals later this winter.

His goals for the future include striving for top spot in the world championships and Commonwealth Games next year and the Olympics in 1984.

He has received many scholarship offers from American universities, and one of his more immediate concerns is deciding which one of them he will accept. A Sudbury Secondary School student who maintains an impressive 79 per cent average despite the great number of days he is forced to miss, Alex seeks

a school that is a powerhouse in US collegiate swimming and will offer the chance of getting a decent education. He says he would like to major in languages.

He has narrowed his choice of universities to Berkeley, University of Southern California, Texas and Indiana. Explains Sudbury's most recent sport's hero: "It will give me more competition than I have up here. It'll give me an opportunity to get a good education."



Laurentian University Swim Club founder and coach, Dr. Jeno Tihanyi details an afternoon's training session to a group of his top swimmers.



Alex Baumann, (with maple leaf on swimming cap) framed through a lifeguard's ladder, is Canada's newest swimming superstar.



Alex Baumann shows the form that took him past the best swimmers in the world to an unofficial world record.

LOOKING BACK

THROUGH THE PAGES OF THE TRIANGLE

March 1947

Thirty four years ago the Triangle reviewed the biggest winter carnival ever to take place in Sudbury and area. Practically the whole city, then populated by 40,000 souls, contributed to making the week-long mid-winter festival a colossal success. Wrote the editor: "There was no yardstick of experience to guide the organizers in their work but they made up in enthusiasm what they lacked in background, and the result was a credit to them and their supporters."

Citizens and visitors alike enjoyed the wide range of events and

activities associated with the carnival. There was a giant 70 float parade that made its way through a downtown festooned with the appropriate decorations. The carnival queen contest finale was held at Athletic Park and Germaine Tessier, representing the St. Jean Baptiste Society, won the crown. Thousands crammed into the park to watch the Canadian Speed Skating Championships. Westerners raced off with most of the hardware and ex-Incoite Frank Stack once again retained his senior championship.

One sporting activity of particular interest was the Ontario Ski

Championships held near what is now Adanac Ski Hill. A special wooden ramp was built so the ski jumping competitions could be held. Twenty thousand people watched the skiers soar through the air for distance and style points. With few parking facilities, hundreds were forced to abandon their cars on the highway and trudge across snow-covered fields. Thousands of others arrived comfortably by a special CNR train from the city.

OTHER MARCH EVENTS

1950:

The brand new Garson employee club was officially opened. The ground floor held a billiard room, four bowling alleys, a gymnasium, men's and women's locker rooms, and a canteen and kitchen. A 400 seat auditorium, fully equipped with stage and dressing rooms and marked for two badminton courts dominated the main floor. The second floor, which was in the form of an enclosed gallery overlooking the auditorium, held a committee room and a lounge. H.J. Mutz, general superintendent of mines, opened the club saying: "The opening of this club marks another step in Inco's broad program for the security, welfare and recreational enjoyment of its employees."

1959:

The Triangle reported that an Inco alloy was contributing to the fledgling American space program. The X-15, the world's first manned space probe, was designed to withstand the fierce, 1,000 degree F. heat of re-entry. Where other metals would disintegrate, Inconel "X" age-hardenable nickel chromium alloy would resist.



The March 1947 Triangle had this to say about the above photo: "Tuesday night saw the official opening of the carnival by Premier George Drew, and a torchlight procession in which thousands took part. Among the dozens of other special features were the fashion show, the closing banquet at which northern fish and game were served, the whiskering contest won by Wilf Salo, the hockey matches at Stanley Stadium, the tug-of-war events, the junior dog derby, and the model mine stope brought from Frood and set up in a Frontenac Hotel window in connection with the special industrial exhibit."

CO in the community

Inco, on behalf of all employees, supports a variety of community clubs, groups, organizations, institutions and projects by means of financial contributions and donations of goods and services. These worthy causes range from medical to recreational, and from educational to cultural, and are examples of Inco's commitment to the communities in which our employees and their families live and work. Listed here are a few of the many institutions and other establishments, who were assisted in numerous ways over the past few months.

Lively YWCA
Northern Ontario Art Association
Le Centre des Jeunes
Quonta Drama Festival
Multiple Sclerosis Society
Laurentian University
Alcohol and Drug Concerns Inc.
Cambrian College
Sudbury Regional Multicultural Centre
Haileybury School of Mines
Sudbury Little Theatre Guild
Manitoulin Student Aid Fund
Royal Canadian Air Cadets
Children's Aid Society of Sudbury
Cerebral Palsy Association
Sudbury YMCA
Wasse Andimik Aning Anishnabe Spiritual Centre
Club D'Age D'Or
Big Sisters



The Canadian National Institute for the Blind in Sudbury unveiled a new machine known as "Visual Tek" for use by the visually handicapped. Inco Metals funded the purchase of this diagnostic and training device costing \$2,600. The system uses a closed circuit television camera and video display terminal to enlarge printed matter up to 60 times its normal size, making it possible for visually handicapped people to read. Geoff Eden, district administrator of the CNIB said that this new diagnostic tool was something that the CNIB has been in need of for some time. Here **Geoff Eden**, right, explains the "Video Tek" system to **Sid Forster**, superintendent of public affairs.



The Big Brothers Association of Sudbury held its annual Bowling for Millions tournament at Notre Dame bowl in February. Representatives of various media and industries took part in Celebrity Day which netted \$7,400 for the organization. Inco Metals Company contributed \$250 to the cause. Team Inco, pictured here, was represented by, front row, from the left **Ron Santala**, supervisor of operations at central utilities, **Allan Cecchetto**, tour co-ordinator, public affairs, **Karen Curry**, public affairs co-ordinator, **Dave Scott**, a training foreman at the copper refinery; back row, from the left, **Pat McNamara**, operations supervisor of the test centre, and **Dick Bontinen**, a process data analyst. Team Inco showed impeccable form in defeating the Falconbridge team.

Was the Sudbury Basin formed by the immense impact of a giant meteorite from outer space? . . .



Multi-Megaton bombs ju to blast that forn

Two billion years ago the earth was a rough, rocky, barren planet — a strange world still simmering from the fires of creation. Life existed only in its most primitive forms, algae and bacteria suspended in angry seas. It was during this time that the steamy, primordial peace was shattered by an explosion of gigantic dimensions caused by a meteorite smashing into the earth's surface. The crater that was left became the Sudbury Basin.

Those who believe that the Basin was indeed originally gouged out by a meteorite, subscribe to what is known as the meteorite impact theory of the Sudbury Basin's creation. Staff geologist Gord Morrison of the mines exploration department is Inco's resident expert on this theory. His office is crammed with geological data of all sorts . . . maps, reports, rock samples, satellite photographs.

Much of the information he has collected serves to buttress this explanation of how one of the richest resource areas known to man was formed.

Gord was invited to present his research in November of 1980 to scientists attending the Lunar and Planetary Institute Conference in Houston. The Lunar and Planetary Institute was established as a research and support services centre for NASA.

The meteorite impact theory was first proposed in 1964 by Dr. Robert Dietz, an American geologist. Dietz found the Sudbury Basin to have some characteristics of an impact site and proposed that it indeed had been formed by a meteorite.

This explanation for what had happened in this area two thousand million years ago stood the scientific

community on its ear. It got in that unlikely position more from ridicule than from being intellectually stimulated by the new proposal. Says Gord: "It took about three years for people to stop laughing. It (the theory) wasn't accepted right away."

The meteorite impact theory has gained many adherents but it is by no means universally accepted. According to Gord, many geologists believe in the traditional theory of the formation of the Sudbury Basin; that it is the remnant of an old volcano. Most Inco geologists swear by the meteorite version of the Basin's creation.

"We didn't have the right answers for what the Sudbury structure looked like," Gord elaborates. "The volcanic model didn't explain the observations we found." From studies of other meteorite impact sites in the world

... or was the Sudbury Basin formed from a volcanic eruption created by forces deep within the earth?



st firecrackers compared ed Sudbury Basin

and on the moon and other planets of the solar system, the Sudbury Basin, he continues, displays characteristics generally associated with meteorite craters. In order to investigate these characteristics, American astronauts came to Sudbury in the early 1970's.

The reconstructed Basin has a circular symmetry — a kind of bull's-eye structuring typical of meteorite impact sites. When meteors crash into a surface, they usually leave behind smashed rocks known as breccia and a conical form of rock fracture called shatter cones. The Sudbury Basin has very prominent displays of breccia and shatter cones visible throughout the district. Finally, minerals found locally exhibit shock metamorphic features that are unique to impact sites. Quartz from the Basin, for example, has a great number of very fine cracks called

planar features. This damage, scientists say, could only have resulted from a meteorite impact.

"The size of the cataclysmic explosion created by the meteorite eons ago is impossible to fathom," comments Gord. Compared to this big bang the powerful megaton nuclear explosions we know "are just firecrackers," he says. Massive ore deposits were not deposited in this area by the meteor itself. Rather, Gord conjectures, the impact triggered an "endogenic magma" — a situation where molten lava was forced to the surface partially filling the crater.

He estimates the size of the original crater to have been 100 to 150 kilometres in diameter and eight to ten kilometres deep. Millions of years of deformation and erosion have kneaded the original crater into

the current ellipse 50 kilometres long by 27 kilometres wide. The ores we mine today were not formed immediately. Throughout the intervening years the magma slowly crystallized to form the sulphide orebodies common in the Basin.

Since the last time the Triangle looked at the meteorite impact theory in the early 1970's the theory has gained more credence among scientists the world over. Studies of impact sites have continued in connection with NASA (the Lunar and Planetary Institute), and the Earth's Physics Branch of the Dominion Observatory here in Canada. Discoveries made in outer space, scientists have found, can be applied to the Sudbury Basin.

Probing of craters on the moon and other planets reveal even more astounding similarities between

continued on next page

special impact sites and the Sudbury Basin. In recent years, meteorite impact sites have been found to be of polygonal or many-sided shape instead of round. By reconstructing models of the Basin, geologists have been able to determine the same sort of structure exists here. Researchers have also discovered that these craters are terraced, possessing troughs. In the Basin, these troughs often bear mineral deposits. Applying what they have learned through the space program, geologists have gained some valuable tools for their exploration activities.

Data continues to be collected through exploration both here and in space. As it streams in, Gord grows more confident that the meteorite impact theory is the correct point of departure when dealing with the geological history of the Sudbury Basin. Gord points out the new information received is being compiled not only with reference to present data but also to that collected over the last 100 years. The more research he does, the more he finds that the Sudbury Basin did result from the big bang of a meteorite colliding with the earth.

Satellite photographs of the area, such as the one Gord Morrison is examining here, are used as exploration tools supplying geologists with various kinds of information about the Sudbury Basin's ores and their origins.



The conical shaped rock formations called shatter cones, pictured here, are found extensively throughout the Sudbury Basin. They are, some scientists maintain, evidence of meteorite impact eons ago.



Family Album

Family Album Photos

If you are an Inco employee and would like your family to appear in the Family Album section of the Triangle please let us know by calling 682-5425, or send in your name to the address on the masthead.

Doug Koroscil, a maintenance foreman at Levack mine, his wife Gwen and daughter Melanie, 7, spend most of their vacation time camping with their trailer in provincial parks. Boating, fishing and swimming are among their favorite past-times. When not vacationing in the parks, the Koroscil family likes to motor to British Columbia to visit relatives, or see a bit more of the United States. Doug is keen on hockey, skidooring and ice fishing in the winter. Melanie who loves to read, according to Mom, is in grade one at Levack Public School.



From the Port Colborne nickel refinery we have manager Trevor Fregren and his fine looking family. Trevor started with Inco at Port Colborne in 1959 and after a short stay at Thompson, Manitoba he returned to Port Colborne in 1979 as manager of the refinery. His outside interests include skiing in winter and sailing in summer, while wife Madeleine enjoys painting and drawing in her leisure hours. Son Chris, left, works for a major holding company in Winnipeg and son Duncan is employed with the Canadian Carborundum Company in Niagara Falls.



John Wright, a process foreman in the FBR extension in matte processing, has been with Inco for 11 years. John, his wife Lorna and daughter Patricia, 3, love the outdoors. They like to spend their summers at the cottage on Lake Penage where they do much boating, swimming and fishing. The family swims in the winter as well, at local swimming pools. John likes to ice fish while Lorna enjoys cross country skiing and doing volunteer work. Patricia has a friend named Becky, the family dog.

First aid co

H.J. Mutz finalists

These first-aid teams, representing the 14 managerial areas in the Ontario division, were the finalists in



Garson Mine

Claude Larochelle, Fred Horner (coach), Clarence Wheatley, Bill Gibson, Stan Rice (captain), Leo Deguire



Copper Cliff Mines

Elie Malakieh, George Jenkins (coach), Reg Park, Frank Upchan, Wayne Kennedy (captain), Denis Morin



Frood-Stobie Complex

Claude Trudel, Gordon Stewart (coach), Ronald Gervais, Robert Labelle, Jack McGibbon (captain), Neil Pacaud



Central Mills

David Cockburn, Gerald Dube (coach), Roger Rouselle, Romeo Villeneuve, Ron Vailancourt (captain), Des Campbell



Creighton Mine

Douglas Coffin, Robert Boyer (coach), Wally McBain, Tony Cirillo, Perry Kirkbride (captain), Morris Villeneuve



Matte Processing

Henry Gash, Orval Couture (coach), Gerry Laviole, Ray Lariviere, Ron Coleman (captain), Maurice Therrien

mpetitions

the H.J. Mutz and D.F. Finlayson competitions.
Their knowledge, skill and
dedication make them all winners.

D.F. Finlayson finalists



Central Maintenance Forces
John Smith, Richard Jacobs (coach), Robin Erickson,
George Genier, Denis McGregor (captain), Steve Cote



Iron Ore Recovery Plant
Gord Ettinger, Roger Bedard (coach), Mark Lanteigne,
Terry Bodgan, Don Benoit (captain), Terry Sasseville



Transportation
Ray Gignac, Norm Quesnel (coach), Germain Nadeau,
Leo Boudreau, Richard Marois (captain), Dieter Rothensee



Copper Cliff Nickel Refinery
Bill Mitchell, Cliff Corelli (coach), Jim Haddow,
Mike Forget, Jack Parry (captain), Malcolm Parry



Copper Cliff Smelter
Frank Rocca, David Stanbaum (coach), Djaro Vojnovic,
John Marunchak, Michael Bellehumeur (captain), Lucien Lafrance



Port Colborne Nickel Refinery
Innocent Stocco, Alfred Schrader (coach), Italo Celli,
Cesar Carmine, Joe Sammut (captain), Jack Pearce

continued on next page.

and the winners are . . .

Late breaking news . . .

As the Triangle was going to press these two teams competed in the R.D. Parker first aid final. Levack mine emerged as the ultimate winner. A full report on the event will be featured in next month's edition.



Levack Complex

*Michel Belanger, Merv McLaughlin (coach), Reg Chartrand
Rod Burns, Marcel Henri (captain), Tom Luoma*

**H.J. Mutz
winners**

**Levack
Complex**

**D.F. Finlayson
winners**

**Copper
Refinery**



Copper Cliff Copper Refinery

*Gaetan Rainville, Norm St. Amand (coach), Ray Cottin
Lois Lawrence, Len Leclair (captain), Jane Proulx*

Chelmsford kids get a taste of underground



The underground tour at Coleman mine included a visit to a stope where they were given a chance to see and feel ore. These four ladies examine some choice specimens found by their tour guide.



Safety in the mine was a topic stressed and demonstrated for the students during their tour. Here they are shown a pair of gloves worn on the job.

At the mine

It was evident from the moment the students from Chelmsford Senior Public School entered the warm room at Coleman mine and donned helmets and belts for the underground tour, that the excitement was building to a fever pitch.

The group was led by mine engineer Barry Nicholson through various sections of the operation in a safe, orderly manner. A guide was provided for each three or four students to make sure everyone received a full explanation of what they saw.

Expressions of wonder shaped youthful faces as they experienced rapid descent in a cage, the darkness and extensiveness of a drift, and the sights and sounds of men and machines mining the ore which plays such a big role in our lives.

One reaction seemed common to the visitors. While they had all seen pictures and films of mining operations, nothing they had seen could compare to the real thing.

Enjoying the tour as much as the youngsters were the hosts, the men who work in Coleman. They took great care to explain things fully and answer questions so all could understand.

While the miners have handled other tours, these visitors were often university geology students and always adults. They had rarely dealt with an audience so young and so receptive. It was with great pride they showed the students the workings of their mine.

When one grizzled veteran of the stopes was asked what he thought about strutting his stuff in front of this group of such tender years, he replied: "I think it's great. I wish I had an opportunity like this when I was a kid."

continued on next page

Mining day at Chelmsford P.S.

At the school

Bernie McKay, sandfill pourer boss at Coleman mine, found himself in a new element last month. A featured guest of the Chelmsford Senior Public School's "Mining Day", he stood, clad in his mining gear, fielding questions about working underground from a knee-high sea of inquisitive faces belonging to the grade three class.

Following a slide show presentation on mining the young students wondered about everything from the depth of a mine to the height of the superstack. One little soul, inquiring about the extent of Inco's mining operations, was assured that miles and miles of company drifts could be found under the Sudbury Basin. "Well if there are so many tunnels underground," the youngster retorted seriously, "Why doesn't the earth cave in?"

The boy got his explanation, and that was the whole point behind "Mining Day" at Chelmsford Public School. Bernie and other company employees, at the request of the teaching staff, offered students their knowledge and experience through



Bernie McKay fields one of many questions that this class of youngsters had on mining.

slide presentations, question and answer sessions, maps and product samples as a means of enhancing their understanding of minerals and mineral processing. Inco employees on hand for the special event were: Barry Nicholson, mine engineer at

Coleman mine, Colin Flett, planner at Coleman mine, Derek May, mine engineer at Levack mine, Ken Lindsay, a division supervisor in engineering at Levack mine, Wayne Ackland, a ventilation supervisor at Levack mine, Jim Guse, a mine



Colin Flett, a planner at Coleman mine, illustrates an aspect of mining for a class of grade 7 and 8 students.



Students found the geological presentation interesting and the rock samples fascinating. Here, Al Bentley points out a feature of a sample to this young man.

geologist at McCreedy West, Emile Mailloux, a mine geologist at Levack mine, Al Bentley, a mine geologist at Coleman mine and Joe Mather, a planner at McCreedy West.

Vice-principal Wayne Bailey explained that mineral and mining studies were part of the curriculum of several grades at Chelmsford Public School. He and his fellow teachers gained many insights into the subject matter on an Inco tour in December. That's how the mining day came into being. They wanted to provide students with a first hand look at the industry.

Company officials were contacted and arrangements were made not only for talks and displays but also for a tour of a mine by about 80 students at a later date.

This sort of contact between employees and students, Wayne thinks, is an ideal method of teaching. "Children don't learn very well from you just telling them about something," he added. "They have to see things for themselves." Wayne predicted that they would be every bit as amazed by actually witnessing what goes on in a real mining operation as he was.

Through this exposure to mining, many children learned exactly what their fathers are doing at work. Wayne says it is "developing a rapport between parents and children." After the children have had an exposure to mining, they in turn ask their fathers more questions.

The visit by company representatives to Chelmsford Public School and the promise of a tour underground at Levack mine have served to heighten interest in this area of study. Wayne estimated that there was three times more interest in the mining segment. "It (Mining Day) gave a purpose for the lessons in class," he said.

Speaking for the Inco employees, Barry Nicholson said the experience of informing students about mining was an enjoyable one. "It's a good thing, something that should be continued," he reported. "We've definitely learned from it."

Interviews

Ron Landrye, 14, . . . Ron, the son of Coleman mine's maintenance foreman, Roy Landrye, was most impressed by the machinery he saw



Roy Landrye, maintenance foreman at Coleman mine, with son Ron.

during his first trip underground. "I like the way they take the scooptrams apart and put them back together again," he commented. His father had previously explained to him the workings of a mine but it was only after his trip to Coleman that he could associate those "wierd names with different things." Asked if he would work underground Ron replied; "It wouldn't be too bad. If I did work here I would be a mechanic."

Walter Wilson, 13, . . . "It was really fun, I really enjoyed it," said Walter, son of William Wilson, a stope-leader at Levack mine. Other



Walter Wilson

than the drilling, "all the machinery in action" most impressed him. Walter mentioned he wouldn't mind working in a mine, calling it "a good honest way to make a living." The Coleman tour gave him some insights into how

his father made a living. He explained, "I'm really proud of what he does, though I've always been proud of him."

Mary Somerset, 13, . . . "It was bigger than I thought it would be," noted Mary, daughter of John Somerset, a supervisor of design and



Mary Somerset

drafting at general engineering. "It's different than I thought it would be," she assessed. "I thought it would be a lot lighter than it was." Of all she had seen in Coleman mine that day, the jackleg drills impressed her most.

Courtney Middleton, 13, . . . "Different" was the way Courtney described the experience of touring the 1600 foot level of Coleman mine.



Courtney Middleton

Her father, Ken Middleton, is a first aid attendant at the copper refinery. She thought a mine operation would be "tidy and neat, but it's not." The sight, sound and feel of the drills, as was the case with many of her classmates, was the most memorable part of the excursion for Courtney.

PEOPLE



Copper Cliff South mine certainly has its share of safety record holders. One maintenance crew and two mine crews recently earned the honor of going a full year without a lost-time injury. Members of the maintenance crew are, back row from left: **Blanchard Bell, Stan Ojanpera, Eimo Kankainen, Terry Myher, Lloyd Gallagher, Rick Burns, foreman Gerry Carriere**; front, from left: **Hyacinthe Savoie, Bill Mulligan, Louis Vizza, Nick Krawczuk.**



Members of the first mine crew are, back, from left: **Bill Cottrell, Phil Bonnis, Bob Grenier, Tom Chellew, Brian Becking, Junior Newman, Jim Dwyer, Tony Solski, Rolly Lariviere, Clayton Campbell, foreman Ron Geddes**; front, from left: **Tom Rumley, Roy Roque, Jim Murdock, Mike Swiatek, Joe Persechino.**



Members of the second mine crew are, back, from left: **Marcel Coutu, Bill Halman, Paul Boyd, Roy Warren, Paul Paasila, Roy Budgell, John Daley, Raymond Salo, Jim Plummer, Wayne Friel, foreman Vic Marcoux**; front row from left: **Barry MacDougall, Joe Adams, Lauri Kivi, Esko Rouvinen, Valde Jutila, Fred Elliott.**



It was a busy autumn of woodworking for **Moe LeBlanc**, a diesel mechanic leader at Creighton nine shaft. Moe made three chests, two rocking chairs, framed mirrors and smaller items from red and white cedar as Christmas presents for members of his family. "I get a lot of satisfaction seeing my children's faces Christmas morning," says Moe, who has been doing carpentry work for some 30 years. He spent some 200 hours working on the Christmas gifts. "Although it involves hours of cutting, sanding and laminating, it is a relaxing hobby," Moe added.

PEOPLE



The biggest bonspiel in the long history of the Copper Refinery Athletic Association was held last month. Forty two teams comprised of copper refinery employees, pensioners, members of the athletic association and representatives of firms who donated prizes, took part in the two day affair. The President's Trophy, emblematic of the bonspiels overall championship, was claimed by **Doug Gathercole's** rink. Doug is an Inco pensioner and a curling great who has represented Northern Ontario at the Brier. Other members of his rink were **Sid Segsworth**, superintendent of casting and transportation at the copper refinery, **Gail Desloges** and **George White**, both of Master Brendan Industrial Services. Here a trio of sweepers clear the way to the button.



Stephen Kaizer left, and **John Morissette**, second year students of the mining technology program at the Haileybury School of Mines were recently presented with Inco scholarships. The scholarships which cover the cost of tuition and a cash grant, were awarded to the students with the best academic standing in first year.



A foursome of Inco employees carried the Northern Ontario banner into the Canadian Senior Curling Championships in Nanaimo, British Columbia earlier this month. The squad, skipped by **Art Romanik**, won the right to represent Northern Ontario in a curling classic held in January when they defeated a field of six rinks in a competition held in Coniston. They are members of the Copper Cliff Curling Club and have been together since last autumn. The proud Northern Ontario representatives pictured here are, from left, **Chic McDonald**, a maintenance area foreman at the Copper Cliff smelter, **Elio Flora**, supervisor of personnel services at central maintenance, **George Morin**, maintenance mechanic first class at Froid-Stobie and skip **Art Romanik**, a maintenance mechanic at Froid-Stobie.



The trickiest part of any loppet is the mass start. Survive the initial stampede and you've got it made. This is part of the rush at the start of the ten kilometre event.

They're off!

Fifth annual Inco Loppet

The fifth annual Inco Loppet was held on February 15 at the Voima Athletic Club in Sudbury. Nearly 400 skiers of all ages were on hand to participate in what has become known to some as a great family event, to others as the best cure of the mid-winter blues and to still others, as the best bargain for a buck in town.

Near perfect conditions greeted the skiers. Sunny and warm, more than a few participants chose to shed one or two layers of clothing after a couple of kilometres in order to keep cool or "catch a few rays."

The mild weather did force many people to deliberate a little longer than usual on exactly which wax or combinations of wax they should

apply. Once the shotgun thundered the order to start, they had to live with their choice.

Participants built their energy levels to all time highs, at least as far as Sunday mornings are concerned, with the delicious grub served up by the now famous Inco Pancake Division, prior to the big event. Any of the fortitude sapped in tackling the trails snaking through the wilderness of the Long Lake area was replenished by the sweet beverage and oranges Voima Club members dispensed at strategic points throughout the race.

The Inco Loppet, by no means a cross-country ski race, attracted all calibres of skiers from the seasoned veteran to the novice. Methods of

getting from one point to another on "skinny skis" varied as much as the type and colour of dress worn by the entrants. Among the methods used to get down a steep hill, other than the headlong rush into oblivion or the less risky walk down the side, were the medium speed "snowplow" and the ever popular "fanny-slide."

A constant vigil was maintained over all the trails by members of the Voima Club and members of the ski patrol. Representatives of St. John's Ambulance were on hand also in case of some emergency.

When it was all over, each skier had a certificate of achievement and a smile acknowledging the accomplishment of a feat in physical fitness and a few hours well spent.



A feature of this year's loppet was the noticeable increase in the number of children who participated in the family event. This youngster was one of many on the five kilometre course.



For many skiers, the most thrilling part of the race came a short distance before the finish line at Voima's famed Broken Ski Hill. The pause at the top gave people a little time to ponder whether discretion was the better part of valour or if they should take the plunge. Here, some chose to walk the length of the hill while others went for broke.

Part of the Inco Loppet tradition includes a visit with the famous Inco Pancake Division where pre-race appetites are quelled with pancakes, sausages, juice and hot coffee.





Thomas Burke
\$1085



From left, Gil Schroeder, Jean-Paul Coutu,
Ray Martin shared \$315



Joe Goegan
\$310

Congratulations to this mont

- \$1,085** **Thomas Burke** at **Stobie mine** made the suggestion to use a concrete mixture of sand and cement rather than ROC-LOC as a sealer for the sandfill collar pipes in the stopes. The sand and concrete mixture was pre-mixed, applied easily and was less expensive than ROC-LOC.
- \$315** **Jean Paul Coutu, Ray Martin** and **Gil Schroeder** at **Levack mine** suggested to add a wear plate on the 300 cubic foot bottom dump cars used underground. Installing a wear plate eliminated the cost of replacing the complete side of the car. It also reduced the chances of muck getting in between the car body and wear plate. Material and labor costs were reduced.
- \$310** At **matte processing**, **Joe Goegan** made the suggestion to install check valves on the outlet end of the solenoid valve on the Eimco filters. In the past, the solenoid valve would stick and plug up with wet feed. The check valves prevented the wet feed from interfering with the solenoid valve. The check valves were an inexpensive way of extending the life of the solenoid valve.
- \$265** **Jim Stillar** at the **Copper Cliff smelter** suggested that the piston sleeve on the loader track tensioner be shortened. This helped prevent fork breakage.
- \$260** At **Frood-Stobie mill**, **Des Campbell** and **Gerry Richard** made the suggestion to install an orifice on the air intake of the feeder chute vibrators. The orifice reduced the flow of air into the motor, thereby extending the life of the vibrators. Fewer repairs were required and savings were made on parts.
- \$180** **Merv Gribbons** and **Ray Paquette** at the **Copper Cliff smelter** suggested repairing instead of replacing holding tanks for hydraulic brake fluid used for main aisle cranes. The cost of buying and installing holding tanks was eliminated.
- \$155** At **Stobie mine**, **Ewald Prass** made the suggestion to install support brackets on filters in Trane heaters and fans. In the past, the suction of the fans made the filters bulge and sometimes dislodge completely. The support brackets proved to be effective in extending the life of the filters. The filters did not come loose and were not drawn into the heating elements, creating a fire hazard.
- \$150** **Gerry Orton** and **Marcel Pilon** of **Levack mine** made the suggestion to provide an oil storage room in the hoist room to house oil needed for the hoist and compressors. There was a fire hazard in the past because the oil barrels were stored all over the hoistroom and compressor areas. The centralized oil storage reduced the amount of inventory and oil loss through contamination.
- \$150** At **Frood mine**, **Bill Aykroyd** suggested that hinges on Grangesburg cars be covered with rubber. The rubber guard prevented mud and sand from building up on the car hinges and allows the doors to close securely, thus eliminating a potential hazard.



Jim Stillar
\$265



Des Campbell, left, and Jerry Richard
shared \$260

h's suggestion plan winners

- \$150** **Gord Davison** and **John Hogan** of the **Iron Ore Recovery Plant** suggested an interlock switch be installed between the kiln drive and quench tank agitator in the roaster kiln building. This eliminated feed buildup during agitator failure which was a possible safety hazard in the past.
- \$150** **At the Copper Cliff smelter, Merv Gribbons** and **Ray Paquette** suggested that frictionless bearings be used on transfer sheave wheels. The sheave, housing, bushing and pins now last longer thereby saving on parts and labor.
- \$150** **Jean Paul Levesque** and **John Lawson** at the **Copper Cliff smelter** made the suggestion to install a scraper along the feed belt. The scraper reduced spillage and reduced the amount of maintenance required plus eliminated a safety hazard.
- \$150** **At the Copper Cliff smelter, Armand Michaud** suggested that oxygen pipes with end caps be purchased. The end caps preserved the thread on the pipes as well as prevented dirt, water and oils from entering the pipes, eliminating a safety hazard.
- \$140** **Gerry Richard** and **Des Campbell** at the **Frood-Stobie mill** made the suggestion to install a pressure valve on crusher jacks. The valve relieved buildup of pressure on the hoses and reduced the hazards of jack slippage.
- \$140** **Leo Roussy, Richard Poulin, Ransom O'Malley, Claude Joly, Yoland Blais, Ernest Landry** and **Robert Godin** at the smelter shared \$140 for their suggestion to install an underground fault receptacle in the tool rooms where electrical tools are issued. The ground fault was installed as a safety measure and proved to be less expensive than installing plugs in the field.
- \$140** **At the Copper Cliff nickel refinery, Ray Murray** made the suggestion to install a flexible pipe from the gas burner to the launder. The previous pipe was rigid and would often break during the granulation process. Savings were made on repairs.
- \$110** **Reino Niemela** at **Creighton mine** suggested to reduce the length of the fines chute discharge pipe in the rockhouse. The long pipe was often blocked with wet feed which made it difficult to clean. The shortened pipe reduced the blockage and reduced the time required to clean the pipe.
- \$110** **At Stobie mine, Alcide Fournier** and **Engene Bedard** suggested improvements to the hoistroom by modifying vent doors and installing electric fans. Hinges were installed on the vent doors and pulleys were used to operate the doors from the ground floor. Hinged doors and electric fans are easier and safer to operate in changing weather conditions which had a direct effect on the hoisting equipment.



Attention Curling Pensioners

The sixth annual IN Touch Curling
Bonspiel for retirees will be held at
the Copper Cliff Curling Club

**Thursday, April 9, 1981
- 6:00 p.m.**

and

Friday, April 10, 1981 - 8:00 a.m.

All Pensioners Welcome

Entry forms can be picked up from any of the curling committee. The registration fee of \$5.00 must accompany the application and includes prizes and lunch. Out of town pensioners who wish to enter can mail their entry to

John Woznow
Box 1055
Copper Cliff, Ontario
P0M 1N0

Curling Committee

Verdell Price at Coniston, **Jesse Morrison** at Copper Cliff, **Rusty Duberry** at Walden,

Wes Hart at Sudbury, **Fred Spencer** at Levack, **Ralph Brown** at Idylwyld.

Entries limited to first 112.

IN Touch Curling Bonspiel

Name _____ Phone _____

Address _____

Bring your own broom
and
Clean Curling Footwear

*Entries must be received by April 1, 1981
in order that the draw may be made.*