



The Triangle
FEBRUARY 1978

Editor,
Rudolph Kneer

Net Earnings For Fourth Quarter 1977 Sharply Down From Previous Year



The Triangle

ON THE COVER . . .

Cross-country skiers have been making splendid use of the numerous ski trails, thanks to this season's abundant snowfall. Here, Ontario Division planner Hugh Judges, Larry Peyton, of Copper Cliff computer systems, and Steve and Shelley Judges are featured on a ski trail woven around the Lively Golf Club, where magnificent evergreens face the picturesque landscape, providing a perfect setting for one of the north's favorite winter activities.

Feb. 6 — Inco Limited announced today its unaudited net earnings for the fourth quarter and year 1977. Estimated fourth-quarter 1977 earnings were \$4.6 million, or two cents a common share, compared with earnings of \$60.9 million, or 82 cents a share, for the fourth quarter of 1976.

The company's estimated earnings for the year 1977 were \$99.9 million, or \$1.24 a share, compared with earnings of \$196.8 million, or \$2.64 a share, in 1976.

Net sales for the fourth quarter were \$534 million, compared with \$578 million for the fourth quarter of 1976. Sales for the year 1977 totalled \$1.95 billion, compared with \$2.04 billion for the previous year. Sales by ESB accounted for \$706 million, or 36 per cent, of Inco's 1977 sales and \$598 million, or 29 per cent, of 1976 sales.

The precipitous decline in fourth-quarter 1977 earnings from the same quarter of the previous year was due principally to substantially reduced deliveries of nickel, lower prices for primary nickel and copper, currency translation adjustments, and a required provision for separation costs related to employment reductions. Most of these employment reductions will occur early in 1978. Fourth-quarter 1977 currency translation adjustments resulted in a charge of \$0.8 million, compared with a credit of \$11.3 million to fourth-quarter 1976 net earnings.

Major factors contributing to the decline in earnings for the year 1977, as compared with the prior year, were lower deliveries of nickel and platinum-group metals, lower prices for copper, higher unit costs in the metals business and a decline in ESB's contribution to earnings, primarily due to nonrecurring factors. Net earnings for 1977, which benefitted from higher prices for rolling mill products and platinum-group metals products, included a credit of \$17.6 million from currency translation adjustments, compared with a credit of \$2 million in 1976.

For the year, deliveries of nickel in all forms amounted to 312 million pounds, a decline of 24 per cent from the 410 million pounds delivered in 1976.

Copper deliveries totalled 341 million pounds, compared with 356 million pounds in 1976. Deliveries of rolling mill products in 1977 were slightly lower than in the previous year. No deliveries were made in 1977 from the company's nickel projects under development in Indonesia and Guatemala.

The board of directors today declared a quarterly dividend of 20 cents (U.S.) a common share, payable March 9 to Class A and Class B shareholders of record on February 16. The dividend on the Class B common shares was declared payable out of "1971 capital surplus on hand" as defined in the Income Tax Act of Canada. In 1977, the company paid three quarterly dividends of 35 cents a share and a fourth-quarter dividend of 20 cents a share, bringing total 1977 dividends to \$1.25 (U.S.) a common share, compared with \$1.60 a share paid in 1976.

The board of directors also declared a quarterly dividend at an annual rate of 5.375 per cent on the company's floating rate Series A preferred shares, payable March 1 to shareholders of record on February 17, and declared the initial dividend on the company's 7.85 per cent Series B preferred shares, payable March 1 to shareholders of record on February 14.

Last month, at hearings of the Select Committee of the Ontario Legislature looking into the announced Inco-Falconbridge production curtailments, Inco Chairman J. Edwin Carter estimated the company's finished nickel inventory at year-end, 1977, at approximately 340 million pounds, an increase of 32 million pounds from the third quarter total. Mr. Carter pointed out that "this is all Canadian nickel." Production of finished Canadian nickel in 1977 was estimated at about 415 million pounds.

The Committee was also told that Inco's "best estimate" of its average realized price for all its nickel products was \$2.06 a pound in the fourth quarter of 1977, compared with \$2.15 a pound in the third quarter and \$2.24 a pound in the second quarter.

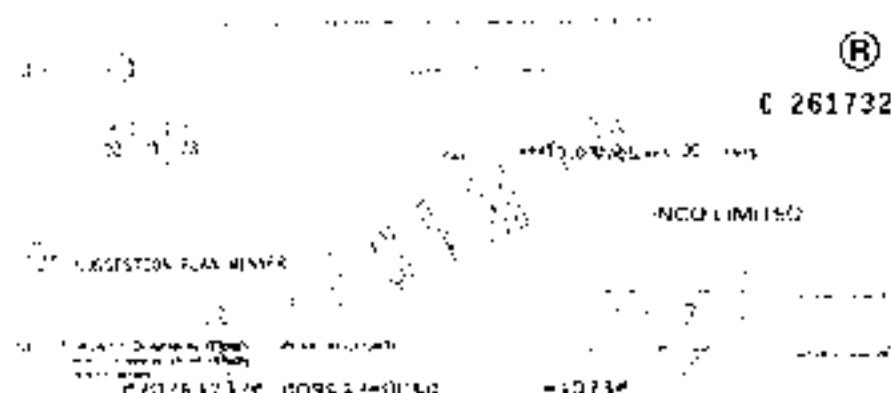
*All dollar figures are expressed in U.S. currency.

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Maximum Suggestion Plan Award Raised To \$10,000

Wanted: Ways To Improve Safety And Reduce Cost Of Operations



Maximum award payable under the Ontario Division suggestion plan has been increased to \$10,000 from the previous \$5,000 figure. The new award structure will apply not only to new suggestions but to those presently under investigation.

According to Peter Spaul, manager of industrial engineering, today more than ever Inco Metals Company is looking for ways to reduce operating costs and maximize its production.

Better methods, practices and safety precautions will make Inco Metals Company a better place to work. It ensures that our products remain competitive. Everyone benefits," he said.

Purpose of the plan is to provide a method whereby hourly paid employees at all Ontario Division mines and plants may submit their ideas to management for consideration. As an employee, you are in the best position to find and suggest ways to improve safety and

The Plan Recognizes Individual Initiative And Ingenuity

- The company will pay from \$25 up to a maximum of \$10,000 for each suggestion accepted depending on the value of the idea. Where a suggestion results in dollar savings, the award will be one-sixth of the net amount which the company considers to be the savings during the first year following the introduction of the suggestion, up to a maximum of \$10,000.
- Where employees submit a suggestion together and it is accepted, the award will be shared equally between them.
- Non-accepted suggestions are kept on file for a period of two years from the date of non-acceptance and may be reopened during this time.
- Every non-accepted suggestion will be eligible for resubmission at the end of two years from date of non-acceptance. If at the end of this two-year period you believe your suggestion is still applicable, you should resubmit it and it will be considered as a new suggestion and re-investigated.
- In order to extend the life of your original suggestion by another two years, your second suggestion must be received within 30 days after the two year expiry date and be marked "RESUBMISSION" and the original suggestion number indicated.
- A brochure, outlining the company's suggestion plan and its new award structure, will be available within the near future.

reduce costs in the mining, processing or maintenance operations.

The plan recognizes individual initiative and ingenuity. Taking your idea out into effect is a great thing; experience not only is a challenge but an educational one. It's also a good feeling to be recognized for it and your suggestion accepted.

If you have an idea about one of these subjects, put it on paper. You may earn an award of up to \$10,000.



inside the number one stretch converter at the Copper Cliff smelter, Dick Began, left, second-class carpenter, and Jerry Lockman, carpenter apprentice, install backforms to hold brick in place during a repair of the converter.

Mobile and ready to go — that's our maintenance field force, headquartered in the Copper Cliff smelter complex. Working hand-in-glove with maintenance departments at all of Inco's Sudbury area surface plants, the special group of "troubleshooters" is called on for repairs and installations that may be too extensive for a particular plant's own

maintenance personnel.

The "force" is headed by superintendent Peter Todd and is divided into distinct categories; general foreman George McDonald is responsible for miscellaneous maintenance mechanics (fitters) and for carpenters and painters; general foreman Ralph Geregthy looks

Our travelling
troubleshooters —

Maintenance Field Force

after the electrical section, and Andy Moxam is general foreman, masons.

Concerned mainly with major repairs at the smelter and refineries, the group is also available to other surface facilities. On a regular basis, the fitters repair the runways for overhead cranes. They also perform all major rebuilds of



Shoring the remaining brick during a repair of the number one stretch converter are second-class carpenters Raymond Dicaire, left, and Angelo Dirocco.



At the disc sander in the carpenter shop at the smelter complex, first-class patternmaker Allan Wuorinen prepares a pattern in wood for subsequent machining.



First and second-class maintenance mechanics Rolly Landry, left, and David Violette band an offtake pipe.

reverberatory furnaces and were called on to replace the Kaldo vertical converter at the Copper Cliff nickel refinery.

The masons are involved with rebricking our converters, reverberatory furnaces, flash furnaces, and the anode furnaces at the Copper Cliff copper refinery.

The carpenters construct new buildings



Ziggy Cymbalski, first-class signpainter, transforms a blank 4 by 8 piece of plywood into a scenic safety message. It can take as little as three days to complete a scene, which will be hung in a strategic workplace area.

and perform major renovations, while the signpainters design and produce numerous signs. And the carpenter shop is home for the company's only pattern-makers, highly qualified employees who create patterns in wood for subsequent machining.

The electrical group is particularly in demand during and following power

failures, when their invaluable service helps to keep downtime to a minimum.

"I've always been involved with maintenance," says general foreman George McDonald, now in his 31st year with the company, "and it's great to be mobile and able to help other plant maintenance groups when the need arises."



In the fitters' shop, Phillip Heindl, second-class maintenance mechanic, prepares a specialized cable sling.



At the miscellaneous maintenance mechanics shop, Ego Bertuzzi, left, maintenance foreman, and Steve Cote, clerk, plan the work schedule for the following day. The maintenance field force is headquartered in the smelter complex.



The Menard brothers — from left, Rheal, Octave, Delphis, Alphonse, and Leo. They all work at the Froid-Stobie complex and, together, their years of service with the company add up to over a century and a half.

Together, the five Menard brothers add up to more than 150 years of service with the company!

It's got to be some kind of record! Five brothers, all working at the Froid-Stobie complex, can collectively boast over 150 years with the company — that's more than a century and a half of service!

"The Triangle" caught these photos at a recent first-ever Menard family reunion, organized by the youngest brother, 50-year-old Leo, and held at the Pinecrest Recreation Hall in Carol

Richard Park. The occasion also provided an opportunity to learn more about the Menards.

For many years, Hanmer was home for the Menard family, which consists of the five Inco brothers and two sisters, Lucienne and Regina, whose husband Yvon Labrosse has recently retired from the Copper Cliff smelter.

Of the brothers, first to join the company was Delphis, who came to Inco in

1942. Now with 35 years under his belt, Delphis is a maintenance mechanic in the component repair centre at Froid mine. He and his wife Margaret have two daughters and a son, Denis, who works at Copper Cliff South mine and already has 12 years with the company.

Then, two years later — 1944 — Rheal followed his brother's lead and now, 33 years later, Rheal is a molorman at Froid mine. He and his wife have five

Inco was well represented at a recent family reunion organized by Leo Menard, garage mechanic leader at Little Stobie mine. The five Menard brothers have a total of 22 children; six of the sons work for the company.

Octave Menard, eldest of the brothers, has a family of three. Flanking him are son Gerry and daughter Jackie with her husband Bob Labelle. At front are Gerry's family. Absent is Octave's daughter Susanne.





Delphis Menard was the first of the brothers to join Inco, back in January of 1942. Shown here are wife Margaret, left, and their two daughters Claire and Linda. Absent is son Denis, who works at Copper Cliff South mine.



Rheel Menard, a motorman at Frood mine, chats with his three sons, Richard, left, Stobie mine; Roger, Copper Cliff North mine, and Connie from the machine shop in Copper Cliff. Rheel also has two daughters.

children; the three boys all work for Inco — Roger's at Copper Cliff North mine, Richard's at Stobie mine, and Connie is at the machine shop in Copper Cliff.

Eldest of the five brothers, Octave joined Inco in 1946 and now has 31 years with the company. Married and the father of three, Octave is a switchman at Stobie mine and will be retiring this year.

Brother Alphonse was next to join Inco; in fact, he began the same year as

Octave and similarly has 31 years of service. A motorman at Little Stobie mine, Alphonse and wife Simone have four sons and a daughter.

Youngest of the five brothers and last to join Inco is 50-year-old Leo, who started with the company in 1948, giving him a mere 29 years of service. Now a garage mechanic leader at Little Stobie mine, Leo and his wife Germaine have two daughters and four sons, two of

whom also work at Inco — Ronald is a machinist at the Copper Cliff copper refinery and Albert is at the Copper Cliff smelter.

Quick calculation shows that together, the five brothers have a total of 159 years' experience with Inco, representing one heck of a lot of mining knowledge! And if one were to carry the figuring just a little further, we could start adding on the Menard sons' years of service . . . let's see, that's . . . TOO MUCH!

A motorman at Little Stobie mine, Alphonse Menard and his wife Simone have four sons and one daughter. Shown with their respective spouses are Normand, Paulette, Rene, and Andre. Absent is son Fern.



The family of Leo and Germaine Menard, complete with children and grandchildren. Son Albert, standing second from left, works at the Copper Cliff smelter and son Ronald, standing second from right, is at the Copper Cliff copper refinery.





For those who enjoy cross-country skiing, be sure to mark Sunday, February 26, on your calendar — the date for the Third Annual Inco Loppet and Pancake Breakfast.

The Loppet is a cross-country ski outing that is recreational rather than competitive in nature. So, come on out and enjoy yourself, along with members

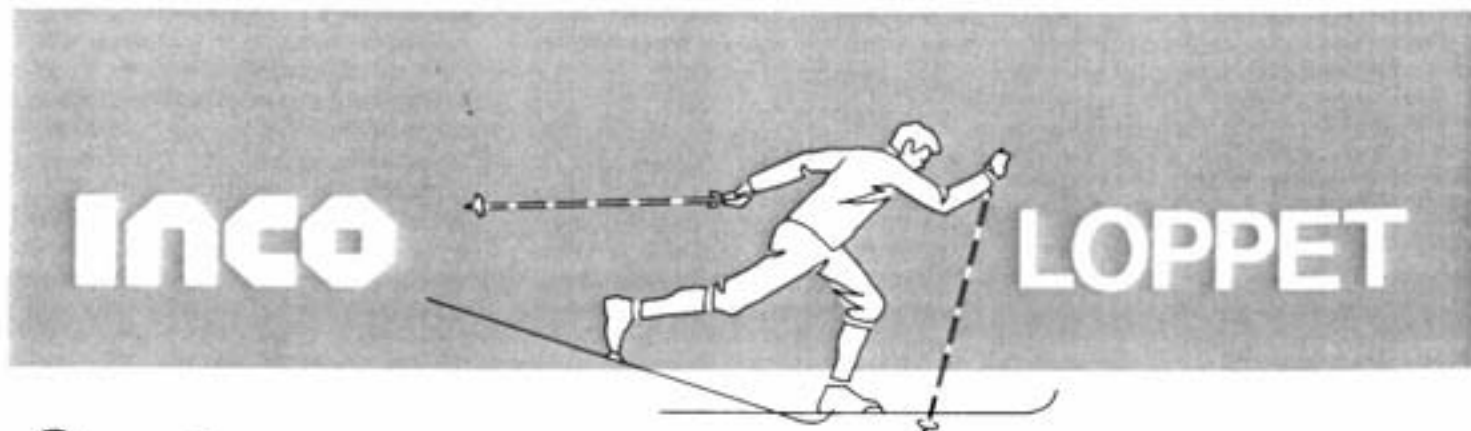
of your family. Anyone can enter, and all entrants will receive a certificate of merit, regardless of how long it may take to complete the course.

This year's Loppet will be held at the Voima Athletic Club, located on Sunnyside Road in Sudbury. There will be four different courses to follow: 5, 10, 15, and 30 kilometers in length — enough variety

to suit everyone's needs.

The pancake breakfast will be held prior to the start, from 8:00 a.m. to 10:00 a.m. The Loppet will commence at 11:00 a.m., with everyone hitting the trails in a mass start.

If you haven't already submitted your application, why not send in the handy form at the bottom of this page?



Mail entry form to P.O. Box 633, Sudbury, Ontario P3E 4S5, by February 20, 1978.

ENTRY FORM

Name

(Please Print)

Address

Telephone

I wish to enter 30Km (2 x 15km)

15Km

10Km

5Km

\$1.00 entry fee per person to be enclosed. Registration is limited to the first 600 entrants.

I hereby release INCO LIMITED, the Northern Ontario Ski Division, the Voima Athletic Club, agents, officials or anyone connected with the INCO Loppet from any loss, injury or damage whatsoever incurred from my participation in, or presence at, said Loppet.

Signature of Participant

Parent's Signature, if under 18

Family Album



Proud father of this Inco family is Allan Janke, a bitman at Little Stobie mine. An accomplished carpenter and an avid fisherman, Allan also finds time to look after the Little Stobie Recreation Association in his spare time. Posing for "The Triangle" photographer are wife Roberta, son Robert, 11, and daughter Brenda, 14.



This is the Gary House family from Port Colborne. An instrument technician in the process technology department, Gary enjoys working his 11-acre hobby farm and tinkering with electronics in his spare time. His wife Bonnie enjoys sewing and reading. Children are, from left, Randy, 6, Anita, 9 months, and Brenda, 5.

A man of many talents, this is Bob Jach and his all-girl family. A mines equipment co-ordinator in Copper Cliff, Bob is justly proud of the fine home he built, complete with swimming pool. In his spare time he enjoys wood carving, hockey and golf. With his wife Linda are daughters Tiffany, 3, and Kerry, 6.



An avid collector of beer steins, Bob Burke, of Inco's transportation department in Copper Cliff, here poses with his family. An Incoite for the past 22 years, Bob now boasts one of the largest stein collections in Northern Ontario. That's wife Irene, right, daughter Sheri, 14, and son Cam, 17.



Necessity is indeed the mother of invention, as evidenced by a new procedure recently developed at Copper Cliff South mine.

Looking for an improved means of supporting the crown pillars above large blasthole stopes, the mine's engineering department devised a technique that has now been implemented and successfully tested in various work areas. With continued support from mine engineer Menno Friesen, Dave Sarin, division supervisor, mines engineering, is largely responsible for co-ordinating and developing the new technique known as "uphole cable bolting".

The new method is designed to stabilize large areas of ground at a time and in fact does the same job as roof bolting, only on a much larger scale. And while cable bolting has been on the scene for a number of years now, this is its first introduction to Inco's Ontario Division mines.

The procedure is mainly applied to the support of crown pillars, brow protection of drawpoints in blasthole stopes, and for support of other large excavations; ultimately, usage will be extended to cut-and-fill stopes, which will increase efficiency and safety conditions.

As with roofbolting, the purpose of uphole cable bolting is to strengthen ground by grouting, which simply means adding a mixture of cement and water to the ground.

The procedure uses lightweight $\frac{3}{8}$ -inch cable which can be rolled up and easily carried to the work site. The cable is fixed with steel buttons every three feet for additional strength.

Portable staging is set up under the area to be cable-bolted, and holes are drilled to receive the cable and grout.

Copper Cliff South mine introduces

The tip of the cable which is inserted first has a special top-holding device and is affixed to a $\frac{3}{8}$ -inch plastic breather tube.

Once the cable has been inserted — for example, a 50-foot-long, two-inch-diameter hole at South mine recently received a 42-foot cable — a grout plug is placed in the collar of the hole and the breather tube is placed through the grout plug. Then the nut at the lower end of the grout plug is tightened to seal the hole.

Now the bottom of the grout plug is attached to a one-inch-diameter plastic grout hose. The bottom of this grout hose is then fixed to a specially-designed "Y" piece, as is the hose's inner $\frac{3}{8}$ -inch breather tube. This "Y" piece separates the grout which is to be pumped into the hole from the air which will simultaneously be forced out of the hole.

The end of the breather tube is placed in a container of water and pumping begins. Bubbles will indicate that air is being pushed out of the hole by the grout; when the bubbling stops, the operator knows that the hole has been filled.

A portable pump has been adapted to force the grout into the drill holes, and the water/cement ratio is closely controlled, to maintain proper consistency and strength, for if the mixture's too thick, it plugs the pump; if it's too thin, the mixture won't be strong enough.

Advantages of the new technique include portability, efficiency of installation, lowered costs, greater safety, and less set-up time.



The new uphole cable bolting technique features portability, simplicity, and increased safety. Longhole drillers Dan Sakovic, left, and Gabe Bisailon prepare to insert the new lightweight $\frac{3}{8}$ -inch cable into previously-drilled holes.

Uphole

Dan Sakovic, longhole driller, has attached a $\frac{3}{8}$ -inch plastic breather tube to the end of the cable that's fitted with a special top-holding device. This particular 42-foot length of cable is being received by a 50-foot-long two-inch-diameter hole.





Introduction of the cable bolt is complete and now the grout plug is being placed in the collar of the hole by longhole driller Dan Sakovic. The plastic breather tube has been placed through the grout plug, and the hole is now ready to be sealed.



Mine planner Fred Birchall, left, and Gabe Bisaillon, longhole driller, tighten the nut at the lower end of the grout plug to seal the hole. The bottom of the grout plug is now attached to a one-inch-diameter plastic grout hose.

Cable Bolting

A specially-designed "Y" piece separates incoming grout and outgoing air. When the bubbling stops, Jean-Yves Jacques, bulldozer operator, knows the hole has been filled.



A close control of the water/cement ratio is maintained to provide proper strength and consistency. Jean-Yves Jacques pours the mixture into a hopper. The grout is then pumped into the holes by means of a portable low-pressure, low-volume pump which has been adapted to pump the mixture.



Modified Work Centre



This is a Wolf-Turbo air light which is used in drilling and slushing operations underground. Here it is inspected and repaired by Jean Paul Rivet.



Silkscreening is the process used to letter signs at the shop. Here, Norman Davis, left, and Joseph Chartrand admire the finished product.

Nestled in the Ontario Division's Froid-Stobie complex is a little shop that puts out a lot of work. And while many of us probably aren't even aware of the shop's existence, we come in contact with its work many times throughout the day.

Known as the Modified Work Centre, the shop's main function is the production of signs for use in and around Inco's various surface and underground operations. Signs that warn; signs that inform or direct or explain . . . they're all made at the shop, and they're created from scratch using stencils and the silkscreen process.

In addition to producing an average of 400 to 450 signs per week, the shop is responsible for repairing various pieces of small equipment used at the Froid-Stobie complex, such as air lights, Ano-Loaders, safety glasses, safety hats, and blasting reels; as well, strapping is cut for underground operations, and rubber handles are installed on barring pipe.

Shop leader is Bill Brandie, who's been with the company for some 40 years. And except for five years at the Orford building, Bill's time with Inco has all been spent at the Froid-Stobie complex. He was a raiseman at Froid No. 3 shaft before becoming shop leader of the Modified Work Centre in 1970. Said Bill of the special workshop, "It provides an opportunity for fellows to continue permanent employment when a disability prevents them from returning to their regular jobs."



Bill Brandie, left, shop leader at the Modified Work Centre, watches while Armand Prevost applies a final coat of paint to an ore-pass sign.



Peter Malarski finishes the repairs required for an Ano-Loader, which is used for blowing Amex blasting agent into drill holes underground.

Safety glasses used at the Froid-Stobie complex are repaired at the centre. Wilber Moore makes necessary adjustments.



Bernard Hellsten, left, and William Breau measure and cut the plastic used in the production of the many different signs that are turned out at the workshop for use throughout the Ontario Division.





The Wollenhaupt triplets born October 7th — Kenneth, Kimberly, and Kyle. Or is that Kyle, Kimberly and Kenneth? Or . . . ?!

The Four K's- 3 plus 1!

Kenneth, Kyle, Kimberly and Kristina — three plus one make up the delightful Wollenhaupt family of Shebandowan! And it seems the recipe is quite simple: . . . take proud parents Jim and Deborah, add a full measure of tender loving care, mix well with a genuine love of children, and there you have it — instant family!

Kenneth, Kyle and Kimberly were born October 7 and weighed, respectively, four pounds, ½-ounce; four pounds, seven ounces; and five pounds, nine ounces; 20-month-old Kristina rounds out the Wollenhaupt family.

"We found out we were having triplets in June," said Deborah, "and we were both ecstatic! We both love kids, and the triplets are really easy to take care of because they're all on a schedule. The only thing is, there's a heck of a lot of washing!"

Jim, a mill operator at the Shebandowan complex, is "really happy" with the triplets, and is understandably proud!

Jim Wollenhaupt, Shebandowan mill operator, and wife Deborah with 20-month-old daughter Kristina and the triplets.



What You Are Is Where You Were When

What's happening at the

In these modern and changing times, it's more vital than ever to understand and relate to the people we live and work with. Of utmost importance is the need to bridge that proverbial "generation gap", and that's just what a special 90-minute instructional program is helping to do.

"What You Are Is Where You Were When" is a videotape presentation that's been made available to Inco's various facilities through our Training and Development Centre in Sudbury. The feature is currently generating a lot of enthusiasm throughout the entire Ontario Division.

"Over 800 plant supervisors and unit employees in the smelter have seen the presentation so far, and the feedback is exceptional," says George Middleton, smelter training supervisor. "It shows how young and old can better understand each other, and helps individuals to acknowledge the things that influence them and why they judge things the way they do. But most of all, it gives younger persons a better understanding of why



Special showings of the 90-minute feature are being scheduled for unit employees. Here, personnel from smelter maintenance and from the furnace and converter departments view the widely-acclaimed instructional film.

Enthusiasm is so great for the film that supervisors are requesting special weekend showings in order to expose their families to the benefits of the presentation.

In an informal discussion before each showing, George Middleton, training supervisor, smelter complex, introduces the various points highlighted by the film.



smelter training centre:

their seniors think the way they do, and vice versa."

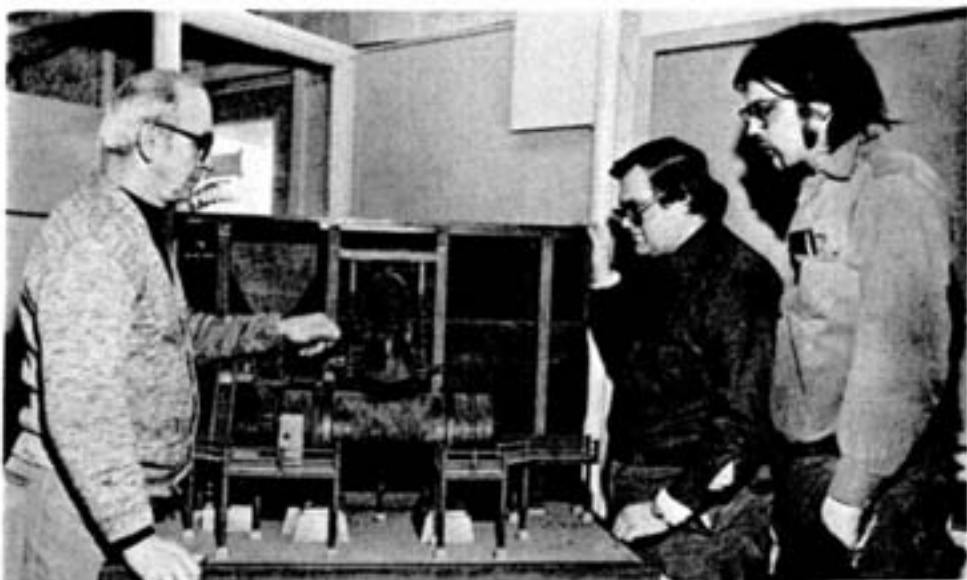
According to George, response to the film is so great that the employees are asking to see the presentation rather than waiting for it to come to them. And they want their families to see it too, for better attitudes at home as well as better work relations.

The videotape is presented in the language and terms of today, and the man who "tells it like it is" is Dr. Morris E. Massey, Associate Dean of the School of Business at the University of Colorado.

The smelter training centre provides training for unit and supervisory employees in maintenance, furnace and converter departments. Currently, supervisory personnel are involved with "supervisory induction programs" which cover all aspects of a foreman's responsibilities. Subsequent training programs will teach supervisors how to train employees by means of the modular training systems approach which is being introduced throughout Inco's Ontario Division operations.



Smelter personnel completing a supervisory induction program are, from left, Jack Van Exan, maintenance foreman; George Paradis, process foreman, furnace department; Ross Billard, process foreman, converters, and Don Dumontelle, process foreman, furnace department.



Using a scale model replica, Clayton Smeltzer, left, a skimmer in the smelter's converter department, discusses the operation of converter hoods to process laborers Doug Ross and Steve Boyd.

Smelter training supervisor George Middleton, left, explains the operation of the smelter's new stretch converters to Bill Zelenchuk, training manuals writer.



Gerry Frenette views graphic illustrations required for the functional training program. The graphics visually describe the various processes at the smelter.



NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . .



This is a representative group from the Copper Cliff mill who recently accepted their well-earned trophy for the best safety performance of Ontario Division mills throughout 1977. **Gerry Gillett**, left, superintendent of the Copper Cliff mill, accepted the safety award from **Rudy Regimbal**, assistant to the vice-president responsible for mining and milling.



Sandplant operators **John Fedec**, left, and **Rod Wyman** proudly display a sign declaring that the Copper Cliff South mine sandfill plant has now poured a million tons since the plant's startup in March of 1975.

You can make more friends in two months by becoming really interested in other people, than you can in two years by trying to get other people interested in you.

Dale Carnegie



When workmen at the Iron Ore Recovery Plant noticed a crack in one of the large rollers supporting the No. 5 reducing kiln, plans were made to remove the 67-inch diameter roller and to install a spare assembly. Normal procedure is to remove the weight of the kiln from the rollers, utilizing two 350-ton jacks and then exchange the broken roller with a new one, using a crane. Due to very limited access and headroom, a crane could not be used. Consequently, thanks to the excellent co-operation from personnel at Creighton and Copper Cliff South mines, the lifts were carried out safely and in record time with the help of an ST8 scooptram which eliminated extensive rigging to remove the 13-ton rollers. At left, the scooptram is in position under the kiln where maintenance mechanics assist in placing the roller into the scoop bucket. The photograph at right shows the men and equipment involved in the move. Kneeling, from left, **Gino Oliver**, **Cliff Boomhower** and **Marco Urso**. Standing, from left, general foreman **Ilario Toniolo**, **Dale Gutjahr**, **Ray Forcier**, **Bill Mirult**, **Marcel Poulin** and foreman **Vic Riutta**.



Logo Writer — Norm Hillier

Our logowriter this month is Norm Hillier, manager of safety and plant protection. Norm has been with the company since 1948 and began his Inco career as a process chemist at the Port Colborne nickel refinery, where he subsequently took on the responsibilities of plant general foreman and superintendent of the anode and leaching, calcining and sinter department, before being appointed assistant to the manager. He came to Copper Cliff in 1971 as assistant to the manager of the Copper Cliff copper refinery and in 1974 was appointed to his current position.

Norm and his wife Esther live in Copper Cliff and have three children; sons Rod and John both work in Toronto, while daughter Diana is in her first year of architecture at Carleton University.

For the Hilliers, winter leisure hours are spent curling and cross-country skiing, while summer activities are centred around their camp at Lake Penage.

Over 215,000 Feet of Raise Boring To End of 1977

Since the mid-sixties, when raise boring was first introduced at Inco's Creighton mine, a total of 215,456 feet of hole have been back-reamed at Ontario Division mines. The largest percentage of this footage, over 100,000 feet, was 5 feet in diameter, with more than 85,000 feet in the 6, 7, and 8-foot diameter range. According to **Bill Taylor**, superintendent of drilling, the trend to larger diameter bores continues. It is interesting to note a recent feat of the mines drilling department, when a 1,066-foot raise, 8 feet in diameter, was successfully completed at the Levack West mine.



For the seventh time since 1969, the **Iron Ore Recovery Plant** has again won the **All-Plants Safety Award**. Above, **Gordon Machum**, left, Ontario Division vice-president responsible for smelting and refining, goes over data on the plant's safety performance with IORP manager **George Nowlan** and safety supervisor **Don Elliott**. Below, Gord Machum, far right, extends congratulations to a cross-section of smiling IORP employees on their fine safety record. Says George Nowlan: "I'm proud of our employees and their enviable safety performance. Naturally, we intend to keep the trophy at the IORP for some time to come."





This is the specially-lowered Cat 966 front-end loader, recently supplied on a trial basis to the Levack West mine, where it will be used in a cut-and-fill and blasthole development application underground. The unit is fitted with a larger, 4 cubic-yard special mining bucket, smaller diameter 16:00 x 25 - 24-ply tires, rear end and fire protection system, no-spin differential and a lowered operator seating position. Below, **Conrad Houle**, left, Crothers marketing representative, points out the relocated, inclined console and tilting steering column to general mine foreman **Glen Strutt** and utility vehicle operator **Eric Luttrell**.



Appointments and Re-assignments

Rolf Boehme, programmer analyst, computer systems, Copper Cliff.

Leo Boyer, general foreman, Copper Cliff nickel refinery.

Kathy Briscoe, account payable clerk, Copper Cliff.

Thomas Callaghan, mine general foreman, Coleman mine.

William Dopson, general foreman, Copper Cliff nickel refinery.

Murray Edward, buyer, purchasing-warehousing, Copper Cliff.

Tony Fritz, supervisor, equipment rentals, transportation and traffic department, Copper Cliff.

Everett Henderson, maintenance assistant, Creighton mine.

George Kaminski, material controller, purchasing-warehousing, Copper Cliff.

Randy Lawson, safety foreman, Copper Cliff.

Earl Mumford, design engineer, general engineering, Copper Cliff.

Doug Ogston, maintenance general foreman, central shops, Copper Cliff.

Steve Palfry, operations assistant, Iron Ore Recovery Plant.

James Paquin, senior process assistant, Copper Cliff mill.

Oliver Peltomaki, shops co-ordinator, central shops, Copper Cliff.

Leigh Pollock, secretary, central shops, Copper Cliff.

Bruce Schroeder, process supervisor, Iron Ore Recovery Plant.

Allan Sherlock, general foreman, Copper Cliff nickel refinery.

Pat Thompson, shift foreman, Iron Ore Recovery Plant.

Percy Tugwood, computer software specialist, computer systems, Copper Cliff.

Ken Unwin, maintenance assistant, Levack mine.

Terrence Vincent, shop controller, central shops, Copper Cliff.

Allan Wilts, shops co-ordinator, central shops, Copper Cliff.

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Inco Employees!

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NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . . .



Joffre Perras, centre, safety assistant with Inco's safety and plant protection department and a branch member of the St. John Ambulance Association, Sudbury, discusses the current St. John campaign with brigade members **Jesse Basedon**, left, and **John Krystia**. Appeal target for 1978 is \$12,000.



Development of a massive recreational complex in Walden received a boost when town council accepted a 3.2-acre gift of land from the Ontario Division of Inco Metals Company. Value of the parcel, located at the corner of Anderson Drive and Highway 536 in Lively, is \$45,000. Above, **Bill Cook**, left, Ontario Division legal officer, presents the deed to the property to **Tom Davies**, centre, Mayor of the Town of Walden, and **Richard Bois**, the town's recreation director.



The Galt Country Club curling team recently won the "Ports of Call Bonspiel" at the Port Colborne curling club, and Warner Woodley, manager of the Port Colborne nickel refinery, was on hand to present the Inco Trophy to, from left, **Barb Noll**, **Joyce Ruetz**, **Nancy Wooley** and **Jan Sherk**.

You May Earn Up To \$10,000

by submitting your ideas on safety and operating improvements through the Ontario Division Suggestion Plan. Don't delay! Your idea may qualify for the maximum award!

Well Over 4,000 Calls

are made to Inco's HOTLINE each month. You, too, can keep informed about the weather, company happenings and other pertinent information pertaining to your region. Get the HOTLINE habit by dialing

682-0626
in Sudbury
835-2454
in Port Colborne



Jacqui Vesey
Your HOTLINE hostess

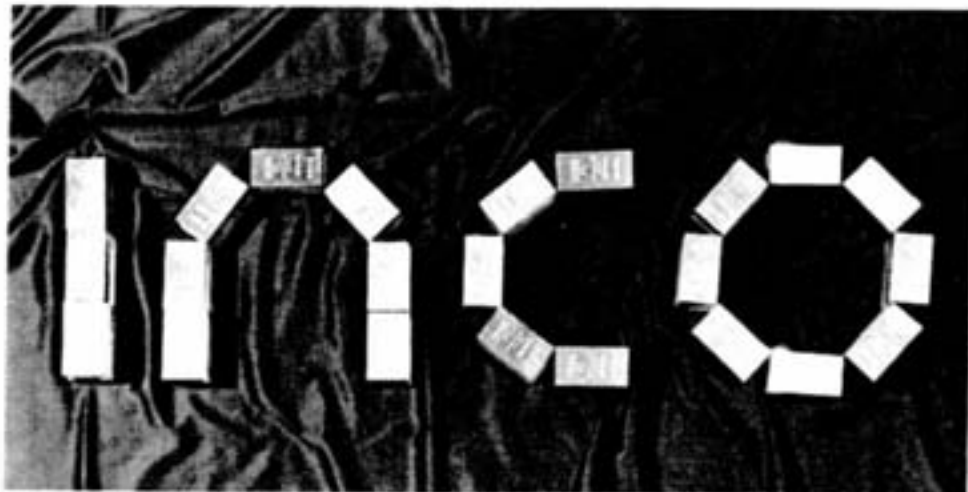
NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . .



The first 75-ton load of rock for Copper Cliff South mine's 826.0 rockpass and 830.0 orebody was recently dumped by haulage truck driver **Harvey Winn**. The rockpass extends from surface near Highway 17 west to the 1000 level; from there, the rock will be picked up and dumped into the designated stopes.



How do you move a 26-ton capacity steel box, originally fitted on a haulage truck, from surface to the 1500-foot level underground? Add to this the fact that the box itself weighs 6 tons and is cumbersome to handle! Nothing to it, according to the **Copper Cliff South mine rigging crew** who successfully lowered the unit down the mine shaft with only one inch clearance. That's teamwork!



The familiar company wordmark, INCO, is formed by **23 platinum ingots** that have a total value of about **\$1 million**. Produced at Inco Europe Limited's facilities in Acton and Birmingham, England, each ingot is stamped with the Inco wordmark, the symbol for platinum (Pt), the purity, the weight and serial number. Nearly a million tons of ore must be mined to produce this amount of platinum, which is a by-product of the nickel refining processes.



Elaine Arnold, recently appointed supervisor of public and community affairs at the Port Colborne nickel refinery, didn't waste any time in getting acquainted with members of the local media. Here she explains details of a local news release to **Frank Sernak**, news director of radio station CHOW.

NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . . .



Instrumentation is becoming more important to the efficient operation of the Port Colborne nickel refinery. Here, checking out a timing circuit board from the dust collector at the foundry additives plant wheelabrator, is **Joe Hanuska**, a 30-year veteran at the plant. Joe has been an instrument technician for the past 13 years.



Warner Woodley, manager of the Port Colborne nickel refinery, recently presented the keys to an ambulance, formerly used at the refinery, to the City of Port Colborne. Because of the minimal number of accidents at the plant and the excellent service provided by the Regional Ambulance Service, it was felt that the ambulance was no longer required at the refinery. Pictured here are, from left, **Mike Cook**, president of the Port Colborne volunteer fire brigade; **Warner Woodley**; **Frank Diamond**, fire chief of Port Colborne, and Mayor **Bob Saracino**. The ambulance will be utilized as a rescue unit.



This happy group at the **Crean Hill mine** recently took delivery of the **All Mines Safety Trophy** for 1977, presented annually since 1961 to the mine with the most outstanding safety record. The presentation was made by **Ron Brown**, assistant to the Ontario Division vice-president, mining and milling. It is the second year in a row that Crean Hill mine has won the trophy. "The Triangle" takes great pride in adding its congratulations for the men's exemplary safety work.

NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . .



Annual first-aid competitions are currently underway at various mine and plant locations. Semi-finals for the mining and milling division will be held on Tuesday, February 21, with smelting and refining run-offs slated for Thursday, February 23. The finals for the R. D. Parker Shield will be held on March 9. Above, from left, **Hank Derks**, chief first-aid co-ordinator, discusses final arrangements for the section "B" competitions with safety assistants **Gerry Dinel** and **Jack Corrigan**.



Members of the Copper Cliff maintenance field force recently installed some 20 low-pressure sodium lamps around the base of the 16-million gallon capacity water tank in Copper Cliff. The light-sensored lamps turn on and off automatically at dusk and daybreak. Above, **Dan O'Reilly**, left, and **Mike Demers**, both first-class electricians, inspect one of the new light fixtures. Below, **Mike Beers**, left, a fourth-year apprentice, watches **Art Leroux**, first-class electrician, as he works on one of the junction boxes.



That's **Bryan Toews**, left, a blaster boss at Little Stobie mine, recalling a recent incident to mine foreman **Joe Beynen**, centre, and mine superintendent **Don MacKelgan**, when he slipped and fell into an open hole in 801 stope on the 665 level. Luckily, Bryan was wearing his safety belt, and instead of falling the full 200-foot length of the hole, his well-anchored belt stopped his descent just four feet into the opening. Says Bryan: "You don't have to sell me on wearing my safety belt!"



NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . . .



Allan Kaven



Gilles Grandmaison



Bill Gagnon



Martin Kupris



Ken Kust



Paul Brunelle



Reg Lemieux



Silvio Dellfrate



Raymond Bidal



Carl Young



Pat Sergnese

Employee Suggestion Plan
Now Awards Up To \$10,000!
Your Ideas On Safety And
Operation Improvements May
Qualify For Top Money!

Copper Cliff Smelter Employee Is Awarded \$1,370

It might be the dead of winter with loads of snow and everything frozen, but you'll never know it with all the activity and hot ideas in this month's suggestion plan. Nearly \$11,000 were awarded to Ontario Division employees for their suggested improvements to safety and operations. Topping the list was **Guido Cecchetto**, of the Copper Cliff smelter, who collected \$1,370 for his idea to repair the lip on converter ladles with broken flanges. Another big winner was **Allan Kaven**, of Stobie mine. His idea to rethread "In-The-Hole" drill spindles earned him the tidy sum of \$1,320. **Ray Galloway** and **Gilles Grandmaison**, of Garson mine, split \$750 for their suggestion to replace leaf springs with coil on drill jumbo air motors. **Bill Gagnon**, of Creighton mine, pocketed \$715 for his suggestion to machine the keyway in the seal retainer of "In-The-Hole" drills. **Martin Kupris**, of Copper Cliff North mine, was awarded \$705 for his modification in arranging steel liner plates in loading pockets. **Rod Jar-movitch**, also of Copper Cliff North mine, collected \$700 for his suggestion to fabricate seal assembly parts for Howden-Parsons compressors in machine shops. **Ken Kust**, of Stobie mine, was awarded \$645. He suggested replacing pillow blocks on JS500 scooptrams with a flanged bearing against the firewall. A

Copper Cliff copper refinery employee, **Frank Lacroix**, made \$335 for his idea to brace sheave holders on anode wheel drives. **Paul Brunelle**, of Little Stobie mine, took home \$320 for his idea to fabricate new air connection swivels on ITH drills. **Reg and Richard Lemieux**, of Creighton mine, split \$230 for suggesting to install heat deflector plates over the scrubber unit of the JS500 scooptram. **Silvio Dellfrate**, of the Copper Cliff smelter, made \$220 for suggesting to stock parts for the four-inch gate valves in the warehouse. **Conrad Comtois**, of Frood mine, was awarded \$180 for his idea to install steel mesh baskets for latrines. **Gilles Grandmaison**, of Garson mine, received another award for \$170, this time for his suggestion to replace cork gaskets on Cavo loaders with Garlock gaskets. **John Ralche**, of Copper Cliff North mine, was awarded \$160 for suggesting to install a switch on air-operated lights underground. **Vaughn Hilderbrand**, of the Iron Ore Recovery Plant, received \$145 for his idea to alter the lubrication system to second-stage nickel filters. **Don Craig** and **Raymond Bidal**, of maintenance construction, split \$130 for suggesting to fabricate shotcrete nozzles in Inco shops. The lone \$90 award winner was **Cyril Melanson**, of the Copper Cliff copper refinery. He sug-

gested converting lab roof fans to direct drive. **Aurele Mainville**, of Garson mine, suggested purchasing a rubber plunger for button head couplers, and he received \$80 for his idea. **Joseph Bedek**, of Copper Cliff North mine, earned \$75 for his suggestion to purchase less expensive wrenches to replace Atlas-Copco wrenches. An improvement to the construction of sandfill drain pipes earned **Daniel Dwyer**, of central shops, the sum of \$70. The lone \$60 suggestion award was handed to **J. R. Burns**, of the Copper Cliff copper refinery, for his suggestion to fabricate molds for lead-lined valve stems. **William Ingram**, also of the Copper Cliff copper refinery, collected \$55 for his idea to alter the lead welders' table to permit fabrication of lead inlet pipes. Award winners in the \$50 classification were **John Henning**, of the Iron Ore Recovery Plant, and **Edward Fredette** and **Lucien Pilon**, of the Levack mill.

At the Port Colborne nickel refinery, **Carl Young**, of the mechanical department, was awarded \$750 for his suggestion of improving the method of making starter wrenches for the anode department. Another employee, **Pasquale Sergnese**, of the anode department, received \$210 for his idea of putting a scraper on the take-up roll of the drum filters.

metric's here!

Whether we like it or not, the metric system is becoming more and more prevalent in our everyday lives. Eventually, as the metric conversion plans of the Federal Government's Metric Commission progress, all areas of our society, including industry, will be using the metric system of measurement almost exclusively.

Inco's Ontario Division president, Ron Taylor, issued a metric policy statement last July which read in part: "The modern metric system known as the International System of Units or SI, has been adopted by all the industrial countries of the world including the U.S.A. and Canada. As part of the national program, the Canadian Mining Industry is committed to the adoption of the SI system of measurement."

Accordingly, the Ontario Division will be converting to the use of this metric system. The conversion will progress in a rational manner, having regard to the pace of change of customers, suppliers, and government."

In line with the above statement, a metric conversion committee was established with representatives from all major work areas in the company. It was recognized that a very important element in preparation for metric

conversion, will be an employee awareness program, aimed at giving all employees a general understanding of the metric system. The program will be in the form of a series of Triangle articles, posters in plants and offices, and a distribution of metric literature.

In addition to this awareness program, specific metric training programs are also being developed for those employees whose work will require them to have a direct or job-related knowledge of metric measurement.

The purpose of the metric system is to simplify, not complicate, your life. In most cases, metric won't change a thing except, maybe, your point of view. If you're slightly overweight in pounds, you're going to be just as overweight in kilograms, but it will sound better.

Keep in mind that metric isn't here to change the world — just to make it a little more orderly. If 98 per cent of the countries around the world are using the metric system — there's got to be a reason for it.

Remember to watch your bulletin boards and the next issue of "The Triangle" for more information.

