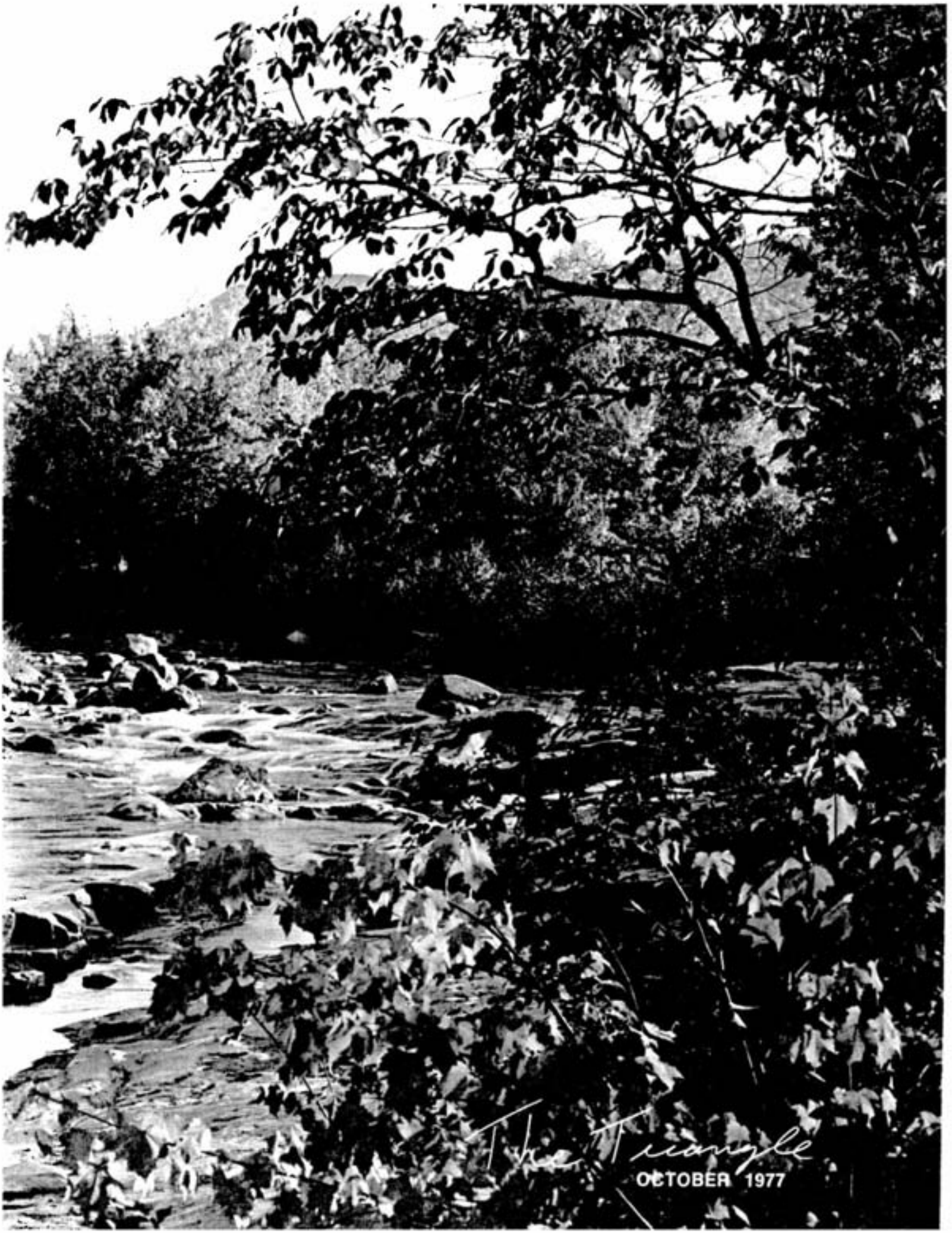
The Triangle
OCTOBER 1977

The Triangle

Editor,
Rudolph Kneer

ON THE COVER . . .

At this time of year, the Northern Ontario countryside is ablaze with color. The leaves of the deciduous trees turn almost every color of the rainbow, from yellow to bright orange and red. Interspersed, among them, are the vivid greens of the stately spruce and pines. This picturesque scene captures the autumn splendor of Canada's breath-taking Northland.

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While in Sudbury to address the Northern Ontario Medical Association, Ontario Liberal leader Dr. Stuart Smith took time out from his busy schedule to take in an orientation tour of Inco's Clarabelle mill and the Copper Cliff smelter complex. Above, a computer assay printout which indicates the amount of nickel being extracted from the feed, comes under the observant eyes of Harry Tompkins, left, public affairs director, Ontario Division, Inco Metals Company; Tom Parris, Ontario Division vice-president, mining and milling; Dr. Stuart Smith; and Ron Taylor, Ontario Division president.

Charlie Hews, left, Ontario Division vice-president, Inco Metals Company, recently presented Dr. Henry Best, president of Laurentian University, with a cheque for $60,000 as part of Inco's pledge in support of the University's School of Engineering, and to express the company's belief that the joint efforts of the university and the mining industry will result in one of the most progressive schools of mining engineering and mineral processing engineering in North America. The present enrolment of 120 students in the School of Engineering constitutes an increase of 54 percent over the enrolment for the year 1976-77. This is beyond the projections for enrolment in each of the three years of the School of Engineering for the year 1977-78.

Inco Directors Meet in Copper Cliff

Members of the Board of Directors and the Advisory Committee of Inco Limited recently met in Copper Cliff for their regular monthly meeting.

Following a board meeting and a luncheon at the Copper Cliff Club, the distinguished group, along with officers of Inco Limited, Inco Metals Company and ESB Incorporated, took in an extensive tour of the Copper Cliff Nickel Refinery, followed by a visit to Laurentian University.

Also on the agenda for the day was a trip to the tailings area, and a comprehensive tour of the Copper Cliff smelter and the new Canadian Allpys Division Rolling Mill of Inco Limited's Formed Metal Products Group.

J. Edwin Carter, centre, Chairman and Chief Executive Officer of Inco Limited, in conversation with Ron Taylor, left, Ontario Division President, and John McCreedy, Chairman and Chief Executive Officer, Inco Metals Company.

At the Copper Cliff Nickel Refinery, Brian Pearson, centre, explains an item of interest to, from left, Charles Baird, President of Inco Limited, and directors Wm. Ward Foshay and G. Arnold Hart.

Allan Bale, centre, points out the workings of a top-blown rotary converter at the Nickel Refinery to, from left, directors David Barr, William Steven, Samuel H. Woolley and Reva Gerstein.

Also at the Copper Cliff Nickel Refinery, Weldon Thoburn answers questions for, from left, advisory committee member Norris R. Crump, director Peter D. Curry, Inco Limited vice-president Harold Hendershot and Frederick J. Port, Chairman of the Board and President of ESB Incorporated.

Taking in a view from the Library Tower of Laurentian University are, from left, director G. Arnold Hart, Ron Taylor, Ontario Division President, and directors Kenneth A. DeLonge and Ashby McC. Sutherland and L. Edward Grubb, a member of the Advisory Committee.

Before any hunt, proper preparation of firearms is an absolute must. Inspecting and cleaning their rifles are Jim Wasitis, second-class welder at the Copper Cliff smelter's roaster building and son Sid, with the smelter's training centre.

Hunting—Safety and Good Manners

The sport of hunting ranks as one of Ontario's leading recreational pursuits, in which the enjoyment comes more from the appreciation of nature and the satisfaction of skilfully handling firearms than from getting a full bag.

Each year, some 24,000 new hunters respond to the call of the hunt, and the number of resident hunters is well above half a million. With so many sportsmen afield, and with some areas so crowded, the risk of hunting accidents cannot, and must not, be ignored.

Much depends on safety awareness and good common sense.

Do remember that you're not allowed to hunt without a licence, and you must keep it on your person at all times when hunting. And when applying for your first hunting licence, your safety techniques will certainly be put to the test; in fact, every new hunter under 20 years of age must take a course in safe hunting and pass the required examination. Veteran hunters are well advised to brush up on current regulations regarding the use of firearms and the proper, basic knowledge required in the field.

The safest rifle for an inexperienced shooter is a bolt action, preferably a single shot, because it's relatively easy to see at a glance if the action is open and unloaded. A single shot, of course, provides only one cartridge at a time to check or clear.

Remember too that when crushed or struck with hammer or stone, your ammunition can burst when it goes off, and bits of metal from the primer or case can cause serious injury.

In all situations, a good sportsman is a hunter who has a high code of moral ethics. That means that, when armed with a shotgun, you don't shoot sitting grouse or duck on the water. You refuse to take a shot at a duck or goose before it's within range. You don't shoot at a pheasant when the bird is in the angle of fire of your hunting partner, nor would you claim game that you didn't shoot. You always check if you've made a clean miss or wounded your game; you accept the responsibility for all your actions, even your mistakes. And you don't measure your hunting success by the amount of game you bag; rather, you look for and enjoy the intangible values of relaxation, fresh air, new knowledge, the beauty of nature, and good companions who can complement any hunting trip.

Whatever the language . . .

Pat MacDonald gets the message across

"Well, one thing's for sure, you won't find me sitting around the house, talking on the phone for hours," claims Pat MacDonald, administrative switchboard operator at the Copper Cliff general office.

And small wonder, for a regular day at the office can involve Pat in business exchanges with Guatalahara, Mexico, in-depth conversations with Guatemala, Indonesia, clearing calls to Munich, Germany, and brainstorming telephone operators in the land down under.

"Sometimes I have trouble communicating with people in Guatemala," Pat admits, "so we just keep repeating ourselves until the message comes through. When things get rough in another language, I call Marina Abar from our customs department; she's pretty good in French and German."

"I really enjoy my job," says Pat. "It can be a lot of fun, once you get to know the different people. But you've always got to watch what you say. Just when you think you know everyone's voice, you can say the right thing to the wrong person, or the wrong thing to the right person, and first thing you know, you've got troubles!"

Pat started with Inco as a mail girl in 1952, and worked in the pay office and stencil room before obtaining her present position. She figures that her greatest asset is her memory. "A good memory is probably the most important qualification needed to do this job well," Pat mentions. "If I had to stop and look up the same phone numbers all day for all the calls that have to be placed, I'd probably go crazy."

Pat MacDonald, administrative switchboard operator, relies heavily on her phenomenal memory for numbers.

And that wouldn't do at all, for when the telephones start going crazy with calls from around the world, it takes a very sane, cool-calm-and-collected type of person to sort them all out. And Pat handles it beautifully!

Phone books from around the world help Pat place the many calls going through her switchboard each day.

Addresses Sudbury Chamber of Commerce:

Chairman of Inco Metals Company Cites Effects of Changes in the Nickel Industry

The following is a complete text of John McCreedy's address to the Sudbury and District Chamber of Commerce, at the President Hotel on September 26.

It always gives me great pleasure to return to Sudbury where I have many strong ties and close friendships. On this particular occasion, it is especially gratifying to take part in a forum where such a wide range of community interests is represented. Your invitation has provided a timely opportunity to address a subject of major significance to the entire community — namely, the current state of the nickel industry and its relevance to Sudbury and to Inco.

John McCreedy
Chairman and Chief Executive Officer
Inco Metals Company

As you know, Inco has become much more than a nickel company, although nickel is still our principal product. Our corporate name change last year — from The International Nickel Company of Canada, Limited to, simply, Inco Limited — reflects the fact that the company is diversified. The formation of Inco Metals Company earlier this year completed the formal restructuring of the corporation.

Inco Limited is now divided into three principal businesses: primary metals, which are the repsonsibility of Inco Metals Company; formed metal products, which are manufactured in our rolling mills and fabricating plants in the U.S., the U.K., and soon in Canada; and what we sometimes call "packaged power," namely batteries and related products, manufactured by our ESB subsidiary, one of the major producers in that field.

Inco Metals Company is responsible for the production and sales of primary metals products worldwide, and for related technical and administrative functions. Headquartered in Toronto, it encompasses a lot of people and a lot of territory.

On the production side, we have the Ontario and Manitoba divisions in Canada, our overseas projects in Indonesia and Guatemala, our nickel refinery in Clydach, Wales, and precious metals refinery in Acton, England.

The sales organization takes in Inco Europe Limited, which has its headquarters in London and has offices throughout the industrial countries of continental Europe and is also responsible for the Middle East, India and Pakistan; the International Nickel Company, Inc., which is centered in New York and covers the U.S., as well as South America, Australia and developing countries in the Far East; Inco East Asia Limited, located in Tokyo and responsible for the Japanese market; and, finally, the Canadian marketing division in Toronto, which handles all Canadian sales, as well as copper sales worldwide. The sales organization is supported by a commercial development group and metallurgical service specialists.

The technological responsibilities of Inco Metals fall into three catagories: engineering, where many disciplines are represented — mining, civil, construction, electrical, mechanical, industrial and systems engineering; exploration, which encompasses geologists, geophysicists and support personnel; and, finally, process research and technology, composed of process engineers, chemists and technologists who are responsible for the efficient operation of our processing facilities, as well as the development of new and improved process technology.

Inco Metals Company also has its own officers and staff for a wide range of administrative functions, as well as support services such as legal counsel and government and employee relations.

The restructuring of Inco Limited to make it more responsive to today's business realities — and, in particular, the creation of Inco Metals Company — is, in part, a reflection of the fundamental changes that have taken place in the nickel industry worldwide. Here in Sudbury, the nickel capital of the world, our role as a nickel producing region has been affected significantly by a gradual transformation in the over-all nickel picture during the past quarter-century.

The changes, and what they have portended, may not always have been apparent to all Sudburians. At times they have been subtle, seemingly of little significance. And throughout these changes, nickel has been a consistently strong economic anchor, keeping Sudbury more buoyant than many other communities during those periods when the economy has been sluggish. I'm sure, however, that recent events have brought the picture more clearly into focus.

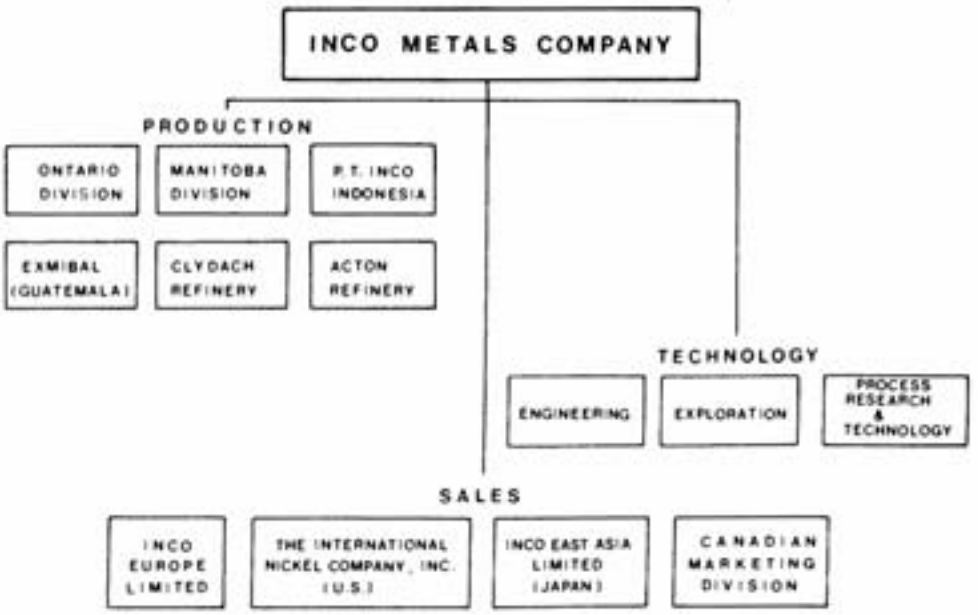
It's hard to realize that in the early 1950s there were only three significant sources of nickel — Ontario, New Caledonia and the U.S.S.R. Today, there are over 20 producing locations and countries, and production has quadrupled.

In 1950, Canada completely dominated world nickel production — 247 million pounds out of a total of 260 million pounds in the Western world.

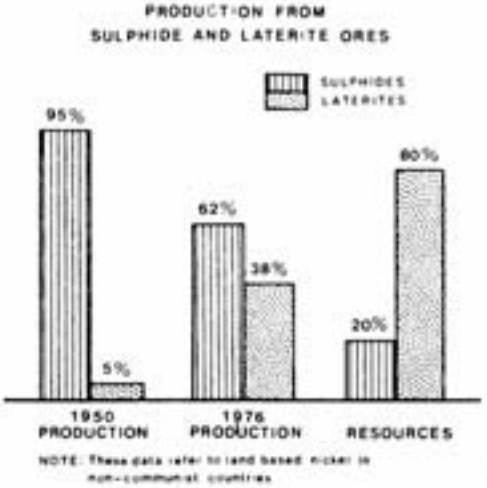
A quarter-century ago, Inco alone produced over 90 per cent of the non-Communist world's needs — all from its Sudbury operations. Last year, Canada produced about 531 million pounds, or about 43 per cent of non-Communist world production. The Sudbury basin accounted for about one-third of the nickel produced in the Western world in 1976, a far cry from its relative position some 25 years ago.

Incidentally, while accurate figures are not available, we estimate that nickel production in the Communist bloc has increased about seven-fold since 1950 to a total of 350 to 400 million pounds. A small amount of Communist production filters into Western markets, but, essentially, their production has remained in approximate net balance with their consumption. Thus, my remarks today will deal mainly with the evolution of the nickel industry in the non-Communist world only.

Back in 1950 almost all of the nickel in the world — 95 per cent — came from sulphide ores.



such as we have in Sudbury. Now, nearly 40 per cent is derived from laterite ores, found mainly in tropical climates. In the future the balance is likely to shift still further, since about 80 per cent of the world's known land-based nickel resources are in laterite ores and only 20 per cent in the sulphides.



These statistics reveal clearly that Sudbury and Inco are no longer dealing from positions of overwhelming size and strength. Furthermore, the nickel industry has been pinched hard in the cost-price squeeze that has affected many businesses in recent years. Further along in my remarks, I'll deal with this subject in greater detail.

In terms of sales, while Inco is still by far the biggest — with something on the order of 35 per cent of the non-Communist world market in 1976 — we now face formidable competition from many sources. Falconbridge, with operations in Sudbury and the Dominican Republic, had a total of about 10 per cent. Le Nickel, the big French enterprise with mines in New Caledonia in the South Pacific, had some 8 per cent. Japanese suppliers, who import all of their raw nickel feed, had about 18 per cent. All the other suppliers accounted for approximately 29 per cent, which included some nickel from Communist countries. It's noteworthy that the new producers, those who came on stream in 1975-76, had about 8 per cent of the market.

The fundamental point I'm trying to get across to you is that the nickel industry has undergone a tremendous evolution in the past quarter-century, and it behooves everyone with a stake in the industry — directly or indirectly — to bring himself up to date.

Speaking of being in tune with the times, a writer for a British newspaper, the London Daily Telegraph, recently suggested that Inco had finally come to terms with itself and adopted, in his words, "a less holier than thou approach towards marketing." I think the phrase "holier than thou" is a bit strong, and I think the writer himself, was a couple of years behind the times in his analysis. Nonetheless, he did zero in on a fundamental truth: Inco has altered its marketing approach. As Inco Metals, we have become more competitive . . . some would say, uncharacteristically aggressive. We had to change our traditional methods to some extent because it has become much tougher to make a living out there in the real world.

A couple of months ago, you may recall, we did something that startled the entire nickel industry. Some people were downright upset. We rescinded our published prices for primary nickel products and announced that, henceforth, prices would be regarded as confidential information between the company and its customers.

Why did we take this unprecedented step? Essentially, because our published prices had become unrealistic in the face of widespread price cutting in the industry. One factor that contributed to the unprecedented discounting was the pressure on new producers to sell all the nickel they could produce to meet their operating costs. Inco's published prices had also become a target from which our competitors discounted. We simply decided that Inco wasn't fair game for "target practice," that we wouldn't . . . couldn't . . . take it lying down any longer.

As Inco Limited's Chairman, Ed Carter, stated in a recent interview, "We do not intend to be the supplier of last resort." We were just that in 1971, when nickel sales were extremely sluggish, as they have been this year, as a consequence of a general economic recession. In that year, virtually all the drop in world demand for nickel was accounted for by reduced deliveries from Inco. We're not going to let that happen again without a fight.

There is another equally important aspect of remaining competitive that often is not given the prominence it deserves, because it is not seen in the traditional context of outselling the competition in the marketplace. I am referring to production strategy — what we produce and how we produce it. A key part of any marketing program, short- or long-term, is to produce what the market requires. And equally important, you must produce it efficiently.

"Inco has the largest share of the world's excess nickel inventories."

An example of production planning with which I'm sure you are familiar is our decision, announced just a couple of weeks ago, to discontinue the production of regular electrolytic nickel at the Port Colborne refinery by January 30 next year. The steel and foundry industries no longer demand nickel of this type in the quantities that were called for in the past. Electrolytic nickel has largely been displaced by less highly refined forms of nickel. We are moving rapidly into this market with utility nickel shot and pig, developed by Inco Metals, as well as with our already established products.

In closing down electrolytic nickel production at Port Colborne, we are making every effort to minimize the impact on employees and the community, although there will be an eventual loss of about 375 jobs. Inco's continuing commitment to Port Colborne is evident in our announcement this month that we will start construction of a $4.2 million effluent water treatment plant there early in 1978.

The development of utility shot and pig, both highly competitive products, is just one example of Inco's proven capability, not only to produce, but to perceive and move effectively to meet what the market demands.

At this time, however, the slack demand for nickel in all its product forms is a matter of grave concern. I'm sure you are all aware that nickel is in plentiful supply. Economic recovery, especially in the heavy nickel-consuming industries of the capital goods sector, has not occurred as rapidly and as consistently as expected over the past two-and-a-half-years. For example, there has been a curtailment of new investment in the chemical, processing and power-generating industries, all of which are major users of nickel-containing alloys.

Since the end of 1974, we estimate that producers in the non-Communist world have tripled their normal combined inventories of nickel. There are also some excess merchant and consumer stocks — essentially in the major markets in the United States, Europe and Japan. Unless there is a dramatic turnaround in the market — and that is highly unlikely — or unless production is further reduced, no significant decrease in worldwide inventories can be expected in the near future, certainly not by yearend.

Inco has the largest share of the world's excess nickel inventories. Ours represents about four months' deliveries over our normal inventory of two to three months' supply. During the past couple of years, Inco continued to accumulate inventory as an investment in the future, and to ensure high and stable employment in the Sudbury and Thompson areas. The continued buildup could only be maintained, however, as long as there was an expectation that the nickel would be absorbed by the market within a reasonable period of time, and as long as it was realistic and feasible in terms of Inco's financial resources, costs and tax burden.

Some months ago, realizing that we had reached both these limitations, we modified this year's production goals. To accomplish this, we decided the best course of action for all concerned was not to replace all employees lost through normal attrition — retirements, quits and the like. Based on our current production and marketing estimates for the balance of 1977, this action is aimed at preventing a further increase in inventories. We are in the process of developing a production plan for 1978, but it is still too early to predict with any degree of certainty the levels of demand and supply that will prevail in the nickel market next year.

That brings me to the second aspect of production strategy that is essential if we are to continue to be competitive — namely, high operating efficiency. In recent years, we have implemented many cost-saving measures with a view to improving productivity and offsetting, to some degree, substantial increases in production costs. The upward pressure of these costs against the weak prices in the present market has placed us in a cost-price squeeze. Should this trend continue, it would eventually have an adverse effect on the viability and competitiveness of our operations. Before that point is reached, however, we would have to adopt new cost-saving measures.

During the ten-year period 1967 through 1976, Inco's unit costs of producing nickel rose by 140 per cent. Our average primary nickel prices did not keep pace, having increased only by about 120 per cent during the same period. This year, unit costs are continuing to rise without a

"Very substantial expenditures will be required just to maintain production capacity and meet environmental objectives."

comparable increase in the average price we are realizing, or can expect to realize, for our primary nickel products.

Copper unit costs more than doubled during the ten-year period, while copper prices rose only 27 per cent. The general softness in copper prices, except in 1974, has been a source of constant frustration. Right now, the situation is particularly bad. Copper prices in North America and on the London Metal Exchange have declined steadily in the past three months. They are now at their lowest level in several years, and there's no sure way of telling when the copper price skid will end. Even if the prices should remain at their present level, the average net selling value for 1977 would end up close to the 1975 realization.

The effect on copper producers of a market that has become unpredictable and virtually out of control is catastrophic. When world production continues to rise in the face of falling demand, the inevitable result is sorely depressed prices. All North American copper producers are hurting badly, and Inco is no exception. It's probably not generally known that, from Sudbury, we deliver almost as much copper to market as nickel. Copper isn't just one of our by-products; it's a co-product with nickel.

The principal factor in Inco's unit costs has been rising labor costs. These have occurred despite a significant improvement in our labor productivity over the past ten years.

Inco's unit labor costs in Ontario rose more rapidly that the U.S. or Canadian averages until 1972, then declined relatively to 1974 when our production was high and mine development and maintenance were minimized to meet production targets and sales demands. They rose sharply following our labor contracts in 1975, continued to rise in 1976 and 1977, and are now well above the Canadian and U.S. commercial averages. Since 1975, the emphasis shifted from production to mine development as sales declined, but employment has remained at a high level.

Inco has also experienced relatively large increases in the cost of many supplies, in particular, energy costs, which in Ontario increased by over 150 per cent from 1973 to 1976. This occurred despite an over-all reduction in energy consumption per unit of production during the same period, achieved through a rigorous program of conservation. Starting about four years ago, OPEC's primacy in oil and its policy of price escalation resulted in an advantage to sulphide ore operations vis-à-vis the more energy intensive laterite operations. But, in Ontario, industrial hydro prices have escalated faster than industrial fuel oil prices since 1974. Further energy cost increases are imminent and, indeed, it's a fact of life that we face increasing energy costs for some years to come. Furthermore, any cost advantage Canadian sulphide ores still might have over the laterites could be wiped out by costs incurred in treating sulphur dioxide generated during the processing of sulphide ores.

We have become more capital intensive, too, in part due to the high cost of the technology necessary to our business. Inco's capital intensity is now far greater than that of manufacturing and agriculture, and still climbing.

From 1967 to 1972, Inco spent more than $1 billion to expand and modernize its Canadian operations. During that period, spending in other countries was modest by comparison, but started to increase significantly with construction of our new nickel mines in Indonesia and Guatemala.

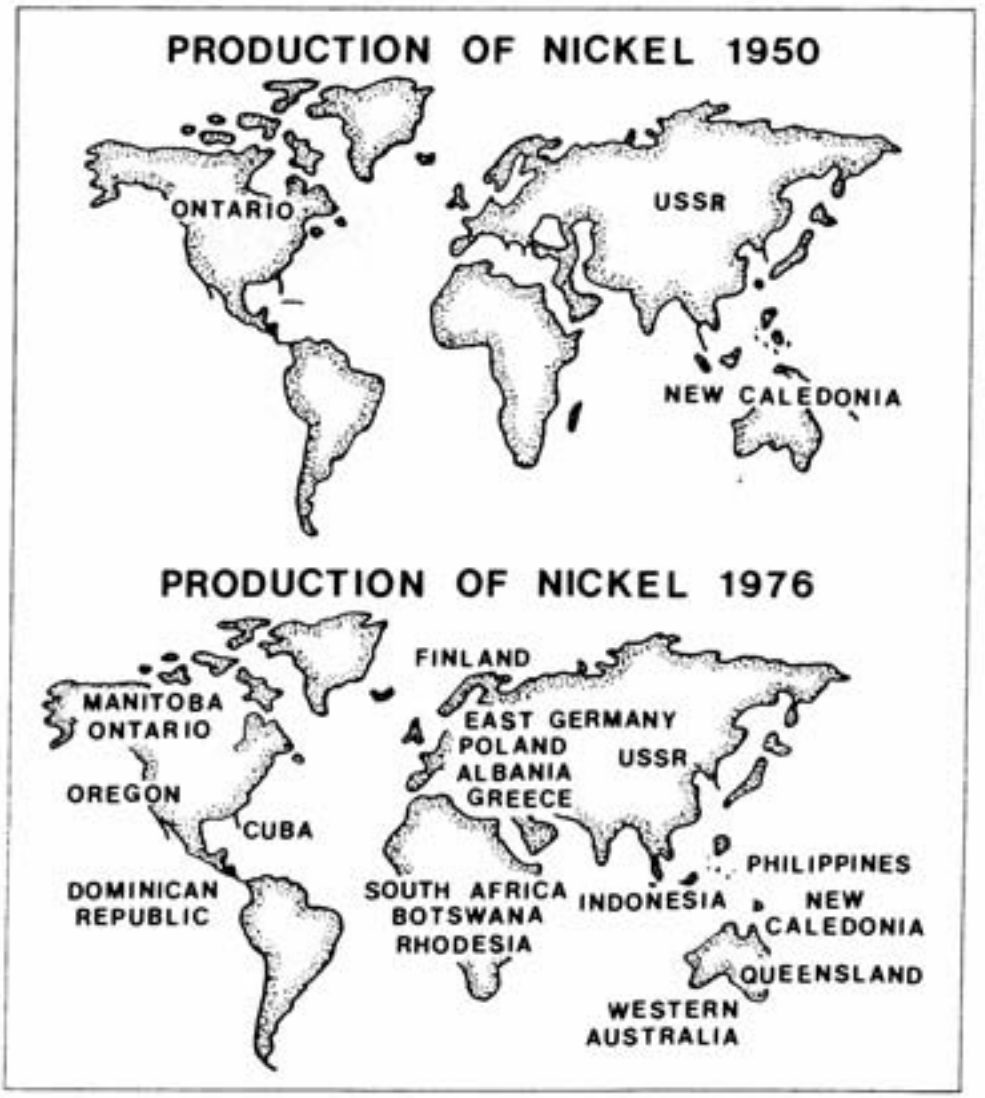
During the next few years, with the completion of the Guatemalan and Indonesian projects in 1977 and 1978 respectively, we have planned sharply reduced spending in other countries. In Canada, however, very substantial expenditures will be required just to maintain production capacity and meet environmental objectives.

The nature of our business demands extensive environmental programs. The expenditures they entail are part of the cost of doing business today and do not increase production or generate income for the company. Inco's largest pollution control cost by far has been incurred in treating sulphur dioxide. The controls we have installed and constructed, most visibly the new stack, have made a dramatic improvement in the air quality of this area.

The latest review of environmental conditions in urban areas by the Economic Council of Canada shows that air quality in Sudbury compares favorably with that of other Canadian cities. Monitoring sites up to 160 kilometres from Sudbury have confirmed that the improvement in local air quality since the high stack went into operation has not been achieved at the expense of more distant areas.

Certainly, we don't have all the answers to all the questions about the environment . . . nor does anyone else. However, from our knowledge and experience gained over many years, we strongly advocate that every effort be made to find practical solutions, based on sound judgements, which will best serve all interests. We must question the advisability of large investments at this time which will yield little benefit to air quality in Sudbury or other areas of the province, but which could have a severe adverse economic impact on our Sudbury operations.

Another area of basic concern to Inco is taxation. In recent years, increases in taxes on the mining industry, especially at the provincial government level in Canada, have seriously eroded our after-tax earnings and our basic financial position in the 1970s.

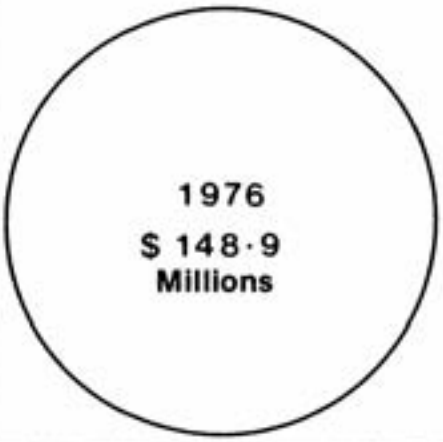


TAXES PAID BY INCO LIMITED IN CANADA 1967 - 1976

$ MILLIONS

Cumulated Taxes 1967-1976

Federal	$445
Provincial	474
Other	74
Total	$993



In the past ten years, Inco's combined federal and provincial taxes have increased by close to 150 per cent. Total taxes paid by Inco alone during the past decade have been about $1 billion. During that period, the provinces have moved to take a relatively much larger share of the total tax payment pie.

Over-all high levels and rates of taxation have become a major deterrent to the prosperity and future health of the whole Canadian mining industry. However, there is now a hopeful sign that a change could be forthcoming. Ontario's Minister of Natural Resources, Mr. Miller, said recently that the province's mining tax system will be reviewed this year. He indicated that the review would include consultation with the federal government and with the Ontario Mining Association.

While the problems I have brought to your attention today have serious implications for our industry, I am not trying to be a voice of gloom and doom; I am simply trying to bring home to you the realities of the nickel industry today, and of Inco's and Sudbury's changing roles. Until a few years ago, the world at large supported prosperity and expansion in the Sudbury mining industry. But the Sudbury Basin can no longer ignore the realities of competition. If the cost of doing business in Sudbury becomes unrealistic in terms of our financial resources and business capabilities — and we are approaching the limit that the market will support — a growing volume

"I am not trying to be a voice of gloom and doom; I am simply trying to bring home to you the realities of the nickel industry today."

of Inco's ore reserves will become of marginal value. The grades and amounts of ore that we can mine economically are determined, ultimately, by fundamental cost-price relationships.

In the years ahead, Inco has a number of assets to ensure its strength and viability as a company, which, in the long run, will buttress its Canadian operations. Nickel and copper, the products upon which Inco was founded, together still account for some 50 per cent of the corporation's revenues. The cornerstone of our corporate structure consists of a highly skilled labor force, established plant facilities, leadership in technology, product diversity and a strong marketing organization.

The rolling mills and fabricating plants of Inco's Formed Metal Products Group give further depth to the corporation, while at the same time directly benefiting our primary metals business. Not only are they healthy enterprises in their own right, they are also the biggest single customer by far for Inco Metals' primary nickel.

Inco's first Canadian venture in this field is the new rolling mill in Walden, which will produce high-quality nickel and cupro-nickel strip, initially for coinage. The venture provides another example of one hand helping the other in Inco's worldwide family, as this investment in the Sudbury area is the result of technology developed by the company outside of Canada.

Another means of keeping the company viable is through diversification. ESB, which we acquired in 1974, contributed one-third of Inco Limited's sales for the first half of this year. Our criteria in making similar acquisitions are a good earnings potential and the capacity to offset cyclical swings in earnings in the metals business.

In the primary metals area, our new laterite operations in Indonesia and Guatemala will enable us to participate fully in the larger world nickel market of the future. While production from these sources won't be significant this year, it will gradually increase through 1978 and 1979, during which time we believe the nickel market will rebound sufficiently to absorb the additional supply. We are also involved in a consortium investigating the feasibility of mining deep sea nodules, which, much further down the line — perhaps signficantly in the next century — will provide another source of nickel to supplement land-based reserves in an expanded market.

We intend to stay in the nickel business . . . and as a leading producer, it is in the company's best interest to do so, because nickel will be in demand for a long time to come and the market will continue to expand. But, to accomplish this objective, we must be prepared, at the right time, to get involved in new nickel production wherever a sound investment is feasible and practical. In the long run, we will benefit our established Canadian operations by developing nickel deposits elsewhere, because this will serve to extend the life of our Canadian deposits.

Nickel is our major resource, but we also recover 14 other elements from our Sudbury ores, including gold, silver and the platinum group metals. We are the second largest supplier of platinum in the non-Communist world, next to South Africa. And, of course, we have copper in abundance. Although misery abounds in the copper market these days, we are optimistic that sanity will prevail in due course and that recovery will follow.

In summary, economic recovery in those market sectors vital to our metals business has not come about as rapidly as we anticipated. Consequently, we now believe our earnings for 1977 will be lower than earlier expectations and will not match the 1976 level. Hopefully, next year will be better, but it's going to be a long, hard uphill battle. There is more competition in the nickel industry than ever before and it's intensely aggressive. Inco Metals Company is meeting the competition head on with aggressive market strategies of its own.

"We must be in our trimmest fighting shape ever — a little lean and a little hungry."

We will partake fully in economic recovery as it gradually unfolds, and we will reap the benefits of future growth in nickel consumption. In fact, we believe we have a competitive edge. Not only does Inco have the experience and expertise, our production capability and flexibility are second to none. Added to this strong base in the primary metals field is a broad corporate base.

However, if we were to indulge in complacency these advantages could melt away. In order to achieve the best possible results for the company, its employees and shareholders and to maximize benefits to the communities in which we operate, we must be in our trimmest fighting shape ever — a little lean and a little hungry. I am confident that Sudbury and the interests represented by this organization will continue to thrive. Certainly, the nickel industry will play a major role in the economy of the region for a long time to come. I expect that my grandchildren, who live in Sudbury and are now just four and seven, will grow up to see a community even more vital than the Sudbury of 1977."

Operation "Copper"

At approximately 08:30 hours, Friday, September 9, 1977, a young man dressed in white coveralls casually strolls through the hangar area at Toronto's Malton Airport. He watches while preparations are made to ready a Beechcraft twin-engine aircraft for take-off. A pilot boards, along with his three passengers.

Our young man springs into action and orders the pilot, under duress, to proceed as normal until airborne. Once aloft, the pilot is ordered to fly to Sudbury Airport, where further instructions will be given.

"What's this?" you might well ask. Has Sudbury been involved in a hijacking, compounded by the kidnapping of three hostages?

In actual fact, no. But in practise, yes. A special exercise was recently carried out, using the airport's old terminal building, to expose airport personnel and local police forces to an airport security situation calling for interface and maximum joint effort.

The "scenario" went something like this: Because of recent adverse publicity concerning the conditions within penal institutions, certain convicts had become very unsettled and militant. A group of extremely dangerous inmates with long sentences planned to seize the opportunity to gain their release from "Copper Cliff Pen." The plan was for one of their close associates on the outside to hijack an aircraft and use it as a bargaining tool to procure their release and subsequent safe passage to an undisclosed destination.

At approximately 09:30 hours, the aircraft arrives at Sudbury airport, at which time the control tower is advised by the pilot that his aircraft is being held under hijack conditions.

The information was immediately relayed to the Sudbury Regional Police Force, who then took over: they placed a commander in charge of the situation and brought in their negotiator, who is specially trained to deal with such situations.

At approximately 09:35 hours, airport security and contingency plans are put into effect. The hijacker has advised that a bomb has been placed in the airport terminal by an accomplice and is equipped with a timing device. He further advises that an explosive device is on board the plane. He demands the release of specific inmates at "Copper Cliff Pen", safe passage, and $100,000 in American funds.

The "bomb", planted in the old airport terminal, was located by the Sudbury Airport police, then recovered and disposed of by the Ontario Provincial Police bomb disposal squad. Negotiations continued.

At approximately 13:30 hours, the explosive device aboard the aircraft is accidentally triggered, forcing the hijacker to remove himself from the plane and resulting in his apprehension.

And thus ended "Exercise Copper."

Talking with Bert Hague, Deputy-Chief in charge of operations with the Sudbury Regional Police Force, The Triangle asked him what prompted the exercise in the first place:

"Well, extortion and kidnappings do occur in Canada, and we feel we have to be prepared. This was merely a simulated situation, a training exercise, that we thought was very successful. The Ministry of Transportation suggested it, and we certainly welcomed it. Our people treated it very seriously, in a most professional manner, and the co-operation was extremely good between the OPP, the Ministry, the airport police and staff, and ourselves.

Commander of the exercise was Inspector George Nault of the Regional Police; second commander, as backup, was Detective-Sergeant Jack Burke from the OPP.

And just as matters of interest, a canine team from Thessalon was brought in to track; a negotiator from Timmins was called in for the exposure and experience; ambulances were notified, and the Garson and Sudbury fire departments were advised. And the "hostages", by the way, were members of the Ministry of Transportation, Toronto.

Quite an all-out exercise, and well worth the effort. As they say, "an ounce of prevention is worth a pound of cure," and it's nice to know that our local "gendarmes" are trying to keep one step ahead!

Sudbury Airport manager, O. G. Myers, left, and Regional Police Force Inspector George Nault determine the location of the aircraft.

Preparing to dismantle the "bomb" found in the airport terminal are members of the OPP bomb disposal group; from left, Sergeant Fred Doyle, Constable Ted Gianini, and Constable Ron Lipscombe.

Regional Police Force Staff Sergeant George Rosset assumes the role of negotiator and maintains communication with the "hijacker".

James Timlin, of the Ministry of Transport, Toronto, played the role of the "hijacker", flying from Toronto with a captured Beechcraft twin-engine aircraft and three "hostages", also members of the Ministry of Transport.

Deputy-Chief Bert Hague, left, and Sergeant Joe Lavoie, both from the Regional Police Force, discuss necessary traffic control.

Reviewing the exercise following its completion are Regional Police Force Staff Sergeant Harry Crozier, left, "hijacker" James Timlin, and Jack Harrington, superintendent of policing and security, Ministry of Transportation.

Comparing scores are, from left, Leo Duguay, Al Chenier, Mike Charron, and Bill Desjardins.

Par For

Creighton Complex

Exceptional weather and ideal course conditions greeted the 80 golfers attending the Creighton Complex annual golf tourney, held recently at the Riverview Golf Club at Penage Lake.

Results of the final tallies showed Mickey Curry as low gross winner and Bryan Crowder as low net winner. The low gross team was comprised of Bob Hughes, Doug Bonden, George Canapini, and Norm Lessard, while the low net team consisted of Dennis O'Brien, Lacey Cull, Mickey Curry, and Bill Conley.

The event, hailed as their best ever, was organized by Dino Fabris, Chabbi Bhusal, Ralph Brown, and master of ceremonies for the presentations, Orville Cull.

Double checking the tallies — from left, Tim Dodd, Gerald Watts, Lawrence Latendre, and Wayne Uttley.

A few tips on the greens — from left, Lacey Cull, Frank Young, Chabbi Bhusal, and Jim Hilts.

That all-important putt — from left, Vic Bachmeir, Bill McCormick, Jr., Dennis O'Brien, and Bill McCormick, Sr.

The Course!

Copper Refinery

Over at the Lively Golf and Country Club, the copper refinery's athletic association's semi-annual golf tourney saw 76 participants vying for top honours. Sid Segsworth took the low gross with a respectable 71, followed by Gary Constantineau with a 79. Don Pilon took the low net with a score of 66, while Dom Castanza was runner-up with a 69.

The athletic association is already looking forward to next year's tournament and the possibility of playing on the Lively Club's expanded 18-hole golf course.

Success of this year's fall tourney was attributed mainly to the organizing abilities of Bob Fournier, Bob Desjardins, Ray Moskalyk, Larry Martel, and Bud Eles.

The "fine copper" quartet — from left, Ron Bell, Bill Hannon, Ken Cox, and Bill Saunders.

The moment of truth — from left, Leo Primeau, Graham Skelton, Dom Castanza, and Moe Jennings.

At the 18th hole — Ed Kavanagh, left, and Brooks Matthews watch Ray Moskalyk, right, sink his putt.

Presentation of awards — from left, Ray Moskalyk, Sid Segsworth, Gary Constantineau, Dom Castanza, and Don Pilon.

Tired and

Changing a 42-ply tire on a 75-ton-capacity haulage truck requires special know-how. Here, United Tire's Tim Johnson rigs the tire with chains before lifting it with a mobile crane. Retreading will take place back at the shop.

After buffing the old tread, a new tread is applied to a service tire casing using a special treadbuilder. The long strips of tread are secured with adhesive bonding agent before going through the four-hour curing process.

Using an overhead trolley, Tim Brouse removes the service tire from the curing chamber. The tire was tubed and mounted on curing rims, then inflated and cured for about four hours under constant pressure at 210°F.

At Frood mine, scooptram operators Richard Dubreuil, left, and Linval Lovelace study an experimental embedded chain tire on a JS500 loader. It's the first such system to be tested under actual working conditions in North America.

Retired

Mining Equipment Tires Require Constant Vigilance

Over the past few decades, many changes have taken place in the mining techniques being implemented at Inco's various underground operations. Perhaps the most effective has been the introduction of trackless mining equipment, which has resulted in making ore extraction more efficient, productive, and flexible.

In order to keep this heavy industrial equipment moving on solid footing, Inco's mining department administers a large-scale program of tire maintenance, comprised of care, supply, and follow-up.

Since there are over 2,000 scooptram and truck tires in use around Inco's Sudbury operations, the local tire dealers are kept busy filling the demand for new tires and retreads. Each year, some $2.5 million worth of tires "roll" into Inco operations.

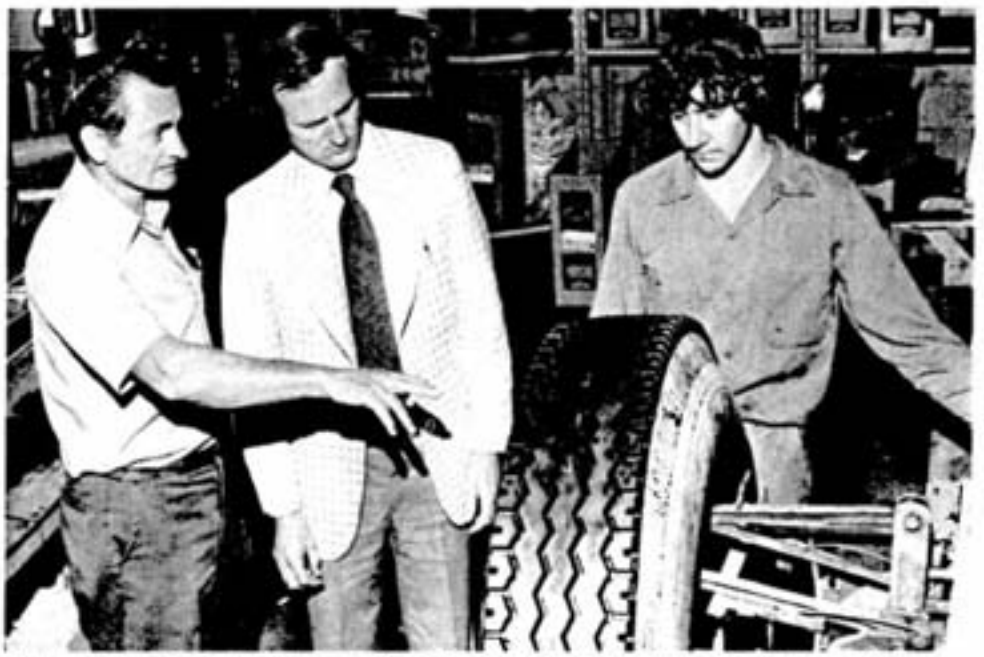
"Tires are a major expense, when you're talking about the quantity needed to fulfill the needs of Inco's mobile equipment fleet," says Len Kitchener, mines equipment engineer, "and because of the initial cost of tires, our goal is to achieve an average of four retreads per tire."

Many of Inco's tires are required for use on highly specialized equipment. Our massive haulage truck tires cost $3,500 each, with an estimated life of over 2,000 hours. After the wearable portion of the tread has been consumed, the tires are dispatched for retread. Since each truck has six tires, and there are eight of the 75-ton haulage trucks in operation at Copper Cliff, we're talking about $225,000 worth of tires, including spares, just for this one particular group of equipment.

In addition, there are over 1,700 scooptram tires in operation underground; since the best tire performance is achieved through maintenance of good roadways and proper operator care, the scooptram operators are kept well informed through regular lectures.

Because it's important to pay close attention to the wheels, in order to avoid hazards such as dislocated and loose locking rings, all operators are made familiar with a company tire-handling code. Added Len Kitchener, "We require the highest possible concern by all operators towards their scooptram tires, in order to attain the best possible tire performance."

Something quite new on the tire scene is an experimental embedded chain tire presently being tested at Frood mine. Normally, tire protection chains revolve around the tire during operation, causing frictional wear between tire and chain; the new system attempts to eliminate this problem by actually building the chain right into the tire. It's the first system of its type to be tested under actual working conditions in North America, and once again, Frood mine takes the lead in innovative testing.



Sudbury Tire's Frank Benish, left, and Tim Brouse, right, point out the procedures used on Inco tires to mines equipment engineer Len Kitchener. This drill jumbo tire will have several extra "lives", thanks to the retreading process which plays an important role in Inco's program to reduce tire costs.

"Stitching" the new tread to the casing, Tim Brouse takes an additional step by removing trapped air between the new tread and the carcass of the tire.

Hallowe'en

The Rite That Celebrates Autumn

Story and Illustrations
by Amy-Lynn Kreer

When Elijah first set his eyes upon Renate, she was lying asleep in the forest beneath two weeping willows. The sun, brilliant and bright, was winking at her through the towering trees, playfully beaming its warm rays of golden light onto her glistening ebony hair. Enchanted by the girl's awe-inspiring beauty, Elijah touched her. Quietly, with the grace of a blossoming flower, she awoke. Her eyelashes still tangled with sleep, she looked at the young man with such wonder that he immediately felt his heart melt within him.

"Where am I?" she asked, with a voice more fragile than crystal.

After he told her that he didn't know, only that they were in an immense, boundless forest, she turned to him once more and asked how he had come to this strange yet lovely place, where the majestic trees swayed with the wind in a dance to the sun.

Elijah explained how he, too, had one day awakened in the forest without any memory. He continued to tell Renate how he had wandered around for hours and days in the hope of finding another human being.

"If you wish, I will bring you to a house at the heart of this great forest where lives the person who has guided me around ever since I came here," Elijah suggested. Renate rose from the blanket of white flowers on which she had been lying and followed him.

As they proceeded through the dark corridors of the immense forest, Elijah mentioned how he had met the old woman who lived at the heart of the forest. He added that the people of the forest followed a time calendar which was based on the life span of their Magna Venefica, or Great Witch.

The old woman's warmth impressed Renate immediately.

The four seasons which the forest people observed were celebrated by four rites: May Eve for Spring, Lammas for Summer, Hallowe'en for Autumn, and Candlemas for Winter. At each of these ceremonies, Elijah continued, the Great Witch was restored with enough power and magic to lead and protect her people throughout another season.

As they passed under the various trees, he pointed out how the leaves were changing color, and that therefore, Hallowe'en, the rite which celebrated Autumn, was quickly approaching. According to Elijah, the Hallowe'en ritual was the most magnificent of all rites because the vivid colors of the forest always created a beautiful background for the event.

As they neared the Great Witch's cottage, Renate began to feel a wondrous warmth enveloping her body. When, at last, she was greeted into the house, she became aware of the fact that it was the great Witch herself who was radiating this marvelous warmth.

At first glance, Renate understood why this woman was regarded as the Great Witch. Surrounded by cats, rabbits and birds, the old woman did indeed give the impression of being the nucleus of life to the forest and its creatures.

The old woman's crystal blue eyes were clear and alive with energy; they sparkled like two brilliant diamonds.

"I am so happy Elijah found you," the Great Witch expressed with a generous smile, "you may be my guest here as long as you wish." Then, without saying more, she left the room, accompanied by her cats.

As she vanished from sight, Elijah whispered to Renate that he had once heard that all the cats which surround the old woman were once great witches themselves, who were forced to transform themselves into a lesser shape after their reign.

"The Great Witch can never marry," Elijah added, "her sole responsibility is to the forest and its creatures."

"She has only one sister," Elijah continued, "and her name is Zenobia. Although her power is limited, she can still bewitch a few of the forest people into doing evil deeds for her.

"When the last great witch was choosing a successor centuries ago,there was a rumor that she was having a difficult time choosing between the present Great Witch and her sister. Both were strong, beautiful and intelligent women, with a wisdom far beyond that of their peers. Yet although they were alike in so many ways, one characteristic distinguished the two: while the one was always concerned with the welfare of the forest, the other, Zenobia, was selfishly using her powers to improve her own personal beauty and welfare. And so, it came to be, that Zenobia's vice became apparent to the Great Witch who was reigning at the time, and her sister became the successor. Zenobia, filled with rage and jealousy, has always tried to overthrow her sister, but the latter has always been too wise and good to let herself be destroyed. The forest people say that Zenobia will make her greatest attempt to overthrow the Great Witch at this Hallowe'en's ritual. If this is so, the entire event will surely be a disaster."

When the Great Witch returned, the three began to make final arrangements for the Hallowe'en celebration.

"Have you calculated the hour which will mark the climax of the ritual?" the young man inquired.

The old lady's eyes sparkled — "yes, according to the constellations, the perfect time will be at midnight on Friday. This will be the hour of Jupiter. This is the only hour at which our incantation will prove a success — should we happen to perform at any other hour, I will be vulnerable to my sister's evil plans and unable to fight her powers."

When she caught sight of the puzzled look on Renate's face, the Great Witch went on to explain.

The tall and cruelly beautiful Zenobia, evil sister of the Great Witch.

"In this forest," she pointed out, "the stars are our timekeepers. Certain sixty minute intervals are very crucial when performing magical rites. Each hour of the week is subject to one of seven planetary rules. Rites concerning wishes and dreams are celebrated at the hour ruled by the Moon, intelligence and knowledge at the hour of Mercury, love and lust at the hour of Venus, power and action at the hour of the Sun, aggression and defense at the hour of Mars, health and wealth at the hour of Jupiter, and divination and works of darkness at the black hour of Saturn. I have chosen the hour of Jupiter because, on Hallowe'en, which will be Friday, the hour of Jupiter falls at the magical hour of midnight when such incantations as the one we will perform are given extra strength."

Renate soon fell asleep, entering into a dream of magic and fantastic spells, with a reality far beyond any she could have imagined.

On the morning of the day which was to end with the Hallowe'en ritual, Renate caught sight of two diamonds in the fur of a cat she was stroking.

"Where did these come from?" she asked the Great Witch.

Without answering the girl's question, the old woman told Renate that she could keep them. Pleased, Renate gazed at the pretty gems, thinking about how much they resembled the old woman's crystal blue eyes.

When Renate showed Elijah the two diamonds, he explained to her that diamonds were very rare in the forest, although emeralds, zircons, rubies and pearls were quite common. Then he showed

Elijah pointed out to Renate how the leaves were changing color, and that, therefore, Hallowe'en, the rite which celebrated Autumn, was quickly approaching.

her a gorgeous opal which the Great Witch had once given him. Opals, he claimed, along with pearls, were daughters of the Moon, while diamonds were the only gems considered to be Sun stones. Moreover, the Evil Eye had no power to harm one who wore a diamond.

"It is indeed odd," he declared, "for you to have found not only one, but two diamonds."

Later that day, Elijah informed Renate how he had learned from the Great Witch that they might be blessed with a blue moon to preside over their Hallowe'en ritual that night.

"Of all nights," he related, "there is none as enchanting as that of the Blue Moon. It brings forth the abnormal aroma of mysticism bewitching the nocturnal air. On rare nights such as these, there is a blue glow all over the forest, which puts joy and fascination into the hearts of all those who are lucky enough to have been touched by its magic."

As Renate's eyes opened with wonder, her beauty became more and more obvious to Elijah. Her flowing hair, secretive green eyes and enchanting voice were not the only qualities which attracted Elijah. She was surrounded by a mysterious scent as innocent as a bouquet of Spring flowers, and as sophisticated as the most exotic perfumes worn by the forest women on special occasions. She was indeed the most beautiful creature in the forest. Soon, he thought, he would ask her to marry him.

All those involved in the ceremony were either dancing in a circle around the fire or chattering among themselves with fantastic energy.

At the moment though, nightfall was nearing and the ritual preliminaries would soon be commencing. The Great Witch, dressed in a glorious costume of Autumn colors, and adorned with precious stones, led the way to the ritual grounds in a marvelous procession with the rest of the forest people.

When they reached the grounds, a large fire was lit by the Great Witch herself. The Blue Moon was present in the sky, and all those involved in the ceremony were either dancing in a circle around the fire or chattering among themselves.

When the ceremony was about to reach its peak, the Great Witch summoned her people to join in two circles around the fire. As they danced, the people chanted the words to the incantation which would renew the old woman's powers for another season.

Towards the end of the hour of Jupiter, when they were nearly finished the last verse of their magic spell, the incantation was interrupted by a flash of lightning in the sky. Without invitation, Zenobia appeared from the darkness, releasing from her cold violet lips such an evil laugh that the dancing and chanting ceased at once.

Tall and cruelly beautiful, she glared at her sister with such an icy gaze that the old woman whimpered. With her incantation ruined, her powers could not be renewed until Candlemas, which was the next seasonal ritual. Even so, without her magical leadership, the people would soon turn to Zenobia for protection against the natural cruelties of the forest.

"You foolish people," Zenobia cried out, "I have at last bewitched you and caused you to confuse your hours of the day—this is not the hour of Jupiter which you had chosen as the climax of your Hallowe'en ritual — the hour at which your Great Witch's energy and magic are renewed. This is the hour of Saturn, when only works of darkness are rendered successful. Your spell is worthless now and you, my sister, are doomed!

"You know where to find me when my sister can no longer radiate warmth and leadership for the forest. I will be expecting you all to call upon me in the Sinister Zone where gnarled trees tower above the earth in an attempt to strangle the sun with their limbs."

With these words, she laughed once more and vanished back to where she had come from.

Disillusioned, the people broke away from the ritual grounds to their homes and sleep.

The Great Witch, knowing that all was lost, made her way home with the help of Elijah and Renate, who were both trying desperately to hold back the tears.

Before she fell asleep that night, the old woman called Renate to her side and told her to be strong, for it would be she who would soon be carrying the sun in her invincible heart. Although the young girl did not understand the Great Witch, she nodded and smiled, then fell asleep.

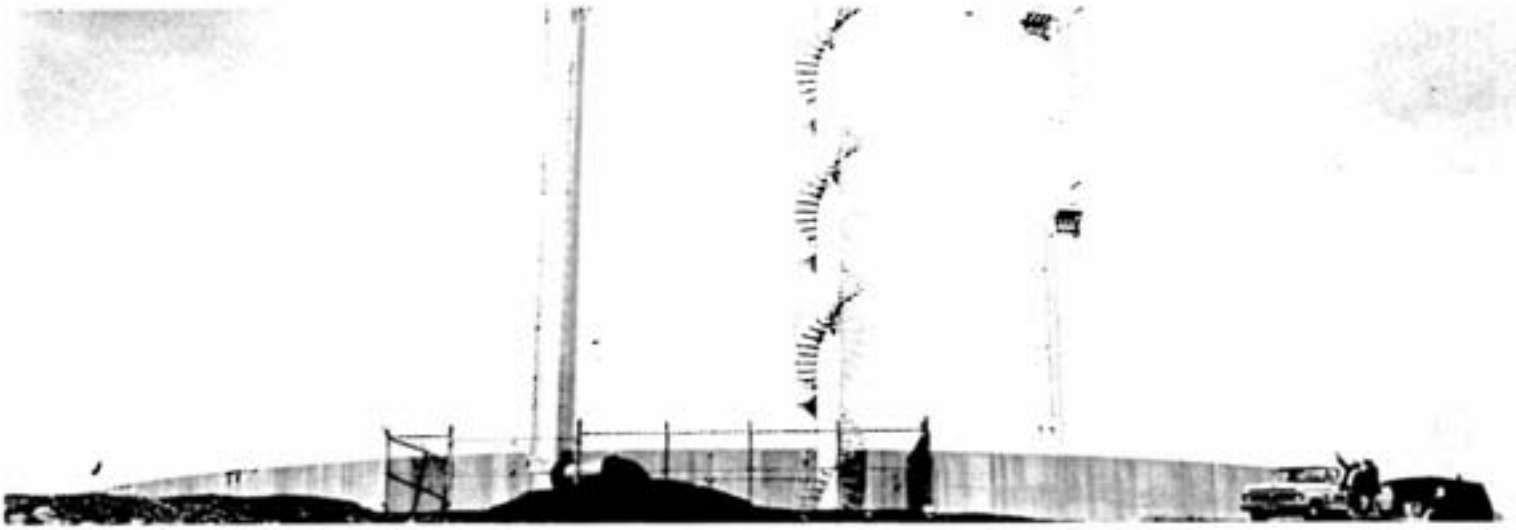
When Renate awoke the following morning, the Great Witch was nowhere to be found. Perplexed and worried, she returned to her room. When she looked into her drawer, Renate failed to find the two diamonds which she had only found the day before. Still trying to remember where she might have mislaid the gems, Renate walked into the other room and opened the large door. The sun, more brilliant than ever, entered the room at once.

As she was attempting to capture the rays, Elijah called out her name. As she turned to answer him, Elijah immediately noticed the change in Renate's eyes. No longer green, they were now a crystal blue, and in the light, they shone like two scintillating diamonds. Without a word, he fell to his knees before her. Then with unparalleled elegance and beauty, Renate sat on the chair which had once only been used by the old woman.

In the light, Renate's crystal blue eyes shone like two scintillating diamonds.

A white cat, never before seen among the regular entourage of felines, pounced on Renate's lap. Realizing the significance of the situation, Elijah did not know whether to be happy or sad. Nevertheless, from his eyes, nine tears, which later turned into a handful of sapphires, fell to the floor. Renate could never become his wife now — that morning she had already been wed to the forest.

The reign of a new Magna Venefica or Great Witch had begun, and for the next few centuries, Renate would be the chosen one who would carry the sun in her invincible heart.



One of the largest water tanks in the world is located in Copper Cliff. With a capacity of 16 million gallons, the tower supplies the towns of Lively and Copper Cliff, as well as all Inco installations in Copper Cliff.

Cool, Clear Water—16 million gallons of it!

Inspecting the inner workings of the water tank are Alf Kaelas, right, superintendent of mechanical utilities and combustion services, and Ed Nevela, supervisor of operations, sewage and water.

At first glance, the Copper Cliff water tank seems rather ordinary. But stand up close, and you begin to realize its gigantic proportions! It's one of the largest water towers in the world, with a capacity of 16 million gallons and a total weight of 135 million pounds when filled.

Inco's engineering department provided the specs for the 48-foot-high tank which measures 240 feet in diameter. Outer walls consist of six 8-foot-high steel plate rings, and the conical roof is supported by interior columns.

Water for the tank is pumped from the Vermilion River to the Creighton water treatment plant, and is then distributed to the towns of Lively, Copper Cliff, and all Inco installations in Copper Cliff.

An exterior spiral staircase leads to the top of the water tank, which stands 48 feet above ground level.

Continuous water movement in the tank inhibits ice formation, thus eliminating the need for costly insulation and heating equipment. Alf Kaelas, right, and Ed Nevela examine the tank's insulated distribution header.

A "first" for hoisting

A further improvement to the already-modernized hoisting system at Levack No. 2 shaft skip hoist has recently been completed. The improvement consists of the installation of the "first ever" Canadian General Electric design of a totally "solid state" field application, regulation and VAR correction system for large synchronous motors.

This equipment replaces the rotating exciter and electromechanical relay which was originally purchased in 1952. Frequent maintenance requirements, as well as unscheduled hoisting delays, created the need to reassess the original equipment, with the result that Inco's general engineering construction services group performed an analysis of the equipment and recommended that Levack replace the existing equipment with a new prototype package.

The new system is made up of sophisticated circuitry employing both analog and digital components. The system monitors the 5500-horsepower synchronous motor during the starting cycle, provides continuous protection, and determines the ultimate time to apply field current for synchronization. In addition, it continually monitors the load on the hoisting system to provide variable field current, so that the power system requirements can be held constant, which, in turn, reduces line losses, and provides energy conservation by improving Levack's line voltage conditions.

Installation was performed by the Levack electrical maintenance department, under the guidance of foreman Tom Bayford; technical assistance came from general engineering's John Wildgoose.

A solid state regulation and correction system for large synchronous motors was recently installed at the Levack mine No. 2 shaft skip hoist. Measuring the proper voltage on the system's power supply are electrician Al Cullis, left, and electrical foreman Tom Bayford. Incidentally, Al did much of the electrical work on the original hoist which was installed in 1954.

This is the family of Louis Bonfoco, a trackman in the yard department at the Port Colborne nickel refinery. Wife Carmen is well known for her fine singing talent. Their three sons are Antony, Louis Jr., and Joseph. That's Joseph's wife, Nancy, in the rear.

Meet the family of Bill Elliott, one of Inco's environmental control supervisors. He and his wife Fran are raising three fine children, Renée, 6, Todd, 8, and Stephanie, 2. The family enjoys visiting their cottage on Lake Penage and attending concerts by the Sudbury Symphony Orchestra, of which Fran is a violinist.

Family Album

Camping, fishing and sailing are the favorite pastimes of Eugene St. Pierre and his family. Eugene and his wife Conni have two energetic young sons, Jason, 2, and Christopher, 4. Eugene is a fan driller at Creighton No. 3 shaft.

Gardening, hunting and fishing are three of Ken Talevi's favorite pastimes. Ken is a locomotive engineer with Inco's transportation department in Copper Cliff. He and his wife, Diane, are raising two children, Shelley, 7, and Kevin, 10.

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

Warner Woodley, left, manager of the Port Colborne nickel refinery, presented 10,000 nickel medallions to Port Colborne Mayor **Bob Saracino** at a recent ceremony at City Hall. The medallions will be given out by the Mayor to visiting dignitaries as a momento of their stay in Port Colborne. The coins were produced for Inco at the Royal Mint from Nickel 201 strip.

* * *

A country music special is always a big attraction in any town, but add a fine Sunday afternoon and continuous music from noon in Copper Cliff's Nickel Park, and you've got Western Day, sponsored by the Ontario Division of Inco Metals Company and the Sudbury Federation of Musicians, Local 290. The afternoon segment of the show went according to schedule, and wishful thinking kept the dark rainclouds rolling by. Thunderstorms in the evening brought an end to the party which had attracted country music lovers of all ages.

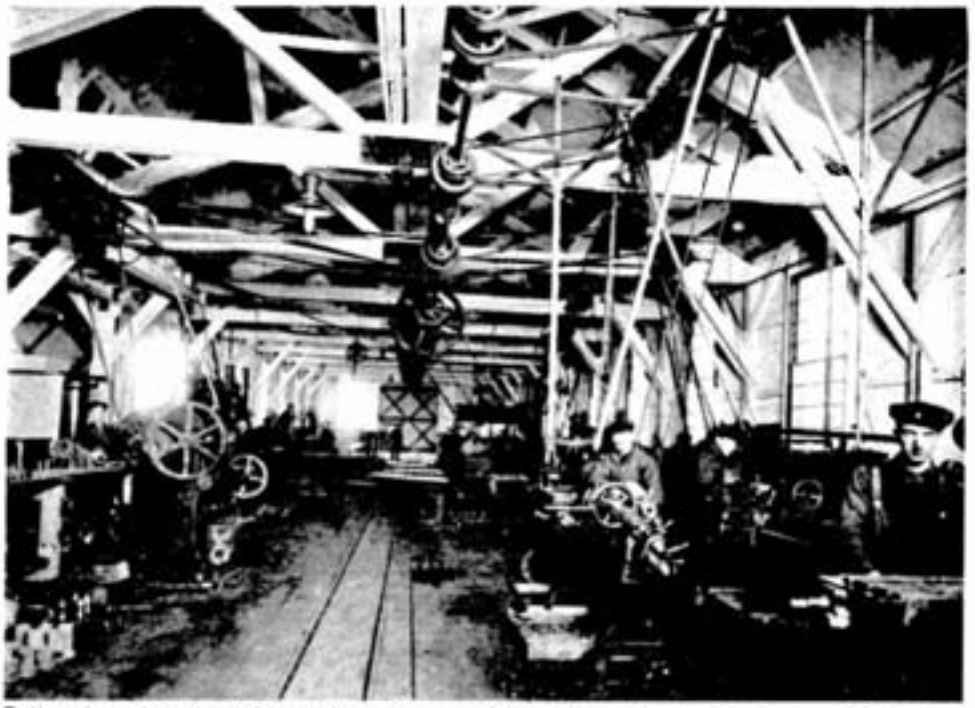
* * *

These three veterans of the Garson mine rockhouse have set a fine example for the rest of the crew. From left are **John Hoar,** conveyorman; **Elliott Ward,** car loader; and **Earl McCooeye,** rockhouse foreman. The crew has worked three years without a reported injury.

No one can make you feel more humble than the repairman who discovers you've been trying to fix it yourself.

That's Frood mine pillar leader **Moe Bedard** at the controls of his two-drum slusher. His working place, an undercut-and-fill stope on 1400 level, measures 200 feet from footwall to hangingwall and is four slices wide at its present elevation.

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



Believe it or not — but this was the old Copper Cliff machine shop back in the year 1914. The photograph was taken just prior to the shop's move to more modern quarters. **J. W. Garrow,** machine shop foreman, is at the far left, while **John McNevin,** a machinist, is second from right.

* * *

Charlie Hews, Ontario Division vice-president, Inco Metals Company, will present a paper on the "Impact of Underground Mine Mechanization on Secondary Industry" at this year's Canadian Mining and Aggregate Equipment Exhibition, to be held October 12 to 14 in the Automotive Building, Exhibition Place, in Toronto. Mr. Hews' paper will be presented at 3:30 P.M., October 13.

* * *

A capacity audience was on hand at the Sudbury President Hotel last Monday, as members of the Sudbury and District Chamber of Commerce listened to an informative address by **John McCreedy,** Chairman and Chief Executive Officer of Inco Metals Company. In his address, Mr. McCreedy cited the effects of changes in the nickel industry.

Pipebands from across the province gathered in New Liskeard recently for the Tri-Town's Highland Games. Perennial adventurer and public affairs assistant Captain **Sam Laderoute** accompanied the Copper Cliff Highlanders to the competition to observe and participate in the pipeband, highland dancing, piping and drumming competitions. Here, the long and the short of preparation for the trip gets under way as Sam instructs **Kevin Barclay,** right, on the proper method of loading a bass drum. Standing at left is Sergeant **Rob Walker,** son of **Con Walker,** administrative assistant in matte processing.

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

Communications are important in an international service club, and the Kinsmen Club of Sudbury is justly proud of **Paul Parent,** right, a senior chemist with Inco's Process Technology laboratory in Copper Cliff. Paul was recently the recipient of the National and International Junior Bulletin awards which were presented for Kin Kwips, the local club's publication. He was also winner of the Art Schwartz Challenge Cup, a bulletin award that was presented after judging publications from 60 countries around the world. Fellow Kinsmen gathered to congratulate Paul and admire some of his awards. From left, **Len Wiseman,** section leader of Copper Cliff nickel refinery process technology and past president of the Kinsmen Club; **Burnie Grant,** graphic draftsman in process technology and vice-president of the Kinsmen, and **Walter Megown,** project leader in the Iron Ore Recovery Plant process technology and treasurer of the club.

The new **McLelland Arena** in Copper Cliff was given an added boost recently when **Hugh Judges,** Ontario Division planner, Inco Metals Company, presented a $12,500 cheque to **Leo Biggar,** superintendent of facilities and maintenance, parks and recreation department of the city of Sudbury. The cheque was used to pay for an ice clearing machine that will come in handy when the rink is opened to the public.

* * *

Some folks figure that sitting around the cribbage board all day isn't such a bad way to make a living. At the Frood carpenter shop, **Paul Berlais** does just that. The difference is that Paul makes cribbage boards which are presented to employees on their retirement.

Working safely has become second nature to this Garson mine sandfill crew. Under the supervision of shift boss **Lawrence Burton,** the crew has gone over a year without a dressing of any kind, and they aim to keep it that way.

NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . .

The bulk of **Inco's premium quality iron ore pellets** are still moving through Turner Dock across the North Channel from Little Current, Manitoulin Island, for distribution to points in the central United States and Canada. The pellets, transported to Canadian Pacific Limited's Turner Dock by rail, have become the mainstay of the dock. At 2,000 tons an hour, it takes a full 8-hour shift to load the Algoma Central Laker **"Algoway"**, above getting ready to dock, to 14,000 tons, its capacity in Little Current harbour. The draught available to a boat decides the amount of cargo it can hold. Lower water levels this year have reduced the boat's capacity about 18 inches of cargo, or 2,000 tons from last year. Allowed the full seaway draught, the "Algoway" will carry 23,000 tons. Using front-end loaders to feed the shiploader from stockpiles, the pellets are loaded into the freighter's hold. A conveyor belt in the bottom of the hold can shift the cargo further to the correct compartment.

Team a thinking man with a fancy flying machine and the possibilities are endless, and the fishermen of the area are grateful that **Len McTaggart,** of Dominion-Pegasus Helicopters, came up with the idea of converting his Jet Ranger into a flying fish tank. The Ministry of Natural Resources hires Len to fly into many of the inaccessible smaller lakes in the Sudbury area which can't be stocked by transport or fixed-wing aircraft. The tanks are of Len's own design, and he fills them with water and fish. Len then lands on the lakes, and with the help of aircraft mechanic **Ken Merrill,** above, releases the fish inches from the water.

Prior to shipment underground at Garson mine, this five-foot by six-foot screen is securely strapped together by yard boss **Nick Basaraba.** The mine truck holding the screen is then rolled into the cage which takes it to the required level. Once securely bound, the screen presents little opportunity to cause injury. The yard boss knows the value of doing a job well, with safety in mind. Nick has worked over 27 years at Garson mine, totally free of accidents.

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

They grow 'em big in Lively . . . and this 10-foot sunflower is living proof of that statement. The Triangle photographer found the plant growing in the backyard of **Ernie** and **Sheila Wunsch,** of Lively. Here Sheila and her son **Dan,** a switchman at Creighton mine, are dwarfed by the sunflower. Ernie Wunsch is employed as a radio dispatch driver, also at Creighton mine.

Big smiles all around from the underground maintenance crew at Garson mine. Under the direction of shift boss **Andy Muir** the crew has gone for a year without a reported injury.

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Safety on the job is important, and members of the Central Utilities department in Copper Cliff take that philosophy with them wherever they go. With a total of 47 vehicles, the Central Utilities department put 500,000 miles behind them last year without a single disabling injury. Central Utilities manager **Gerry Cullain** stated that the group's excellent record could be attributed to "skill of the craftsman and knowledge of the job". The Department is comprised of the power section, mechanical utilities, oxygen plants and municipal and field engineering section.

NEWSMAKERS . . . NEWSMAKERS . . . NEWSMAKERS . .

The Creighton mine rescue team, winners of the **John McCreedy Trophy,** recently captured second place in the Provincial Mine Rescue Competitions. **George McPhail,** left, inspector of mine rescue training with the Ministry of Natural Resources, presented the team with plaques and transistor radios to commemorate their achievement. Accepting their awards from George McPhail are, from left, **Leo Paul Seguin, Allan Simpson, Wayne Arcand, Lorne Hunter,** captain **Dale Muirhead, Randy Naponse** and **Hugh Currie.**

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When **Maria Urban,** of Polkowice, Poland, visited her brother **Andy Kesek** recently, she didn't know that an underground tour of Crean Hill mine was on the agenda. Andy, who works as a bricklayer with the Inco Construction group, thought the visit might be appropriate because his sister is a 'Signalistka' or topwoman in her home town's copper mine. Maria has been doing the job for nine years and is the only topwoman on the job. Before taking the two underground, cagetender and interpreter **Mike Leondoski,** right, pointed out that Crean Hill mine was at the top of the mine safety standing list.

Hearing protection is a major concern at all Inco plants, and at Crean Hill mine hard hats with earmuffs are becoming accepted. Here lampman **Marcel Roy,** right, explains some of the benefits of the new hearing protection to, from left, **Stephen Withers,** drift driller; **Larry Bishop,** hoe ram operator, and **Harvey Behm,** driller.

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The beaches on Sudbury's Lake Ramsey are among the safest in the province, perhaps because they are guarded by the All-Ontario Lifeguard Champions. Sudbury's 1977 Waterfront lifeguard team captured the title during competitions at Carleton University in Ottawa. The team was tested on their first aid, relay and emergency procedures. **Hank Derks,** Inco's Ontario Division chief first-aid co-ordinator, helped prepare the team with first-aid training. Lifeguards comprising the team are **Jim Hodges,** front, **Susan Saville,** seated left, **Nancy Lawlor,** with trophy. Other members of the team are, clockwise from left, **Calum MacLeod,** head coach, **Warren Saville, Mike Waters, Wendy Gancher,** manager coach **Ted Durbacz,** and **Kelly Lynott,** assistant coach. The team will represent the province of Ontario in the All-Canadian Lifeguard Championships to be held in Edmonton next May. Susan Saville is the daughter of **Don Saville,** of industrial engineering. Ted Durbacz is the son of Creighton mine stope leader **Stan Durabcz.**

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

Little Stobie mine planner **Ian McPhee** prepares to tee off at the first hole of the Little Stobie Mine Golf Tournament, held recently at the French River Golf Course. Ian must have followed the advice of his buddies, at game's end he tied for fourth place with "a fine score of 84." Looking on are maintenance mechanic **Bob Roy,** mine planner **Chris Cobbledick** and driller **Pat Godin.** Chris didn't follow anyone's advice and captured first place with a "first-rate 68."

Appointments

Marina Abar, general customs clerk, Copper Cliff.

Dar Anderson, manager, mines maintenance, mining and milling, Copper Cliff.

Ash Chowdhury, industrial evaluator analyst, Copper Cliff.

Roger Fung, industrial evaluator analyst, Copper Cliff.

Bill Hudgins, supervising industrial evaluator, Copper Cliff.

Irene Irvine, keypunch operator, computer systems, Copper Cliff.

Kevin Longard, industrial evaluator analyst, Copper Cliff.

Don Millett, industrial evaluator analyst, Copper Cliff.

Brian Pearson, superintendent of safety, smelting and refining, Copper Cliff.

Larry Peyton, programmer analyst, Copper Cliff.

Jim Scott, mine superintendent, Levack mine.

Brian Young, mine foreman, Copper Cliff south mine.

Wayne Young, shops co-ordinator, Copper Cliff Central Shops.

A steady hand and a sharp eye were the order of the day at the Garson Pistol Range as police officers from across the province gathered for the Sudbury Region Invitational Combat Shoot. Time shooting, reaction time and accuracy helped constable **William McIlmoyle,** centre, take top honors, beating out heavy competition from his fellow officers and members of the Armed Forces Military Police. Also competing were constables **Wayne Swarbrick,** left, and **Alex Keable.** The three constables are with the Sudbury Regional Police.

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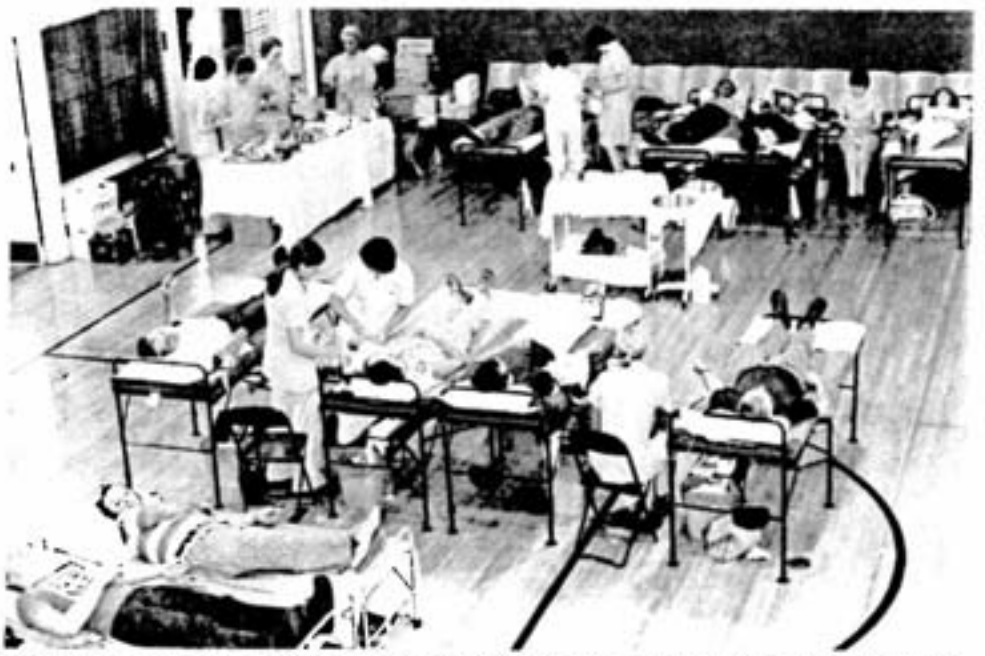

A successful blood donors clinic was held recently at the Inco recreation hall in Port Colborne. A unit of the Canadian Red Cross from the Hamilton area and many local helpers were kept busy most of the day collecting a total of 329 pints. The blood will be used to replenish stocks which dwindled during the summer vacation period.

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

There's a lot more to running a mine than working underground, and this yard crew from Copper Cliff South mine are trying to prove that safe working procedures can be effectively applied on surface as well. So far this crew has gone accident free for over six months while keeping surface services running safely and smoothly.

Preparation for Retirement

The need to establish well defined **plans for retirement** has become a much discussed item of interest — this is evident by numerous articles appearing in newspapers, magazines and information provided through industrial, governmental and educational sources. Inco Metals Company has provided assistance to many employees and spouses through the pre-pension counselling program. For those who have been unable to take advantage of the opportunity or those who wish additional discussion, the **Employee Benefits Counsellors** will be pleased to arrange an appointment at your convenience. The number to call in Copper Cliff is 682-4438 and in Port Colborne 834-3611.

Suggestion Awards . . . Suggestion Awards . . . Suggestion Awards . . . Suggestion Awards . . . Suggestion Awards

Thomas Bell

George Lalonde

David Mazerolle

Gerald Gagnon

Herbert Cole

Numerous employees shared in big cash awards from the company suggestion plan this past month. Heading the list are **Thomas Bell,** of Frood mine, and **George Lalonde,** of Copper Cliff North mine. Each of them was awarded $2,500 for a suggestion to purchase double-threaded roof bolts, with only one nut attached. Next in line was **David Mazzerolle,** of the Frood-Stobie mill, who picked up $870 for a suggestion to turn the vibratory screens around when worn, thereby doubling their period of usefulness. At the Copper Cliff smelter, **Gerald Gagnon** designed a form for the repair of one casting mould side wall and was awarded $770. **Norman Morrow,** of Frood mine, picked up $595 for recommending that tugger hoist brake screw nuts be fabricated in Inco shops. Garson mine's **Ernest McKerral** came up with an improved method of redecking mine utility trucks and walked away with a $550 award. **Herbert Cole,** of the Frood-Stobie mill, pocketed $460 for recommending installation of a holding tank and piping oil to the mill feed conveyors. Levack mill's **Edgar Melanson** won $335 for his improved method of repairing cell shafts. **Elmer Zinkie,** of the Copper Cliff smelter, took home $290 for a suggestion to exclude eight stack tuyeres from several converters. The team of **Michel Belanger** and **Andre Belanger** split $260 at the Levack mill for recommending replacement of a feed roll steel deflector plate with a plastic one. Andre also suggested lining the fine ore chute with live rubber, and was awarded $180. At Copper Cliff North mine, **Wayne Laflamme** won $150 for recommending reinforcing the plate for ST4 and ST8 scooptram buckets. **George Williams,** of Levack West mine, won $100 for recommending installation of a piece of cable to prevent uphole drills from coming out of gear. **Norm Willard,** of Levack mill, suggested shortening the lime screw conveyor spiral to prevent blockage. He walked away with $90. A $75 award went to the team of **Lucien Joly** and **Fred Jones,** of Creighton mine, for their idea to install spill plates on backhoe buckets. Another Creighton mine team, **Harvey Beech** and **John Villeneuve** picked up $75 for recommending to raise the window in the carpenter shop for a better view of the button saw operator. **Graham Fogal,** also of Creighton mine, was awarded $75 for recommended modifications to drill staging guardrails. **Ronald Tranchemontagne,** of Levack West mine, was awarded $70 for his idea to prevent uphole drills from coming out of gear. **Ed Fila** and **John Hoffman,** of the Copper Cliff copper refinery, were awarded $65 for their idea to install larger power cable to the motor in storage. Awards of $60 were presented to **Gaetan Durocher,** of the Levack mill; **Robert Littlejohn,** of the Levack mill, and **Robert Rorison,** of Creighton mine. Picking up $50 awards was the team of **Wayne Chenette** and **Gerry Fraser,** of the Copper Cliff mill; **Murray Hatfield,** of the Levack mill; **Mel Ferris,** and **Bruce Patchett,** of Creighton mine, and **Garry Belfitt,** of Levack mine.

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

Summer student **Tom Winton** appreciates the value of eye protection. Tom was spiking rails with the track gang along the Copper Cliff slag cut when he was called over to assist in turning a rail. A small piece of slag, wedged under a tie plate, flew up and struck his glasses when the rail was laid. If not for the safety glasses, Tom Winton certainly would have lost an eye.

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Sincere congratulations were recently extended to **Guy Hashey,** centre, for his exemplary safety performance. The lineman helper has worked for the company for 40 years without a lost time injury. Line repair general foreman **Jack Hunter,** left, and **Gerry Cullain,** manager of central utilities, Ontario Division, congratulated on his outstanding safety performance.

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Those 'standing room only' days at the Levack-Onaping Arena may be numbered. Local hockey buffs will be pleased to hear that Inco Metals Company recently donated $10,000 toward the Onaping Falls Recreation Advisory Group's project to provide additional seating in the arena. Levack West mine general foreman, **Glenn Strutt,** left, presented the cheque on behalf of the company to **Lloyd Lalonde,** a member of the recreation advisory committee. Looking on from the rear are Onaping Falls mayor **Jim Coady,** left, and committee member **Bob Sabourin.**

Inco track gangs have a big plus in their favor with this multi-purpose loader to assist them in their work. Capable of operating on or off the track, the loader is used to handle the long steel rails that have been responsible for the excellent bicep development of past crews. The boom comes equipped with a magnet for picking up rail fastenings, as well as attachments to convert it for use as a backhoe or forklift.

DOWN MEMORY LANE . . . DOWN MEMORY LANE . . .

1937

Admirably situated at the east end of Lake Ramsay, with excellent swimming and sports facilities, these picnic grounds leased and equipped by Frood Welfare Association have been the scene of very successful picnics staged by the Frood Welfare and by the Copper Cliff Benefit Association. Photo shows a portion of the Frood picnic crowd gathered around the refreshment counters. At both events races, softball matches, pie-eating contests, and other features contributed to thoroughly enjoyed programs. Free ice cream was distributed in copious quantities to the kiddies, who took full advantage of this golden opportunity. The initiative of the sponsoring Associations evoked a great deal of favorable comment, and the popular picnics will probably be held annually in the future. Always a valuable addition to any entertainment, the Coniston Band is seen in the foreground.

Garson Welfare Association's snappy orchestra, which scored such a hit with the crowd at the season's first INCO Amateur Contest and earned a place in the finals on August 30, presented the complete program at a smoker held in Garson, July 29. Standing on the stage, from left to right, the orchestra members are: Maestro Fred Desjardines, Pete Desjardines, Omere Daoust, Albert Mann, Eddie Desjardines, Murray McMaster, Walter Forbes (the lad who can play a violin in any position except under water), and Tony Veranda. Members of the Welfare Association executive in the foreground are: President A. Lye, Secretary Tommy Hamill, Bob McCauley and Sam Souch.

Copper Cliff:—Silver salmon fishing, just off the Washington shore across from Victoria, was the highlight of a holiday jaunt to the Pacific coast by Walter Stephen, of Copper Cliff concentrator. He and his brother were out only an hour to land the catch with which Walter modestly poses in

the accompanying photograph. The big fellow he's holding toward you so invitingly weighed 10 lbs., put up a thrilling fight, and was food fit for a couple of kings.