

Triangle

FEBRUARY 1968



In this issue

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Marathon man

Divisional shops' machinist Drago Bakic walks back and forth to work every day. He logs 60 miles a week but for him it's a matter of life.

4



Creighton ventilation

The Creighton 11 shaft ventilation project is the biggest one of its kind ever undertaken at any of Inco's mining operations. It will effectively double the volume of air passing through the mine.

10



Mines research

Innovation has kept Inco in the forefront of the mining industry. The mines research department was established to see that the company continues to set the standard for the rest of the industry.

22



Popular pastime

Bowling is a popular indoor sport that thousands of people participate in — especially when it's cold and windy outside. Sudbury bowlers continue to do well in provincial and national championships.

26



On the cover

This glistening "ice fall" at Halfway Lake Provincial Park is just one example of the many winter wonders that you can see if you make use of any of the provincial parks in the Sudbury area. Most provincial parks are available for winter use. For more details see story on back cover.

Will he? . . . or won't he?



On February 2 every year, our furry friend the ground hog leaves his warm little home to take a peek at the outside world. Because the outside temperature is not always agreeable, his venture is most often short.

None-the-less, this dependable little fellow has a very important mission to fulfill — that being to predict the remaining length of winter. He can do this simply by noting whether or not his shadow appears on the snow behind him.

Now, considering this ground hog and his family have been cooped up in a burrow since early November, one might expect him to be overjoyed at the sight of the sun shining overhead. This is usually not the case, for the appearance of his shadow frightens the little fellow and

is an indication of another six weeks of winter. Upon observing the shadow he makes a hasty retreat, back to the warmth of his burrow.

The ground hog's ability to predict weather conditions is almost common knowledge in Canada. But one may wonder where the story originated and why.

Originally, February 2 was not called Ground Hog Day at all. Nor did the story begin in North America. It was the badger who was first observed during this time of year. And the country was Germany. These, long ago, farmers watched the badgers' activities carefully to determine the proper time to commence planting their crops.

When the German country-folk moved to Pennsylvania, they found it

necessary to substitute the ground hog because badgers were found to be nearly non-existent in the area. Thus, the custom, although slightly altered, was brought to Canada and the United States.

Can our furry little friend predict the weather? It seems a matter of opinion. Ground hog clubs across the country swear the little critter never fails. National Geographic, on the other hand, maintains he has been correct only 28 per cent of the time in the past 60 years.

But regardless of their beliefs in a ground hog's ability to predict weather conditions, there is hardly a person who doesn't look forward to February 2 with some degree of interest and expectation, and the thought of spring just around the corner.



Marathon Man

There are very few people that are not stopped from reaching their appointed goals these days by rain or sleet or snow. One exception is Drago Bakic, a machinist first class in divisional shops, who braves the elements year-round by walking the 6 miles to Copper Cliff from his Sudbury home every day.

The saga of Inco's version of the marathon man began in February of 1978 when Drago underwent open heart surgery. A coronary bypass was performed and a pacemaker was installed. The operation saved his life, Drago says, acknowledging that "I was almost dead" before going under the knife.

With the surgery being a success, Drago's doctors looked for a method of lowering his heartbeat. Medication helped some but it would be exercise, the experts decided, that would do the job. "Start walking," he was told.

It's doubtful that doctors realized how seriously this resolute individual would follow the walking prescription. "I started with a half mile a day, then a mile," recalls Drago. When he returned to work in September, 1979, it was on foot.

Since then it has been 6 miles of walking a day, five days a week, regardless of the weather. Alone and with stubborn determination, Drago strides along his lifesaving route impervious to the lash of a bitter winter wind or the bone chilling rains of autumn. In several instances, the weather has been so atrocious as to prompt fellow employees to stop and offer him a ride at least part of the

way. Every time Drago has refused. He did once accept, he remembers, the offer of a raincoat during a torrential downpour.

Drago admits taking a bus from the smelter to the Gatchell area, about two miles, when deep snow has made it impossible to walk safely on the shoulders of Highway 17 west. To make up for that mileage, he walks a convoluted route through the streets of Gatchell rather than taking the direct path along Lorne Street.

Though Drago readily recommends walking to everyone, he does confess that it really isn't very much fun and at times "you become sick and tired of walking." Ideally, a walking partner would ease the tedious trek. Says Drago, "Really I need some company." This is a standing offer to anyone interested in improving their cardio-vascular system.

Drago's daily constitutional has become a refined thing indeed. He selects the appropriate footwear and clothing to don for whatever weather and road conditions he has to face.

Routes are changed regularly with the aim of easing the effects of the wind and the mind numbing monotony.

While his fellow employees at divisional shops have come to understand Drago and the reasons for his march each day, others who see him plodding along during a blizzard or hear of his walking generally think one of two things. Either he is incredibly stingy, hoping to save millions on bus fare or he is slightly unbalanced, to put it lightly.

The toll that walking takes on rubber boots, running shoes and summer shoes, Drago assures us, is much greater than the amount he would save on busfare. He can count at least five pairs of footwear that have been worn to nothing in the last two years.

Most people think he is just plain nutty to do all that walking. "Some people have told me that I'm crazy," Drago smiles. "They stop their car and say 'Are you crazy, look at the weather.' I don't care what they say. I know I depend on it."

Drago braves the elements on his long trek to and from work.

Drago at work in the machine shop.



Christmas is for kids

The photographs on these pages were taken at a random sampling of the many childrens' Christmas parties that occurred at most mines and plants. They show the spirit of Christmas reflected from the faces of children.

What they don't show are the many hours of work spent behind the scenes; and the planning, and dedication of scores of Inco employees who volunteered their time to make Christmas a special time for children. It is to these people that the pages are dedicated.

SMELTER



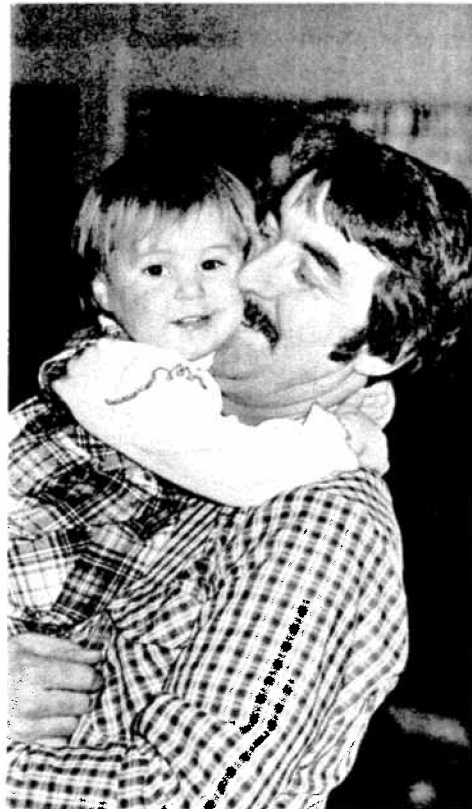
LEVACK COMPLEX



CREIGHTON COMPLEX



PORT COLBORNE



COPPER CLIFF NICKEL REFINERY



FROOD-STOBIE COMPLEX



DIVISIONAL SHOPS





A member of the U.S. Geological Survey measures the temperature of the return air in the coal mine at the base of the mountain, 5,500 feet, with 6,000 level.

Biggest project of its kind ever undertaken

There is only one word to describe it — unique.

A ventilation project of this kind and size has never been undertaken at any of Inco's mining operations. Until now.

The Creighton mine complex is in the process of completing a major ventilation project at its number 9 shaft (main intake airway) and number 11 shaft (return airway).

The project is designed to provide the mine with an increased air supply to ensure comfortable environmental conditions as mining proceeds to greater depths.

"The Creighton 11 shaft ventilation project will allow Creighton mine to effectively double the volume of air passing through the mine," explains Graham Ross, manager of Creighton mine complex.

According to Graham, the increased air flow will provide sufficient heat removal to ensure comfortable working conditions as mining proceeds to an ultimate planned depth of 8,600 feet below surface where the undisturbed rock temperature is expected to be 124 degrees Fahrenheit.

The unique feature of this system of heat removal, Graham says, is the cost-effective, energy conserving design used to maintain an average year-round temperature of 37 degrees Fahrenheit at the top of the air intake system.

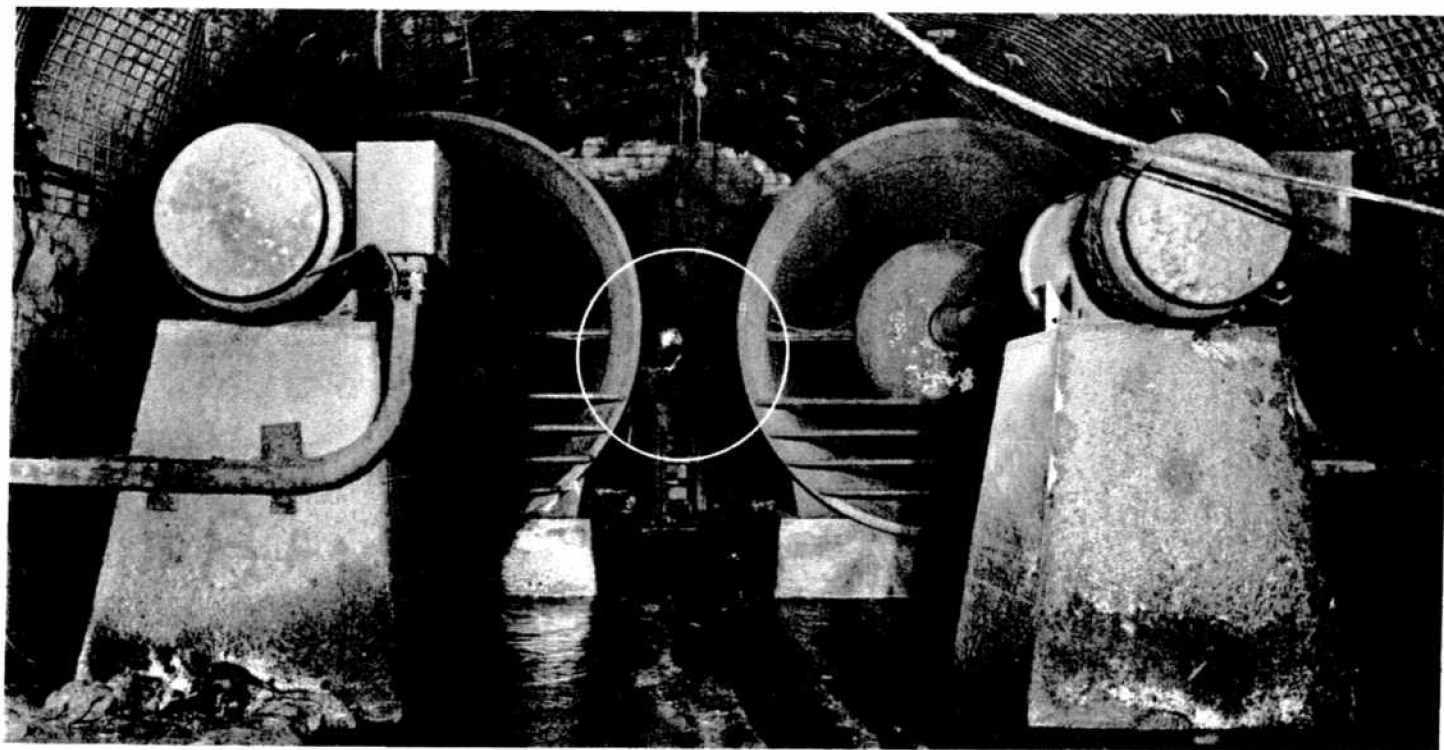
In many deep mines throughout the world, expensive energy consuming refrigeration plants are maintained to cool the working atmosphere.

However, the Creighton system has

one distinct advantage; it will make use of the natural phenomena of seasonal freezing and thawing by drawing air through a large mass of broken rock at Creighton's open pit known as the number three shaft ice fields.

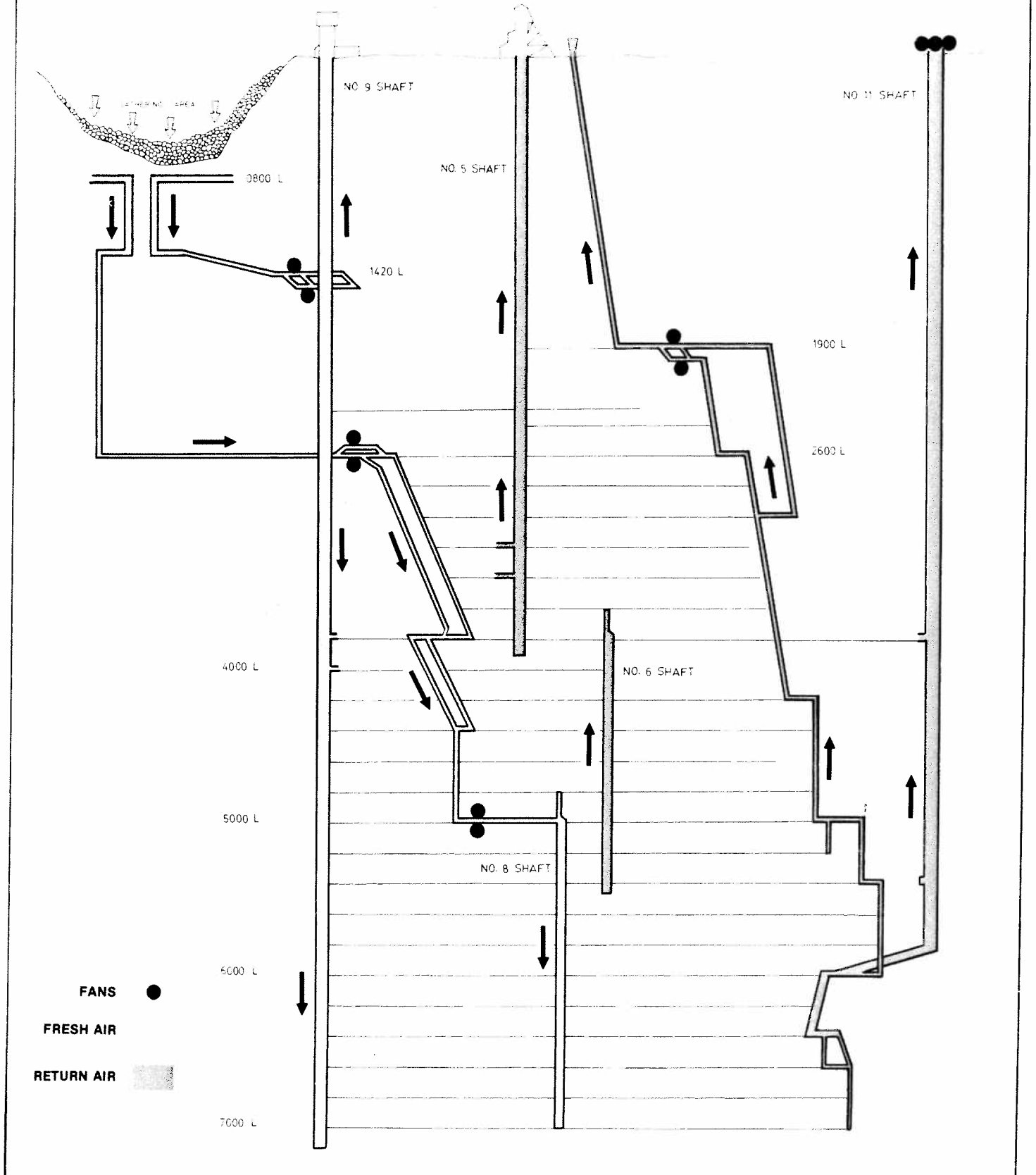
This mass of broken rock acts as a heat exchanger, warming the intake air in winter and cooling the air during the summer. In winter, the precipitation causes ice formation in the broken rock mass. The ice is melted in the summer. The rock itself provides by far the larger heat exchanger effect. Ventilation controls at the ore pass millholes are used to regulate the flow of air to adjust the air temperature seasonally.

"By using this unique asset, we have avoided the capital investment and resulting energy costs of a



Ventilation assistant Mike Fahey monitors the operating pressure of the return air fans on 5,000 level.

CREIGHTON MINE VENTILATION SYSTEM



14,000 horsepower refrigeration plant," Graham says.

In the pit, the air flows down through the drawpoints, across the slusher drifts, into the ore passes and is collected on 800 level where it enters the main intake airway.

The air will be drawn down the main intake system by two sets of axial-flow fans. One set which is presently used as return air fans on 5,000 level will be situated at 1,420 level. The other set is operating on 2,600 level. The air circulates to all areas of the mine through a series of smaller airways.

The main return airway (number 11 shaft) extends from surface to 5,850 level where it connects via a transfer ramp to 6,000 level and then to the existing return air raise which extends to 7,000 level.

Return air from work places is exhausted through boreholes and raises to return air systems on the levels above. On surface at 11 shaft three exhaust fans, each 2,250 horsepower, will operate.

"Together these fans will have the capacity to exhaust approximately 1.4 million cubic feet of air per minute from the mine," says Harvey Parsons, Creighton's mine ventilation supervisor.

Work on the ventilation project commenced in 1977. The overall project included the sinking of the all-important 11 shaft and lining it with concrete to secure its walls as well as provide a low resistance airway; the driving of an air intake drift on 800 level from the open pit intake to a new fresh air raise, the driving of the new fresh air raise from 800 level to 1,280 level; the driving of a ramp from the existing 1,280 level to 1,420 level; and breaking through the newly created 1,420 level into number 9 shaft at opposite sides of the shaft.

"The fans are positioned so as to provide equal air distribution at both sides of the shaft," Harvey says.

Other work included the spraying of concrete on the walls of the transfer drift which was driven from 5,850 level to 6,000 level. Also, buildups of ice at the ice fields were melted while controls and bulkheads were installed to regulate the amount of air entering 9 shaft.

Refrigeration required to maintain reasonable environmental conditions

at Creighton was first considered some 30 years ago but use of and improvements to the broken rock area as a heat exchange medium has provided a means to improve environmental conditions over the years.

By increasing air quantities and expanding the heat exchange area, it is expected that major refrigeration will not be required for quite some time.

Bob Coulter, a planner in Creighton's engineering department, left, and Harvey Parsons, Creighton's ventilation supervisor, go over plans for the ventilation project at 11 shaft. In right background is one of the three concrete piers currently being constructed to support the large exhaust fans.



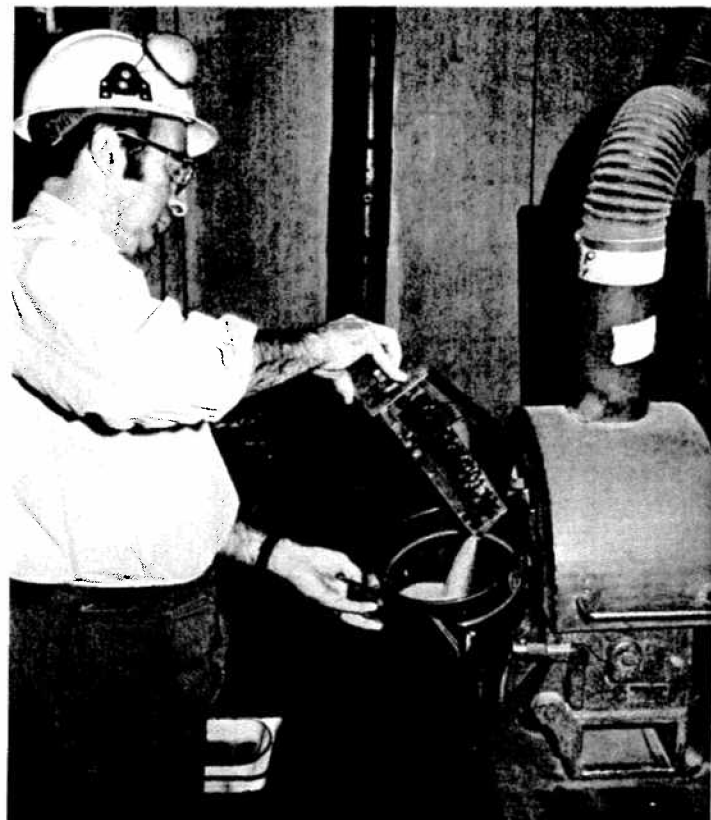
AROUND THE PORT

news and views from the Port Colborne nickel refinery



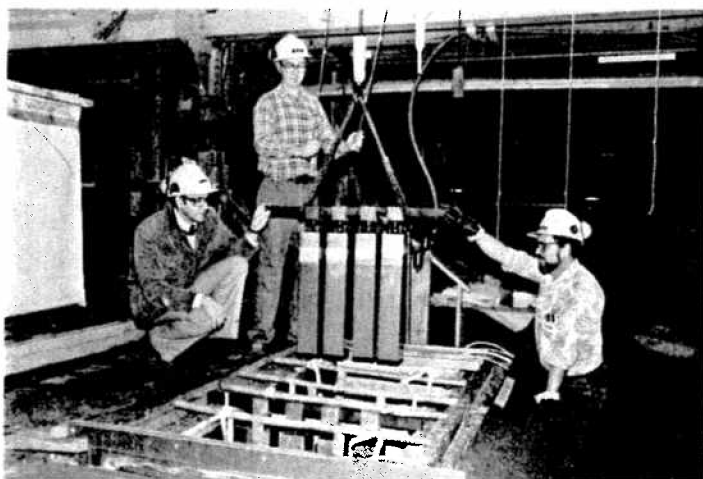
ACADEMIC UPGRADING FOR P.C.N.R. EMPLOYEES

As a result of recommendations made by the joint training committee, academic upgrading is being made available to employees, through local schools. In the photo, **Cal Peyton**, right, counsels **Paul Dion** and **Bill Zivcic** on what courses may help them in achieving their goals. The program was set up to allow the students to go at their own pace and teachers are available at all times to help them with difficulties, as there are no regular class hours. Twenty employees from the Port Colborne nickel refinery are taking part in the program at present and it seems to be growing in popularity.



QUALITY CONTROL AT THE P.C.N.R.

Quality control is an important function in the production of the varied products at the Port Colborne nickel refinery. Samples are taken of raw materials coming into the plant, at several stages during the refining process and of finished products before delivery to customers. These are then analyzed to ensure that a very high standard of chemical purity is met. Above, **Gilbert Brazeau**, pulverizes a sample to ensure uniform consistency before being sent to the general laboratory. Below, **Frank Pelschl** and **Doug Hanham**, use the plasma arc analyzer to determine if a sample meets high chemical purity specifications set by the company.



NICKEL PLATING COOLING FINGERS FOR INDONESIA

Copper cooling fingers for the furnace in Inco's Indonesian facility were recently nickel plated by process technology department staff at the Port Colborne nickel refinery. The fingers are incorporated in the walls of the furnace and cool the slag near the edges of the furnace to prevent the refractory brick from being consumed. In the photo, **Dr. Ed Jones**, assistant superintendent of the process technology department looks on while **John Davies** and **Maurice Jacques** pull a set of the fingers from the plating tank.



Largest Turnout Ever

The nippy temperatures didn't deter a record number of people from visiting Inco's 8th annual Christmas greenhouse display at School Lane in Copper Cliff from Dec. 4 to Jan. 3.

A total of 13,799 people visited a warm paradise of temperate and tropical plants, including azaleas, cyclamens, Christmas peppers and

cherries, lemon, banana and orange trees, and of course, the ever popular flowering poinsettias in pink, red and white.

The sights of water fountains flowing into small ponds and the soft sounds of birds chirping also added to the tranquil setting. It all made you feel that you never wanted to leave.

The Inco greenhouse received close to 3,900 more visitors this year than last year during this period according to Alex Gray, Inco's gardener. "The Christmas greenhouse display was very successful," he commented. "We had a good response from the general public."



It was a record year for the amount of money tossed into the water fountains and ponds during the Christmas greenhouse display. The coins, once collected and counted, amounted to \$482.04, and were donated to the Salvation Army. Here the greenhouse hostesses, from left; Pierrette Martin, Holly Dopson, Danielle Brunet, Melissa LeBorgne, Hannah Moors, Nina Naumenko and Carolyn Ludgate present Major Richard Park of the Salvation Army with the many bags of coins.

King Miner

When 39 competitors participated in the King Miner Contest in Thompson this past July there was a lone representative from Ontario. None other than a 33 year old from

Inco's Copper Cliff South mine, Roger Lamoureux, a wiry 5'5" 150 pound stope leader.

Roger, taking part in his first national King Miner Contest, placed a

very respectable fourth, serving notice to perennial Thompson champ, Lorne Spicer, that he would be a force to reckon with in the future.

Local 6500 sponsored Roger's trip to Thompson, basing the selection on his excellent showings in miners' contests held by the Steelworkers at previous Labour Day picnics. Roger welcomed the thought of competing against some of the best miners in the country. "I liked the idea," says the soft spoken miner. "I like comparing myself to miners up there. I wanted to see how much better they were."

The King Miner's contest consisted of 11 events all designed to test a person's abilities in performing both traditional and modern mining tasks. The events were stoper drilling, log sawing, jackleg drilling, nail driving, steel packing, ladder climbing, hand mucking, crib building, slusher operating, scooptram operating and mucking machine operating. The last



Roger is pictured doing what he does best at Copper Cliff south mine, operating a jack leg in a stope.

three events counted in the team competition only, not the overall individual award. First prize in each event was \$100.

Roger took a first in jackleg drilling, seconds in ladder climbing and hand mucking and "a few fourths." He finished fourth overall, something he is pleased with, especially after doing poorly in the first two events "mostly because I didn't know what to expect."

How did his fellow employees react to his showing in Thompson? Roger replies: "A lot of them tease me that I met my match. Most of them were really surprised that I did that good.

And some were surprised that I couldn't do any better."

His only preparation for the contest was doing "a few push ups and things like that." Inexperience with this kind of competition and nerves prevented him from placing higher in the standings than he did. "There were a few things I missed because it was my first time," Roger states.

"The right thing would be to go there one day early and check everything out and prepare mentally for it," Roger thinks.

Roger is complimentary of how well the contest was organized and how it enhances the public's image

of miners. Spectators see more than "the dirty old miner". They see individuals combining strength and intelligence to complete a job in the safest, most efficient way possible. It gives them a glimpse at a most challenging career and the different breed of men it beckons.

Now that he has competed in the King Miner Contest, Roger feels confident of his chances next year. He acknowledges that reigning champion Lorne Spicer is "a big man in good shape" who is a worthy King Miner. Roger is taking dead aim on the title and vows "I'll get him next year."

To sleep, perchance to dream. Roger Lamoureux caught a couple of invigorating winks between the hand mucking and crib building competitions at the King Miner Contest in Thompson earlier this summer.



Apprentices Graduate

Thousands of hours of training came to a happy conclusion recently for 59 employees who successfully completed Inco's trade apprenticeship programs.

To mark the occasion, the

employees were invited to attend a dinner in their honor at the Copper Cliff Club. There each graduate received an Inco apprenticeship certificate along with a congratulatory handshake from John MacDougall,

vice-president of engineering and maintenance services.

Inco offers 17 trade apprenticeship programs which vary in length from two to four years. "The program gives the employee the opportunity to learn a trade, to become a qualified tradesman," explains Alex Skelley, apprentice training co-ordinator from training and development.

The number of people required for a trade is based on attrition figures supplied by central maintenance. An employee interested in taking an apprenticeship program must complete an application form available in the industrial relations department in his work area. He then must take trade oriented aptitude tests which are graded by training and development personnel. "The results of the tests determine whether the candidate has specific aptitudes for that trade," Alex says.

Each program provides the apprenticeship trainee with on-the-job and in-school training. The majority of the training is done on the job, providing the trainee with invaluable hands-on experience. "The trainee learns his skills not only from the foreman but also from other tradesmen," Alex adds.

The foreman assesses the trainee on a quarterly basis each year and submits his evaluation to training and



Garage mechanic Gary Moratz repairs components in a scooptram engine.

development. "We look over these assessments to see how the trainee is progressing and if he is fulfilling his obligations to attend work and school," Alex says.

The remaining time is devoted to in-school training which is conducted by qualified instructors within the company or at various educational institutions in the Sudbury area. In school, the trainee learns the theoretical aspects of the trade through the use of modules and textbooks. It also involves frequent tests.

The instructor assesses the trainee's performance and submits the results to training and development. "We rely greatly on the instructor's and foreman's assessments," Alex commented. "Should the instructor or foreman feel that the trainee requires additional time to complete a section

of the program, we can make arrangements to accommodate them."

Upon graduation, the employees either stay at the plant or mine site where they finished their apprenticeship or transfer to another location where they are needed.

Graduate Don Vienneau, a machinist second class at the divisional shops complex, began the four year machinist program at the Creighton machine shop and finished the program at the divisional shops complex.

Although Don found the program long, it was still enjoyable. "The work is very challenging and you're always learning," he says. "The hands-on training is the only way to learn as far as I'm concerned. The instructors made the program the success it was. They gave everything they had to the program."

Allan Walker, a graduate of the four year electrician apprenticeship program, agrees. "The instructors really knew their stuff and were more than willing to help," he says. Allan does feel, however, that more program time should be devoted to hands-on training.

Like Don, Allan began his apprenticeship at Creighton. He worked underground at nine shaft, then went to the smelter where he's been since. "I've had an interest in the electrician trade since high school. When the opportunity came to take an electrician apprenticeship program at Inco, I took it. I wanted a trade and now I have one."

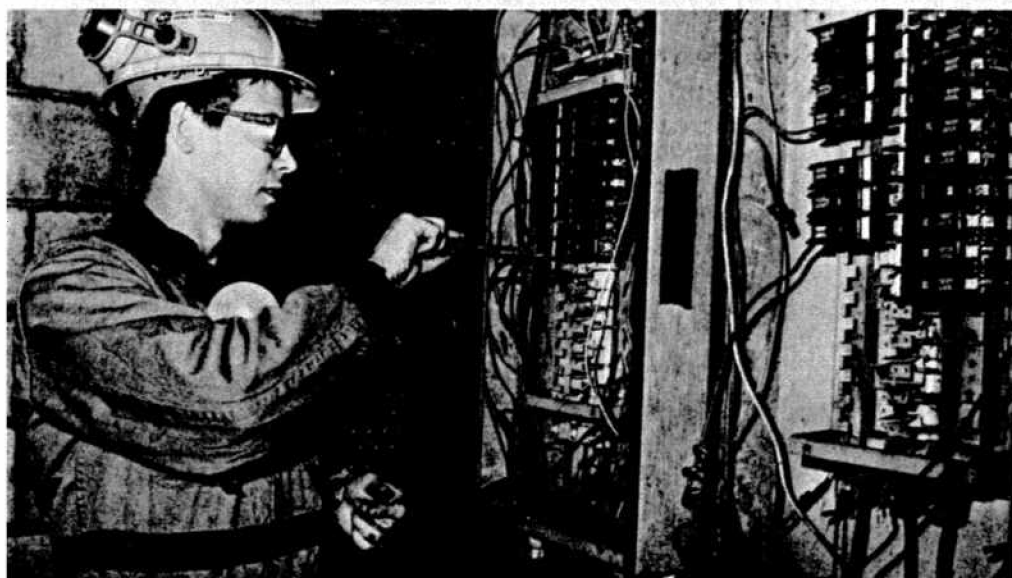
Similar sentiments came from Larry Tessier, a graduate of the two year instrument man apprenticeship program. Larry began his career underground at Creighton. "When you've been at the end of a shovel for



From left; graduates Allan Walker, Larry Tessier, Gary Moratz, vice-president John MacDougall and graduate Claude Mailloux look over an Inco apprenticeship certificate at the dinner given in the graduates' honor.



Machinist Don Vienneau programs a digital readout machine which properly positions a horizontal boring mill.



Electrician Allan Walker hooks up new lighting circuits at the smelter.



some time and the opportunity comes to improve yourself, you take it," Larry says. "I found the program demanding. It kept me busy at work and at home but I enjoyed it. There was the challenge of learning new approaches, new techniques and trying to solve instrument problems by going through them systematically."

The classroom and on-the-job training are equally important Larry feels. "Virtually everything I have learned in class has come in handy on the job. I don't think you can have one without the other."

Gary Moratz, a graduate of the three year garage mechanic apprenticeship program, now working at Copper Cliff South mine, also believes in the importance of both in-class and on-the-job training. "If a question comes up in class, you can see the answer on the job," he says.

Gary began his apprenticeship at South mine, moved on to the component repair centre at the divisional shops complex, then returned to South mine where he completed his apprenticeship.

He found all those with whom he worked very helpful. "Often the mechanics and foremen would ask me what I wanted to work on. I had a variety of work to do which made the job all the more interesting. I also gained a lot of valuable experience."

Gary has long enjoyed "tinkering with cars." When he took a mechanics course at night school some years ago his interest grew even more.

When the mechanics apprenticeship program was offered, Gary was busy filling out an application. "It's a great opportunity to better yourself and your career," he says. "Having schooling and a job at the same time — you just can't beat that."

Instrumentman Larry Tessier makes repairs to a section of the control panel in the control room at the Clarabelle mill.



Family Album

Family Album Photos

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

Camping has long been a love of the Lionel Carriere family. Lionel, who is a service man at Levack mine, his wife Marie-Jeanne, their children from left: Gaston, Estelle, Clement, Constance and Bob, have been camping for some 20 years during their summer vacations. They head out with their camping gear to wilderness parks in Canada and the U.S. where they enjoy fishing, canoeing and just roughing it. Skidooring and snowshoeing is also a family affair in the winter months.



From the Port Colborne nickel refinery is the Ed Madsen family. Ed is a chemist in the process technology department and has been with the company for 29 years. His pastimes include gardening, woodworking and officiating minor soccer games. Wife, Jessie, works part-time as a floral designer and occupies her spare time with sewing, embroidery and home decoration. Son, Carl, is a high school mathematics and English teacher. Daughter, Elizabeth, is taking nursing at McMaster University.



Strike up the band! The Charles Kennedy family band, that is. Charles, a mine foreman in the training department at Creighton three shaft, his wife Leona, nine year old twin sons Lee, left, and Howard, are members of the Sudbury and District Pipe Band. The boys play tenor drums while Leona and Charles play the bagpipes. Leona is also instructor with the band. Charles is pipe major and band president. He's been with the band since 1954.

Mines Research



Len Kitchener, mines equipment supervisor, left, discusses the use of certain types of mining equipment underground with Claudio Barsotti, manager of mines research.

Helping our mine operators maintain their position of technical leadership rests in the hands of the mines research department. Innovation has kept Inco in the vanguard of the mining industry over the last few decades.

"Research into new and better ways to mine is not new to this company," says Claudio Barsotti, manager of mines research. "In fact, over the years, we have either originated or pioneered many major innovations such as undercut and fill, mechanized cut and fill, large diameter blastholes, vertical retreat mining and raise boring which have been adopted with great success throughout the mining world."

He points out that as significant as these developments may have been, research must continue at an accelerated pace in order for the company to stay in the fore of the mining industry.

Established in August of 1980, the mines research department consists of 29 employees headquartered in the mines research offices located in the Copper Cliff Clinic building.

The department has two goals. "They are," Claudio explains, "to improve mines' safety and productivity by technical means and to carry out a number of support and research activities previously done by mines engineering."



One part of the mines research department is the rock mechanics team. Here, Mike Malkoski, a mines research technician, reads a tape extensometer to measure drift closure at the 4,000 foot level of Garson mine.

Several teams have been organized within the department, each performing both a service and a research function in specific areas of mining. These areas are blasting, rock mechanics, sandfill, drilling, mining equipment and conceptual.

According to Claudio, the service aspect of the mines research department in the area of blasting includes vibration monitoring and blast evaluation. They also assist in planning underground blasting layouts. The research side of their duties finds them testing new products and evaluating the effectiveness of different blasting techniques in a special test stope.

The rock mechanics team concerns itself with ground control and underground monitoring when providing service to the company's mines. The research projects with which it is involved at several mine sites include the evaluation of a microseismic source location system to locate rock noises at Creighton mine and the development of a numerical modelling technique for mine design at South mine.

The vast quantities of sand, cement and water used in sandfill operations occupies the attentions of another team of individuals. As well as providing advice on the operation of sand plants, the sandfill crew tests different fill materials at the Murray Mine test centre. One important area of research it is investigating is the use of different types of slag in sandfill operations.

The drilling section, adds Claudio, supplies technical expertise for diamond drilling and raise boring. This includes looking after the movement of personnel and machinery and the maintenance of equipment. New types of drills are developed and tested by this group. A new in-the-hole drill that has been in use for over a year at Stobie mine was designed by the drilling section.

The electric scoop tram and the remote control scoop tram are products of the type of research undertaken by the mining equipment people. Their service function is selecting and coordinating the purchase of new equipment and the materials that go with it.

The conceptual group under the direction of senior advisers is dedicated exclusively to research. It interacts with and provides impetus for the other groups in the search and development of safer and more cost

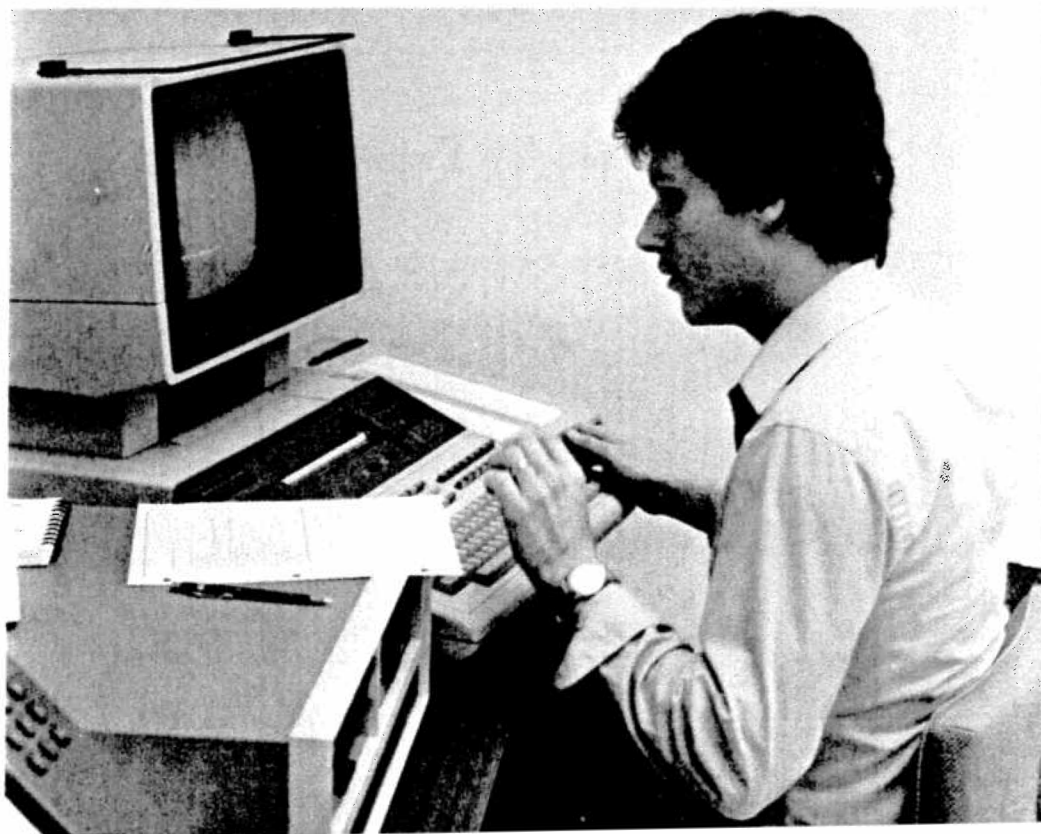
effective methods and systems for mining operations.

Among other things, the conceptual group consults with senior management and fellow research personnel to identify those activities that require evaluation and improvement at company mines throughout the district.

Together these teams will provide insights that will point the way to safer, more productive mines. Future editions of the Triangle will explore each section in greater depth.

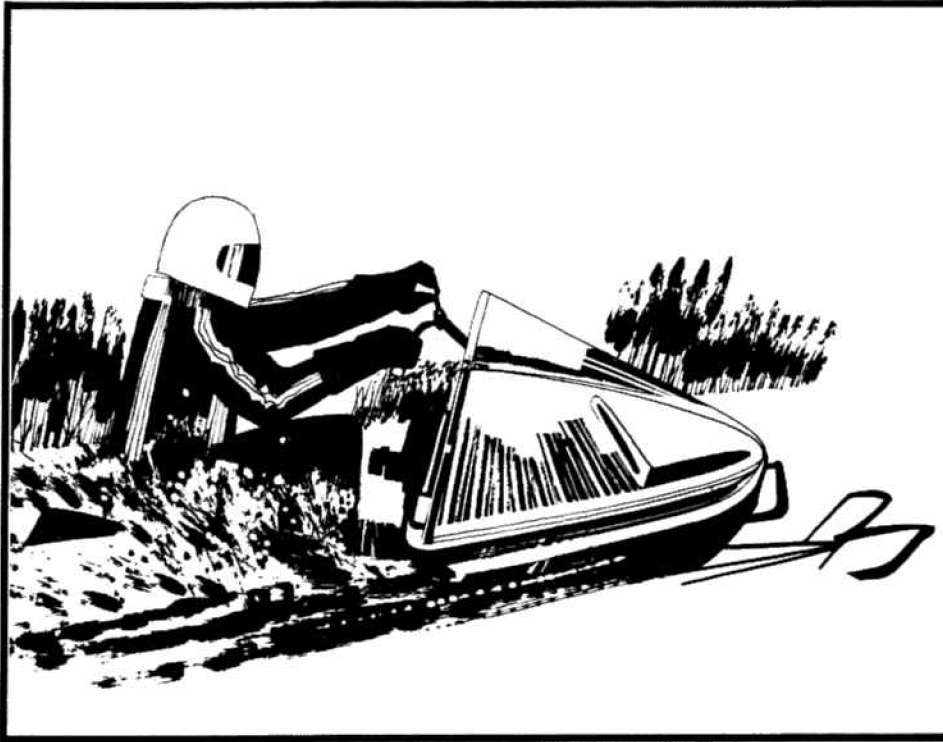


Poring over a layout of a mine are Richard Beauchamp, left, and Rick Godin, both research engineers, mine methods.



Rick Ross, a mines research assistant, programs a computer used at the mines research office in Copper Cliff.

Snowmobile Safety



Snowmobiling has developed into a way of life for many Canadians in recent years. It is not only a very healthy and enjoyable sport, but in some cases, a necessity in emergency situations and in remote areas.

Snowmobiling, however, may also be a very dangerous hobby. Every year in Ontario accidents claim lives and hundreds of people are injured, many of them permanently.

Last winter's statistics, released by the Ministry of Transportation, speak for themselves. Of the 575 official reports of snowmobile accident 353 people suffered injuries, and 23 deaths occurred. These figures do not

include injuries to pedestrians or accidents involving drownings in lakes and rivers.

Contrary to popular belief, the majority of accidents last winter did not happen on or near a roadway, but in open spaces during daylight hours, and more often than not, on the weekends. A significant number of the drivers and their passengers were found to be impaired at the time of the accident. Most were under the age of 25.

Sudbury area snowmobile associations have long been aware of the dangers of the sport. For years association members have endeavored to reduce the number of

fatalities and inform the public about a safer method of enjoying themselves.

"Forgetting to be safety-conscious is the prime reason for accidents," says Elmer Heikkila president of the Broder-Dill Snowmobilers Association and Copper Cliff mill employee. Most often accidents occur when the driver is unfamiliar with his machine, disregards the provincial laws governing the use of snowmobiles or deliberately places his life in danger by not wearing a helmet or drinking while he drives.

"Snowmobile associations," says Elmer, "have been formed in the Sudbury area to promote safety on the trails. Together with the Ministry of Transportation, association members spend much of their free time instructing novice snowmobilers in the proper care of their machine, operating techniques and sensible tips for survival in the wilderness."

"Safety and enjoyment of the sport is the main aim of any association," says Elmer. "Members of all associations can take advantage of well-groomed trails which are away from traffic and open water. Using these types of trails properly is bound to reduce the number of accidents and make the sport that much more enjoyable."

"Snowmobiles," says Elmer, "are not toys. They are a motor-driven machine which, similar to a car, must be controlled at all times. Snowmobilers who recognize this fact have most of the safety battle won."

Newest Development In Analytical Chemistry

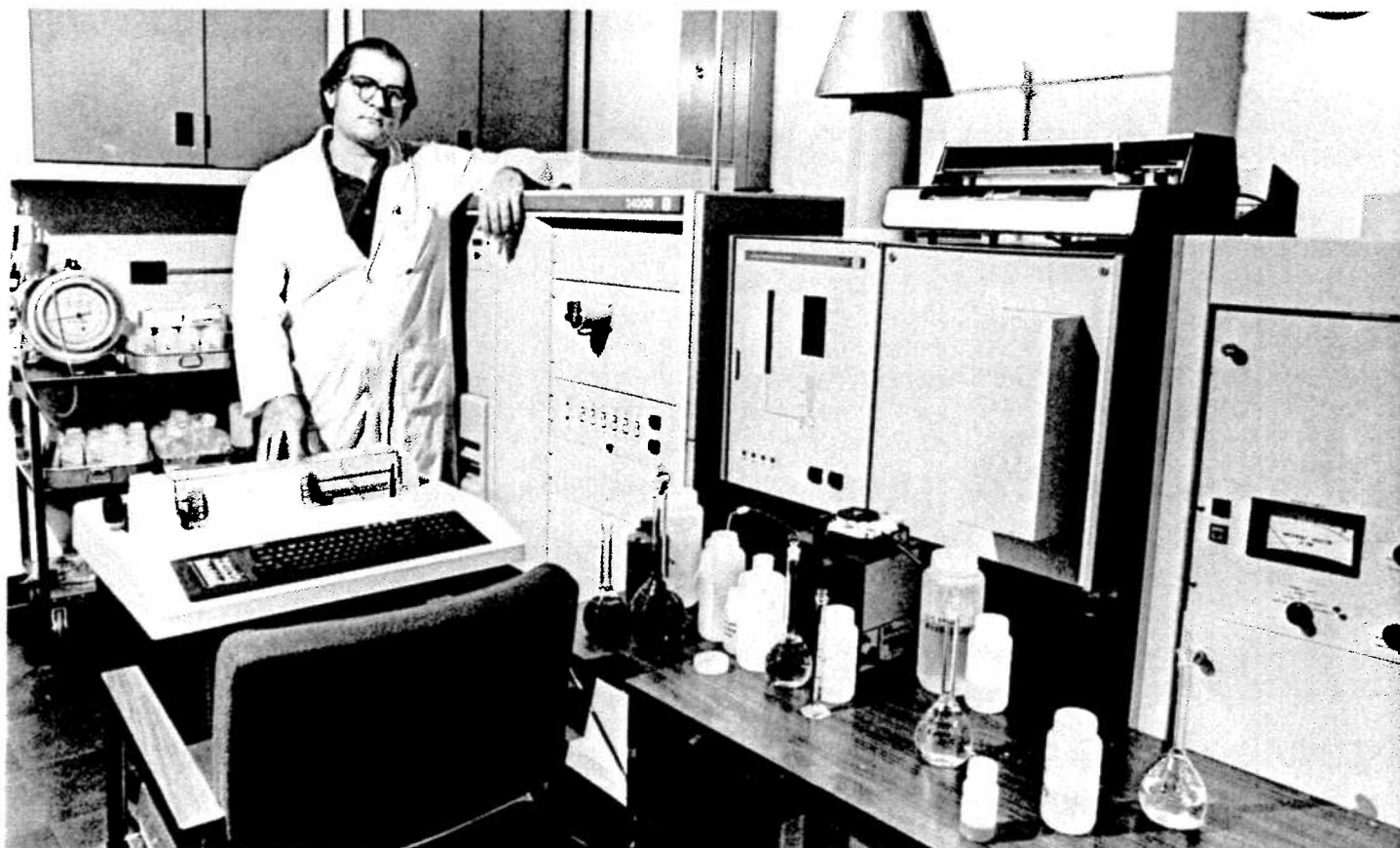
The Technical Services Laboratory, situated next door to the Copper Cliff general office, has experienced a rapid growth in requests for analysis from different areas of operation in the company. In order to meet the rising demands for analysis and to vastly improve the quality of assay service provided, a highly sophisticated element analyser called an Inductively Coupled Plasma spectrometer, or ICP for short, has been acquired.

The new instrument, purchased at

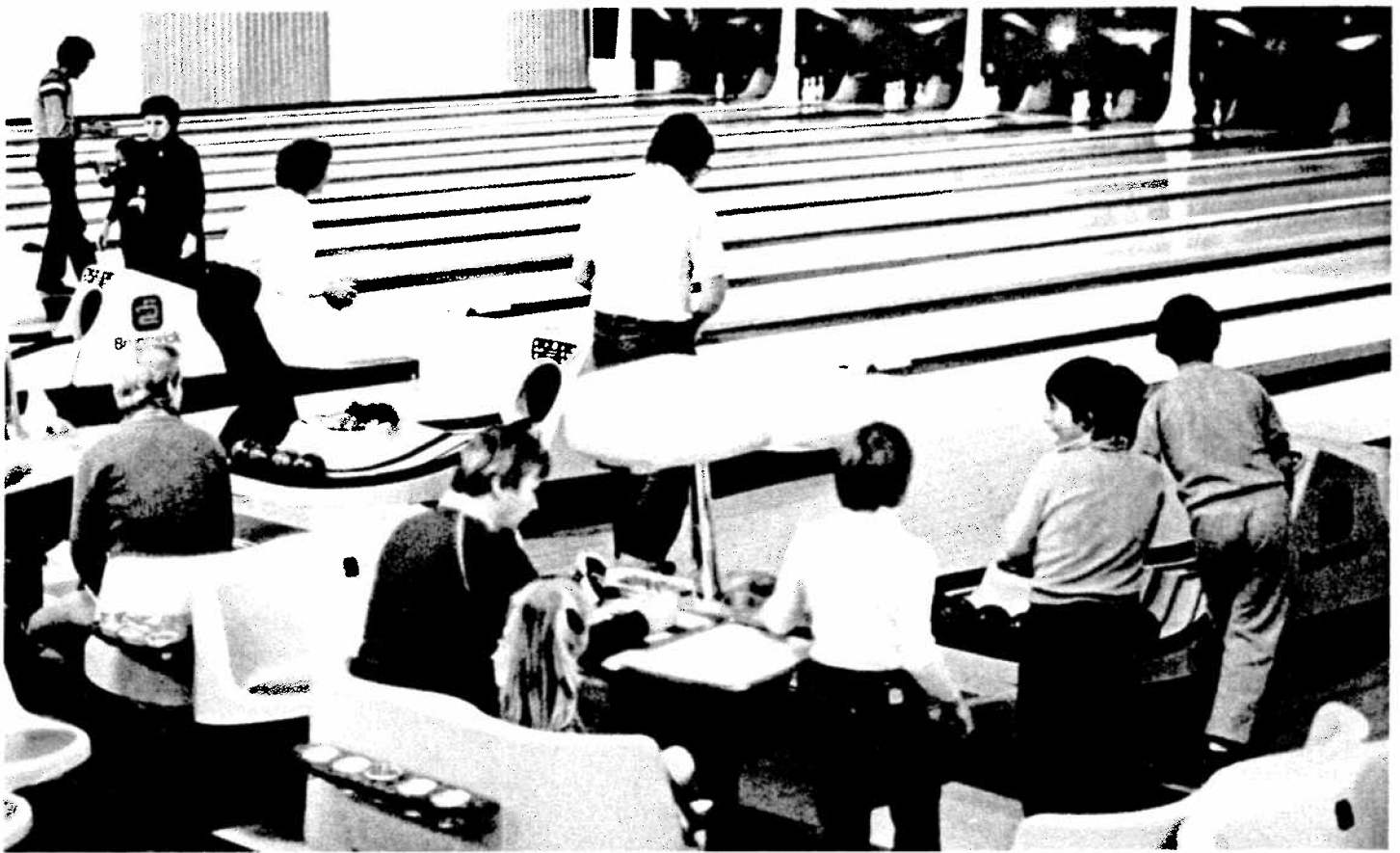
a cost of \$250,000, represents one of the newest developments in analytical chemistry. It is capable of analyzing up to 36 elements (such as copper, nickel, cobalt etc.), simultaneously in less than two minutes. The unit, which is under computer control, is expected to find wide application in the analysis of environmental water samples, occupational monitoring samples and various metallurgical products.

The ICP analyzes samples which are in liquid form. Many of the

samples brought into the laboratory are solids and must be put into solution, usually by dissolving with acids. The modern technology of the instrument then goes to work. The solution is sprayed into the ultra-high temperature (about 10,000 degrees Celcius) argon plasma. This causes all molecules to break down into individual atoms which at this temperature emit light that can be measured and used to determine the concentration of the various chemical elements in the solution.



Development chemist Rene Ethier operates the highly sophisticated element analyzer called an Inductively Coupled Plasma Spectrometer.



Bowling is not only a great social outlet, but also an ideal way of staying in shape physically.

Popular Pastime

A strike in baseball means, of course, missing the ball altogether. It could be disastrous, lead to a nervous reaction and perhaps the loss of the game. But for bowlers, a strike has just the opposite affect.

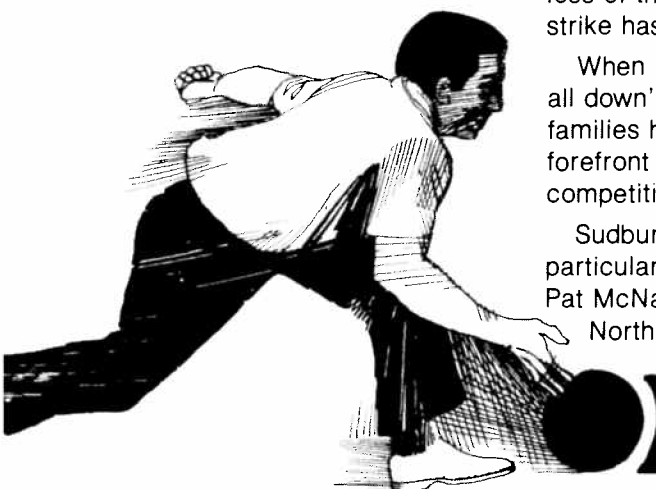
When it comes to 'knocking them all down' Inco employees and their families have long been at the forefront of Canadian bowling competition.

Sudbury bowlers have done particularly well in recent years, says Pat McNamara, president of the Northern Ontario Five Pin Bowlers

Association and operations supervisor at Inco's mineral dressing test centre.

"In 1979 our mixed team won the gold medal at the Canadian championships held in Victoria, British Columbia," says Pat. "I had the best tournament of my life then, bowling the highest average of all bowlers from across Canada — averaging 282."

The following year, Laura Mitchell, an office supervisor at the Copper Cliff nickel refinery, topped all qualifiers at the National Championships in Winnipeg. With an





Inco employees have long made up a large portion of the Sudbury area leagues. Here, hamming it up are; (from left) Don Burnside, Graham Squirell, Sandy Squirell and Pat McNamara.

average of 280, Laura qualified to represent Canada at the International Bowling Federation Championship in Manila, the Philippines.

Sudbury's ladies open teams have proved themselves by winning the Provincial Championships for the past three years. In addition, they brought home silver medals from the last two Canadian championships.

Their coach, Bill Mitchell, an electrician at Copper Cliff nickel refinery is said to be one of the best in the area. Under his leadership, the ladies were successful in winning a gold medal at the 1976 Ontario Winter Games in Kingston.

"Success, however, is not limited to grown-ups," says Pat. The Youth Bowling Council, operated by the Bowling Proprietors Association, has

a registration of over 3,000 in the Sudbury area alone.

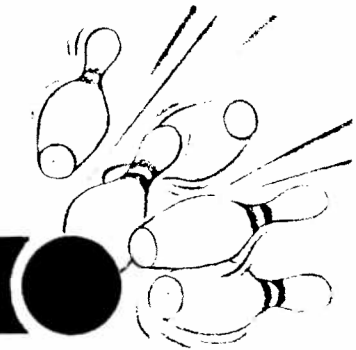
In 1976 a junior boys team bowled its way to the National Championships in Regina where they won a silver medal. The next year, a girls team placed fourth in Winnipeg.

A fairly new addition to area bowling is the Nickel District Bowler's Hall of Fame. To date, six fine bowlers have been inducted into the hall, including Inco pensioner Frank Gramolini, 'Red' Bruce, a warehouseman at Creighton mine and Gerry Brebant, an employee at Levack mine.

In addition to their fine showing local bowlers, through their association, have worked hard over the past few years to raise funds for Big Brothers in both the Sudbury and Elliot Lake areas. Through the Bowl

for Millions campaign held each February, over \$27,000 was raised in 1981. "This year," says Pat, "the goal is much higher. And in appreciation, the Big Brothers Association is sponsoring a Holiday Festival Tournament, with a trip for two to Florida as first prize."

"All in all," says Pat, "bowling is a great sport for people of all ages and abilities. And it is still relatively inexpensive compared to most other sports. It's a great way to meet and make friends — and of course, stay in good physical condition."



PEOPLE



Keypunch operators from left; **Trudy Hyde, Maxine Pope** and **Maureen Riutta** display some of the many goodies donated to the needy family.



At South mine, stope boss **Ray Courchesne**, left, and brother **Rolly**, a utility vehicle operator, make a donation to Santiago Garcia Gamez.

Family Album Photos

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

Foster child

Santiago Garcia Gamez has been living in the hearts and minds of the employees at Copper Cliff South mine since the spring of 1979.

It was at that time that the six year old boy from Honduras became South mine's foster child through the Foster Parents Plan of Canada.

Since then, the employees have pooled their resources to help improve Santiago's life in Honduras.

To date, they have collected approximately \$750 through individual and crew donations for Santiago. "Response has been good," says Elwood Wohlberg, South mine's geologist and chairman of the foster child committee.

Santiago and South mine correspond frequently. "We've received about 10 letters from Santiago so far," Elwood added. "He is pleased to receive our letters and gifts."

One letter from the child can attest to that. It concluded by saying: "I hope to hear from you soon. I close this with a million of hugs and caress."

Christmas giving

The computer services department made Christmas merrier for one needy family in the Sudbury district.

Members of the department donated money, dry goods, toys and clothes to a mother and her five children ranging in age from seven to 13. A few days before Christmas, some members of the department personally delivered the gifts to the family.

The some \$400 collected

was used to purchase additional dry goods, clothes and toys for the family.

The department has been involved in this type of Christmas project for some years now.

"1981 was the biggest year for donations in our department," says Maureen Riutta, a keypunch operator and one of the organizers of the Christmas project.

"Everyone in their own way pitched in to make this project a great success."



Members of Black Gold are, from left; **Bob Joseph, Doug Guay, Jean-Marc Collin, Gary Graham, Pat Lafond** and **Mike Pelland**.

Black Gold

"Please don't be a gutter ball!" With all that team spirit it must have been a strike for Pat Lafond, who, along with the supporters, are members of Black Gold, the first bowling team to represent the roaster department at the Iron Ore Recovery Plant.

The team plays weekly in a men's 12-team garage league which includes employees from mechanic-type businesses as well as Inco plants and mines. The league

is midway through a 33 week bowling season.

"It's good exercise and you meet a lot of nice people," says Jean-Marc Collin, captain of Black Gold and a roaster operator helper at the I.O.R.P.

The team is currently in fifth place and "that's pretty good considering the tough competition we have," Jean-Marc adds.

The captain says he isn't hung up about winning the championship. "It doesn't matter if we win or lose, it's the fun we have that counts."

PEOPLE



Noreen McQueen accepts the cheque to help pay for Natalie's wheelchair equipment from left; **Ray Ferguson**, former superintendent of Frood mine now superintendent of Stobie mine, committee members **Lionel Gervais**, **Armand Belanger** and **Mike Brisson**.

Frood support

Life for a young girl afflicted with cerebral palsy has been made a little easier as a result of a solid team effort by the employees of Frood mine.

Natalie Menard, daughter of Ron Menard, a rockhouse laborer at Frood mine, received a new electric

wheelchair and accessories through the local office of the Easter Seal Society, thanks to the money donated by the employees of Frood mine.

With support from management, Frood employees **Lionel Gervais**, **Armand Belanger** and **Mike Brisson** spearheaded the

project which raised \$2,280.12 to help pay for Natalie's wheelchair equipment.

Noreen McQueen, district nurse with the Easter Seal Society in Sudbury, has been involved with Natalie since 1975. When learning of the Frood employees' concern and willingness to assist financially with the purchase of expensive equipment, **Noreen** acted as co-ordinator in ordering the prescribed equipment at a discount through the Society's head office.



Natalie Menard in her new wheelchair.



Keith Calder, left, and **Curtis Clarke** have been awarded Inco Scholarships of \$780 each.

Halleybury scholars

Two second year students at the Haileybury School of Mines campus of Northern College were awarded Inco Scholarships of \$780 each for high academic standing in their final first year examinations.

The students are **Keith Calder** of Prince Albert, Ontario and **Curtis Clarke** of Iroquois Falls, Ontario.

RECENT STAFF APPOINTMENTS

Fern Albrechtas, safety foreman, safety, Stobie mine

Daniel Bizler, surveyor, mines engineering, Garson mine

Brian Brownson, production assistant, Iron Ore Recovery Plant

Thomas Callaghan, maintenance superintendent, Levack mine

George Canapini, senior cost analyst, division comptroller, Copper Cliff

Marc Dagenals, junior analyst, process technology, Copper Cliff

Roger Diamantini, senior process assistant, Copper Cliff matte processing

Thomas Donnelly, anode foreman, copper refinery

Barbara Fennessy, industrial relations assistant, employee relations, copper refinery

Hans Frommer, maintenance assistant, Frood-Stobie nine shaft

Everett Henderson, maintenance foreman, Copper Cliff South mine

Paul Holub, job analyst, employee relations, Copper Cliff

Esko Kalvalainen, estimator, engineering, Copper Cliff

Hilda Liechtl, senior process assistant, process technology, Copper Cliff

Nina Naumenko, leader 'B', agriculture, Copper Cliff

Daryl Park, instrumentman, mines exploration, Copper Cliff

Dominic Parrotta, surveyor, mines engineering, Creighton nine shaft

Nadine Principi, terminal operator, engineering, Copper Cliff

Thomas Prior, superintendent divisional shops, central maintenance

Robert Seawright, surveyor, mines engineering, Garson mine

Cameron Smith, survey party leader, mines engineering, Garson mine

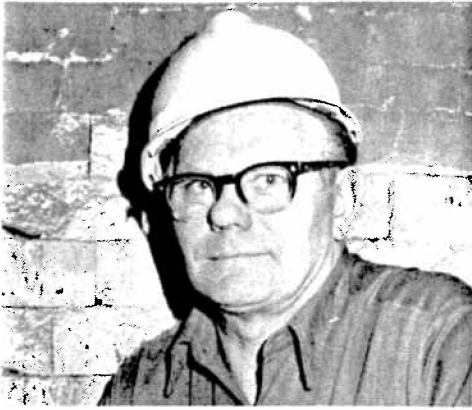
James Swain, instrumentman, mines exploration, Copper Cliff

Zarko Tesic, senior process assistant, Copper Cliff nickel refinery

Terry Van Kempen, planner, mines engineering, Copper Cliff South mine

Line Villeneuve, industrial relations assistant, employee relations, Frood mine

Steve Wood, planner, mines engineering, Stobie mine



Angelo Facchin
\$5,205



Ralph Clark
\$1,635



Mervin Gribbons
\$770

Suggestion plan awards

- \$5,205** Suggest a way the company can save energy and you may wind up with a fat suggestion plan cheque in your hip pocket. That's what **Angelo Facchin** of the **Copper Cliff nickel refinery** did and he topped this month's list with \$5,205 big ones. Until Angelo's brain wave, the nickel refinery was using two natural gas burners in its three ladle stands to preheat relined ladles. Why not use just one burner?, Angelo asked, knowing that it would provide sufficient heat. When the idea was implemented it was found to be a tremendous energy saver reducing the number of burners and the amount of natural gas used.
- \$1,625** The top award in **Port Colborne** this month went to **Ralph Clark** for his suggestion to use Resolite panels instead of Transite for roof monitors for sections between windows. A lighter material that is easier to handle and cut, Resolite minimizes breakage and waste and can be installed in 1/3 the time. In addition to labor and material savings, environmental improvements also resulted from the elimination of Transite panels.
- \$770** Finding that the wheels of the main aisle and casting building bridge crane wore excessively on one of the flanges, **Mervin Gribbons** of the **smelter** recommended that the wheels be rotated 180 degrees. Now the wheels wear on the opposite flange extending the life of the entire wheel. Savings are being made in labor and material costs and downtime has been cut.
- \$670** The problem at **Creighton** number seven shaft sand pit was that material in the 3,000 ton tailings storage tanks would settle and not slide down from the walls. Densities in the two tanks could not be controlled and they were left prone to 'rat holing' on the improper build-up of sand in the tank. **Steve Bilyj** redesigned the four spray jets used for mixing sand which, after a period of testing, proved capable of alleviating the aforementioned problems. Downtime is reduced, material is being saved and safety has been improved thanks to Steve's suggestion.
- \$655** **Bob Neville** of **Frood mine** noticed two 125 horsepower, 2,200 volt motor generators being used to provide battery charging power for different levels of three shaft. The number one generator was hooked into three levels, 1,000, 1,200, and 1,400. Only 1,200 level still requires the power. Bob proposed that the 1,200 level be switched to the number two generator which could easily handle the load from this and its own levels, 600 and 800. When this was done, number one was overhauled and used as a spare. Maintenance and operating costs have been cut and energy is being saved.
- \$445** Roof bolts that were brought up by the skip at Levack mine were being cut out, thrown into a steel box which, when full, was carried by a hoist to a truck that hauled it out to a disposal bin. A forklift dumped out the old bolts to complete the operation. **Louis Labelle** of **Levack mine** realized that substantial savings in labor would be made by installing a conveyor belt, once used in the rockhouse, to carry the bolts directly out to the bin.
- \$370** To alleviate a problem with the tensioning phase of the strapping head on the canning machine in the **FBR** shipping area, **James Mulligan** came up with the idea of installing a pressure regulator next to the air motor to control the tensioning cycle. The result has been



Steve Bilyj
\$670



Bob Neville
\$665



Louis Labelle
\$445

Due to the large number of suggestions awarded this month, only those suggestions of \$150 or more are listed below.

- economies in cans that previously were damaged and strapping formerly wasted through over-tensioning.
- \$350** Recently **Dennis Bean** of **South mine** offered the idea of implementing the data package system for the information and training of tradesmen in the company and he was awarded \$150. Since then the suggestion has been reviewed and Dennis has been awarded an additional \$350 for savings and improvements that have come to light.
- \$230** The cost of new camera equipment and related maintenance and energy costs were eliminated when **Richard Kirkland** and **Claude Genereux** of the **Frood-Stoble mill**, thought a wide angle lens could be put on the number seven shaft skip dump closed circuit TV in order to see a second take off point.
- \$185** **Ernest Gervais** of **Little Stoble mine** made the suggestion plan list by recommending that reuseable flanges be removed from discarded underground water pipes and welded onto new pipes about to be installed. This resulted in savings in materials.
- \$180** The 20 parting plant cells in the silver building at the **Copper Cliff copper refinery** have both an inside and an outside cloth, the former held onto bolts, the latter held in place by clips. **Conrad Laferriere** had the idea of dispensing with the clips by making holes in the outside cloth and fastening it to the same bolts used to secure the inside cloth.
- \$175** Rather than assemble wheel chocks for ST4, 5 and 8 scooptrams by hand, **Conrad Potvin** of **divisional shops** suggested the labor saving method of tacking them together in a jig.
- \$150** **Roy Manning** of **central utilities** noticed that if a skid unit fails to depressurize in time it overlaps into the testing cycle venting whatever pressure is left into the skid out valve. His solution to this problem was to use auxiliary contacts to shut off the main timer motor so it would not advance until the depressurizing cycle was completed.
- \$150** **Louis Prete** of the **Copper Cliff smelter** suggested a spot at which to locate heat temperature cameras for the converters that would be a "true position" and save technicians the trouble of constantly having to adjust the cameras.
- \$150** A retired employee at **Creighton mine**, **Steve Walch**, earned some cash for his idea of putting brass bushings on the rollaway skip door to prevent deterioration to the constant friction.
- \$150** **Lyle Perry** of **Copper Cliff mill** won with his proposal of a method to prevent feed from building up in the stand pipe.
- \$150** A modification to the tracks on Atlas Copco down-the-hole drills that extended the life of the tracks was suggested by **Ronny Tranchemontagne** of **McCreedy West**.
- \$150** Another **McCreedy West** employee, **Jim Sullivan**, correctly foresaw savings in labor when he offered the idea of using a hopper with a control valve to add separan to sandfill rather than the old method of being poured periodically out of an eight ounce can.



Winter World

Nature under the spell of winter is a world of splendid solitude and stark beauty that is accessible to individuals in Ontario's provincial parks.

There are four parks near Sudbury that are open for your enjoyment throughout the winter: Killarney, south of the city off of Highway 69, Fairbanks, 56 kilometers west off of Highway 17, Windy Lake, 40 minutes north on Highway 144, and Halfway, an hour north on Highway 144.

Cross country skiers, whether they like striding along groomed trails or breaking their own way through the wilderness, have the best of both worlds in district parks. Windy Lake Provincial Park offers 23 kilometers of groomed trails that include short

loops through gently rolling terrain or longer more challenging courses. Facilities provided include a ploughed parking area and vault toilets.

More adventurous souls can don their heavy touring skis or snowshoes and explore the remotest parts of the other three parks which do not have groomed trails. Killarney with its lakes, forests and ancient quartzite mountains presents hikers with a spectacular winter wilderness. The unspoiled beauty and panoramic vistas of Halfway await the photographer and the artist.

Trails maintained by the Onaping Falls Snowmobile Club at Windy Lake are open to all snowmobilers. With no groomed trails in the other three

parks, snowmobile addicts can organize their own day-long treks punctuated, perhaps, by a winter cook-out with friends.

However you get onto the lakes of these provincial parks, whether it be by snowshoe, snowmobile or cross country skis, some excellent ice fishing awaits. Fishermen can, with a bit of luck, look forward to good catches of pike, lake trout, perch, whitefish or pickerel. A summary of ice fishing regulations can be obtained from the Ministry of Natural Resources.

Experience the natural wonders of Ontario's provincial parks this winter. Next autumn you may actually be itching for the snow to fall.