



John Macgregor
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The Triangle

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ON THE COVER . . .

Parading their newly presented colors are members of the Copper Cliff Highlanders Cadet Corps. The impressive color dedication ceremony, inspections, drills and demonstrations were viewed by a capacity crowd. Story and photographs, covering the Corps' Diamond Jubilee, are presented on pages 20 to 25 in this month's edition.

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Copper Cliff's "Music In The Park" Is Scheduled For July 13, 20



All Inco employees and pensioners, along with their immediate families, are invited to two special evenings of music in Copper Cliff's Nickel Park, complete with a box lunch and refreshments and an opportunity to take a bus tour of nearby Inco surface plants. Minimum age for the tour is 12. The evenings are scheduled for Wednesday, July 13, and Wednesday, July 20, from 6:30 p.m. to 8:30 p.m. Because of the large numbers involved, lunches and tours will be confined to employees with tickets. Contact your supervisor for your ticket requirements. Tickets are also available at the major time offices. Pensioners may pick up their tickets at their local Drop-in Centre or at the Copper Cliff general office, main entrance.

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INCO TOURS

Regular public summer tours are now under way and will run through until September 3, 1977.

The tours run continuously between 9:00 a.m. and 2:30 p.m. and are offered Monday through Saturday.

Groups of 12 people or more must make reservations by calling

682-2001

All tours start from Nickel Park in Copper Cliff.

Inco's Vast Experience Assists In Developing Nickel Criteria Document



"Inco's cooperation was substantial."

The U.S. National Institute for Occupational Safety and Health (NIOSH) has published a criteria document setting out its recommendations for controlling exposure to nickel in the workplace. The recommendations will undergo a thorough review procedure before the Occupational Safety and Health Administration (OSHA) eventually sets new standards for nickel in the United States.

The publication has been reported briefly by the media. In order to give our readers a more complete understanding of the document itself, of the procedures involved in revising nickel standards and the implications of the NIOSH recommendations, The Triangle recently interviewed Ernest Mastromatteo, MD, Inco Limited's Director of Occupational Health.

Ernest Mastromatteo, MD, joined Inco Limited as Director, Occupational Health in 1976, following a two-year assignment as chief of the Occupational Safety and Health Branch of the International Labor Office in Geneva, Switzerland. Previously, Dr. Mastromatteo had a long and distinguished career with the Ontario Ministry of Health, where he last served as director of the Occupational Health Protection Branch.

Triangle:

Dr. Mastromatteo, what is NIOSH and what are its terms of reference?

Mastromatteo:

NIOSH is an agency of the Department of Health, Education and Welfare in the United States. It has broad terms of reference. One, for example, is to conduct research in occupational health matters. Another is to carry out educational activities to train experts in the field of occupational health. A third function is to develop so-called criteria documents which contain recommendations for the safe handling of agents — that is, substances which may produce adverse health effects — encountered in industry.

Triangle:

What, then, is OSHA?

Mastromatteo:

OSHA is an agency of the U.S. Department of Labor. It is entrusted under the Occupational Safety and Health Act to look after the safety and the health of workers in industry in the United States.

Triangle:

The term "criteria document" sounds

imposing, but obscure. Perhaps you can simplify it for us.

Mastromatteo:

The NIOSH criteria are a set of guidelines that help it analyze various kinds of health information in a reasonably consistent way.

When developing a criteria document, NIOSH first tries to collect all relevant information concerning the biological effects reported in humans or experimental animals exposed to a particular agent or agents. NIOSH then applies its criteria to this information to judge whether there may be health hazards in the workplace and, if so, what is their nature. They then recommend a standard for controlling occupational exposure to the agent, or agents, so as to eliminate or minimize the hazards. The information, the judgements and the NIOSH recommendations are all published in the "criteria" document.

Triangle:

I understand that Inco cooperated with NIOSH on a voluntary basis while it was developing the nickel criteria document. What form did the cooperation take?

Mastromatteo:

Inco's cooperation was substantial. As you know, we don't mine and process primary nickel in the U.S. But, we do have one of our alloying operations there, one part of the large U.S. nickel-consuming industry. We responded to NIOSH's request for information primarily because of our U.S. presence. But, we also felt we could perform a unique service for NIOSH in view of our vast experience with nickel elsewhere, going back more than 75 years. As soon as it was known, in the latter part of 1975, that NIOSH was seeking information on nickel, Inco started preparing a submission providing information on the Company's operations and the experience of its workforce relative to exposure to nickel and its inorganic compounds. In fact, we made two detailed submissions to NIOSH last year. We also hosted visits to Sudbury and Huntington by representatives of NIOSH and of Stanford Research Institute, which NIOSH retained on a contract basis.



"I believe that the levels presently existing in Inco operations are low enough to prevent any increased risk . . ."

Triangle:

What procedures are involved in establishing health standards in the U.S.?

Mastromatteo:

First, to put the picture in perspective, I should point out that the Occupational Safety and Health Act became law in the United States in 1970. It gave specific terms of reference and responsibilities to OSHA and NIOSH. Nickel is one of some 70 substances studied by NIOSH so far, and the criteria document relating to nickel is no different in format from any other. All the criteria documents are turned over to OSHA, which decides in which order they should be evaluated.

During the evaluation process, there is an opportunity for industry, for unions — in fact for all interested parties — to make submissions to OSHA, which then decides on the form of the standard. OSHA is also responsible for enforcing these standards in all U.S. industrial workplaces.

Triangle:

What are the principal points in NIOSH's recommendations for nickel?

Mastromatteo:

First, I should make it clear that the nickel criteria document deals only with nickel and its inorganic compounds. Nickel carbonyl is not discussed in this document. As I pointed out, the criteria documents follow a standard format. They have recommendations on medical supervision, on labelling and posting, on monitoring, on record keeping, and so on. A major point of interest is the low exposure level recommended for nickel in the workplace.

Triangle:

What is that recommended exposure level, and could you explain how NIOSH arrived at its conclusion?

Mastromatteo:

NIOSH has recommended that the maximum exposure level for nickel in the workplace be set at 0.015 milligram of nickel per cubic metre of air. That's a very small amount of nickel in the air — less than one-thousandth of an ounce of nickel spread evenly throughout the air contained in four average sized homes! This level is radically lower than the present standards in force or guidelines being followed in the U.S., Canada and the U.K. — one milligram of insoluble nickel per cubic metre and 0.1 milligram of soluble nickel per cubic metre. NIOSH has recommended such a low limit because it concluded that exposure to nickel metal or its inorganic compounds may be cancer causing. Once NIOSH decides that an agent may produce cancer, it is bound by its own policy, which states that the exposure to such a substance shall be as close to zero as possible. This is the reason why NIOSH has recommended such a low level of exposure to nickel.

Triangle:

Why did NIOSH conclude that exposure to nickel metal and its inorganic compounds may cause cancer?

Mastromatteo:

Basically, it was due to the fact that certain nickel refinery workers have had



"... NIOSH acknowledged . . . that the information on which it based its conclusion is incomplete."

an increased incidence of lung and sinus cancer and the agent or agents responsible have not been identified. Since various nickel compounds were present in these refineries, NIOSH concluded that "... in the absence of evidence to the contrary, nickel metal and all inorganic nickel compounds, when airborne, should be considered carcinogens." Data from animal experiments provided only limited support for these conclusions.

NIOSH acknowledged in the criteria document that the information on which it based its conclusion is incomplete. In addition, the Director of NIOSH stated in his prepared remarks to a congressional subcommittee in April of this year that differences of opinion exist within NIOSH as to whether nickel is a carcinogen. NIOSH also recommended further toxicological and epidemiological research and agreed to consider revising its recommended standard if more definitive information becomes available. We intend to discuss with NIOSH and OSHA what specific items of research will be most useful.

Triangle:

Do you believe there is a safe limit of exposure to agents which can cause cancer?

Mastromatteo:

This, too, is a very controversial question. Some scientists believe that even the smallest dose of an agent that causes cancer is sufficient to provoke cancer in some people exposed to that agent. Other scientists believe that, before cancer can be initiated, there must be a certain level of exposure to that agent. This is a very crucial argument in the scientific field. For example, is one cigarette likely to

increase the risk of lung cancer? Is one puff likely to increase the risk of lung cancer? At what point is the risk increased? When we apply that to agents in the work environment, we have to ask the same question: Is there a small dose — or exposure — where there is no risk? Is there another dose — a somewhat higher exposure — where there is risk? In my opinion, shared by others in the occupational health field, there is a practical level of exposure to agents which won't increase the risk of getting cancer — a level below which there is no increased risk and above which there may be increased risk.

The levels of airborne nickel which were associated with an increased risk of cancer in the particular refining operations — calcining and sintering — were many, many times higher than present levels. I believe that the levels presently existing in Inco operations are low enough to prevent any increased risk of lung or sinus cancer. I don't think it is necessary to go to the very low exposure level recommended by NIOSH in order to avoid a health risk. NIOSH policy dictates that once an agent has been considered capable of causing cancer in any organ, its exposure limit should be zero or practically zero. I don't agree with this policy. On the other hand, OSHA's policy is to limit exposure to potential carcinogens to the lowest level feasible.

Triangle:

The American Conference of Governmental Industrial Hygienists (ACGIH) has established guidelines known as threshold limit values, or TLVs. What, in terms we can all understand, is a TLV? What is the ACGIH? And what are the present guidelines?

Mastromatteo:

A threshold limit value represents a time-weighted average exposure to agents in the work environment for eight hours a day, forty hours a week. To give you an example, when we say that the TLV for nickel is 1.0 milligram per cubic metre of air, it means we may be exposed to a little bit above that level provided there is a corresponding period of exposure below that level so the exposure averaged over eight hours comes to 1.0 milligram per cubic metre.

The American Conference of Governmental Industrial Hygienists is a professional organization composed of industrial hygienists who work in

government agencies. Also admitted to membership are academic people who are engaged fulltime in controlling agents in the working environment which could affect the health of workers. Some time ago, ACGIH felt there was a need to establish guidelines for exposures to various substances. Back in the forties, it set up a committee to recommend guidelines intended primarily for use only by professionals working in government agencies. However, these recommendations have since been adopted as guidelines or enforceable standards by many governments.

The TLV committee of ACGIH was aware of Inco's experience with respiratory cancer and took this into consideration in establishing a TLV of 1.0 milligram per cubic metre for nickel and its inorganic compounds. In recent years, based on evidence that some of the soluble nickel compounds cause mild irritation of the lungs of experimental animals, they lowered the TLV for such compounds to one-tenth of a milligram per cubic metre. At Inco, we follow the ACGIH guidelines — as guidelines per se in Ontario and the U.K. and as standards in Manitoba.

Triangle:

It's clear, then, that adoption of the NIOSH recommendations would mean a severe lowering of the present guidelines. In your view, is this necessary and could, in fact, nickel producing and consuming plants in the U.S. meet such a standard?

Mastromatteo:

I don't think it is necessary to go to such a low exposure level to protect employee health. NIOSH recommends that an essentially zero level of nickel be maintained in the plant air. I don't think this is possible in most cases, from either technical or economic points of view.

Triangle:

Is Inco engaged in any follow-up studies on this subject?

Mastromatteo:

Inco, in cooperation with the United Steelworkers of America, through the Joint Occupational Health Committee, has embarked on a major health study of all Ontario Division production and maintenance employees going back to 1950. In this study, every worker with more than six months' total exposure — even those that are no longer employed by Inco — will be included. I expect individual work histories will be

computerized by the end of the year and that some conclusions will be available early in 1978. The Manitoba Division is now building the capability to do similar studies.

Triangle:

When do you foresee nickel standards being set in the United States?

Mastromatteo:

That's a very difficult question to answer because many factors are involved. NIOSH has submitted a large number of criteria documents to OSHA, but OSHA has acted on relatively few. My own feeling is that OSHA will begin to develop a new nickel standard towards the end of this year. The unions, the companies affected, and all interested parties will have an opportunity to submit relevant information. Following this procedure, OSHA will decide what the standard will be.

Triangle:

What implications will the NIOSH criteria document on nickel have in other countries, notably those where Inco has operations, such as Canada and the United Kingdom?

Mastromatteo:

Let me point out again that the NIOSH criteria document is a recommendation only. It has no legal status even in the U.S. unless it is acted upon by OSHA and put into the form of a standard. However, just as the TLVs recommended by ACGIH have been widely adopted, a NIOSH recommendation carries some weight with health authorities in other countries and may influence their decisions.



"... the NIOSH criteria document is a recommendation only."



Nancy Brown



Graham Browne



Diana Hillier



Stefa Katamay



Anne-Marie McNamara

A total of 18 students, 15 in the Sudbury area, two in the Toronto area, and one in Port Colborne, have won university scholarships awarded by Inco Metals Company. In all, 21 scholarships, with an annual value of up to \$2,250 each, are being awarded to children of Inco employees and pensioners in Canada for the 1977-78 academic year.

Each scholarship provides tuition, fees and a stipend of \$750 annually to the recipient. In addition, there is also a supplemental grant to the university of \$300-\$500, depending on the selected field of study. The awards are made on a one-year basis by an independent selection committee of high school principals from the Sudbury District and Port Colborne, Ontario, and from Thompson, Manitoba. They are renewable for three additional years or until graduation, whichever is the shorter period. Recipients are unrestricted as to their field of study. Two hundred and seventy-eight children of Inco employees and pensioners have

received awards since the plan was begun in 1956.

Nancy Brown, of Copper Cliff, a graduate of Copper Cliff High School, plans to enrol in the faculty of natural science at the University of Western Ontario. Her father, William A. Brown, is administrative assistant to the manager of the copper refinery.

Graham Browne, of Copper Cliff, is a graduate of St. Charles College and plans to study economics at the University of Western Ontario. His father, Robert N. Browne, is assistant to the vice-president, administration and engineering services.

Laura Casas, of Sudbury, whose father, Fabian Casas, is a chemist at the copper refinery, is a graduate of Marymount College. She plans to enrol in the faculty of arts and science at the University of Toronto to study chemistry.

Stephen Eadie, of Azilda, is the son of Alvin Eadie, a shaft inspector at Coleman mine. A graduate of Chelmsford Valley District

Composite School, he plans to study physiology in the faculty of science at the University of Western Ontario.

Diana Hillier, of Copper Cliff, is a graduate of Copper Cliff High School and plans to enrol in the school of architecture at Carleton University. She is the daughter of Norman C. Hillier, manager, safety and plant protection for Inco's Ontario Division.

Stefa Katamay, of Sudbury, plans to study physiotherapy in the faculty of science at the University of Toronto. The daughter of Wasy Katamay, a maintenance mechanic at the Copper Cliff concentrator, she is a graduate of the Sudbury Secondary School.

Anne-Marie McNamara, of Sudbury, is the daughter of Joseph McNamara, a maintenance mechanic at the copper refinery. A graduate of Ecole Secondaire Franco-Jeunesse, she plans to enrol in the faculty of science at Laurentian University to study chemistry.



Shelley Sorgini



Maria Taricani



David Taylor



Carolyn Thain



Laura Casas



Stephen Eadie



Cindy Oakley



Helen Pakkala



Kathryn Ryan

Cindy Oakley, of Val Therese, a graduate of Confederation Secondary School, plans to enrol in the faculty of arts at Laurentian University to study psychology. Her father, Fraser Oakley, is a maintenance mechanic at Stobie mine.

Helen Pakkala, of Copper Cliff, is the daughter of Andrew O. Pakkala, a machinist in the mechanical department at Copper Cliff. A graduate of Lively District Secondary School, she plans to study interior design at Ryerson Polytechnical Institute.

Kathryn Ryan, of Sudbury, whose father, Robert M. Ryan is a systems analyst in the Copper Cliff computer systems department, is a graduate of Nickel District Secondary School. She plans to study physiotherapy in the faculty of science at Queen's University.

Shelley Sorgini, of Sudbury, is a graduate of Lockerby Composite Secondary School. The daughter of John Sorgini, a supervising specialist in the engineering department at Copper Cliff, she plans to enrol in the faculty

of science at the University of Waterloo to study optometry.

Maria Taricani, of Sudbury, whose father, Silvio Taricani, is deceased, is a graduate of Lockerby Composite Secondary School. She plans to enrol in the faculty of arts and science at the University of Toronto to study chemistry.

David Taylor, of Copper Cliff, is the son of Ronald R. Taylor, president of the Ontario Division. A graduate of St. Charles College, he plans to enrol in the faculty of engineering at the University of Toronto to study engineering science.

Carolyn Thain, of Sudbury, is a graduate of LaSalle Secondary School and plans to study accountancy in the faculty of commerce at Laurentian University. Her father, Raeburn G. Thain, is a stationary engineer in the Copper Cliff utilities department.

Laurie Wisniewski, of Levack, whose father, Andrew Wisniewski, is mine foreman

at Levack mine, plans to study occupational therapy at Queen's University. She is a graduate of Levack District High School.

Ronald House, of Port Colborne, a graduate of the Port Colborne High School, is the son of Roy C. House, senior accounting clerk at Inco's Port Colborne nickel refinery. He plans to study electrical engineering at the University of Waterloo.

Michael Podolsky, of Oakville, a graduate of the University of Toronto Schools, is the son of Terrence Podolsky, vice-president, Inco Metals Company, Toronto. He plans to enrol in the faculty of arts and science at the University of Toronto to study mathematics, chemistry and physics.

Jan Walli, of Burlington, a graduate of Lord Elgin High School, is the daughter of Einar Walli, a research technologist at the company's J. Roy Gordon Research Laboratory, Sheridan Park, Mississauga, Ontario. She plans to enrol in the faculty of arts, Queen's University to study English and theatre arts.



Laurie Wisniewski



Ronald House



Michael Podolsky



Jan Walli

Hearing Awareness Month –

Sounds Good!

Shoppers in Sudbury's City Centre were greeted by an extensive display recently when Inco Metals Company, in co-operation with the Mid-North Regional Board of the Canadian Hearing Society, presented a special public information program for Hearing Awareness Month.

"The purpose of the display", said John Rickaby, superintendent of safety, central services, "was to help make the public aware of the many facets of Inco's hearing conservation program".

Reaction proved the display to be a total success. A joint effort by Livio Visentin, audio test co-ordinator, and Fred Eng, visual aids designer with Inco's safety department, resulted in an educational and attractive display which demonstrated the steps taken to protect and conserve employees' hearing.

Audio/visual aids provided a continuous description of Inco's hearing conservation program; those preferring actual conversation were met by members of the company's audiometric staff, who provided answers for the many questions raised by the display. Samples of foam plastic earplugs used in company operations were available to everyone. In addition, a series of billboards, each dealing with an element of the overall program, provided a brief and precise explanation of the many facets of the program.

Since the first step towards hearing conservation is elimination of noise, the planning and design of quieter workplaces is a priority. New plants, such as



The audiometer is used to test the hearing threshold of Inco employees; regular testing can determine the possibility of a hearing loss. Here, Kim Kalviainen is tested under the expert eye of Mike Mulloy, audio test co-ordinator.

the Clarabelle and Copper Cliff mills, were designed to minimize noise problems.

The second step in the program is to identify problem areas through the use of noise surveys. Visitors to the display learned that, when an area is suspected of harbouring a noise problem, a special survey is conducted, using a sound level

meter or octave band analyser. If the area being measured is in a plant, differing noise intensities are plotted on the floor plan, giving a pictorial record of where the noise is coming from.

The third step in the program involves corrective measures through engineering controls, once the source has been located. The noise itself is isolated either



Audio test co-ordinator Livio Visentin, left, and visual aids designer Fred Eng, centre, explain to Carin Derro the procedure used to test the audiometer's accuracy before audiometric testing takes place.



The Canadian Hearing Society approached Inco with a request for a special display to illustrate the company's hearing conservation program which has been developed over the past 20 years. Hundreds turned out to view the display.

by enclosing the noise source, or by interrupting the path of the noise through use of baffle-type walls. If that's not possible, the zone is designated as a hearing protection area, and specified hearing protection must be worn.

Hearing protection became mandatory in 1969 for all employees working in the designated areas and occupations, with

muff-type protectors being specified for higher noise levels. Muff-type protectors became mandatory for everyone engaged in drilling operations, and the use of double protection — muffs plus ear plugs — has been promoted for employees in certain high noise level occupations, such as jumbos, fan drills, and long-hole drills.



Mike Mulloy, left, demonstrates the proper use of foam plastic earplugs to Mario Cecchetto.

Just as the objective of the display was to make the public aware of the company's hearing conservation program, a continuous campaign of employee awareness is conducted throughout company operations. Through the use of movies, sound-slide presentations, personal contact and safety talks, the employees come to understand the benefits of hearing protection. Understanding the problem is one of the first steps towards prevention.

Regular monitoring of each employee's hearing threshold determines the condition of his hearing in various octave bands and, since 1965, the company has included in its pre-employment medical examination a hearing test in which each prospective employee is given an audiometric examination.

Since then, employees have been given regular tests. Audiometric personnel compare the results of these regular tests with those of the previous tests, and judge whether or not an employee has developed a possible hearing loss. If such is the case, steps, including possible medical referral, are taken to prevent further loss. Summary reports of audiometric results are forwarded to plant managers for assessment of the effectiveness of the hearing conservation measures.

Hearing is a precious possession. Hopefully, the company's display helped to tune people in on hearing conservation through its "sound" advice.



Audiometric technician Mike Armillotta explains the workings of a portable sound-level meter to Vivian Armieri, left, and Tina Tulloch, at the company's hearing conservation display in Sudbury's City Centre.

Six Inco teams participate in



The John McCreedy Trophy was won by the Creighton mine rescue team. Front row, from left, Hugh Currie, Wayne Arcand, and Leo Paul Seguin. Standing, from left, captain Dale Muirhead, Allan Simpson, Randy Naponse and Lorne Hunter. The team will now represent Inco in the Ontario Mines Rescue Championships.

While an underground fire is an extremely rare occurrence, each Inco mine has well-trained and-equipped mine rescue personnel ready to spring into action at any given moment. A simulated fire in mock mine surroundings at the Falconbridge Community Arena didn't present any danger to the six Inco teams participating in the recent Annual Mine Rescue Competition, but it certainly created a keen sense of competition, as the teams pitted their skills against each other, vying for the coveted John McCreedy Trophy.

The day-long event had each participating team solve a problem prepared by mine rescue superintendents John Hallows, John Guthrie, and Len Kutshaw. With the arena's floorspace sectioned off to resemble an underground scene, and the added realism of darkness, the rescue teams worked by the light of cap lamps as they would in an actual emergency situation. Each team had four responsibilities: locate any missing personnel underground and assure their safety; extinguish any fires



Frood-Stobie team captain Dave Bruce, right, found four men safely hidden in a mine refuge station during the competition. After being assured that the station's air supply and communications systems were working properly, the crew proceeded with the rescue. From left are team members John Pombert, Gord Rae, and John Lacey.



Rescue teams must submit to a written test which will prove their practical knowledge. Here, Creighton mine's Leo Paul Seguin applies himself to the task at hand.

Annual Mine Rescue Competition

found; ventilate the mine, and bring up personnel.

The six Inco teams participating in the competition were Garson, Frood-Stobie, Creighton, Levack, Copper Cliff North, and Copper Cliff South mines. At day's end, the Creighton mine team emerged victorious, for the fourth time winning the John McCreedy Trophy.

Judges for the competition came from Inco's Ontario Division mines, with Falconbridge Nickel Mines' safety supervisor, Jock Thom, acting as chief judge. Included on the judges' list were Pat Dinan, Copper Cliff South mine; Bill Gagnon, Creighton mine; Dick Lampman, Frood-Stobie complex, and Jack Wallgren, Copper Cliff North mine. Timekeeper and scorekeeper was Hank Derks, Inco's chief first aid co-ordinator.

Each mine rescue team consists of seven members; five perform "under-ground", one remains "on surface" to act as spare, and the seventh is the briefing officer, who presents the problem to his team and remains in constant radio contact.



Creighton mine's Allan Simpson douses an acetylene fire, while captain Dale Muirhead marks the fire location on a level map. Jock Thom, left, watches the movements.



The Frood-Stobie rescue team handles an acetylene fire. Gord Evans, left, mans the fire hose under the watchful eye of John Lacey, centre, and team captain Dave Bruce.



Safety requirements call for an individual check by the team captain. Copper Cliff South mine's captain Bill Halman, right, has the favour returned by Alex Gillies.



Faced with the problem of fire in simulated mine surroundings, the Creighton mine team performs a hose link-up with an existing water supply. Completing the link-up are, from left, team members Hugh Currie, Lorne Hunter, Leo Paul Seguin, and Allan Simpson. It is the fourth time that the Creighton team has won the John McCreedy Trophy.

Despite Cool Weather:

There Were Fun And Games Galore At Annual Copper Cliff Mines Picnic

Cold, cloudy and windy weather didn't dampen spirits at the Copper Cliff Mines Association Annual Picnic recently held at the Richard Lake Campground.

Spirits were bright, and the sun must have gotten the message as the skies cleared at noon. Committee chairman Bob Croteau greeted the picnickers at the gate, with goodies for the children and mothers. Each child's name was automatically entered for a free draw on a lawn swing set. Once inside the picnic area, everyone was eligible to enter the numerous races.

The Udeschini family, under the skilful direction of father Ed, were out bright and

early to set up the signs and facilities for games, including a shooting gallery, dart and ring games and a weight-guessing contest. A special guest appearance by Sesame Street's "Big Bird" proved an exciting event for the younger crowd.

Horseback riding was also on the agenda, courtesy of Joe Melanson, who turned up with two ponies and a horse.

One of the most popular events was the egg-throwing contest, which turned into a grand central station of laughs for the afternoon.

Strong-arm tactics were the order of the day at the wristwrestling champion-

ships. Len "The Brute" Bouillion was the champion of the day, with many challengers but little real competition.

Henry Prinoski's checker tournament was a great success. Since he worked so hard at organizing the tourney, nobody thought it unusual that he should beat out all competitors.

It was a perfect day of enjoyment and outdoor activities for the many people associated with the Copper Cliff Mines Association. It was made possible by planning and good work by many dedicated people, creating fellowship and enjoyment for all.





Despite Rain And Cold:

Hundreds Brave Elements During Inco Relay

It had everything from blistering heat to numbing cold — from sunshine to rain — and all in the space of 24 hours. More than 400 participants and 100 officials braved the elements during the second annual Inco 24-Hour Relay, held at Laurentian University in Sudbury, June 11 and 12.

Although no world records were set this year, the event has to be termed a resounding success if you take into account enthusiasm, participation and dedication. Very few people gave up, even during the early hours of Sunday morning when the thermometer plummeted near the freezing mark. The cold temperatures, coupled with rain during the night and strong winds, prevented everyone from running to full potential.

The challenge of the 24-Hour Relay brought groups together from all walks of life and all ages. And during the course of 24 hours, it magically turned them into the best of friends.

A relay team from Toronto, composed entirely of high school students, ran a total of 260 miles in the 24-hour period. The Canada and world record was set at last year's relay — 281 miles. The two-man team of Al Salmoni and Ken Sidney, from Sudbury, ran an incredible 112 miles, amounting to about 56 miles each.

The Northland Athletic Club in Sudbury hosted the event and helped in the organization of food and drink for the athletes. Meet organizer Terry McKinty feels events like the 24-Hour Relay are becoming more popular.

"Any event, where the average person can participate, is really catching on," says Terry. "We realize that these events can always be improved, and we feel that next year's relay will run a lot smoother. Naturally, we expect an even bigger turnout."



Gerry Dinel, from the Inco relay team, proudly displays T-shirt given out to each participant.



The relay started at noon under a sunny sky and warm temperatures. Everybody was fresh and ready to go, including the spectators who were at trackside to cheer the runners on. Over 400 participants came out to brave the elements.



As the relay came to a close, runners put on more and more clothing to keep out the cold. Many participants were running on determination alone.



Cold temperatures on the second day caused some to take drastic measures.



After it was all over, large quantities of sandwiches, watermelon and cake disappeared in rapid fashion. Organizers were well prepared, and no one went hungry.

Travelling through Port Colborne on The Welland Canal

There can't be many people at our Port Colborne nickel refinery who, at one time or another, haven't been faced with a lifted canal bridge while travelling through the city. And with a steady increase in shipping on the canal, traffic delays at the bridges are becoming more and more common.

Methods of alleviating traffic congestion caused by the canal have been a topic of much discussion in the city

for many years. The most recent proposal is the building of a third bridge just south of Lock No. 8, halfway between the existing bridges, which would mean that one of the three bridges could be down at all times, allowing traffic to continuously cross the Welland Canal.

Although the canal causes certain inconveniences, its benefits can readily be seen in the Port Colborne area. Much of the city's industry is based on shipping, and several large ship repairing firms are located in the area. Two sizeable flour mills depend on the ships to bring in grain from western Canada, and the Government Elevator acts as a depot for much of the grains in transit to other locations. Some of the major commodities shipped to and from the city include oil, coal, sand, and stone; countless other products move through Port Colborne on the Welland Canal, en route to worldwide destinations.

Historically speaking, the first canal came into being in 1824, and was created by the Welland Canal Company, founded by William Hamilton Merritt. The original canal, built to avoid Niagara Falls, followed the valley of Twelve Mile Creek, to Allanburg. The eight-foot-deep channel then continued to Port Robinson. Ships then followed the Welland River to Chippawa, where they entered the



From a single control tower, all facilities in the vicinity of Lock No. 8 can be operated and watched. Two closed-circuit television monitors help determine when ships are clear of lock gates and bridges, which helps speed the ships through the lock.



It takes only eight to ten minutes to fill a lock with about 25 million gallons of water, raising a ship 46½ feet. Depending on the number of other ships encountered, it takes eight to ten hours for a ship to pass through the 26.7-mile-long Welland Canal.

treacherous currents of the Niagara River. The canal had 40 locks and could accommodate ships 100 feet long, raising them up the Niagara escarpment.

The present Welland Canal, completed in 1932, allows shipping between Lakes Erie and Ontario, thus avoiding the Niagara River completely. Seven locks each lift ships about 46½ feet high, and a guard lock maintains a constant level between Lake Erie and Lock No. 7 at Thorold. Ships are raised or lowered a total of 326 feet in the canal, the difference in elevation between Lakes Erie and Ontario.

The Welland Canal was built at a total cost of 132 million dollars, and was considered to be quite a feat of engineering during the first half of the century. The average lock is 766 feet long and can accommodate ships 730 feet in length, with beams of 75 feet; these vessels can carry upwards of 28,000 tons.

To keep up with the times, the canal is constantly being updated. A traffic control centre in St. Catharines keeps each vessel under surveillance by means of closed circuit television, radio communication, and an intricate telemetry system. In 1973, a new channel was built between Port Colborne and

Port Robinson; two tunnels were constructed underneath it, thus eliminating traffic delays during the shipping season.

Looking ahead to the canal's future, over 2,000 acres of land have been expropriated in the town of Niagara-on-the-Lake, and a new channel with only four large locks has been proposed. With a little luck, perhaps a third bridge or a tunnel for Port Colborne will soon become a reality.



The "Rubens", registered in London, England, is one of the many thousands of ocean-going vessels that pass through the Welland Canal each year. It's shown here approaching the Main Street bridge in Port Colborne. One of the major flour mills is seen in the background.



This sign even indicates the sailing distance to London, England, as well as other destinations.



The Main Street East tunnel in Welland is one of three that pass under the canal. Others are located at Townline Road in Welland and at Highway 58 in Thorold. A large, self-unloading laker can be seen on the canal above the tunnel.



Watching basketball games is a favorite pastime of the Fred Johannes family. Beside Fred is his wife, Julie. Standing behind are Helen, Vicki and Greg. Fred is superintendent of construction forces, engineering and central utilities, Copper Cliff.



This is the Ken Burke family. With seven years of service at the Port Colborne nickel refinery, Ken is a plant personnel clerk in the shearing, shipping and yard department. He and his wife, Gail, have two children, Tracy, 15 months, and Kenny, 4.

Family Album



Skidooning, camping and wristwrestling are the favorite hobbies of Max Blanchard, a slusherman at Creighton mine. He also enjoys spending time with his family. Front row, from left, daughter-in-law Debbie, wife Lois, and Kim. Back row, from left, son Bruce, a switchman at Creighton, Jeff, father Max, Lisa, and son-in-law Dorian Levesque, a car loader at Creighton mine.



Lou Poulin and his wife Lillian have raised a fine family of 10 children. Lou works at Copper Cliff North mine as a carpenter. Members of their family are, front row, from left, Donald, 10, Bernard, 7, and Roger, 12. Seated, from left, Lou, Nicole, Mrs. Colette Ricard, wife Lillian, and Mrs. Denise Meilleur. Standing, from left, Armand, Mrs. Maureen Robillard, Robert, and Denis.



Installed in 1943, this sheave wheel has hoisted 2,000 tons a day for the last 34 years. Here rigger helper Raymond Gervais greases the bearings.



Bisected for easier transportation, the sheave wheels will be bolted together at the rims, and a heated shrink ring will lock the sections together prior to installation. Before these procedures can take place, riggers Leo Deguire, left, and Lloyd Cowper "beartrap" the sections to prevent them from falling over. Each of the sections weighs 4,171 pounds.

Bringing in the Sheaves (!?)

A systematic replacement of mine hoist rope sheave wheels will take place at a number of Ontario Division mines, beginning this month.

A total of sixteen 12 and 14-foot-diameter headsheaves, grooved for ropes that range from one and three-quarters of an inch to two and one-sixteenth inches, will be arriving from England during the next eight months, with the total value of the sheaves placed at half a million dollars.

Some of the existing sheaves have been in continuous service for some 25 years, and a few of them have hoisted more than 40,000,000 tons.

Accordingly to Inco's hoisting specialist Largo Albert, the new sheaves are of a fabricated weldment design. "The old sheaves were a bicycle-type cast, with spokes", said Largo. "Today, cast spoke types are not readily available, due to a lack of adequate casting foundries and a diminishing number of people experienced in this particular type of casting".

All sheaves are regularly monitored for groove wear, spoke diameter reduction due to corrosion, as well as for cracks, by non-destructive testing equipment.



Recently arrived from England, these sheave wheels are scheduled for installation in the Garson mine headframe this summer. Prior to their installation, the wheels receive a thorough inspection by, from left, Fern Dionne, Garson mine zone planner; Largo Albert, hoisting specialist; Dick McIvor, design engineer, and Ted Tuori, Garson area maintenance superintendent.

Highlight during the celebration of the Diamond Jubilee of the Copper Cliff Highlanders Cadet Corps was the dedication of the new colors by, from left, the Reverend Edwin Erion, United Church; the Reverend Father Joseph Graham, Roman Catholic Church, and the Reverend Jack Crouch, Anglican Church, all of Copper Cliff.











Copper Cliff Highlanders Cadet Corps Celebrates Diamond Jubilee

Impressive color dedication ceremony viewed by capacity crowd

Governor-General sends congratulations and commends Corps on fine record

The 765 Copper Cliff Highlanders Cadet Corps celebrated its Diamond Jubilee recently at Nickel Park in Copper Cliff amid ceremony, drills and demonstrating.

Formed in 1917, the Highlanders corps is one of the oldest in Canada. Major Roy C. Barnes developed the first group of corps members from a Boy Scout troop in Copper Cliff.

On June 4, 1937 the regimental colors — the flags of the corps — were first presented to the group by Inco. In 1958, regimental colors were again presented to the Highlanders by the Imperial Order of the Daughters of the Empire. The Saturday celebration again saw new colors bestowed on the corps by Legion Branch 224.

Members of the Highlanders Corps range in age from 13 to 18, with the total membership of the corps numbering 60.

Female members were admitted into the corps in 1974. They wear a green Douglas skirt rather than the kilt and take the same training and tests as their male counterparts.

During the first year of membership, band members are taught the basics of chanter playing and drum pad practice.

In the second year they receive their instruments — adept musical students are allowed to proceed quicker — and are instructed in various drills. These include the rudiments of drumming, and basic theory and execution of piping.

The Highlanders are synonymous with proficiency. The corps has an illustrious past in which a number of

awards have been bestowed. It also participated for nine consecutive years at the Grandstand show at the Canadian National Exhibition.

The Triangle photographer was on hand to record the impressive Diamond Jubilee ceremonies, and the photographs are displayed in this month's centre fold.

Cpl. Alasdair Gray, left, takes charge of the new colors, presented to him by Harry Franss, centre, President of Branch 224, Royal Canadian Legion, Copper Cliff. Assisting during the ceremony are Major Geoff Hervey, second from left, and Captain Alex Gray, commanding officer, Copper Cliff Highlanders Cadet Corps.




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GOVERNMENT HOUSE
 RESIDENCE DU GOUVERNEUR GÉNÉRAL

I am pleased to send my warmest greetings to the 765 Copper Cliff Highlanders Cadet Corps on the occasion of their Diamond Jubilee.

We all take pride in the Cadet Corps achievements demonstrated by the leadership and citizenship qualities shared by thousands of Canadians who have benefited from its training and educational programs.

I should like also to congratulate the members of the Cadet Corps for their contribution to the celebration of Her Majesty's Silver Jubilee. I am confident that these two commemorations will encourage them to renew their commitment to the values which have made our country

John Diefenderfer

June 1977

Hundreds View Levack Area Operations During Open House



Through a co-ordinated effort by Glenn Strutt, left, superintendent of Levack West mine, Dar Anderson, centre, superintendent of Levack mine, and area manager Eric Kossatz, the Levack Open House was a success. The three supervisors were on hand from the opening tour to answer questions and lend their services where needed.



Some equipment on display at Levack West was actually in use, as part of a demonstration for the many visitors. This drill jumbo, however, was not used in the program. Mike Petryna, a painter with Levack's carpentry shop, explains the operation of the drill to his daughters Pam, left, and Shelly and his wife Leona.

Employees' Youngsters Are Thrilled At Comprehensive Equipment Display

Employees from Inco Metals Company's Levack mine complex were out in full force recently for the Levack Open House. With families in tow, the Levack employees toured the complex, answering the many questions fielded by their children.

"Judging by the size of the turnout, the Open House was a complete success," says Glenn Strutt, superintendent of Levack West mine. "We had over a thousand people through our facilities. With tours scheduled to start at 9 a.m., 50 people were waiting first thing in the morning. There was a steady flow of people throughout the day."

The surface tours centered around the Levack West mine, where 30 units of heavy equipment were on display, some of them in operation to the delight of the crowd. Drill jumbos, scissor trucks, bulk loaders and teletrams are a common sight to miners, but most of the children hadn't seen any of them before. In addition, a bus tour was offered so the youngsters could see the entire complex.

Inside the Levack West main terminal building, a series of equipment displays indicated the advances made in mining's associated fields. Displays on geology, ventilation, safety, diesel engines, fire suppression, air-operated equipment and in-plant fire fighting equipment kept the visitors occupied.

Refreshments were also available. Hot coffee, fresh donuts and ice-cold pop were free to all.



Explosives are common tools in metal mines, but they are tools treated with the utmost respect. Some of the detonators used in Levack complex mines were on display during the Open House, with a rope barrier to prevent anyone from getting too close to the setup. Here, Levack West stope boss Bob Parker describes the particular uses of the equipment to Paula Laberge.



Special displays at Levack West mine indicated the diversified aspects of the modern mining industry. Although seldom used in area mines, Inco maintains top-flight mine rescue teams should their services ever be required. Gilles Dubois, left, son of Clem Dubois, of Levack mine, listens closely as Stelio Sobotincic, a construction leader, explains the operation of a face mask to his son Steven.



Equipment of the past and present provided visitors with an insight into the advances made in protective gear, especially in the field of mine rescue. John Guthrie, training officer for the Onaping Mine Rescue Station, was on hand to provide expert advice.



Although the complexities of equipment eluded some of the younger Open House visitors, the candy kept them happy through the visit. Here Mrs. Emory Parent gives her three-year-old son Michael an "aerial" view of the equipment display.



Nancy-Jane Newburn, left, Copper Cliff's Miss Teen Canada, expresses her best wishes to Bert and Beth McClelland.



1940.



Tribute to Bert McClelland

Harold Heale, centre, industrial evaluator with Inco, extends his congratulations to the feted couple.



An active 37-year contribution to the community of Copper Cliff was honored recently at a retirement party for Copper Cliff High School teacher Bert McClelland and his wife, Beth.

It may have seemed a good time to review the past but, while guest speakers were reminiscing about Bert's hockey and teaching days, the guest of honor was looking ahead to the future — rumor has it that Bert will be coaching next fall.

"Yes, I'm going to coach next year. I really had no intention of getting out of coaching and, on top of that, the kids want me back." It'll be a good opportunity for Bert to test the 200-by-85-foot ice surface at Copper Cliff's new McClelland Community Centre, largest in the region.

Close to 500 attended the affair at the Walden arena and, after the dinner, Bert and Beth stood for more than an hour at the head table, shaking hands and talking with friends and acquaintances. Well-wishers came from near and far, not only representing the Sudbury region, but Alberta, Montreal, New York, North Bay, Mount Forest, Westport, Missouri, and more.

Will Digby, Inco's superintendent of employment and benefits, and a former student of Bert's, acted as master of ceremonies for the occasion, while head table guests included such well-known



1977



Sudbury mayor Jim Gordon officially recognizes Bert McClelland's outstanding contribution towards the well-being of the community.

couples as the Jim Gordons, the Tom Davies's, the Dick Dows, the Bob Diebels, and the Al Rondinas.

About the retirement party, Bert commented that "Beth and I are particularly pleased, because we didn't consider it necessarily a retirement party, but a reunion. It might have been a

Copper Cliff High School reunion party. I didn't see myself as the focal point, but a chance to meet the guys and girls again, and old friends."

The McClellands' plans include a summer of relaxation, followed by a month-long visit this September to England and Scotland.

"In the fall, I'll be giving more time to the organization of the team and to the outdoors, hunting and fishing," said Bert.

"The Triangle" sends along its best wishes to Bert and Beth, for their many contributions to the Copper Cliff community.

Will Digby, Inco's superintendent of employment and benefits, acts as MC.

Exchanging pleasantries are Bert McClelland, left, Dorothy Mathews from Toronto, and Copper Cliff's Dick Dow.





Comparing the actual site with the expansion drawings are, from left, club treasurer John Mullock, field exploration, Copper Cliff; club president Walter Chornenky, employee relations, Frood-Stobie mine; Bob Moote, course designer, and course chairman Vic Bachmeier, Copper Cliff North mine.



Completion of the expansion program, anticipated for July 1978, will result in a 5,875-yard, par 70 course.

Expanded Facilities for Lively Golf and Country Club

In 1956, Inco cleared a fire belt along the edge of Lively, and seeded the open area to grass; in 1957, an interested group of residents approached Inco with their request to use the grassed area for a golf course. And thus began the 9-hole, par three Lively Golf Club.

In the late '60s, additional ground was provided by Inco, and the course was lengthened to approximately 2400 yards. But in 1970, a cyclone struck the golf course, completely destroying buildings, equipment and trees. 250 club members

each put up \$100, and a new clubhouse and improved facilities were constructed.

With a 1975 membership of approximately 575, plus heavy use by green fee players and additional land made available by Inco, the club looked at expansion; a Wintario grant was obtained to help develop an additional nine holes, and actual development work began in 1976.

The new nine-hole extension will be slightly over 3,000 yards long, a par 35.



Looking towards No. 11 green. Tailings from Inco will be used as fill where necessary, and the company's agricultural department will cultivate and seed the fairways.



The new nine-hole extension of the course will be characterized by a wide creek flowing through the centre of the course, with a scattering of ponds. Looking on during excavation for a lake between the new No. 12 and No. 16 fairways are Emile Legault, left, of Carman Construction Company, Walden, and course chairman, Vic Bachmeier.

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



As part of a career development program, management candidates selected by department heads within the smelting and refining area are assigned to the Corporate Internal Audit Staff for up to two years. Under this program, candidates are trained in accounting and internal controls, and assist in audits that are carried out at all major Inco locations in North America. Above, from left, **Jim Connelly**, director, internal audit, discusses items of mutual interest with **Allan Bale**, superintendent, pressure plant and utilities, C.C.N.R., **Joe Bradt**, supervising auditor — Canada, and **Bill Steenburgh**, project leader, process technology, matte processing. Bill and Allan are recent additions to the internal audit staff under the C.D. Program.



Work is well under way on the Ontario Division's new \$29-million **Divisional Shops Complex**, in Copper Cliff. The complex will provide modern maintenance shop support facilities for producing mines and plants in the Sudbury district and will incorporate a complete range of machine repair equipment and superior working conditions for Inco tradesmen. Construction of the new shops will take two years to complete. Preparation of the site is running smoothly. Above, a TC12 bulldozer, using a ripper, grinds its way through a slag pile in the initial stages of road construction to the site. Teeth on the ripper must be replaced at four-hour intervals because of the gruelling strength of the slag. Below, loaders and dumptrucks haul away the slag.



When it comes to landing the big ones, leave it up to **Ed Sirkka**, Levack's mine engineer. That's a five-pound whitefish Ed is holding. He landed a fine specimen, along with a nice catch of pickerel, on a recent fishing trip to Lake Nipissing.



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



Delegates of the Canada-France Inter-Parliamentary Association toured Inco Metals Company's facilities in Sudbury recently. Their tour included viewing underground workings at Copper Cliff North mine, Clarabelle mill and the Copper Cliff tailings area. Later, delegates were made welcome at a reception held by Ontario Division president **Ron Taylor**, left, and his wife, **Vi**, second from right. The distinguished visitors included **Mrs. A. M. Fritsch**, deputy speaker of the French Parliament, and **Mr. Emile Brizet**, right, French member of parliament and head of the delegation. Below, following a luncheon, visiting dignitaries discussed the details of their Canadian tour, which includes stopovers in Ottawa, Frobisher Bay, Lake Harbour, Pangnirtung, and Mont-Gabriel as well as the Sudbury area. Three of those attending the luncheon were, from left, **Dr. Jean Guy-Bray**, manager of mineral resources development, exploration department, Inco Limited; **Jean Chambon**, French member of parliament, and **Terry Podolsky**, vice-president, exploration and mineral resource development, Inco Metals Company.



Inco Metals Company welcomed families of the Levack mine complex employees during the mine's Open House recently. Over 1,000 people toured the facilities to examine the displays on geology, explosives, mine rescue equipment and other aspects of modern mining methods. **Sean Turner**, 5, got a big thrill sitting at the controls of this 26-ton underground dumptruck, while his brother **Jason**, 3, looks on. The boys received a thorough explanation of the machinery from their dad, **Al Turner**, a garage mechanic at Levack mine, and Levack West mine engineer, **Phil Raymond**, right. Below, the mechanically minded found that the mine's display on diesel engines was complete and comprehensive. **Ken Seminchuk**, son of **John**, a welder at Levack mine, pays close attention as Levack West garage mechanic **Alex Brosseau** describes the capabilities of a diesel engine, used in Jarco trucks.



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



Following the Annual Mine Rescue Competition, participants had a chance to unwind during the follow-up banquet. While the formal agenda hadn't planned for live entertainment, a few impromptu musicians got into the act. Accompanied by pianist **Bob Croteau**, of the Copper Cliff South mine rescue team, the mine rescue minstrels felt compelled to belt out a few songs, ranging from the olden goldies of the past to today's contemporary hits. Above, harp and harmonica backed up the vocals on "You Picked A Fine Time To Leave Me Lucille" performed by, from left, **Bob Nault**, **Tim McDonald**, **Leo Paul Seguin** and **Bill Moffat**. Below, Mines ventilation engineer **Jim Rutherford's** rendition of "Danny Boy" left them with tears in their eyes.



For up-to-the-minute information,
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Inco Hotline

Sudbury	682-0626
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As part of the new \$27-million ventilation system at Creighton mine, a 21-foot-diameter concrete-lined shaft is being sunk from surface to the 6,000-foot level. The shaft will serve as the exhaust route for all return air from the lower areas of Creighton No. 9 shaft. It is designed to carry 1,400,000 cubic feet of air per minute. There will be return air transfer drifts on the 5,000-foot and 6,000-foot levels. Large fans on surface and booster fans underground will circulate the air.



Summer tours of Inco facilities in the Sudbury area are in full swing, with visitors arriving from numerous countries. This couple travelled all the way from Germany and even brought along their own Mercedes-Benz motor home. **Helmut Minkowski** and his wife, **Ilse**, are from West Berlin and plan to spend the next six months touring Canada and Alaska. The couple travelled to Canada by boat, landing in Montreal, where their motor home was unloaded. Inco tour guide **Mike Hurley**, right, welcomed them. Tours of Inco facilities are open to the general public and run continuously from 9:00 a.m. to 2:30 p.m., Monday to Saturday. For groups over 12 in number, a reservation must be made by calling 682-2001. Tours leave from the Nickel Park in Copper Cliff.

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



These five pretty girls are members of the first and second company of the Copper Cliff Girl Guides. They have all received the highest honor in guiding — the Canada Cord. From left, **Judy Taylor, Nancy Mossey, Susan Lister, Debbie Linton** and **Tina Rodina**.



Bruce Russell, of Guelph, Ontario, graduated recently from the three-year mining technologist program at the Haileybury School of Mines campus of Northern College. He was awarded the **W. F. Brown Memorial Scholarship** and the **Bob Segsworth Bursary** for general proficiency. Bruce also was awarded the **Inco University Continuation Scholarship**, presented to him here by **Merv Dickhout**, chief mines engineer of the Ontario Division of Inco Metals Company.



At an informal gathering in Thames House recently, the London, England, office staff said farewell to **Don Phillips**, right, who was chairman and chief officer of Inco Europe since 1972. He is now president and chief operating officer of Inco Metals Company in Toronto, a major new unit of Inco Limited. **Robin Nicholson**, managing director of Inco Europe, presented Mr. Phillips with a card signed by all London office employees.



Renovations at Creighton mine's No. 3 shaft included the construction of a new training centre on surface. The training centre will provide personnel with a central location to study maintenance techniques. Here, maintenance mechanics **Yogi Bjerknes**, left, and **Jim Stefanko** install the centre's air line, designed to supply compressed air for hand-operated tools used in the training program.

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



Storage of the wide variety of chemicals, glassware and miscellaneous laboratory supplies at the J. Roy Gordon Research Laboratory in Sheridan Park, Mississauga, is in the capable hands of storekeeper **Alex Colley**. With an eye for keeping things in the proper place, Alex is also in charge of the library of technical matter that takes up a large part of the storage area.



CIM Golf Tourney Is Scheduled For Aug. 20 at Onaping

According to **Monty White**, secretary-treasurer of the Sudbury Branch of the Canadian Institute of Mining and Metallurgy, this year's **CIM Golf Tournament** has been scheduled for Saturday, August 20, at the Onaping Golf and Country Club. Two draws are slated, with the first draw at 7:30 a.m. and the afternoon draw at 1:30 p.m. **Entries will be limited to 144 players.** Entry forms will be available by July 15 from the branch representatives. Non-golfers can participate but must pre-register.



Dr. Ronald J. Gillespie, professor of Chemistry at McMaster University, right, recently received the Chemical Institute of Canada Medal for 1977 from **Dr. J. A. Morrison**, President of the Institute, at the Second Joint Chemical Conference of The Chemical Institute of Canada and the American Chemical Society, held in Montreal. The award, a palladium medal, donated by Inco Limited, is the highest honor the Institute can bestow. Dr. Gillespie, 27th winner of the medal, and one of Canada's foremost inorganic chemists, was selected for his outstanding contributions to inorganic chemical research and to teaching.



As part of the modular training system being introduced throughout the Ontario division, training manuals are currently being written for the Port Colborne nickel refinery. Taking part in a course for the writers of these manuals are, from left, **Bernard Skuta, Mike Whyte, Tom Mayne, George Darling, Gaetan Marquis, Cal Peyton, Bryan Sewell, Hank Zerhusen**, course leader from Management and Training Systems and **Robert Levlie**. Information is gathered on all plant processes and equipment and then placed into training manuals. These contain all the information an employee needs to know to do the job safely and with full confidence.



The Ontario Division agriculture department in Copper Cliff has spared no effort over the years to return the previously barren tailings disposal area into a fertile, productive state, and a recent visit to the area shows that growth is progressing most favorably in that area. Above, a previously barren section of the tailings area starts taking root. Below, Inco tour guide **Alan Cecchetto** attempts to get a better overall view of the area atop bales of hay, harvested from one of the rejuvenated areas.



Prevention of eye damage is a major objective of Inco's safety program. Similarly, the Canadian National Institute for the Blind conducts a program with the same objective. Inco Metals Company recently boosted the CNIB program with a donation of \$8,000, which will be used to help the blind function in the community. **Len Kitchener**, left, mines equipment engineer, presented the cheque to **Jack Clements**, the CNIB's new district administrator.



Making the most of fine summer weather, artist **Bruno Cavallo** decided to take his paints and easel along the new LaSalle Boulevard extension for a close look at the Frood-Stobie headframes. Bruno's favorite subjects, logically enough, are mine headframes, buildings and boats. A yearly exhibition in the gallery beside his home gives Bruno the chance to display his work to anyone interested.

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



There was something for everyone at the Levack complex's Open House. Those with a taste for equipment found it in numbers, and those with a taste for refreshments, such as **David Czerwionka**, found them in abundance. David is the son of **Alphonse Czerwionka**, a stope leader at Levack mine.



Appearances can be deceiving, and while it may appear that **Anne Moors** of Inco's agriculture department is entrapped in dense vegetation, the entire situation is well in control. The honeysuckle plants she's trimming are part of the orderly and eye-pleasing sights of Copper Cliff's Nickel Park.



While our American neighbors south of the border had reason to celebrate the Bicentennial in 1976, this maintenance crew from **Garson mine** had reason to celebrate as well. Under the direction of maintenance foreman **Cecil Ace**, the group of mechanics and apprentices worked the entire year of 1976 without a reported injury. The Triangle takes great pride in adding its congratulations for the exemplary safety record.

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



Inco editors recently met in Copper Cliff for their Third Annual Editors' Conference, hosted by the Ontario Division of Inco Metals Company. Following an informative tour of underground workings at Frood-Stobie mine, delegates visited Inco's general engineering department. Viewing a scale model of the Sudbury basin are, from left, **Ken Cherney**, Manitoba division, Inco Metals Company; **Matt Redling**, Huntington Alloys Inc.; **Tom Canning**, director, public relations, Inco Limited, Toronto; **Pam Lawler**, ESB Inc., Philadelphia; **John Davitt**, Inco Inc., New York, and **Nancy Spurlock**, Huntington Alloys Inc. Below, members of the group receive pre-flight instructions from **Bob Watson**, of Great Lakes Helicopters, prior to an aerial tour of Inco's Sudbury operations.



This summer, as in the past, hundreds of students are packing their lunchpails and heading for summer jobs at Ontario Division plants. Their jobs run the gamut from planting hedges to cleaning crushers. Above, summer students **John Haavisto**, left, and **Rob Crema**, suspend highly polished blanks of heavy-gauge copper in deposition tanks at the Copper Cliff copper refinery, as part of the electrolytic process. Below, **Eric Dunn**, left, and **Tom Bertulli** roll out the barrel at the Copper Cliff warehouse.



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Monday through Saturday

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The general laboratory at the Port Colborne nickel refinery had been a man's domain until recently, when two lovely young ladies were hired to fill in during the summer vacation period. **Cheryl Christoff**, above, testing electrolyte for copper content, is the daughter of **Tom Christoff**, general foreman of the electrical department. She will be returning to her fourth year of studies in mathematics and chemistry at McMaster University in the fall. **Pauline Baldissera**, below, is testing the lead content in a solution on the atomic absorption spectrophotometer. She is a chemistry major at Waterloo University and will also return in September for her fourth year of studies. Pauline's father, **Bruno**, is a first class carpenter in the mechanical department.



Area bowling enthusiasts will be glad to hear that a local team brought home top honors in the Thomas Adams National Classified Bowling Championships, held recently in Edmonton. The team, bowling out of Pine Hill House in Walden, represented Northern Ontario in the competition which involved teams from eight provinces. Displaying their trophy are, front row, **Red Bruce**, left, a burner at Creighton mine, and **Myles Britton**. At rear, from left, **Ray Tremblay**, a maintenance mechanic at Clarabelle mill, **Peter Seguin**, and **Wayne Prowse**, a cost analyst at Inco's Copper Cliff office.



Lunchtime at the process technology building in Copper Cliff is the ideal time to get together and talk about the morning's work. **Summer students** working in process technology have found that the front steps of the building offer a great view and plenty of sunshine. The occasional member of Inco's agriculture department can also be seen catching a little sun with the gang from the lab.

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



Three employees at Levack mine were recently honored for their exemplary safety records. **Ken Hoop**, left, maintenance superintendent, presented hats and 3/8-inch drills to, from left, **Fernand Maisonneuve**, stationary engineer; **Mike Stelmakowich**, electrician and **Arnold York**, stationary engineer. Each of the three have gone accident-free for 25 years or more.



The Ontario Division of Inco Metals Company recently paid tribute to **Harry Moorhouse**, retiring mine rescue station superintendent, who has been largely responsible over the years for the excellent standard of mine rescue training in the Sudbury area. At a banquet held for Inco's mine rescue teams, **Charlie Hews**, right, vice-president of administration and engineering services, presented Harry with a carving by **Charles Paxy**, depicting a mine rescue man in full attire. Harry's mining career started in 1937 when he joined the Froid mine electrical department. He undertook mine rescue training in 1943 and distinguished himself as a member of the Inco mine rescue team that battled the underground blaze in East Malarctic, Quebec, in 1946. In 1949 Harry joined the Ontario Department of Mines as a mine rescue technician. His experience and dependability made him a logical choice when he was placed in charge of all mine rescue equipment maintenance at the scene of the McIntyre Mine fire in 1965. Even in retirement Harry's career should serve as a fine example to the dedicated men of mine rescue.



Congratulations are in order for **Jorma Heikkila's** crews from the 1725 and 1900 levels of Creighton No. 3 shaft who have recently worked one full year without a dressing of any kind. "We are very proud of the conscientious attitude that has been adopted by the men," said **Peter Venus**, Creighton No. 3 shaft superintendent. "Their record serves as a fine example of safety in action."

Would You Like to know more about Your Company?

Copies of the 1976 Annual Report are available. If you'd like one, mail your request to:

**Public Affairs Department,
Inco Metals Company,
Copper Cliff, Ontario, P0M 1N0**

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



Day-to-day routine for the plant protection officer consists of providing first aid assistance, and the safety and plant protection department works hard to ensure that the quality of training meets Inco's usual high standards. First-aid instructor **Rick Cholette**, left, here reviews the symptoms of some first-aid injuries with a group of summer students about to start on the job.



Equipment being cleaned at the Froid Central Repair Depot is guaranteed to look like new after being put through this new sandblasting unit. The sandblasting chamber is a new concept around Inco operations, this particular unit being # 00001 on the inventory list. The ceramic nozzle used in the completely contained chamber fires a mixture of glass bead and aluminum oxide at the piece being cleaned, with all dirt being filtered out and the mixture recycled and re-used. The nozzle must be replaced once a month because of wear. **Steve Dominick**, a second-class garage mechanic, sandblasts a wheel-hub inside the chamber. At right, an outside layer of safety glass gives a clear view of the object being sandblasted. The inner layer is made up of replaceable plexiglass, changed every three or four days because of abrasion within the chamber.



Modular training writers **Will Little**, front, and **Albert Sasseville**, right, note the front idler on a D7 caterpillar tractor, in for repairs at the Clarabelle open pit garage. **Stanley Larouche**, left, a first class garage mechanic, explains the work that had to be completed before returning the equipment to operations. Concise explanations and accompanying diagrams will result in an informative book of procedures and an educated workforce. Under the modular training system, job functions are fitted to the training rather than the training fitted to the job. The jobs are developed from functional knowledge, with emphasis placed on operating from a position of overall process understanding.



That pretty voice answering the phone at the J. Roy Gordon Research Laboratory in Sheridan Park, Mississauga, has a pretty face to go with it. Receptionist **Sheila Storbeck** doubles as a secretary at the laboratory and does an efficient job of making visitors feel at home. Ah, science!



Leo Oliver



Gerald St. Amant



James Lewandoski



Rudy Wolf



Norman Newberry



Jim Porter



Robert Charsley

Looking For Some Extra Cash? Why Not Submit Your Ideas On Safety Improvements

Smart thinking meant money for numerous employees again this month. Top award for the month went to **Jean Paul Bouchard**, of the Copper Cliff copper refinery. His design for a rotary-type cutter for cutting asbestos sheets won the tidy sum of \$1,290. Another big winner was **Leo Oliver**, of the Copper Cliff smelter, whose suggestion to relocate the No. 16 matte transfer netted him \$970. A recommendation to install a timer relay on the FBR 140 conveyor surge bin brought \$600 to **Gerald St. Amant**, of matte processing. Coleman mine's **James Lewandoski** pocketed \$500 for his improved method of removing broken scooptram wheel studs. **Rudy Wolf**, of the Copper Cliff smelter, took home \$415 for a recommendation to use "Keen-nerts" to secure cylinder heads on punching machines. **Norman Newberry**, of the Port Colborne nickel refinery, won \$360 with his suggestion to install stainless steel bottom frames on dumpers. Also from the Port Colborne nickel refinery, **Jim Porter** won \$225 for his recommendation to use stainless steel to make shoes for the bottoms of production racks. The team of **Robert Charsley** and **Lawrence Coulas**, of Copper Cliff North

mine, split a \$220 award on a suggestion to save the used bearings on 11A mine dewatering pump and machine bores and relined with babbit. **August Alberton** won \$115 with a suggestion to replace 1/2-inch copper valves with less expensive ones. **William Shuparski**, of Levack mine, took home \$100 from a recommendation to modify skip slimes plugs for easier cleaning. At the Copper Cliff copper refinery, **William Cranley** picked up \$85 for a suggestion to install protective shields on valves and water lines at the anode charging doors. Also at the Copper Cliff copper refinery, **Harold Kolvula** won \$80 for his idea to install ammeters for battery loco generators. Three winners took home money in the \$75 category: **Don Leblanc**, of the Copper Cliff copper refinery; **Gulseppl Marchioni**, of the Copper Cliff copper refinery, and **E. J. O'Brien**, formerly of the Creighton mill and now retired. **Felix Folsy**, of the Iron Ore Recovery Plant, was awarded the lone \$60 marker with the suggestion to install air valves on the roaster wind boxes. In the \$50 category, awards were presented to **Brian Dixon**, of the Copper Cliff copper refinery, and **John Carbone**, of the Creighton mill.

Appointments

Daniel Cooper, senior drill technician, mines exploration, Copper Cliff.
Colin Davey, maintenance foreman, Copper Cliff nickel refinery.
Gerard Dellaire, senior timekeeper, Copper Cliff North mine.
Marshall Ellis, programmer analyst, computer systems, Copper Cliff.
Ken Kay, superintendent of process technology, matte processing, Copper Cliff.
John Kelly, grade control technologist, Copper Cliff South mine.
Tom Kilp, product costing analyst, Copper Cliff.
William Kirkness, services foreman, Levack mine.
Allyson Lidkea, maintenance clerk, Shebandowan mine.
Paul Montpellier, pay office clerk, Copper Cliff.
Don Nadrozny, maintenance controller, Levack mine.
Vince Orlando, superintendent of training and development, Sudbury.
Marcel Podolski, project leader, Copper Cliff nickel refinery.
Pat Poland, drug and alcohol coordinator, employee relations, Copper Cliff.
Claude Poulin, grade control technologist, Levack mine.
James Rawlick, process supervisor of mills, Clarabelle mill.
Clyde Rohn, mine general foreman, Shebandowan mine.
Donald Saville, superintendent of industrial engineering, smelting and refining, Copper Cliff.
Rod Sutton, specialist, engineering, Copper Cliff.
Mario Tarnowycz, senior clerk, Copper Cliff.
Dan Topo, industrial relations representative, Copper Cliff North mine.
Linda Witt, stenographer, process technology, Copper Cliff.
Robert Zadow, training supervisor, Creighton mine.

Call For Assistance

The employee benefits department is waiting to answer your inquiries regarding the many company-sponsored benefit programs. From time to time, employees experience situations which are difficult to explain. Assistance will be provided by calling 682-4438.

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



The introduction of the use of microfilm in the purchasing department at the Port Colborne nickel refinery will lead to a great reduction in the volume of paper needed to carry out its function. Now a 208-page book containing detailed information can be reduced to one small sheet of film. With the use of a magnifying scanner, information can be found quickly and efficiently. With some of the new equipment is **Richard Smith**, a purchasing clerk at the Port Colborne nickel refinery.

Inco Golf Tourney Slated For August 13

The annual **Inco Golf Tournament** will be held on August 13, 1977, at the Idylwyde Golf & Country Club. Entry fee of \$9.00 will cover green fees, lunch and prizes.

Two draws will be held, both with shotgun starts. The morning draw will tee off promptly at 7:15 a.m. and the afternoon draw promptly at 1:00 p.m. The maximum number of entries has been established at 256 to accommodate as many participants as possible. Permanent employees and pensioners will have first opportunity. Be sure to advise those interested to get their entries in early.

Luncheon will be served between 11:30 a.m. and 3:00 p.m. The afternoon draw will dine before teeing off and the morning draw at the completion of their round. Club privileges will be extended to all players for the day.

The various event winners will be guests of the company for a presentation of prizes on August 17, 1977, at the Copper Cliff Club.

In addition to the regular event winners, the four low gross players for the day will play in the President's Trophy Tournament in competition with teams from Thompson, Manitoba, Port Colborne, and Toronto. This event will be played at the Idylwyde Golf & Country Club on Saturday, August 20, 1977.

For further information, contact John Spec, Personnel Department, General Office, Copper Cliff, at 682-4776.



Environment Ontario's new mobile air monitoring unit, one of the most sophisticated mobile laboratories in North America to collect and analyse air quality samples, was on display in Toronto's Nathan Phillips Square recently when 4,000 representatives from industry, science and government took part in the Air Pollution Control Association's 70th annual conference. The vehicle is inspected by conference chairman **W. Brad Drowley**, executive director, Resource Development, and Air Resources Director **Alan Harris**, both of Ontario's Environment Ministry. One of the Ministry's best known programs is the air pollution index and alert system, now operating in major urban areas across the province. Attending the conference were Ontario Division environmental control supervisors **Bob Butler** and **Bruce Dreisinger**. Topics covered during the conference were varied, and included presentations by Inco Limited's process development section.



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Logo Writer – John Davitt

John J. Davitt, a member of Inco's public affairs group with the company's New York office, is editor of Inco Inc.'s employee newspaper, "Pen and Inco".

Recently, John participated in Inco's third annual Editors' Conference, which this year was hosted in Copper Cliff by the Ontario Division of Inco Metals Company; he joined fellow Inco editors representing Huntington, West Virginia; Thompson, Manitoba; ESB Inc., Philadelphia, and Copper Cliff, Ontario. As part of the conference itinerary, John toured Stobie mine's underground facilities and the Copper Cliff nickel refinery, enjoyed a helicopter tour of the

Sudbury basin, and participated in an all-day editors' work session.

John and wife, Pat, live in Massapequa, Long Island, about 40 miles from the New York office. They have three sons: Michael, a student at Campbell College in North Carolina; John, a midshipman at the US Merchant Marine Academy, and Thomas, who is entering his senior year of high school.

"Since I live near Great South Bay", John commented, "I enjoy fishing from my 15-foot outboard-powered boat. The bay yields flounder, weakfish, and blues. And if you don't mind digging in the mud,

you can bring home a dozen or so clams."

John also enjoys a game of golf, but "I only get to play half-a-dozen games each year, and when I break 100, I'm in ecstasy. Please don't ask about my score on the back nine!"

John's 35-year career with Inco has been channeled in the area of communications and, over the years, he's been responsible for preparing trade paper and plant community advertising, brochures, benefit booklets, product stories, press releases, and audio/visual presentations.