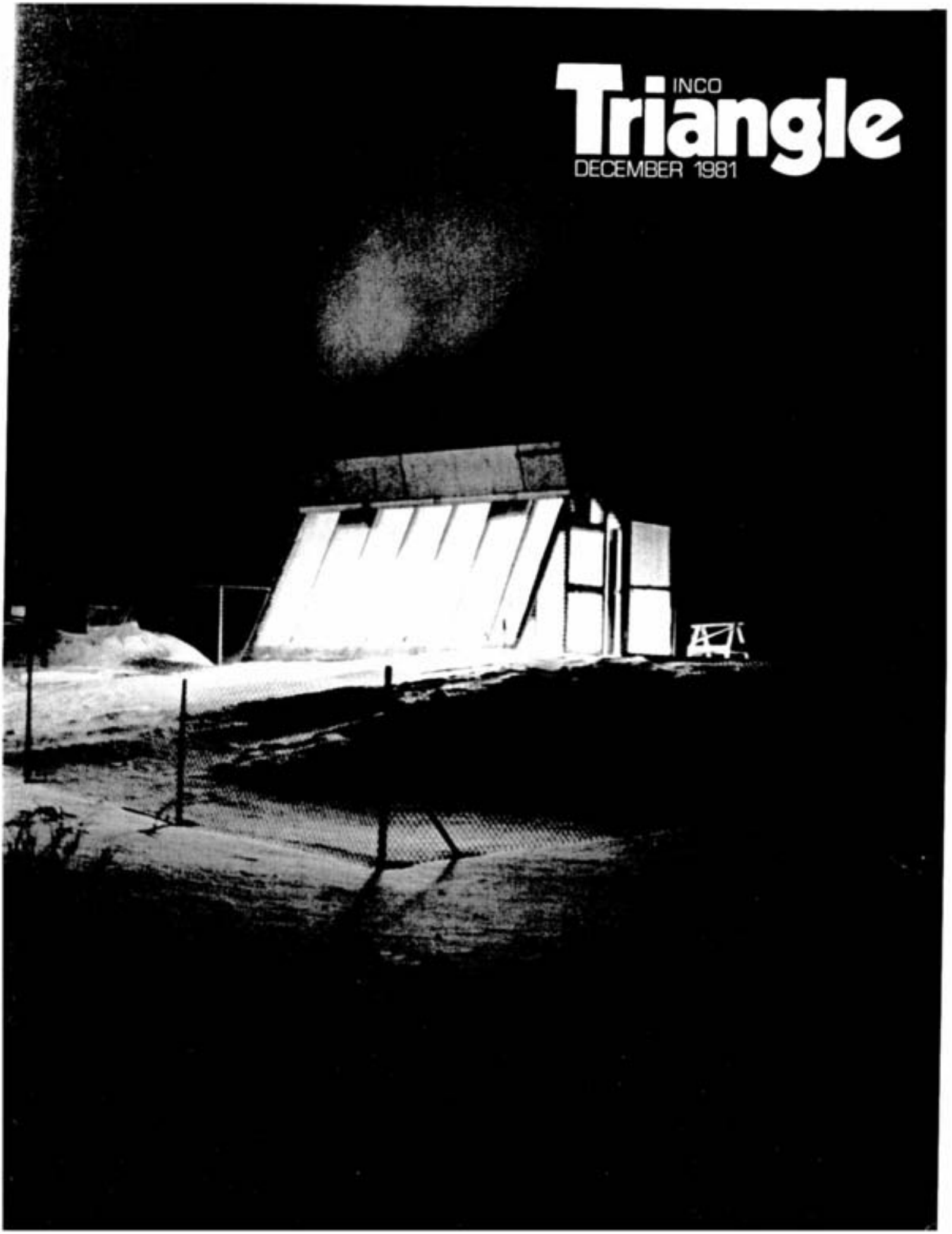

INCO Triangle

DECEMBER 1981

INCO Triangle December 1981, Vol. 41 No. 11

In this issue

A big rewind

Repairing a 27-ton, 9,000 hp stator was one of the biggest jobs ever undertaken by the winding shop. It was accomplished with painstaking care in just seven weeks from start to finish.

Then and now

A lot can happen in 20 years but nowhere is the passage of time more evident then in pictures taken approximately 20 years apart. Our traditional Christmas feature of then and now Family Albums, shows how families grow and change in 20 years.

Christmas Seals

Christmas Seals have been in existence for almost 80 years. They were originally used to raise money to combat TB but are now used more to fight other diseases of the lung.

Shorter stack

A Copper Cliff landmark since 1929 has been reduced in size. The original 500-foot red brick stack lost 100 feet off the top when it was dismantled, brick by brick, during the summer.

On the cover

Glowing softly in the night sky is Inco's experimental greenhouse near Copper Cliff South mine. No matter how cold the outside temperature may get, the inside temperature stays warm thanks to an ingenious method of using waste heat from the South mine return air raise. For more details see story on page 18.

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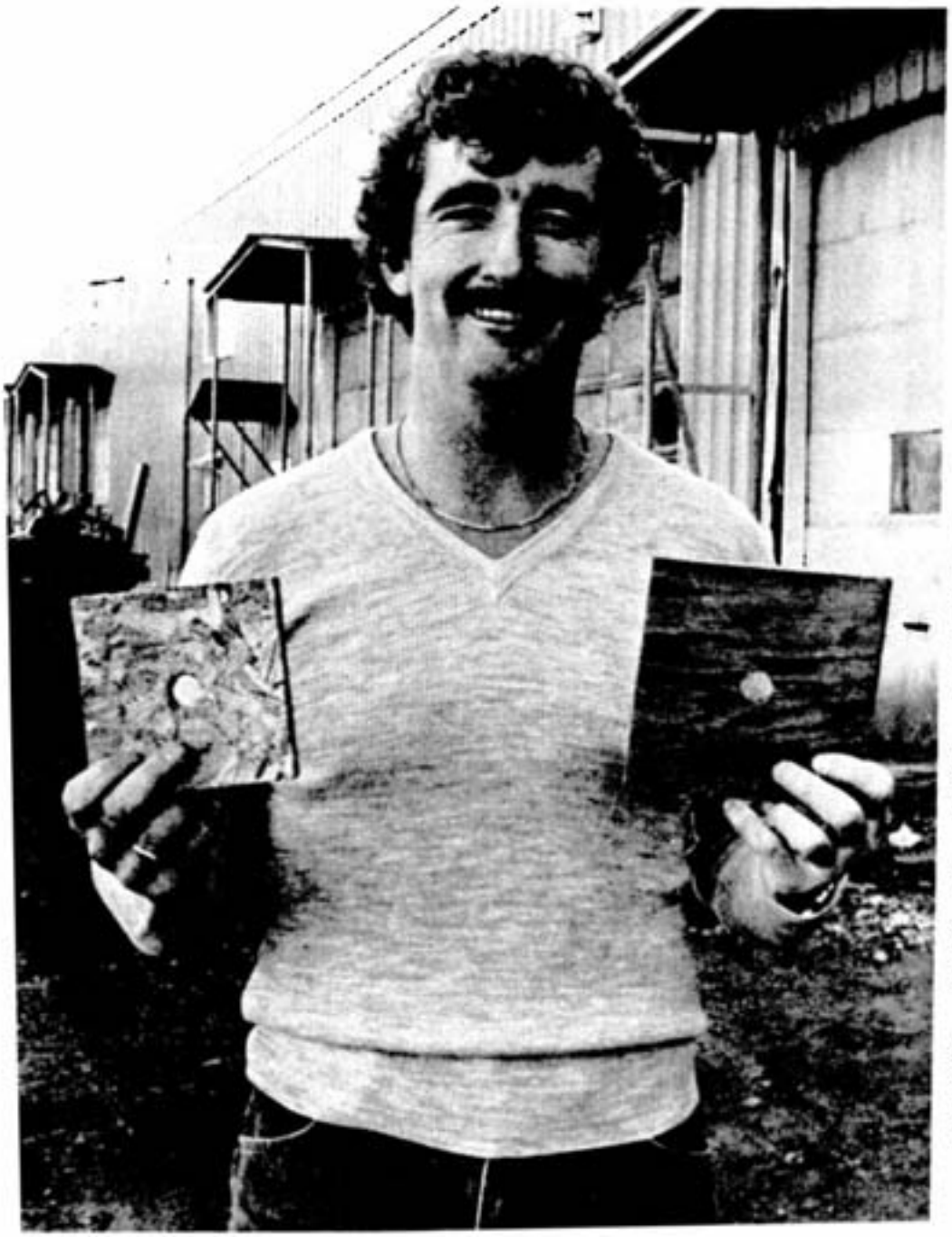
On behalf of the Ontario Division I would like to extend best wishes to you and your loved ones for a joyful holiday season. May all the warmth and happiness that is present during this time remain with you throughout the new year.

Winton K. Newman
President
Ontario Division
Inco Metals Company

10,000 reasons to smile



Guy Downey's smile could easily be featured in a toothpaste commerical.

The reason? His smile is worth many dollars — 10,000 to be exact. Yes, 10,000 big ones. Guy is the most recent recipient of the company's maximum employee suggestion plan award.

Guy, a driller at McCreedy West mine, came up with the winning suggestion to replace a six inch by six inch plywood washer used for roof bolting underground with a five inch by five inch washer made of chipboard.

The wooden washer and a metal washer are used to hold the screen securely in place while the roof bolt is torqued into the back of the stope. The wooden washer prevents the metal washer from cutting the screen during the bolting operation.

The washer made from chipboard cost considerably less than the washer made from plywood and proved to be just as durable. The reduced size of the washer resulted in substantial savings in materials. Guy's suggestion to use a different type and size of washer has resulted in a 30 per cent savings in material for the company annually. The new washer is being used on a division-wide basis.

Experience in blasting and drilling operations helped Guy come up with his idea. "I found that the life of the plywood washer was quite short," he said, "so why not use a washer of different material and of equal quality but is much cheaper. I thought the chipboard could do the same job."

Guy thought his idea was a good one so he put it down on paper and submitted it to the suggestion plan office.

"The size of the award came completely by surprise," Guy said. "It's not very often that you have something like this dropped in your lap. It should make for a very merry Christmas."

This is the second maximum employee suggestion plan award presented this year. Guy joins Ray Morin of the copper refinery on the major winner's list. Congratulations!

AROUND THE PORT

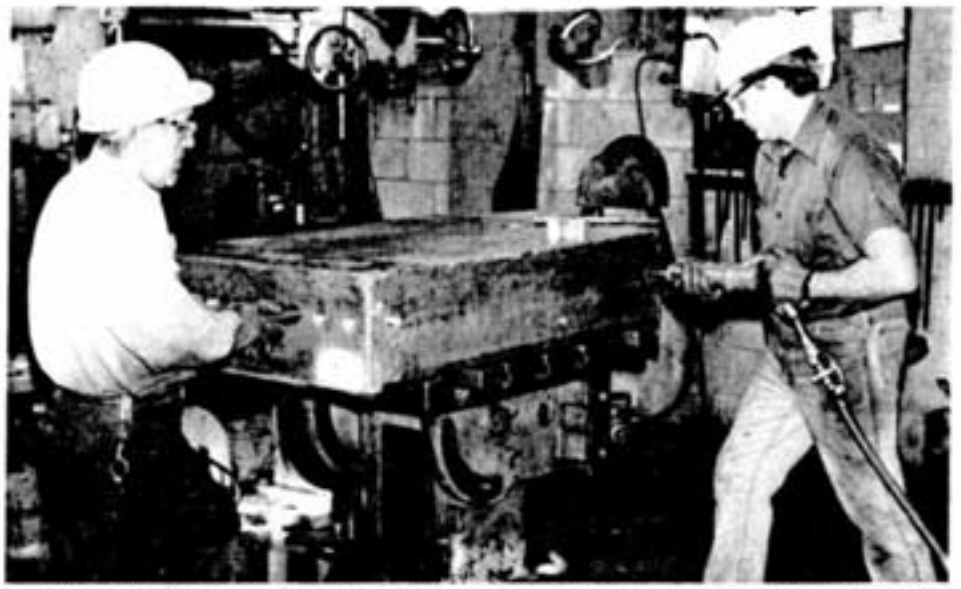
news and views from the Port Colborne nickel refinery

Made by Inco for Inco

The moulds used to cast nickel anodes at the Port Colborne nickel refinery are unique in that they are totally an Inco product. The copper used to make them is mined in Sudbury and refined and cast at the Copper Cliff copper refinery. The metal used, comes from the same furnace that is used to make wire bars. The flow of molten copper is simply diverted long enough to fill the metal die.

Until last spring each mould was double faced, meaning that when one side had outlived its usefulness it was flipped over, allowing the other side of the pattern to be used. Those moulds were made by the sand casting method and only two could be made each pouring. The new one-sided moulds are die cast and a large number can be made during a pouring.

The 3,300 pound castings are sent to Port Colborne for machining and are then installed on the casting wheels. When the moulds deteriorate beyond repair, they are returned to the copper refinery to be recycled. Moulds for casting copper anodes are made by the same method.



Machinists Mike Bauer and Clint Minor install internal plugs to regulate the circulation of cooling water through the holes drilled in the mould.

The PCNR children's Christmas party will be held at the Inco recreation hall on Friday, December 18 at 6:30 p.m.

SOCCER FINALISTS

The Italo-Canadians soccer team from Port Colborne was a finalist in the Ontario Cup, but lost out, by one point, to a team from Rexdale in the final game. Team members are, front from left; ***Massimo Citrigno, Paul Favero, Mark Brouillard, Lucio Ianiero, Steve Interisano*** *and* ***Lino DePasquale*** *(coach) and a trackman at the refinery. Back row, from left;* ***Wayne Rae, Tony Citrigno, Kevin D'Onofrio, John DiPasquale, Tim McGowan*** *and* ***Frank DeChellis.*** *Missing when photo was taken was trainer* ***Bruno Favaro,*** *a lift truck driver at the PCNR.*

CURLING INSTRUCTION

Veteran curler and superintendent of operations of the Port Colborne nickel refinery, ***Bill Kantymir,*** *instructs plant nurse* ***Sheila Wakaliuk*** *in the basics of curling during a recent "open house" at the Port Colborne Curling Club. Many other Inco employees and their spouses also accepted the club's invitation and received expert instruction from other qualified teachers such as Tom Christoff of the maintenance department, John Sullivan of the general lab and Vic Bahniuk from the research stations.*

Pastoral Institute

Outside Huntington College, Rev. Bill Major, left, and Inco's Eric Fenton discuss the counselling services offered to Inco employees.

Coping with life on a daily basis is at times hurting and challenging. Many people can cope with stresses on the job or in personal relationships while others find it all too difficult. The stresses may lead them to seek professional counsel.

The Pastoral Institute of Northern Ontario, located at Huntington College at Laurentian University campus, is a non-profit, ecumenical training and service organization supported by various church groups, social agencies and institutions. The Institute has entered into contract with Inco Metals Company to provide counselling and training services for its employees and families.

"The need for these services has always existed," said Eric Fenton, superintendent of industrial relations. "An employee may have a problem that develops into something he just can't handle. He has no outlet or pressure release valve. An independent organization like the Pastoral Institute can provide him with counselling services."

Seeking professional help unfortunately has a stigma attached to it, said Rev. Bill Major, executive director of the Pastoral Institute of Northern Ontario. "In our society it's a sign of weakness. Everyone should be self-sufficient and be able to deal with their own needs by themselves," he commented. "It's a big step to

reach out for help. We at the Institute believe seeking help is not a sign of weakness, but a sign of caring about yourself and your life."

The Pastoral Institute provides Inco employees with a variety of counselling services; individual counselling dealing with stress, depression, anxiety, alcohol and drug dependencies and relationship problems; marriage and couple counselling involving problems with communication, sexuality, parenting, dealing with conflict and decision-making, growing in relationship skills; family counselling involving parent and child consultations, problems such as communication, discipline and conflicting lifestyles.

Rev. Major added that counselling at the Institute is not giving advice, not judgmental, nor is it someone running your life or the company finding out about the employee's life.

"Counselling is helping and supporting people to take steps to make the most of their lives. It is carried out in a safe, trusting and strictly confidential atmosphere," he explained.

Referrals can be made by professionals such as doctors or clergy, by individuals, by agencies or by self-referral. Persons seeking more information may phone the Institute office at 673-4446.

Rev. Major goes over counselling schedules with, from left; Dolores D'Amour, associate director, and Marcia Pasika, executive secretary, both of the Pastoral Institute of Northern Ontario.

Reach For The Top

The cream of the student crop from high schools in Timmins, North Bay and Sudbury toured Inco's operations at Copper Cliff in October while they were in the city to tape the Northeastern Ontario Reach for the Top finals.

Students from competing high schools prepare to answer questions from the quiz master on the set for Reach for the Top program.

Representing 24 high schools, the students engaged in a battle of brains in front of CKNC quiz master Peter Williams. The results would decide which teams would advance to the next level of competition leading to the provincial and national Reach for the Top contest. The series was put "on air" October 31st and can be seen Saturday afternoon on Channel 9 Cable 8 at 1:30.

This marks the 10th season of the station's involvement with Reach for the Top. CKNC and Sudbury will be host to the all-Ontario Reach for the Top final in March.

Local teams, if past performance is any indicator, stand an excellent chance of going a long way down the Reach for the Top road. Last year a foursome of scholars from St. Charles College in Sudbury advanced all the way to the national final and missed the Canadian championship by a scant 20 points.

Reach for the Top contestants listen to tour guide Bob Paradis' explanation of the operations at the Clarabelle mill control room.

First class winders George [illegible] and Jack Dube peer through the massive 55-ton stator.

A Big Rewind

When the 27 ton, 9,000 horsepower stator from the number one substation was removed and forwarded to the winding shop floor in early August, the winders realized they had a big job on their hands. Loyal Lagrove, a first class winder for the last 25 years at Inco and the man who oversaw the project from its start to its finish seven weeks later, stated it was the biggest job ever undertaken in the history of the winding shop.

The stator is part of a 55 ton unit that drives a 90,000 cubic feet per minute intermediate air blower that supplies blast air for the converters in the smelter and the FBR roasters. Because it performs this critical function it is called the "backbone of the smelter" by some. After a power failure earlier this year it was discovered that two coils in the stator had "grounded out", disabling the unit. Two blowers, one pushing 40,000 cfm and the other 60,000 cfm, were installed to replace the bigger machine while it was being repaired.

The crucial part of the operation in the winding shop was lifting, very gradually, a fraction of an inch at a time, the many coils in front of the two damaged coils. The painstaking work was done until the winders had the necessary 2 1/2 inch clearance they needed to remove the bad order coils. Twine held the coils up as the winders proceeded carefully to their objective. "If we damage the coils then we would have lost the job," explains Loyal. "It's like a doctor operating on your heart, if he cuts in the wrong place . . . That was the key to the whole job."

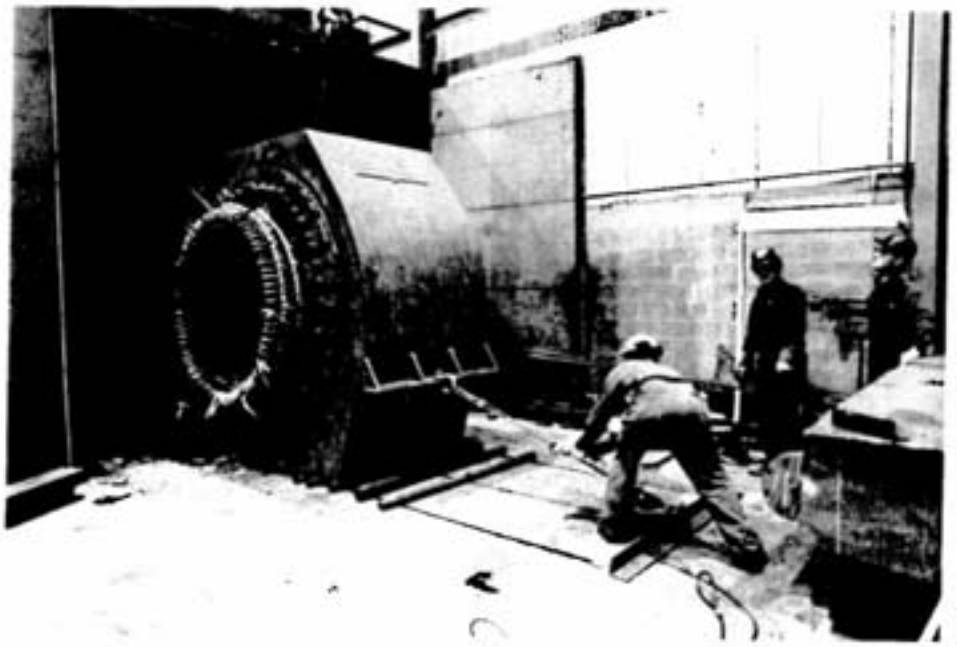
Loyal Lagrove, a first class winder for the last 25 years, oversaw the project.

Maintenance mechanics Clarence Lajambe, left and Tony Ostojic direct stator onto float truck.

The winders succeeded in installing a new pair of coils. They also found a breakdown of insulation on all 84 coils, a situation which called upon them to do extensive re-insulation work. In addition to this the winders also reduced the internal diameter of four holding rings.

The final step of the stator project began with the stator being carefully maneuvered by crane into the winding shop oven where it was baked for 16 hours so the epoxy impregnated glass cord holding the coils onto the rings would harden. After a cooling period, the men plugged the gaps between the coils with Dacron felt saturated with varnish. Once again the stator was baked at 300 degrees, this time for 24 hours. Finally, it was sprayed with five coats of thin varnish and baked for 36 hours leaving the interior of the stator with a high gloss finish. The huge apparatus was lifted out of the oven, rolled out of the winding shop to a float that carried it back to sub-station number one.

More than being a source of pride, Loyal feels the opportunity to work on such a large project has given all the winders, particularly the younger ones, some very valuable experience. Every winder in the shop spent time on the substation stator. "They wouldn't normally have a chance to witness work being done on such a big motor," he remarks. Not only is the 9,000 horsepower the only one of its type at Copper Cliff, but it is also rarely seen in need of repair. The previous major repair job was done in 1966.



Chris Dugas ensures that the stator is safely guided out of the winding shop oven. Looking on are Clarence Lajambe, left and Ron Crowe.

INCO

Quarter Century Club 1981

A total of 600 Inco employees in the Ontario division were honored for their 25 years of service at the 32nd Annual Meeting of the Quarter Century Club held in October. Due to the large number of new members in the Sudbury area, the ceremonies were held on three consecutive evenings, October 20, 21 and 22. The Port Colborne Quarter Century Annual Meeting was held October 23.

New mining and milling members were hosted on the first night by Inco Metals vice-president Tom Parris. Charles Baird, chairman and chief executive officer of Inco Limited, welcomed the new members and their wives.

On October 21, Mike Sopko, vice-president of smelting and refining, hosted his area's new members with Roy Aitken, senior vice-president of Inco Metals Company, welcoming the new members and their wives.

The new engineering and maintenance and administration members were hosted by vice-presidents Frank Sorochinsky and John MacDougall on October 22. Walter Curlook, president and chief executive officer of Inco Metals Company, addressed the new members and their wives that evening.

In Port Colborne, Trev Fregren, manager of the nickel refinery, hosted the new members of the Quarter Century Club on October 23. Welcoming the new members and their wives was Charlie Hews, vice-president of Inco Limited.

New members and their wives enjoyed an evening of lively conversation, entertainment, dinner and dancing. Each new member was presented with a gold Quarter Century pin while his wife received a Quarter Century cup and saucer.

Congratulations to all the new Quarter Century Club members — it's certainly an achievement of which you can be very proud!

Quarter
Four nights

Century
to remember

Then & NOW

1962 — *Ken MacDonald and his wife Estha with daughters from left; Betty Ann, Susan and Lois, and son Barry. Ken worked at Creighton mine.*

1981 — *The MacDonald family now — Ken and Estha with daughters from left; Betty Ann, Susan and Lois, and son Barry. Ken is retired.*

1960 — *Jack and Elaine Ruddy of Coniston with Carol, 3, and Billy, 3 months.*

1981 — *Jack and Elaine with, from left: Billy, Cathy, Carol and Brian. Jack works at the Copper Cliff nickel refinery.*

Then & NOW

1963 — *Bill and Winnifred Prince with sons Jeffrey, 7, and Gordon, 4.*

1981 — *The Prince family now — Winnifred, Jeff, Gord and Bill. Bill is staff paymaster in Copper Cliff.*

1961 — *Tony and Rosina Seppacergua of Port Colborne with twins Diana, left, and Rosemary, 2, and son Albert, 8.*

1981 — *The children sure have grown up in the intervening years. Here's Mom and Dad with, from left, Diana, Rosemary and Albert. Tony works at the Port Colborne nickel refinery.*

Then & NOW

1957 — *Jerry and Eileen Tovey with Judy-Ann, 5, Michael, 7, and Louise, 3.*

1981 — *Mom and Dad with children, back from left; Tom, Judy-Ann, Joe, Angela, Michael and front centre, Louise. Jerry works at Creighton mine.*

1960 — *Henry and Therese Bourre with their clan, back row from left; Jacqueline, Jannine, Annette, Helene, Yvette, Fernand, Claude, Donald; front from left; Jacques, Denise, Colette, Richard and Gerald.*

1981 — *The Bourre family, back row from left; Gerald, Richard, Donald, Dad, Claude, Fernand, Jacques; front from left; Helene, Colette, Denise, Mom, Annette, Jacqueline and Jannine. Henry is retired.*

Then & NOW

1961 *— Jack and Marlene Moskalyk with Sandra, 1.*

1981 *— Jack and Marlene with their children, back from left; Kevin, Derek, Kirk, Sharon and Sandra. Jack is a benefits counsellor in the benefits department.*

1961 *— Tom and Audrey Kirwan with their youngsters, from left: Janet, 3, Wayne, 4, Bobbie, 11, Frank, 7, and Carol, 5.*

1981 *— Mom and Dad with, back from left; Frank, Carol, Bobbie, Janet and Wayne. Tom is recovery superintendent at the Iron Ore Recovery Plant.*

Waste Heat Provides Fresh Vegetables

Agricultural technician Mike Peters inserts seeds into bolsters.

Mike Peters checks growth rate of plants ready for harvest.

Horticulturist Ellen Heale, project superviser, examines leaf lettuce

If you happen to work at Copper Cliff South mine and part of the daily routine includes having to listen to your partner expound endlessly on politics, sport and weekend activities, you will be happy to know that all that hot air he releases into the drift is going to some very good use. It may be helping to grow the leaf lettuce, tomatoes and cucumbers that he likes to stack in that huge creation he calls a sandwich.

Sitting unobtrusively near the ventilation shaft at South mine is an experimental 150 square foot greenhouse operated by Inco's agriculture department. This structure is special because it is heated with mine ventilation air. The waste heat exhausted from the mine acts as an insulation blanket, keeping the interior warm in winter and cool during the summer.

Jointly funded by the Regional Municipality of Sudbury and Inco, the greenhouse was erected in the fall of 1979. Its foundation consists of a number of gabions (wire cages) filled with riverstone. These rocks act as a filter, removing dust and particulates from the mine air being drawn from the mine. They also prevent rapid fluctuations in air temperature.

The exterior of the prototype greenhouse is corrugated fibreglass, common in greenhouse construction. Approximately six inches inside there is a layer of transparent polyethylene sheeting. The mine air circulates between the sheeting and the fibreglass to form an effective barrier against the external environment. The period between cleanings of the polyethelene material is lengthened by dust and particulates being trapped in the rock filters below. The mine air does not circulate inside the greenhouse but is expelled through a vent in the top of the greenhouse. High humidity would enhance plant disease problems if this air came in direct contact with plants.

In order to maximize the use of passive solar radiation, especially during winter months, the southern wall has been sloped at an angle to catch the sun's rays. The granular slag floor also absorbs and retains heat from the sun. The north wall of the greenhouse has been insulated to protect the interior from the icy blasts of winter.

Ellen Heale, horticulturist and project supervisor, and Mike Peters, agricultural technician, have been conducting growing tests with tomatoes, English cucumbers, leaf lettuce and spinach since January of 1980. Ellen says experiments have been very successful to date and commercially viable crops are possible.

Plants are grown in fibre pots or bolsters filled with an artificial soil mix. Feeding and watering are automatically controlled by a system which pumps water mixed with fertilizer to each plant. Ellen notes that supplemental heat and light were provided for certain crops to make up for our cold, short winter days.

The average temperature of the air being pumped out of the mine into the greenhouse ranges from approximately 10 to 12 degrees Celsius. Electric baseboard heaters have been used to supplement mine ventilation air and raise temperatures on particularly cold days. When the outside temperature plummeted to -30 degrees, the temperature in the greenhouse was maintained well above freezing at 7 degrees. The extra light needed to stimulate plant growth is supplied by a high pressure sodium lamp which provides optimal lighting conditions.

After three successful crops of greenhouse tomatoes and one of cucumbers, Ellen and Mike have commenced another special experiment. In March, they seeded a pair of "cool season" crops, leaf lettuce and spinach. This time, Ellen added, no supplementary electric heat was provided. "We took a chance this time," Ellen smiles. "I'm extremely pleased with results." The crop's survival and the lower expenditures of energy required for heat, enhanced the economic viability of the project.

As experiments continue in the prototype greenhouse, Ellen and Mike are looking forward to the time when a larger test greenhouse will be built. Other sources of waste heat, such as compressor coolant water, used in many surface operations, will be explored for their use in warming greenhouses.

"In an era of inflation and rising energy costs, the prototype greenhouse offers citizens of northern mining communities the potential for obtaining reasonably priced, good quality, fresh, salad-type vegetables year round," states Ellen.

Mike Peters, left and Ellen Heale, in the process of planting seeds for the first crop.

Christmas Seals

As a stamp the Christmas seal does not have the legal power to carry your card down the street, but as a symbol of the fight against lung disease it has carried the hope of relief to millions of sufferers over eight decades around the world.

The story of the Christmas seal is the story of Christmas itself; a statement of people pulling together to help the less fortunate. A Danish postal clerk named Einar Holboell, moved by the plight of children stricken by tuberculosis, came upon the idea, in 1903, of selling stamps to raise money that would help these youngsters.

People would be asked to donate a standard, nominal fee affordable to everyone when purchasing a Christmas seal. Holboell realized that large sums of money could be realized without costing anyone very much. He convinced not only post office officials but also Christian IX, King of Denmark on the merits of the Christmas seal.

The first edition of the seal was issued in the Christmas season of 1904. The success of the campaign went beyond the wildest expectations of anyone, as Danes bought 4,000,000 seals. The money from these Christmas seals and those from the 1905 campaign went towards the construction of two hospitals for tuberculous children.

It did not take long for the gospel of the Christmas seal to spread throughout Europe and over to North America. Emily Bissell pioneered the Christmas seal in the United States in 1907. A year later, in Toronto and Hamilton, people involved in building hospitals for TB patients undertook Canada's first Christmas seal campaign. Ever since then the seals have been as much a part of Christmas as holly and ivy.

Historic and colorful, Christmas seals have been coveted by stamp collectors. Yet they do not command great prices in the marketplace and are not considered a good investment. "It's only a collectible," explains Bob Boudignon, a coordinator in accounts payable and an avid stamp collector. "It's a Cinderella item to postage stamps. It's something related to stamp

collecting by it being used on envelopes at Christmas time."

The earliest Christmas seals raised money and created an awareness of TB on behalf of particular hospitals in specific cities across the country. Before 1927, seals bore the names of different TB sanitoriums such as the Royal Edward Institute, the Queen Mary Hospital for consumptive children, the Queen Alexandra Sanatorium and Preventorium, the Toronto Free Hospital for Consumptives and the Muskoka Free Hospital for Consumptives. After 1927 the numerous Christmas seal campaigns were brought together under the umbrella of a national TB organization. Since then the seals issued throughout the country have been standard, with the designs being changed each year.

In past years funds from the Christmas seal campaign went exclusively to fighting TB, a highly infectious disease of the lung. According to Dawn Leppinen, executive director of the Sudbury Lung Association, TB is controlled by drugs, it is not extinct.

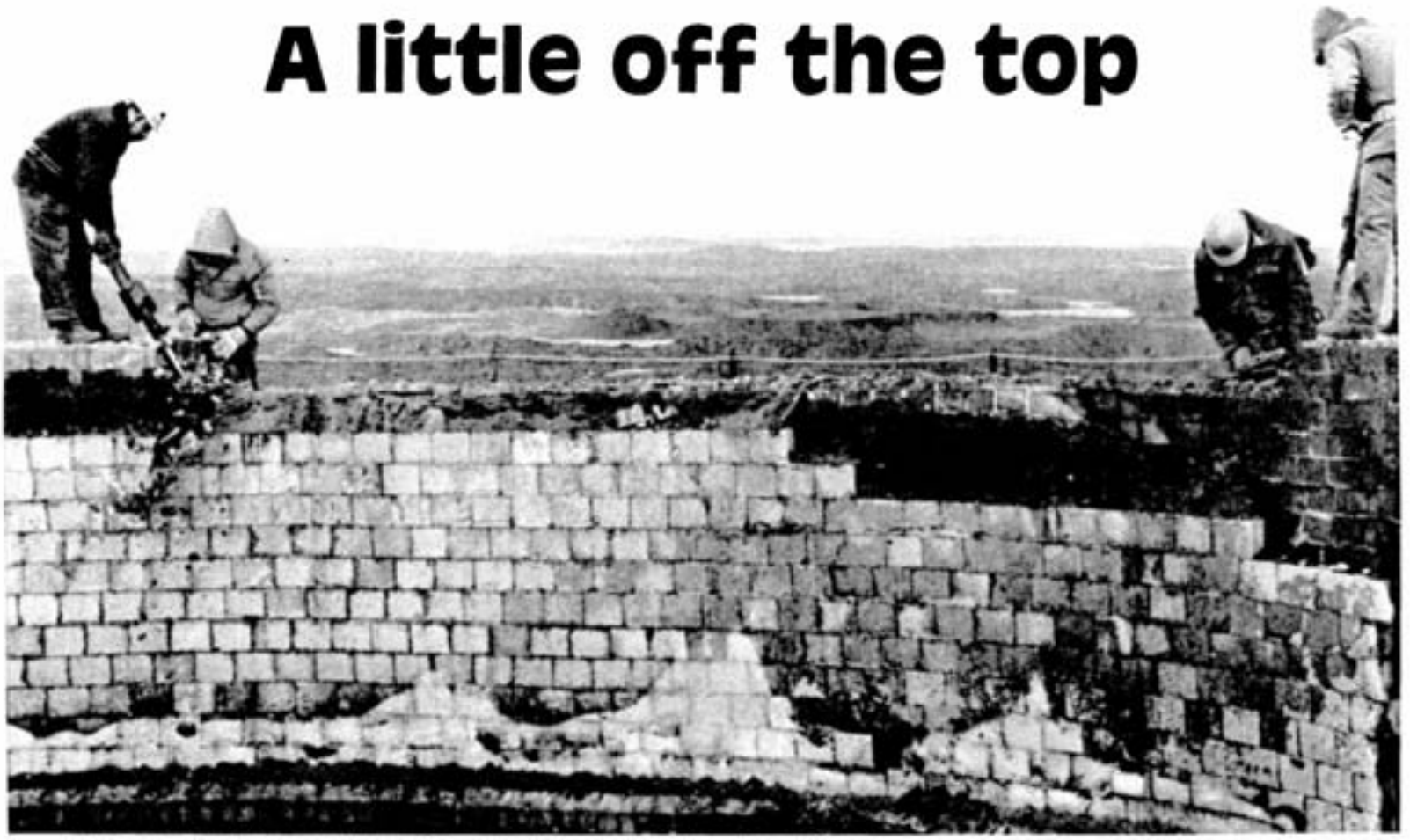
While not the killer that it was 50 years ago, TB still attacks 3,000 Canadians annually. The Canadian Lung Association is still concerned with TB but has also directed its attack on other diseases of the lung such as emphysema, chronic bronchitis and asthma. Part of the $48,000 raised by Christmas seals in the Sudbury-Nipissing area goes toward conducting annual TB tests in schools and educating people about lung disease.

Today people do not have to purchase seals. They are sent Christmas seals through the mail and a donation is strictly voluntary. The act of contributing to the Christmas seal campaign, however, has not changed in meaning since the first one was issued in Denmark in 1904. It still represents the fight against lung disorders, "a matter of life and breath."

Our thanks to Bob Boudignon for his help in writing this story and making his collection of Christmas seals available to us.

STACK DEMOLITION

A little off the top



Using pneumatic pluggers, employees of Francis Hankin loosen the bricks laid nearly 50 years ago.

When the 500 foot red brick stack was erected in 1929 it caused a sensation throughout the world much as the construction of the superstack did four decades later. At the time it was an architectural wonder that captivated the imagination of all those involved in the stack building industry. So it was with a bit of reverence that John Weston, a construction superintendent with Francis Hankin and Co. Ltd., led a team of men to begin the demolition of the old landmark.

Before the dismantling process began in June the stack was the biggest brick stack in the British Commonwealth. Now dwarfed by the 1,250 foot superstructure that replaced it and flanked by the 500 foot concrete stack, the red brick stack has a diameter of 48 feet ten inches at the top and 72 feet seven inches at the bottom. Its wall is 17 inches thick at the top and 54 inches thick at the base. All told there was over 1.2 million bricks in the stack.

A specialist in the construction and demolition of stacks, John said that 100 feet of the red brick stack "will be taken apart the same as it was put together, brick by brick." His crew of seven men began by removing the stainless steel liner that caps the stack. Then they tore down the walls, knocking the material towards and down the inside of the stack. An Inco employee, Ed Schillemore, was project engineer for the stack demolition and assisted in planning the work.

"Safety is number one," stated John adding that his men were protected from the time they left the ground to scale the 500 foot stack. In addition to this, a wide area around the base was cordoned off and constantly supervised to prevent anyone from straying too close to the work site. Each brick in the stack weighs 12 pounds, a potentially destructive and lethal force when it falls from such a great height.

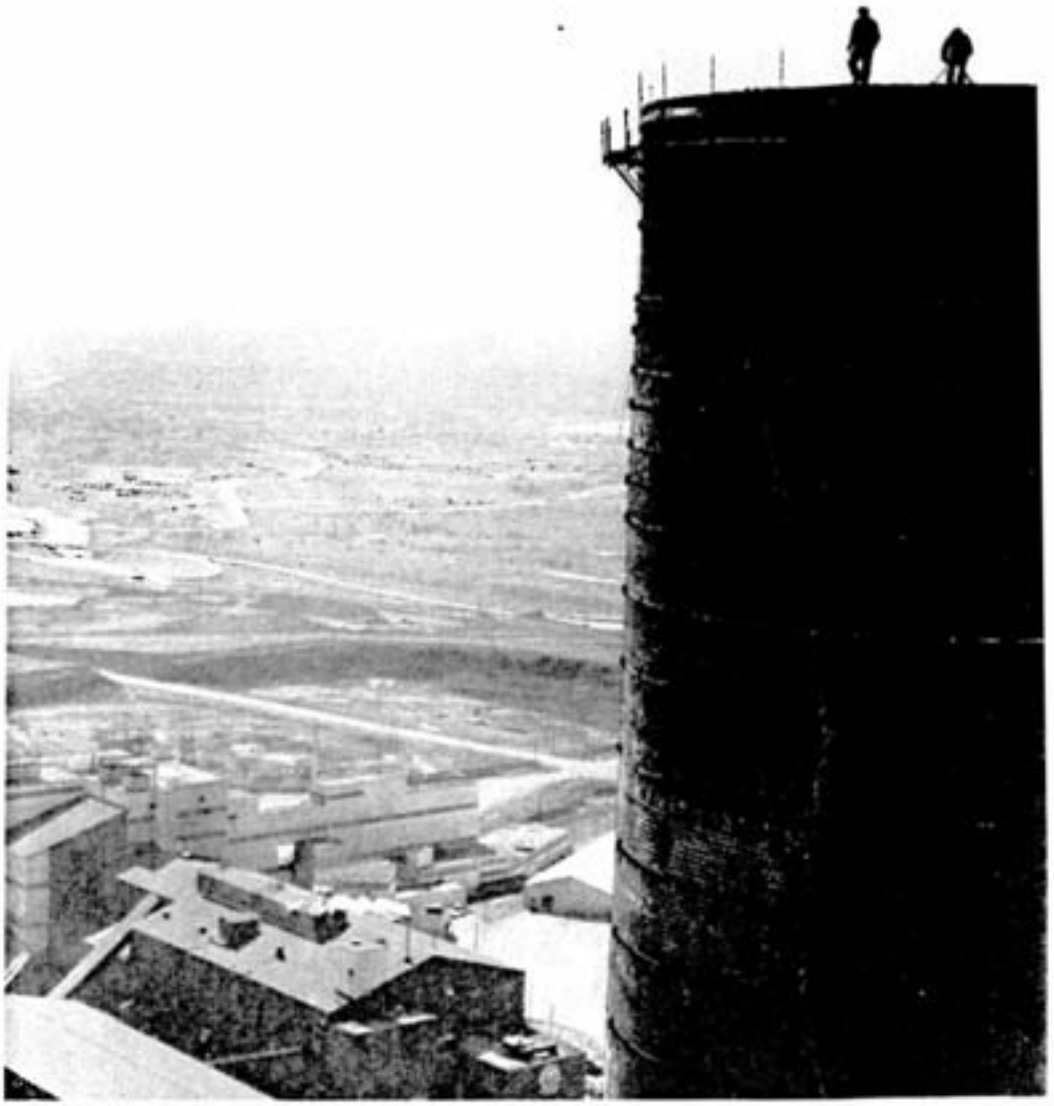
It's a long way up.

Examining a blueprint of the red brick stack are, from left, John Weston, a construction superintendent with Francis Hankin and Co. Ltd., Ed Schillemore, Inco's project engineer for the stack demolition and Bob Sandberg, a plant engineer in the Copper Cliff smelter.

The workers were handpicked by John especially for this job. It takes a different breed of man to ply his trade on a platform at a distance above the ground where most people would experience sheer panic. Fifty days were scheduled to complete the operation. The men did not ascend the stack on days when it rained or the winds were excessive.

While the top fifth of red brick stack came tumbling down this summer, the rest will follow some time in the future. The neighbouring concrete stacks will not share their mate's fate. One currently serves as a cooling tower for the water that cools some converter hoods.

So with the sound of the sledge hammer's smash, one of the world's great stacks began its fall into the past. When asked if the demolition evoked some sense of history John replied: "When you're involved in taking down part of the biggest stacks ever built . . . yes."



Wyman Ford and Darryl Gaudet lay the rigging which supported workers knocking in the stack's walls.

Before the dismantling process the stack was the biggest brick stack in the British Commonwealth.

Bundled up in a winter coat to protect himself against the frigid winds 400 feet above the ground, this fellow pries apart the stack's brick lining. Immediately behind and below, the roof of the Copper Cliff mill can be seen. To the right, in the distance, are the white buildings of the Clarabelle mill.

Gerry Bradley, transportation foreman, yard services, supervises the removal of broken material at the base of the stack.

Harnessing Mother Nature

Mother Nature lashes out once again. Her winds batter all that stands and her rains swell the river to perilous levels. In turn, the water level at the dam rises — but only marginally.

This is a hypothetical storm at High Falls on the Spanish River that Inco's central utilities and engineering departments are prepared to battle. The best means of defense comes in the form of the recently completed High Falls west dam spillway, a concrete, wall-like structure designed to prevent the overflow or overtopping of water at the east dam above High Falls village.

"The spillway was built as a preventative measure," explained Jack Neil, superintendent of municipal and field engineering in the central utilities department. "It was constructed to expand the Spanish River's capacity to discharge the flood flow at that particular point in the river. With the new spillway, we have lowered the risk of overtopping."

Some time ago, a flood study was conducted by the utilities and engineering departments along with a consulting firm to determine the feasibility of repairing or replacing the original spillway. Because of the spillway's deteriorative condition, the departments recommended the construction of a new one. The original simply did not have the capacity to pass the water. It had also fallen victim to the natural elements — cold temperatures managed to crack the structure in several places and erosion carved out the concrete along its walls.

Soon the preliminary steps for the installation were under way. Utilities personnel conducted surveys and examined the existing site, taking into account the area topography, the depth and length of the spillway and forebay (a reservoir of water on a

The new High Falls west dam spillway completed.

Members of the engineering department go over construction plans for the new spillway. They are, from left; Mel Sekerak, senior design engineer, Chris Dixon, senior contract administrator, Henry Fiacconi, supervisor of construction services, and Mike Skirda, project co-ordinator.

Wayne Taylor, senior construction co-ordinator, left, Jack Neal, superintendent of municipal and field engineering, centre, and field technician Tom Hambley, examine results of compression tests on concrete samples taken from the spillway construction site.

river located immediately above the intake area of a power plant from which water is diverted down to the power plant turbines).

They also reviewed records to determine the annual expected amount of rainfall in the Spanish River region. With these types of studies, Jack said, "We are better able to predict the extent of the flooding and how much of that water we can capture for the use of generating power."

Municipal and field engineering personnel submitted all necessary information to the design section of the engineering department where a specification design and budget estimate for the spillway were produced.

The environmental control department studied these plans to determine if the project would pose any environmental problems to man or animal in the river region. They could foresee no problems, concurred with the plans and forwarded them to the appropriate government environmental agencies for necessary approval.

A capital appropriation request for the project was submitted to management, approved, then returned to the engineering department where the design was finalized and the project contracted out to a local construction company.

Construction work began in late May. Inaccessibility to the construction site posed a few problems initially, but "There wasn't anything we couldn't overcome," commented Wayne Taylor, Inco's senior construction co-ordinator.

Barges were required to transport construction vehicles and material from the east side to the west side of the forebay in order to begin work on the spillway.

The first to be erected was a coffer dam, a temporary dam to retain the water in the forebay during the construction of the spillway. Approximately 1,600 cubic yards of rock was blasted from a nearby quarry and dumped across the forebay for the coffer dam. A plastic

membrane or sheeting covered the upstream side of the coffer dam, from its top to the river bed, to prevent water from seeping into the construction area. Some 450 cubic yards of concrete from the old dam were removed to make room for the new spillway.

Some 500 cubic yards of concrete used for the spillway had to be pumped over a temporary bridge to the construction site. The spillway was visited by Inco concrete inspectors who took concrete samples and conducted compression tests on them in the lab to verify the strength of the concrete and to detect any problems with erosion. The samples passed the tests. The coffer dam was then removed from the forebay.

Spillway construction in progress. At left is the coffer dam lined with a plastic membrane.

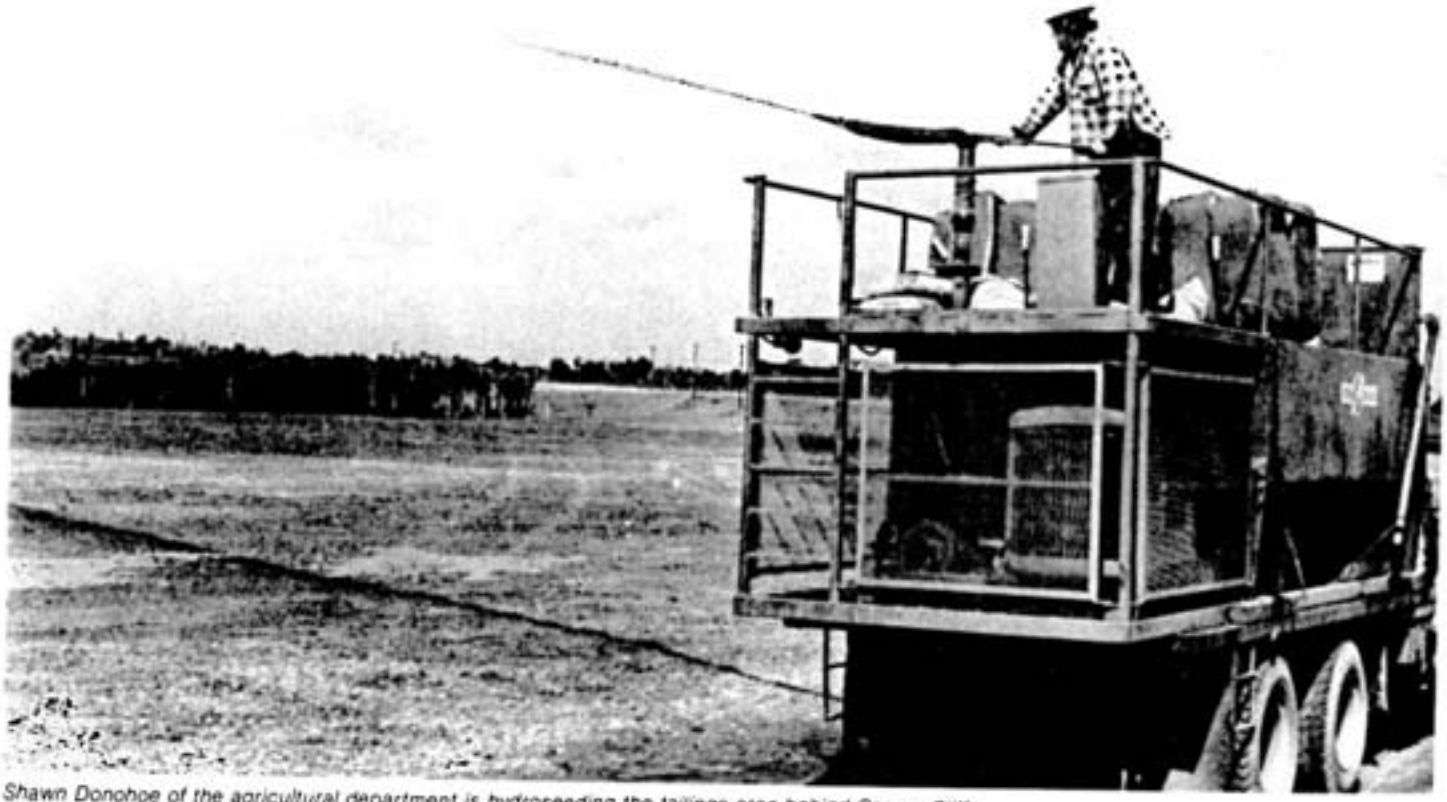
Some 500 cubic yards of concrete were used for the spillway.

The new spillway is more streamlined than the previous one and this, Jack added, "Smoothes out and in turn quickens the water flow, reducing the possibility of water turbulence." The spillway was designed to accommodate approximately 8.5 million gallons of water per minute, meaning this amount of water can pass over the spillway without raising the level of the forebay to a dangerous level.

"We are pleased with the way things progressed," said Wayne Taylor. "The project was well within the working schedule."

Added Jack Neil, "The project was well co-ordinated and well managed. It was one big co-operative effort from all departments concerned."

Beware Mother Nature, these guys are ready to take you on!



Shawn Donohoe of the agricultural department is hydroseeding the tailings area behind Copper Cliff.

Gerry Groetelaars, left, and Tom Peters look at the red top seed to be planted in Port Colborne.

Grown in Port Colborne Planted in Sudbury

A 56 acre farm purchased by Inco in Port Colborne will be making a considerable contribution to the greening of the Sudbury area. Tilled and harvested by local custom operators under direction of the Inco agricultural department, the farm will grow red top grass seed, an expensive type of grass that is used extensively in land reclamation and revegetation in the Sudbury area.

Red top grass, says Tom Peters, Inco agriculturist, is a major component of the mixture used in seeding the tailings area behind Copper Cliff. It happens to be admirably suited to reclamation work in the north. Red top is a grass indigenous to the Sudbury area, but, Tom adds, not in large enough quantities to harvest.

The major source of red top seed is Poland and it has not been readily available in sufficient quantities in recent years to meet the world demand. The Inco farm in Port Colborne will make red top seed more accessible and a more reliable source.

Long and warm, Port Colborne's growing season will give the agricultural department a major advantage. "The red top will mature early enough that we could harvest it and use it (in Sudbury) in the same year," explains Tom. Once the seed has met the requirements of company and government reclamation work, surplus material will be sold. According to Tom, a seed company has already expressed its willingness to purchase surplus seed.

A red top crop has already been planted. It has germinated and is coming along nicely. Tom hopes to harvest the initial crop next year.

Ellen Heale, horticulturist, dips into a sack of red top grass seed.

PEOPLE

RECENT STAFF APPOINTMENTS

Douglas Blair, survey party leader, mines engineering, Creighton nine shaft

Robert Blaney, mines research assistant, mines research, Copper Cliff

Michael Chorkawy, senior power engineer, operating central utilities

John Craig, engineer, central maintenance

Heather Durigon, accounts payable clerk, division comptroller, Copper Cliff

Glenn Elliott, mine foreman, Levack mine

Squire Ellor, superintendent process technology, Iron Ore Recovery Plant

Richard Forget, specialist, engineering, Copper Cliff

Donald Gibson, division supervisor, mines engineering, Stobie mine

Bruce Goard, planner, mines engineering, Frood mine

Larry Gonnella, truck and jitney dispatcher, Copper Cliff transportation

Everett Henderson, specialist, engineering, Copper Cliff

Richard Kitching, maintenance foreman, operating central utilities

David Leon, surveyor, mines engineering, Levack mine

Harold Love, product costing clerk, division comptroller, Copper Cliff

Robert Lusk, mine general foreman, Shebandowan mine

Ilmari Manninen, mine general foreman, Creighton nine shaft

Thomas Marshall, supervisor of utilities, Levack mine

Stan Pasierowski, operations training co-ordinator, employee relations, personnel and office services

Jerry Pawlowski, maintenance foreman, copper refinery

Louise Perrault-Forest, maintenance clerk-steno, Creighton nine shaft

Jayne Prescott, accounts payable clerk, division comptroller, Copper Cliff

Valerie Smith, programmer, computer services, Copper Cliff

Graham Squirell, incentives administrator, mines engineering, Creighton nine shaft

Vernon Thompson, safety foreman, safety, Levack mine

James Thomson, general foreman safety, Creighton nine shaft

Brian Underwood, programmer, computer services, Copper Cliff

Bill Zawalnuk, project planner, engineering, Copper Cliff

They don't take too lightly to bandits trespassing the confines of the copper refinery, not even if he happens to be a cute rascal of a raccoon nicknamed Bandit by his captors. You see, old Bandit thought the copper refinery would be just the place to snoop around in search of a little of someone's lunch. After a bit of a chase Bandit was cornered in the casting building where a pair of gentlemen from the Ministry of Natural Resources apprehended the suspect and transported him back to the wild where he belongs. Shown here are, from left, **Glen Warren** of the Ministry of Natural Resources, **Alex McCall,** an office supervisor at the copper refinery and **Lionel Junkin,** also of the MNR, holding an understandably shy Bandit.

PEOPLE

Gino Cacciotti of central maintenance at Garson mine, has once again put together a winning minor soccer club. This time he led the Sudbury Hawks to the mosquito city and Northern Ontario championships. Shown here is the victorious band of Hawks, front row, from left; **Mark Rondina, Michael Cassidy, Carlo Castrechino, Mark Waschulzik, David Barrett, Mitch Chirka.** Back row, from left; **Milan Vrab,** manager, **Dino Cirillo, Glen Herold, Frank Cinotti, Michael Timpano, Robert Palladino, Patrick McCann, Michael Vrab, Gino Cacciotti,** coach.

Larry Banbury, superintendent of safety for smelting and refining, attended the year end banquet of the Sudburnia Soccer House League where he presented the Valley East club, 1981 peewee house league champions with the newly instituted Inco Metals trophy. The three year old league consists of 33 clubs that includes peewee, mosquito, atom and squirt aged players. Here are, from left, **Marinus Logtenberg,** president of the Sudburnia House League, **Tony Fasciano, David Fasciano, Tom Lacerte, Jack Kosmerly, Terry Lemieux, Larry Banbury** with the Inco trophy, **Stephane Gauthier, Ron Weaver, Gill Brideau, Darren Fish** and **Don Grenier.**

When **Wilma Stephens** earned a place on the Rotary Club Exchange program last year, she was given a choice of spending a year studying, speaking and travelling in any country in the world where Rotary clubs exist. She chose New Zealand "because I thought I'd never get there." For a year Wilma lived with three families in Kati Kati, a farming town in New Zealand. Wilma proclaims the experience a very good and a very educational one that allowed her to meet many New Zealanders and learn and understand their customs. Wilma, the daughter of **Al Stephens,** an industrial relations co-ordinator, returned to Sudbury in July and is presently attending Laurentian University.

PEOPLE

During a visit to inspect the construction of a new spillway at High Falls, **Wayne Taylor,** right, senior construction co-ordinator in the construction services department, met a first year class of civil engineering students from Cambrian College. The students were on a field trip examining Inco's High Falls project. Wayne provided some background information on the project to the class headed by **John Hood,** left foreground, teaching master in the civil mining and geology department at Cambrian College.

The matte processing department wrapped up the golf season with its annual golf tournament held at the Lively Golf and Country Club. A total of 78 employees participated in the day-long event, which was organized by the matte processing athletic association - golf committee. The top golfer award went to Lawrence Mochizuki who scored an even 80. Here, from left, safety supervisor **Henry Harju,** process foreman **Yvon Trottier** and shift foreman **Daryl Hryciw** try to determine where that elusive golf ball went.

Federal government ministers and Inco officials from Toronto arrived in Copper Cliff on September 18 to tour Inco surface plants. Here, **Dr. Mike Sopko,** vice-president of smelting and refining, talks about the pyrrhotite rejection operation that is under construction at the Copper Cliff mill to, **John Roberts,** left, Minister of the Environment, and **Doug Frith,** Member of Parliament for Sudbury.

PEOPLE

The Ontario Mining Association sponsored its sixth annual teachers excursion to several mines and mining communities in Northern Ontario in September. This year's tour included a visit to the Copper Cliff smelter and the copper refinery. These trips are part of the OMA campaign to increase the awareness of Southern Ontario teachers about the realities of mining and mining communities in Northern Ontario. Here the visitors are briefed on the workings of the smelter control room.

A lot of tender loving care went into planting and arranging flowers, trimming and weeding the lawn and pruning and caring for trees but it all paid off for **Erik Hansen.** Erik, a drill fitter at South mine, won the Inco Rose Bowl, the company sponsored award for the most attractive home surroundings. **Ellen Heale,** a horticulturist in the agriculture department and judge for the contest, presented the Rose Bowl amid Erik's beautiful flowers. Inco also sponsors monetary awards for winners in other categories of the exhibition. Both Ellen and Erik, president of the horticultural society, stated they were pleased with the significant increase in the number of entries this year.

Len Kitchener, from the mines department, kindly gave us a photo he took when he visited Tiebaghi mine in New Caledonia where Inco is a partner in developing the chromite mine. In photo, **Ray Dupuis,** maintenance general foreman, tests a low profile underground dump truck.

Walter Krauer
$7,500

from left - John Mihajic and Tom Luoma
shared $4,110

Ugo Crozzoli
$1,000

suggestion

A total of $33,055 was awarded to 57 suggestions in this month's suggestion plan. Due to the large volume of suggestions awarded this month, only those suggestions of $150 or more are listed below.

$10,000 **Guy Downey** of **McCreedy West mine** received the company's maximum suggestion plan award of $10,000. For details, see page four.

$7,500 At **Levack mine, Walter Krauer** came up with the idea to use chipboard washers instead of plywood washers for roof bolting underground. Walter's suggestion was responsible for the renewed investigation of wood washers and resulted in considerable savings in materials for the company.

$4,100 **Thomas Luoma** and **John Mihajic** of **Levack mine** split $4,100 for their suggestion to relocate and reverse the installation of the resistor bank and magnetic contactor unit for 20-ton Goodman electric locos. The idea eliminated costly production delays and reduced maintenance costs.

$2,690 At **Stobie mine, Alexandre Landry** suggested moving the booster pump at Whitson Lake and injecting chlorine into the sump. The suggestion reduced maintenance costs and also eliminated the hazard of men working with dangerous gas and high pressure lines.

$1,000 **Ugo Crozzoli** at **Frood mine** noticed that Blooie seals when worn were discarded, so he came up with the idea to rebuild the seal by revulcanizing the seal's inner wall back to the regular dimensions. The seals, which could be rebuilt a number of times, cut replacement costs.

$850 **Paul Levesque** of the **smelter** netted $850 for his idea to enlarge the lubricating oil container on the roaster feed arm assembly and install longer lubricating lines. These modifications eliminated roaster downtime.

$720 At **Frood mine, Jean Boudreau** and **Gordon Foerter** shared $720 for their method of using obsolete tipple car wheels on 110 and 140 cubic foot cars. The inside of the wheels were machined down to fit the cars. Savings were made on parts.

$720 **Dillon Laberge, Clement Castonguay** and **Albert Seguin** from **McCreedy West mine** split $720 for their method of linking activators in the sumps. The suggestion resulted in material and labor savings and improved sump performance.

Paul Levesque
$850

from left, Jean Boudreau and
Gordon Foerter split $720

plan awards

$610 At the **smelter, Angelo Simeoni** earned an additional award for his idea to install a safety switch on the converter beck valve. Savings were made on manpower and material. Converter downtime was reduced.

$580 **Bill Gagnon** at **Creighton mine** noticed that slots for lock nuts on the front of slusher trunions were not required, so he suggested eliminating the slots entirely. The cost of manufacturing the nuts was reduced.

$475 At the **divisional shops, Marcel Gorzynski** thought up the idea to install bushings in the hub of the Assy F/ST4 scooptram. The suggestion eliminated unnecessary machining of parts and simplified the repairing procedure.

$370 **Stan Goral** of **Copper Cliff South mine** noticed that the air dryer element burned out when the air pressure dropped. He suggested installing a pressure switch and starter to automatically shut down the dryer when necessary. The idea prevents the premature burning out of the elements.

$280 When a brass insert wore out in a chuck bushing, the entire bushing was scrapped, noted **Arthur Reid** of **Garson mine.** He suggested sending the chuck bushing outside the company to have new brass inserts put in. Bad order bushings could be sent out and rebuilt. Savings were made on parts.

$210 **Henry Burton** of **Coleman mine** devised a method to lubricate both the cage and skip tail ropes. Less rope grease was used and labor savings realized.

$150 At **Frood mine, Bill Demkiw** found conditions noisy during slushing operations, so he thought up a design for air movers. The suggestion was found to be effective in reducing noise levels.

$150 **Albert Ouellet** (now retired) at **Copper Cliff North mine** suggested substituting plastic cups for leather cups for the RB83 stoper cup keeper. The leather cups lasted longer. Savings were made on parts.

$150 **Jean Landry** and **Gerald Forest** at **Stobie mine** suggested stocking three-eighth inch Schroeder regulator diaphrams for scooptrams. The equipment could be repaired right on the work site, therefore reducing downtime.

$150 At **Stobie mine, Harold Kiely** suggested using a sandblaster for restoring salvaged equipment parts that would normally be discarded. Savings were made on parts.

Ready to take you on a tour of the Inco greenhouse are, back from left, Hannah Moors, Danielle Brunet, Pierrette Martin and Nina Naumenko. In front are, from left, Carolyn Ludgate, Tracy McDonald and Holly Dopson.

You are cordially invited to view Inco's 8th annual Christmas greenhouse display at School Lane in Copper Cliff from December 4th to January 3rd.

Viewing hours: noon to 8 p.m.
Noon to 6 p.m. Christmas Eve and New Year's Eve
closed Christmas Day and New Year's Day