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Who is this ship of the desert looking at and what's the Inco connection? See Page 9



Coming Up Shorts

A team of local teenagers, with some help from Inco, has launched a thriving designer boxer shorts business. This year's Junior Achievement Program is in full swing, and with a little help from volunteer advisers like programmer analyst Sean Romenco and material controller Greg Riddoch, the program is proving successful. Sean and Greg's group opted to get on the leading edge of a growing designer shorts fad and their production of 25 shorts

a week is selling briskly. It's the second year volunteering for Sean, the first for Greg. Both say the program is worthwhile, that it is enjoyable as well as educational for advisers and students alike. From left are: (Rear) Josh Millard, 16; Matt Atkinson, 16; Donald Palmer, 15; Brian Deegan, 16; Jason Quinlan, 15; (front) Jennifer Gilbank, 17; Charlene Lam, 18, and Amanda Holmes, 15.

Creighton's universal appeal

Is the universe unfolding as it should?

Dumb, rhetorical question, right? Wrong.

It's one of those brilliant questions scientists need in order to get to the right answers.

A scientist who has come up with a possible answer will be working at Creighton Mine's Sudbury Neutrino Observatory this year.

Recent experiments seem to confirm a six-year-old finding by Canadian physicist John Simpson that a third of all neutrinos have a lot more mass than scientists previously believed possible. Scientists previously thought neutrinos had little or no mass.

Big deal, you say. Fat neutrinos.

Said University of Alberta nuclear physicist Gerald Roy: "If the theory is correct, it will turn a lot of things upside-down in the physics world."

Simpson, a 51-year-old native of North Bay, could be in line for a Nobel Prize if his findings continue to be verified. His theory may deal with super-small particles, but it could be the answer to questions that thinkers and philosophers have argued over since man gazed at the night sky.

What's it all about? Will it end? When?

Most scientists agree that the universe was born in a "Big Bang," a primordial cosmic explosion, and that the universe is expanding. What comes next is highly contested.

There are the theorists who believe the universe is "open," that it will expand forever. There are those who say it is "flat," that it will expand and just sit there like a puffed-up pastry. Lastly, there's the "closed universe" theory, that says the universe's expansion will slow, stop, and then begin contracting in on itself until it's compacted into what some scientists call The Big Crunch. Some think the Big Crunch could result in another explosion and the birth of a new universe.

other explosion and the birth of a new universe.

Key to all three theories is the total mass of the universe and gravity. Too little mass, and the universe keeps expanding. Just enough and it sits forever on a delicate balance between contracting and expanding. With enough mass, however, the effect of gravity would slow down the expansion and eventually reverse it.

Until recently, most physicists calculated that the total mass of the universe was not sufficient to cause it to stop expanding.

That's where Simpson's findings come in. Add his weight-gaining neutrinos, and the Case of the Expanding Universe is closed . . . literally.

Inco environmentalists share greening limelight

Two Inco people were among those recognized for their contributions to Sudbury's ongoing land reclamation program.

Darl Bolton and Jim Savage of Environmental Control were awarded Certificates of Appreciation at a Regional Greeners Appreciation Night held in the Sudbury

Council Chambers at Civic Square.

Sudbury's "greening" is seen by the Region as an example of a community partnership attempting to solve a major environmental problem. As well as all levels of government, the partnership includes the academic community

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'Sign of the' Times Square

The Inco name is easily recognizable, of course, but why does the cityscape look so familiar? Because if you haven't been there, you've probably seen it on television on some past New Year's Eve. It's the Big Apple. New York, New York, and we've taken our regards to Broadway. Times Square visitors who annually watch the ball drop to ring in the New Year saw Inco's new corporate commercial flash on a new JumboTron screen. Shown at no cost to raise interest in Sony's new display device, the commercial shared the limelight with others such as Nintendo, Nike, Hertz, General Motors . . . and the California Raisins.

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Inco environmentalists recognized

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and major industries like Inco.

With the revitalization of some 4,000 hectares of once-barren land in the last 13 years, most area residents are well aware of the success of the Sudbury region's land reclamation program.

The people behind the program are not so well known, and the appreciation night was held by council to honor area residents who have made substantial contributions to the reclamation program.

The program was developed in 1978 to tackle the daunting task of revitalizing 10,000 hectares of land.

To date 3,000 hectares of the most damaged land have been revegetated, while another 1,000 hectares have been somewhat improved. The program has included the planting of 1.2 million trees.

"Today these areas bear no resemblance to their former appearance, as grass and trees have replaced the starkness of hard pan soil," said regional chairman Tom Davies.

Joint effort

About \$14 million has been spent on the program and 3,200 students and unemployed individuals hired over the years. Funding and technical assistance from numerous sources—all levels of government, as well as Inco, Falconbridge Ltd., Laurentian Uni-

versity, Cambrian College and other organizations—has been a key, Davies said.

Davies paid tribute to dozens of dedicated individuals who have served over the years on the region's Vegetation Enhancement Technical Advisory Committee.

"From the outset this has been a people program and it should be acknowledged as such," he said.

Among the two dozen individuals honored were Laurentian University professor Keith

Winterhalder, the committee chairman who is considered the father of the reclamation project; Bill Lautenbach, the region's director of long-range planning; and Davies.

Davies pointed out that the reclamation program has received national and international recognition and awards over the years.

As a result of the program's success, "the people of the region of Sudbury are prouder of their community today than ever before."

New technology tried for Thompson tunnels

Roadheader—it reads like the name of a rock band, but it's actually a name given to a rock tunnelling machine. And one of these 110-ton machines will be delivered to Manitoba Division's Birchtree Mine at the end of April.

"We're bringing in the roadheader as part of a joint research project," explained Dave Sarin of Mines Research. "A consortium made up of Inco, Falconbridge and Noranda is sharing the costs and the benefits of this project."

The roadheader will go into operation on the 1,500 level of Birchtree in June and continue for approximately six months. "We

chose that particular location because of the type of ground," explained Dave. "There is a belt of peridotite, which is medium hard and because of the ground support needed, requires special attention for regular drilling and blasting procedures."

The roadheader has a cutting head that bores through the rock face and then enlarges the opening by traversing the designated area and cutting back and forth.

"The project will determine whether the roadheader could allow mining companies to mine this type of ground condition more safely and more economically," said Dave.



Spinning their Wheels

Computer Service's "Nickel Bloomers" team spent hours on this Crown and Anchor and Blackjack table for the Corporate Challenge Vegas Night. But a design flaw put the odds in favor of the customer and the team slipped from near the front of the pack to around 11th place. Computer Services secretary Maureen Riutta couldn't resist the dealer's view at the gaming table, on display at the General Office.

Is there anything funny about the mining business?



Cec Goudreau, industrial relations, Frood-Stobie Complex: "People are serious about their work and there's nothing funny about safety, but there's a lot that happens around here that's humorous. Miners traditionally have a good sense of humour. Good miners like going to work and that's important very important."



Leo Renaud, industrial evaluator, Frood-Stobie Complex: "There's very good morale out here, and a good sense of humor has to go with that. At Little Stobie where I work, people aren't afraid to laugh, and I think supervision has a lot to do with that. If supervisors aren't ready to smile, that creates a certain atmosphere."



John Paul Pretz, blaster boss, Stobie: "It's certainly not all fun, but there's always something to laugh about when you look for it. I don't think there's a lot of the backbreaking hard work in the mining business today and that is one thing that's helped change things. But then, miners have always had a good sense of humor."



Ian Laing, sandfill boss, Stobie Mine: "Life can be miserable sometimes and it usually depends on management. I've been mining 20 years and I find it's what you make of it, good or bad. There's laughs in mining, but the job always gets done first. I think management pretty well sets the tone for the general atmosphere."



Gord Erickson, electrician, subcontractor: "I've been working for Inco on and off for two years, and I sure enjoy working here. The people I've worked with seem to have a good sense of humor. To be any good at your job, you need to enjoy your work. If I was looking for a job, I wouldn't hesitate to work here."



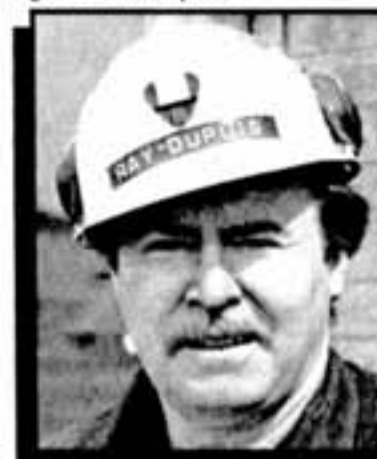
Wilfred Gilliard, plant protection officer, Clababelle: "We're the first people they see when they come to work. I get around to all the plants and mines, and when people come through the gate in the morning they usually have a smile on their face. Of course, they're happier on their way out."



Plemon Randell, ventilation inspection and repair, North Mine: "It's not the good old days any more. It's a lot more serious today, and jobs are expanding with fewer people to do the work. Not as back-breaking, but more responsibility. But there's always room for a good laugh."



Bruce Warren, machine shop coordinator, Divisional Shops: "It's an interesting workplace and there's a lot of laughs around here. It never was the dirty, miserable place that a lot of people outside the business think it is. People in this business have a good sense of humor. Life is what you make it."



Ray Dupuis, mines maintenance, North Mine: "The business has changed a lot. It's not as serious as some people think it is. The work gets done, but the people have a good time at it. Here at North Mine, it's a smaller operation, and people joke around here coming on as well as going off their shifts."



Rolly Frappier, welder, Utilities: "You've got to enjoy your work or you'll develop a bad attitude. You have to make your own job a happy one. I've always seen a lot of good humor around here. If people didn't like their jobs, they'd be gone, and there's a lot of old-timers around here."



At left, Gary Prowse attempts to guide his shot at a distance while Shirley Millan, Super Bertuzzi and Laura Mitchell show Falconbridge competitors that Inco determination.

Inco's on the (5 pin) ball

In their brilliant fluorescent orange T-shirts and hats they were the flashiest team, the most rambunctious, enthusiastic, and some say the noisiest as they squared off with a stacked Falconbridge team to send bowling balls rumbling toward the pins at Notre Dame Bowling Lanes. They lost... but with class.

"I'm not going to give you the score," said Laura Mitchell, one of six members of the Inco Strike Force bowling team and a shipper at the Copper Cliff Nickel Refinery. "You lose by one point or a hundred, it doesn't make any dif-

ference, does it?"

It was the annual Bowl For Millions event, a fundraiser for the local Big Brothers organizations. Teams were encouraged to goad friendly rivals into grudge matches.

The Inco crew wasted no time in challenging Falconbridge for a little friendly competition.

"They came with a stacked team, all men and all experienced bowlers," deadpanned Laura. "We gave it our best shot. We would have liked to win, of course, but we had a terrific time anyway."

If not the most adept bowlers, the Inco crew were definitely the best-dressed... at least the loudest dressed... at the lanes.

The T-shirts and hats supplied by the Public Affairs Department didn't go unnoticed by the event's organizers.

"We won the brightest dressed team award," said Laura. "Fashion-wise, we were brilliant."

While the Inco bowling was highly competitive, a fact that could be read on the faces of teammates like Gary Prowse of Nickel Refinery maintenance, the failure of the intense effort to overcome the hard-bowling Falconbridge crew was dealt with rather philosophically by Laura.

"We did our best, but only two or three of our people were experienced bowlers and Falconbridge

stacked their team with all good bowlers. They went out to win. We were just getting warmed up.

"One game isn't enough to prove anything... I know, excuses, excuses..."

"Next year," she said, "we'll go for a rematch."

It's not the first time Inco has challenged Falconbridge to a Big Brothers bowl-off. Laura, a five-pin league bowler for many years, gets involved in the event regularly and finds it hard to resist a challenge.

She doesn't know the total in pledges to the individual team members. The company donated \$500 to spur their team on.



Inco bowlers congratulate a Falco player on a good shot.



Super Bertuzzi checks his mathematics on the score sheet while his teammates look on.



The home team lines up for a pre-battle picture for posterity. From left (front) Super Bertuzzi, Dick Delorme, Gary Prowse and (rear) Shirley Millan, Laura Mitchell and Pauline Henrie.

Yen for education a "gut feeling"

Miner's 'mother lode' found at school

As with many of his peers at the time, when Harvey Wyers graduated from high school the allure of a full-time job and pay cheque was more powerful than the potential rewards of a higher education.

When Harvey went to work for Inco straight out of high school, good-paying jobs for young men with strong backs were plentiful 21 years ago.

At the time, he never pictured himself sitting in a university classroom. Two decades later that is exactly where Harvey finds himself for up to four nights a week.

From his first days with Inco, until a few years ago, Harvey was a shift-working hardrock miner. An injury brought him to surface where he now works as a bus driver and cleaner at the smelter complex.

While he might be expected to have it a little easier with the lighter duty, Harvey has not worked harder in the last five years.

In 1985, halfway to an early retirement, he decided to return to school, enrolling part-time at Laurentian University.

"I was 35 at the time," he recalls, "and I had been out of school for 16 years."

The motivation to pursue a university degree at that point in his life "was a gut feeling, more than anything else," he says.

But it wasn't long before he knew he had made the right decision.

"Once I got into it I realized I



Harvey Wyers: A need to hit the books was a "gut feeling."

had missed my calling — I loved it."

This spring, Harvey will graduate with an 'honors BA in political science. He will have completed a four-year program in 5 1/2 years of part-time studies.

His schedule throughout has included regular shifts at the smelter and at least two, sometimes four nights of classes each week at Laurentian.

"There have been a few 16-

hour days, that's for sure," he says. "I've been taking two full courses every winter and every spring, and I've taken a summer course as well."

As if that wasn't enough, Harvey also found time to get into the political scene on campus, with the Association of Laurentian Part-time Students. Since last spring he has been vice-president of the 3,900-strong students' group.

"I waited until I was 38 years

old to become a student radical," he jokes.

Although they are not exactly a radical bunch, Harvey and his colleagues in the students' association have pushed university administration for various changes.

Harvey's first success as an executive member of the association was in winning demands for increased access to the university library on weekends. The change was critical for many part-time students who must rely on weekends for their research and study needs, he says.

These days, the students' group is lobbying the university to offer a greater range of courses to part-time students.

"A lot of the stuff we do is constructive criticism," Harvey says.

"We give the administration full credit for their efforts to entice part-time or mature students to take courses here, but there is more that they can do."

As an executive member of the students' association, Harvey also sits on the university's senate and he is a teaching assistant in an introductory political science course at Laurentian.

Coping with such a demanding schedule would be impossible, he says, without the support of his family, co-workers and employer.

"As far as my family goes, they've been very, very supportive. My wife Sue has put up with a lot

and she's even typed a lot of my essays.

"It's been tough on the family. When crunch time comes and essays are due or exams are up, you burn a lot of midnight oil, you spend a lot of time away from home, in the library, doing research. My fellow workers and my supervision at Inco have been very supportive, too. They've encouraged me to hang in there."

Following this spring's graduation, Harvey plans to pursue his studies to the next level. He is aiming for a masters degree, and possibly a PhD.

Harvey says he chose political science because "I've been involved in politics and community activities for some time, and I wanted the formal knowledge to go with the practical experience that I had."

With a degree under his belt, he realizes that "there will be options that will come open. It can be something to start a second career."

However, Harvey isn't speculating on what the future might hold, but he points out that a 30-year pension will be available to him in nine years.

He does know that when he eventually retires, he likely will have other pursuits to keep him busy.

"The thought of taking my pension and withering away doesn't appeal to me."

Symbol of Shops' pride

Divisional Shops creates new logo

Div Shops has made its mark.

The tradesmen at Divisional Shops have earned a reputation over the past few years for meeting challenges, a reputation that's spread even beyond the borders of Inco's Ontario Division. That's one reason why they decided to put their mark on just about everything leaving the shop.

The shops' "mark" is a logo designed by machine shop designer Peter Bartuska, one of 12 people who submitted more than 50 entries in a Divisional Shops Logo Contest.

"The enthusiasm for the contest signals the high morale of employees and the amount of pride taken in their work," said controller Allan Massey, who figures the logo will appear as crests on jackets, hats and T-shirts.

He said the initial reason for the logo, however, was an ambitious effort by the shops to meet a new challenge.

"We are getting into a quality certification program," said Allan. "We want to become registered with the Canadian Standards Association program that will hopefully designate all our shops at a high level of quality."

Just about all the shops will be covered, including the machine shops, winding shop, component repair centre, plate shop, welding and blacksmith shops, and heavy repair shop at Creighton.

Allan said that part of the regis-

tration requirements is a quality control manual to be put together, a manual that requires a logo.

"We decided to have a contest to come up with a logo. The response was excellent."

The winner was picked by a committee consisting of Maintenance and Mines Research Vice-President John Kelly, Central Maintenance and Utilities manager John LeMay and Divisional Shops superintendent Tom Prior.

"There were a lot

of good entries," said Allan. It was a difficult choice.

Peter Bartuska said it was the enthusiasm and pride shown by Divisional Shop employees that got him to participate.

"These guys are tops," he said. "There's real team spirit here. They've always treated me well. That's one of the inducements that got me involved."

Peter, a mechanical designer who spends most of his time designing machine parts, said

he's never tried to design a logo before. He submitted seven or eight.

Most began as pencil scribbles on a piece of paper and were later finished to varying degrees of perfection.

The winning design shows the Shops' emphasis on quality and

precision.

Inside a circular border inscribed with the name of the shops is a v-block or set-up block holding a quality symbol. The crosshairs running through the quality symbol designates the precision aspect of the shops' work.



Peter Bartuska and his Divisional Shops logo.

Good memories, hard work

Levack picture worth a thousand memories

There was a lot more sweat back then. No coffee breaks. You went home tired.

Levack maintenance coordinator Ken Miron made the comment as he moved his fingers across the faces in the framed picture propped up on the Levack office desk, more than once resting on a fond memory.

"I bet every one of the guys would admit they worked hard, harder than miners work today."

Yet few, he said, would regret their years in the business... and at Levack.

With 27 of his 35 Inco years at Levack, Ken recognized many of the 32 faces in the retirement picture taken of people who probably started at Levack in the early '40s. "It was a real family atmosphere back then, even more than today," he said.

When the complex's maintenance superintendent Roy Landrye circulated a dust-covered picture he rescued from under a pile of papers during renovations to the old first aid office, he never realized the nostalgia that it would create. In fact, he said, the effects are still rippling through the 300 people at the mine.

"This picture is worth a thousand stories," he said. "I took it around to most of the old-timers here to see how many of these guys could be identified. Turns out that just about everybody had a story to tell about old friends, characters and good times. It sure brought back a lot of fond memories. It was like old home week around here."

Which tells you something, he said, about mining, miners... and Levack.

"Today, much of the back-breaking work and tough working conditions have been taken out of the job," he said. "Back then, you had cold running water down there and that was it. No microwave ovens."

Surprisingly, he said, the stories dug from distant memories were of the "good old days." He said people "lit up" as they recognized old friends and acquaintances and the good times they had.

It belies the misconception that miners are a dour, unfeeling and uncaring lot, he said. "I'd say 95 per cent of the memories were of good times, respect and caring. Mining has always been a fraternity, camaraderie. People take care of one another. I think there's a



Joe Ribic, Roy Landrye, Clarence Vowels and Ken Miron with old retirement picture.

family environment underground that's even more prevalent than at surface plants."

Of course, he said, Levack's relative isolation from the rest of Inco's Sudbury operations probably adds to the special feeling most people at Levack have about the place they work and the people they work with.

"At one time, there used to be around 1,000 people working here," said Roy. "Today we're a lot fewer, but the traditions are still there. These old-timers and the guys before them are the people who set the traditions we are all living by today. Sure, people change, but miners are a special breed. They're proud of what they do and they care about each other. You can see the pride in the faces of these guys (in the photograph) and you can see it on the new guys here."

Working conditions may have been a lot more austere back then, he said, yet that's hardly what people remember.

"What comes through is the good humor and some of the characters who used to make working pleasant. If you didn't laugh during the course of a shift, it was a bad day. The work always got done, but it was made a lot easier by the humor that was always part of working underground."

He recalled one old timer who fancied himself a quick-draw artist. "High noon underground," said Roy. "And if you outdrew him and shot him with your finger, he'd fall down and play dead."

At 70, retired Levack miner and electrician Joe Ribic remembers the old times. Still a Levack resident, Joe helped put names to some of the faces in the picture who couldn't be identified by the mine personnel.

"I started at Levack in 1937 and retired in Levack in 1976," said Joe. "My (employee) number was 9629. I liked mining and I liked it out here at Levack. I don't regret it. It was hard work and you went

home at night tired, but it was my life and I'm proud of it. I don't think that's changed. Miners take pride in their work."

Engineering office planner Clarence Vowels, a 30-year Levack veteran, said the picture reminded a lot of people about the good memories. "Sure, people gripe and complain. We all gripe and complain, but few of us leave. That should tell us something."

Clarence smirks as he recalls the stories he remembers about some of the guys in the picture. "Better to keep them to myself. You know, mixed company," he said as the grin broadened. "Some of these guys are still around."

The picture was framed and donated to the Onaping Falls Golden Age Club.

Joe Ribic also donated a framed 1946 Onaping Falls News newspaper article and picture of the mine and an old picture of his father and four other men on a rail "speeder" (pump car).



Onaping Falls Golden Age Club president Alice Lejambe and recording secretary George Lockhart with one of three photographs donated to the club by the Levack complex.

'Inco's own' among Walden Ringette champs



The Walden Junior ringette national champions (and some of their Inco parents) are, from left: (front) Shawna Burton, (daughter of former Inco employee Charles Burton); Maria Malvaso, (Colette Malvaso); Maniva Armstrong (Carl Cauchy); Jennifer Weiler, (Bill Weiler); Nadine Armbruster and father Wolf Armbruster; Karen Duguay, (Peter Duguay); (Back) Michelle and Gerry Chartrand, Sarah and Gary Miller, Paul Simpson and Pamela Simpson, Jennifer Scharf and Merve Scharf.

The Walden Juniors ringette team has gone all the way to the top.

The team returned from national competitions in Hull, Quebec with the Gold, defeating Manitoba in the final game to become national champions.

Last year, the team came home with the Bronze medal in the same competition.

"Quite an accomplishment for a small association like ours," said assistant coach Paul Simpson of Canadian Alloys, "considering the teams we are up against come from much larger centres."

To win the Ontario title, Walden had to defeat teams from centres such as Ottawa, Kitchener, Sudbury, Scarborough and Waterloo.

The Quebec competition included teams from every province except Newfoundland and the Territories.

Success is nothing new for the

team. They have won a total of seven provincial titles in a row, three in the Petites division, two in the Tweens category and two in the Juniors division.

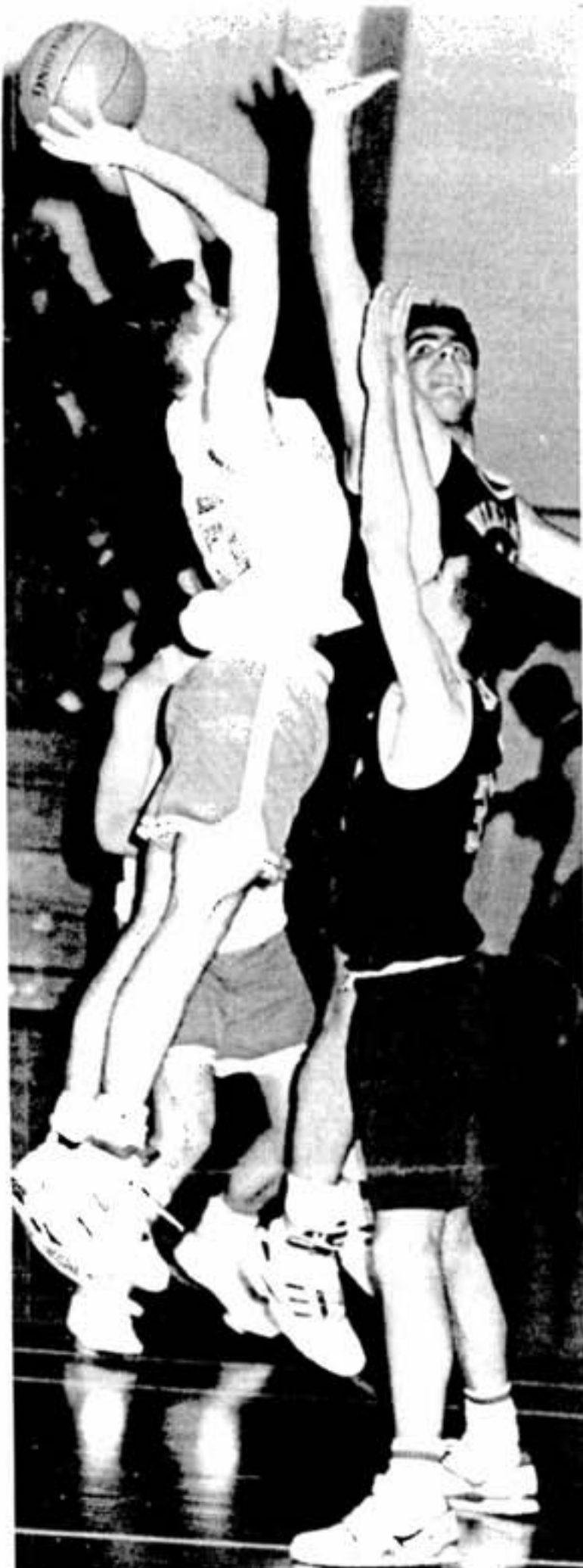
"Walden entered the provincial championships this year in Scarborough as underdogs, facing powerhouse teams from Sudbury, Kitchener and Gloucester."

"Our girls just don't know how to lose at provincials," said Paul. "In 1985 and 1987 we won the provincials as wild card entries and this year as underdogs."

Head coach of the team is Gary Miller of General Engineering Utilities.

"A lot of our Inco parents have spent a lot of time and money following their daughters in their ringette careers, but I think most will agree that it was money and time well spent."

"Quality time with their daughters," Paul said.



Pat Sherlock blocks low while teammate blocks high in an attempt to stop a Brampton attack.



Sometimes, Inco's game is basketball

When it comes to investing, Inco's on the ball . . . basketball, that is.

Who would have thought that the underdog Lockerby Vikings would battle their hearts out to become the Cinderella story of the Ontario Federation of Schools Athletic Association Senior Boys AAA Basketball Championships in Sudbury recently?

Certainly the \$500 Inco donated toward the "adoption" of the 12 players and two coaches on the Lockerby team could guarantee the fast-paced action that saw the home squad overcome almost impossible odds to become eye-opening contenders early in the championships.

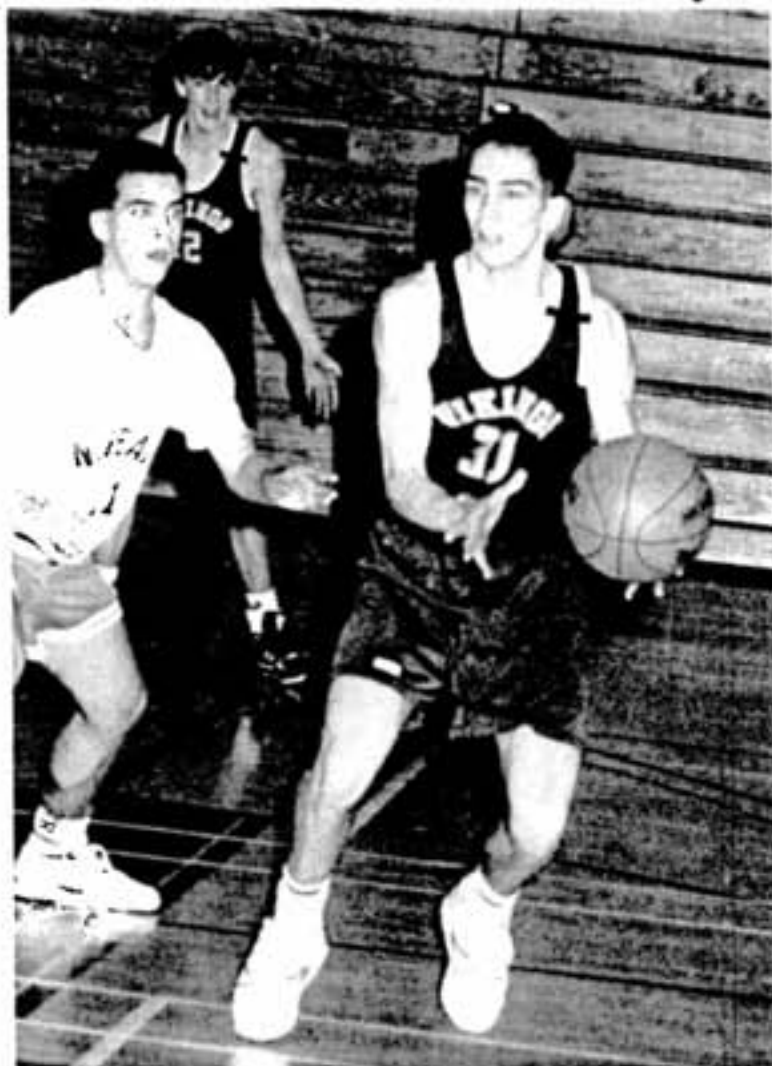
No mere pushovers, the team stunned the No. 4 ranked Mother Teresa Titans of Toronto on the first night of basketball action, then repeated their performance in a second game against the Nepean Knights.

The team lit local audiences on fire as they battled exhaustion to keep up with—and ahead of—their high-powered adversary.

Later in the same day of their second victory, a tired Lockerby team finally fell to the Cardinal Leger Lancers of Brampton.

But Inco's connection to the basketball action wasn't only financial.

With just seven seconds remaining in a three-minute overtime during the second game, it



Pat Sherlock attempts to elude a Brampton player.

was a Lockerby player wearing the number 33 who put the winning basket through the Nepean hoop.

That's Jason Prpic, son of Smelter general foreman Murray Prpic.

Guard Pat Sherlock, wearing number 31, is the son of Transportation project coordinator Al Sherlock and forward Richard Eldridge is the son of Jack Eldridge of Central Process Technology.

Copper Refinery manager Al Cruthers was also keenly interested in the basketball action. His son, Jonathan, is a guard with the team.

One official at the event was Cec Goudreau of Froid Mine Industrial Relations.

Teams representing 16 associations throughout Ontario participated in the three-day tournament.

Inco's donation, in the form of the team "adoption," helped in various tournament costs, including holding a tournament banquet, security and printing of promotional materials.



Where's the ball?



Viking's Steve Zilliax and Titan's Keith Vassell in a foot race.



Jason Prpic takes a shot while at right he attempts to stop a Brampton player's advance.



Inco archival footage top-notch

This movie stars Inco, nickel industry

Picture it. A cast of miners, mill and smelter workers, refiners, executives, acres of plants, miles of mines, mountains of nickel from deep in the earth all the way to the moon.

It's the story of the birth and evolution of the Canadian nickel industry and Inco's leading role in it.

Don't read the book, wait for the movie.

If you're interested in mining in general or Inco in particular, this is a movie you wouldn't want to miss, and it's all made possible by some rummaging around in archives, dusty closets and cupboards in offices all over Inco's world.

"About four years ago we put out a call to hunt up and send us all the local footage of Inco operations, old and new," said Inco's director of corporate communications David Allen. "The response was incredible. What we got back was hundreds of hours of film, a lot of it top quality material. The best was old Mond Nickel Company film from a basement in London, England and from the Inco archives in Sudbury."

Luckily, he said, Inco has a history of keeping records on film. "And right from the start, both Inco and Mond used some of the best cinematographers available. Suddenly we found ourselves with miles of top-notch footage that

chronicles on film much of nickel's history."

He said the film, some of it including highly flammable nitrofilm used in the 1920s, was turned over to the National Archives in Ottawa which was keenly interested in such a complete top-quality record of the development of mining and metals processing in Canada.

The collection consists of 285 film titles (654 reels of film) in English and several other languages. The films cover the period from 1918 to 1980 and were used to record noteworthy occasions and to promote new products when they were brought to market.

In accepting the collection, which was designated as of national significance, Jean-Pierre Wallot, National Archivist, said of the donation: "You have thereby enabled us to document more fully Canada's history and enriched our cultural history."

To update the history and bring it up to the present, a film crew was filming in Sudbury recently.

One segment was filmed at the Nickel Refinery control room with Vice Chairman Walter Curlook. He talked not only about the changes he and his family have seen in their years at Inco, but made observations about how rapidly change is accelerating in mining today.



Vice Chairman Walter Curlook waits as camera assistant Rob Tiller sets stage for filming.

Dr. Curlook was born and raised in Coniston where his father worked in the smelter. Father and son between them span almost 90 years of Inco history.

"The idea of the whole project," said Allen, "is to show the evolution of the nickel industry, its ups and downs, the good and the bad, to this day. It's not a film about Inco but obviously, the history of Inco is by and large the history of nickel, at

least in this century.

"We want the audience to be not only Inco people but, importantly, the broad general public as well so that people in southern Ontario and elsewhere have a better knowledge of the importance of mining, its fascinating history, and the growth of Sudbury."

To this end, Allen is negotiating with television networks for broadcast of the hour-long film in

the fall television season.

"We're also working on some community showings in Toronto and Sudbury," said Allen. "We might not debut the film as a Hollywood premiere, but we want to celebrate our history. It is not only fascinating and mostly unknown in itself, but perhaps understanding our past can help us more clearly understand where and how we wish to shape our future."



David Allen, Dr. Walter Curlook and director Alan Fox discuss the next camera session.



Make-up artist Lisa Brown gets Dr. Walter Curlook ready.

Reaching 'unattainable' levels

Smelter safety record puts complex on top

The Copper Cliff Smelter Complex, a place where you keep your mind on what you're doing.

The approximately 1,000 people who are employed here do highly-skilled, diversified, exacting and sometimes risky work that demands unfailing attention. It's a workplace that has exposure to molten metal, overhead cranes, high pressure systems and diverse equipment. It's the kind of place where nobody has to remind you to strap a mask to your belt and don safety glasses and boots.

Now add scores of subcontractor crews working elbow to elbow with smelter employees, building huge structures that almost daily change the face of the Smelter's workplaces. As the \$500 million Sulphur Dioxide Abatement Project moves into full swing, the entire smelter complex seems to be transforming into new unfamiliar territory, sometimes making the old unrecognizable under a mountain of steel girders, cavernous pipe and rising steel-plate structures.

Yet here rests the 1990 Vice-President's Trophy for the best safety performance among all Milling, Smelting and Refining plants.

"You can have all the posters, meetings, lectures and precautions you want," said safety and loss control general foreman Steve Oreskovich, "but there's absolutely no question that the credit for this goes to the people on the floor, the people who have been consistent in their safety consciousness. You couldn't come up with a record like this at the end of the year without everybody's cooperation."

It's all state-of-the-art, the smelter faithful will tell you. Technology has taken a lot of the back-breaking, repetitious and mundane labor-intensive jobs off the backs of the people who work here. Yet it's still the kind of place where an absent-minded slip can spell disaster.

"This is no cookie factory here. Safety isn't the first thing at the Smelter," said Steve. "It's the first ... and second thing."

Last year, the Copper Cliff Smelter led all surface plants in

avoiding medical aid injuries, lost time accidents and days off work. In medical aids, the complex's rate of 8.4 per 100 employees beat the M. S&R average by 2.6 per cent. The lost time accident rate for the same year was 1.7, well below the surface plant average of 2.3. Days off work totalled 55, a little more than half the average.

In announcing the win, complex manager Peter Ryan called the safety accomplishment "outstanding," and said the smelter hasn't won the award since the early 1980s when Matte Processing kept the trophy for a year.

"Outstanding safety performance eluded the Smelter for many, many years," he said. "After considerable hard work and team play on the part of everyone, we have now attained a position of leadership and safety excellence."

The M. S&R Trophy was formally presented by Vice-President Bob Browne early last month. Accepting the trophy on behalf of the smelter was Ernie Hywarren and his crew along with Bob Gallinger and his nickel circuit workgroup.

The two teams have a long history of safety excellence.

While Steve Oreskovich insists it's the employees who are responsible for the accomplishments, he acknowledges that an increased corporate emphasis on safety has resulted in a new "safety culture" at all Inco's operations.

"It goes from the top down and from the bottom up," said Steve. "And there's been absolutely no doubt that the company has been committed to safety."

With the diversity of jobs at the Smelter, ensuring that all of them are done not only effectively but safely is something that each employee is responsible for.

"We have about 2,000 job procedures here, each laid out in detail," said Steve as he slapped a packed binder on his Smelter office desk. "It's all written down here, a procedure for each job. But it's up to each employee to follow them. You can't just write them down and forget about them. Employees have to use them. That's what I mean, we couldn't have won this



Milling, Smelting and Refining Vice-President Bob Browne and smelter electrician Frank Cividino shake hands to celebrate the Vice-President's Trophy for best safety performance. Standing with the pair are some of the smelter people who made the award possible.

without the participation of our employees."

In his 34 years at the Smelter, Steve has seen attitudes about safety change from something of a side issue to a prime focus. "There's just no comparison with the way things used to be," he said, pulling out a sheet of figures from his desk. He points to a figure that shows 6.8 injuries per 100 employees per year in 1975. "Last year, we had a little over one per cent injured."

Can accidents be reduced to zero?

"I'm not sure if we can ever totally eliminate all accidents," said Steve, "but we are aiming for it regardless. After all, I never thought we'd get it down to where it is now. We've already reached a safety performance that would have been considered unattainable just a few years ago."

To Steve, Inco's additional emphasis on off-the-job safety makes eminent sense as well. "Why? Because people are five times as likely to get injured at home than on the job at the Smelter. Our figures show it. And if you can get him to be careful at home, you know he'll be careful here."

Not only is today's employee highly qualified, better trained and motivated, but Inco's "old-timers" have shown a resilience and a willingness to learn and adapt to changing times and technologies.

"The older employees are the people who built this company and they have proven over and over again that they are willing to change with the times, to learn new skills and procedures. Our people have always shown a willingness to go the extra mile, to accept a new challenge."

"And that goes for safety as well as anything else."

For new safety supervisor Gerry St. Amant, his job is one of the most important at Inco. "I think leadership in all departments is required to make it work," he said. "I've been at the Smelter 15 years, and I've never seen people so safety conscious as today. People involved in the safety end can feel good



Gerry St. Amant: Safety is rewarding work.

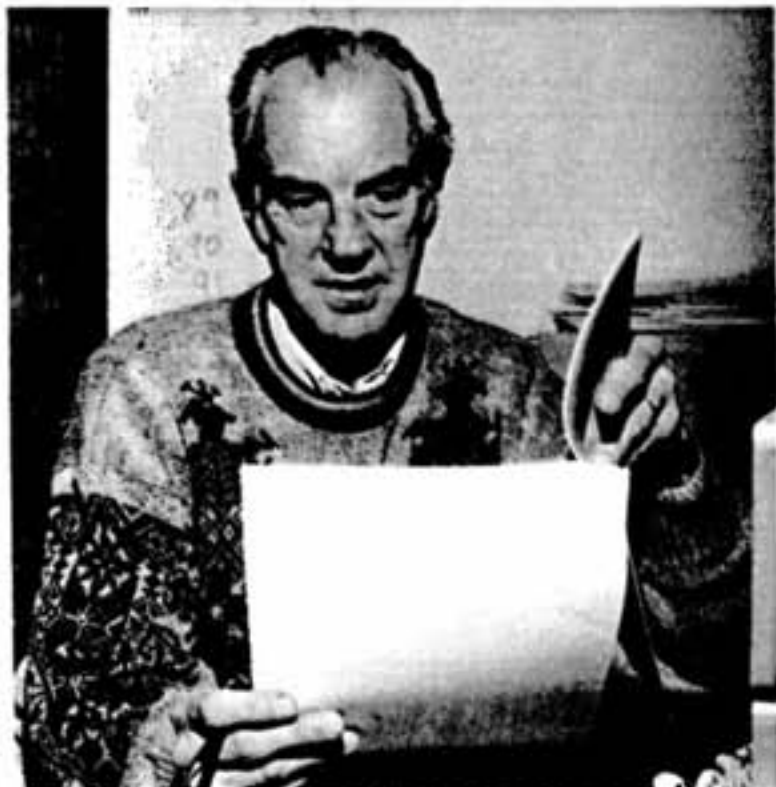
about what they do. I've been at this job for only five days and I can feel the pride in the department already."

Instrument technician Ron True said he's always been careful on the job, yet today he's even more

conscious of it. People talk about it today. People watch out for each other. If I was to do a job on the workbench without my safety glasses on, the first guy who walked by would tell me to put them on."



Ron True: If you forget safety, co-workers will remind you.



Steve Oreskovich goes over the safety statistics.

From Sudbury, you say?



The final and probably most difficult act of love every mother must face is to give her children the freedom to chase their own dreams.

Just ask Margaret Donaldson.

In 1981 her son followed his dreams to Saudi Arabia, and



Margaret Donaldson

Margaret can count on her fingers the few precious times she's seen Robert in the last decade. Yet her face beams with pride as she describes her son's accomplishments.

"Back then I guess I preferred him to go to university and go into some kind of a professional career," said the Computer Systems data entry operator at the General Office building. "But few of us get the chance to live their dreams. I'm happy for him, even if I don't see him as often as I'd like."

A picture of Robert, now 33, was carried on Page 27 of the June, 1981 Triangle along with an article on how he was leaving his Sudbury home to work as an instructor/manager at the Equestrian Club of the Royal Family in Riyadh, Saudi Arabia.

"The contract was for a minimum of one year and I never expected it to last this long," said Marg. "It just kept getting longer and longer."

It wasn't the Middle East that attracted Robert, it was a chance to do what he's loved all his life... work with horses.

"Even as a kid he was never around, usually off to a farm to be around horses," said Marg. "He began riding in Scotland when he was only a boy."

The family moved to Canada in 1970, and Robert continued his equestrian interests here, horseriding and competing for 14 years, seven of which were spent riding and training professionally. He worked for the Canadian Olympic equestrian team as well as the Canadian show jumping team and has taught riding at clubs in Ontario and the United States.

"His room," said Marg, "was

full of trophies."

Although a graduate of Copper Cliff High School, it became clear that education came second in Robert's life. He had high marks in school, but studies followed horses in importance.

Money wasn't motivating either. While other students tried for high-paying summer jobs at Inco, Robert opted for low-paying jobs on farms... farms with horses.

Money, material things didn't seem to concern him that much," said Marg. "His life was horses. He owned a horse while he was at home and he used to have lunch with it. He would have conversations with the horse like it was you and me talking."

Robert did one year of university, but dropped out when studies cut into his farm job.

"He told us he was wasting his time on university, and we were wasting our money," said Marg. "I guess if we could have somehow made him go through school, he would have ended up a very unhappy doctor, lawyer or engineer. Who needs a lawyer who dreams about horses?" she said with a smile.

Robert has never regretted making the decision to go to Saudi Arabia, said Marg, and it's no wonder. Not only does he get the opportunity to work around some of the best horses and horsemen in the world, but he spends a lot of his time hobnobbing with royalty.

Robert was featured in the Winter issue of Equestrian Canada, a story about how the technical consultant to the Saudi Arabian Equestrian Federation owns his own stable where he trains horses and riders. He also operates a "bloodstock business for show jumpers," involving the importation of horses from England to be sold in Saudi Arabia.

Robert created the rule book for the federation, organizes show jumping competitions, creates short and long term goals for the improvement of equestrian sport in Saudi Arabia, creates budgets and supervises the implementation of the goals.

He travels both with the Saudi federation and Royal family to riding functions, as well as on his own, and he's visited places that many only dream about. "Quite a life," said Marg. "Hobnobbing with the jet set and getting paid for it."

"We never know where he's going to call from next. It could be Japan, Nepal, India, Africa or somewhere in Europe," said Marg.

"There's nothing snobbish about Robert," said Marg. "He seems to be able to mix with crown

princes and royalty as well as stable hands."

Unlike his aversion for studies at home, Robert attended university in Riyadh and is almost fluent in both writing and speaking Arabic.

Not that life in Saudi Arabia is all fun and games. During the recent Gulf war, both Robert and his mother were feeling the same strains.

Robert was at a horse show when the war broke out. He faced air raid sirens in the middle of the night and took refuge in "safe rooms" to seal himself in against chemical attack.

For Robert, the "boooooom" of Patriot missiles taking off was a bit shocking, but he said he adapted quickly.

For mom back in Sudbury, it wasn't all that easy. "I worried constantly," said Marg, "but he called me every day at work at Inco to reassure me that he was okay. He knew we were worried about him."

Although brief visits are sometimes over a year apart, Robert

telephones regularly. "About once a week he calls. We call his apartment sometimes, but he's never there. I think he just has it to get his messages."

"When it comes to horses, Robert's still a kid," said Marg, "and I don't think he's ready to settle down yet. Maybe he'll get

tired of it eventually and meet a girl and settle down."

Marg and husband Robert have grandchildren from her other son Donald and daughter Elizabeth. "Of course it would be nice to have a grandchild or two from Robert, but everything in good time... hopefully."



Robert mounts a camel to get a different kind of ride.



Robert has tried camel racing, but horses are the love of his life.



Robert Donaldson (Fourth from left) joins a Royal Saudi family portrait.



Tom Mossey with a used catalytic converter.

"Everybody's happy. The public, Inco, government and the environmentalists. You don't often get the chance to please everybody."

"You mine it where you find it."

Catchy little ditty, huh? As a kind of unofficial Inco motto, it fits.

Sure. Inco miners haul ore the traditional way, from over a mile underground at places like Creighton and Frood. There's even a little ore left in a few open pits. But Inco miners, sniffing for metals, have hit paydirt in some rather unusual places.

Case in point is the Smelter complex's Ryan Pit where metals-permeated furnace firebrick, discarded decades ago, has been dug up and the metals removed. And then there's the Garson crown removal project, where Inco has temporarily sucked water out of the ground faster than it can flow back in while miners remove a rich deposit of ore. There's even speculation about re-mining today's mining wastes tomorrow when rapidly-improving technology allows the extraction of the minute remaining traces of metals.

Where will Inco tunnel up tomorrow's dollars?

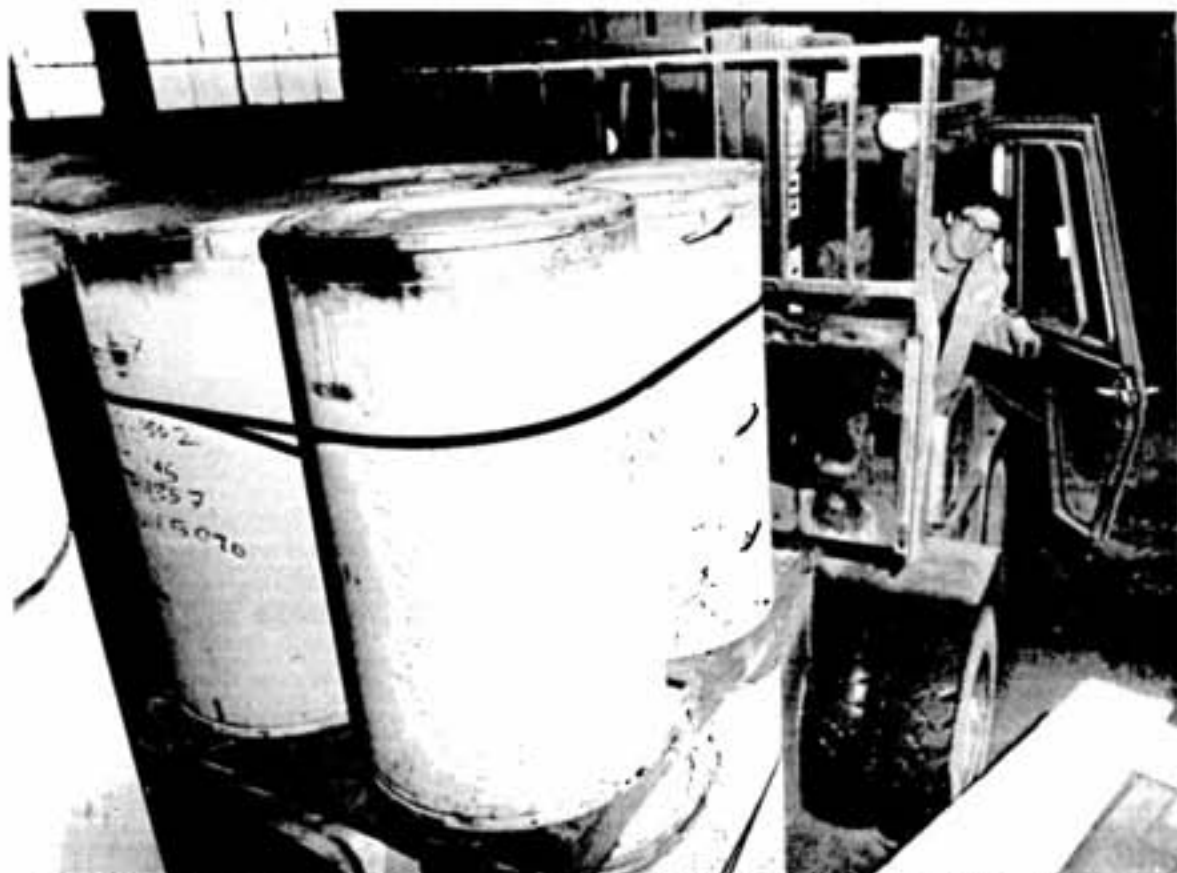
Tom Mossey smiles as he leans back from the desk at his Central Process Technology office. As coordinator of Revert and Toll Materials, he knows about some of the unusual nooks and crannies where new, unorthodox mother lodes have been found. He reaches behind the chair and gropes in a cardboard box on a filing cabinet, hauling out a metal canister the size of a cider jug.

The canisters and thousands of others like them from auto wrecking yards represent a significant part of Inco's total production of platinum group metals. "They

started putting them on cars in the mid '70s," said Tom, "and by '83 they were starting to arrive at the junkyard. A year later, collectors

Precious metals from used car parts

Inco 'mines'



Forklift operator Max Manitowabi moves drums filled with catalyst material to storage area.

sold Inco enough of them to account for over several thousand troy ounces of platinum group metals.

It's a catalytic converter from the exhaust system of a car, he said, and it's a prime example of how recycling can be good for the environment and turn a tidy profit to boot. "Recovering these convert-

ers is an industry that didn't exist 10 years ago. Today it's a multimillion dollar business."

Installed on an automobile, the converters remove a significant proportion of the harmful substances: carbon monoxide, oxides of nitrogen and hydrocarbons from the exhaust gas stream.

A platinum, palladium and

rhodium coating on a porous ceramic monolith or pellet material is used to achieve the reaction.

"We buy the pellets and monolith core from a 'collector' who in turn collects the converters from wrecking yards. The collector removes the casings and loads the pellets or honeycomb material in drums for shipment to us," said



Yvon Lepage, Len Incerti and Art Maestrello drive a sampling pipe into the catalyst material.



Yvon Lepage works the pipe around in the material in order to get a better sample while Len Incerti waits with the sledge.

the junkyard



Above, Tom Mossey examines the newly arrived drums. Above, right, the revert and toll materials co-ordinator examines the catalyst in an opened drum.

Tom. "We recover the precious metals in the catalyst and the metal of the canister is recovered by others. The fact that we can recover the metals from the catalyst in the converter encourages others to recover the steel in the container."

"It began in the mid '80s with a single truckload a month," he said.

The material is sampled by

driving a hollow pipe through a number of drums, then analyzing the material in the pipe for precious metals content. The testing is done by grinding the material to a powder and then analyzing it for metals content at Inco laboratories.

After the material is charged into Inco converters, the platinum, palladium and rhodium is collected.

Chances are, some of the recovered metals were dug out of the ground by Inco miners in the first place, and at least part of the platinum and a high per cent of the rhodium that's extracted by Inco will eventually end up as part of another catalytic converter. About 79 per cent of the western world's rhodium and 37 per cent of the

platinum demand goes into making catalytic converters.

"These metals are relatively rare and that makes recycling all the more important. In most cases, demand is greater than the supply.

Tom's particularly happy because he's in the enviable business of pleasing everybody.

"We do a lot of recycling of

materials back through the smelter. There's our own stuff that's left over, rejects or scrap and discards from operations at our plants and shops. This material is too good to be put out for the garbage, materials like metallic scrap and shavings, flu dust and even high grade slag. Some of the material that we recycle these days used to sit on the bottom of tanks and pipes and would end up out in the environment. Today, the idea is to recover and reuse the metals they contain."

Inco's always been in the business of recovering valuable materials, but with today's emphasis on the environment, the job is doubly rewarding.

"Everybody's happy. The public, Inco, government and the environmentalists. You don't often get the chance to please everybody."

The catalyst in converters isn't the only "garbage" item that Inco purchases from outside collectors. Material accepted for recycling and metals extraction ranges from metal shop turnings to junked jet engines which contain high proportions of nickel and cobalt.

"We just got through with some Rolls Royce scrap," said Tom with only the hint of a smile. "Jet engines turbine blades."

"Sampling is the big problem," said Tom. "We'd accept things like watchbands, rings and jewellery, but the snag is that you can't get a large enough batch to give an accurate sampling of what it's worth."

Tom said Inco is continually finding new and better ways to do the recycling and extraction, and the research and development promises even more of the same in the future.

With the growing concern about the environment, he's sure more opportunities will come along, and new innovative collection and recycling schemes will mean less garbage in the junkyard.



Another few blows with the sledge hammer and the sample pipe is ready for removal, filled with the catalyst material.



Art Maestrello and Yvon Lepage power the sample into a plastic bag for further testing.



In your yard...

By the light of the moon

By Ellen L. Heale, P.Ag.

Fact or fancy - the folklore associated with the moon and agriculture has been prevalent for centuries. Ancient farmers used the moon to provide guidance on growing and harvesting crops. Some gardeners currently use the moon's phases for guidance, while others use that information in combination with the moon's zodiac signs, a complicated endeavour.

First the facts. Every 28 days the moon completes a cycle. That cycle is divided into quarters of 7 days each. Throughout each cycle the moon changes in appearance. During the first half of the cycle the moon waxes from a new moon (which cannot be seen) to a full moon. Over the latter half of the cycle, or dark of the moon, it wanes from full to half to a new moon again. Ancient calendars were based on this monthly cycle.

Paul Katzef, author of *Full Moons - Fact and Fancy about Lunar Influence* writes "the myths and tales may not always accurately describe the mechanisms by which the moon influences terrestrial life, but contemporary science is proving that the effects themselves often do exist." Scientists have connected the phases of the moon with many biological processes. Since lunar rhythms affect the movements of the sea and of water in all living creatures it is possible that the moon also affects the growth of plants. Scientists have also examined the effects of lunar rhythms on the earth's magnetic field. Corn and peas were studied for nine years and it was found that corn planted two days before the full moon grew larger than corn planted two days after and peas planted at the new moon withered more quickly than normal. It is more likely to rain heavily immediately after a full or a new moon.

Then the fancy. The clearest illustrations of lunar empathy have always been in agriculture. In general, farmers and gardeners believed that things grew better as the moon grew, that living things were actually stronger, more resilient and resistant to damage during a waxing moon and weaker, more vulnerable as the moon waned. These beliefs were considered essential to one's success in daily affairs in ancient Rome. Virgil recommended that grape vines be planted on the seventeenth day after a new moon. Camille Flammarion, a turn of the century astronomer and lecturer taught that plants such as cucumbers, radish, turnips, leeks, lilies, horseradish and saffron grew best during a full moon and herbs plucked during a waxing moon would be strongest. In contrast, onions did most of their growing during a waning moon. "Such contrary behaviour was the reason ancient Egyptians were so wary of eating onions."

Traditionally, vegetables that produce crops above ground are planted during the waxing of the moon. The first quarter is considered the best time to plant crops that produce their seeds on a part of the plant that is not eaten. Examples include asparagus, broccoli, cabbage and cauliflower. During the second quarter plant crops that bear seeds inside the part that is eaten, such as beans, tomatoes, peppers and squash. It has been said that generally one does not plant on the day of a new moon or a full moon. However, seeds from which you expect to have double flowers should be sown at the full of the moon or within 2 or 3 days after.

During the third quarter when the moon wanes from full to half, tradition suggests planting crops that produce their yield in the ground. This would include beets, carrots, turnips and potatoes. The fourth or last quarter is good for destroying weeds, brush and pests and for cultivating and ploughing.

The harvest moon is the full moon nearest the fall equinox when farmers are harvesting. The moon rises soon after sunset, which gives farmers extra hours of light to work by. Two thousand years ago, farmers gave that full moon credit for actually ripening produce.

Folklore combines not only the influence of the moon on agriculture, but also the effects of the stars and the elements. The Four elements according to Aristotle were associated with the Four Ages and the Four points of the compass. Earth, symbolizing cold and dry was associated with waning of the moon. Air, which symbolized hot and moist, was associated with the moon's fullness. The element Fire was hot and dry during the waxing of the moon and Water, the sign of cold and moist was connected with the disappearing moon.

The sun, moon and planets each move in a large circle around the sky. All of these objects pass through the same constellations as they make their circle. The ancients divided this circle into 12 constellations. The sun took one month to go through each one. They pictured the constellations as animals and the band in which the planets moved as a circle of animals or the zodiac. Moon gardeners take into account the astrological or zodiac signs of the moon, believing that each sign rules over some aspect of gardening. The Fire signs of Aries, Leo and Sagittarius have to do with the seed and genetic material. All herbs should be harvested in dry signs. Although plants germinated under these signs may germinate quickly and bolt, the Fire signs are considered favorable for vine and stalk growth. Sagittarius is said to rule fruit and is considered especially favorable to apples.

The Water signs of Pisces, Cancer and Scorpio rule over growth. The Earth signs of Taurus, Virgo and Capricorn are associated with the roots of a plant. Aquarius, Gemini and Libra, the Air signs rule over the flower as it reaches out into the air to receive pollen. The ways in which the moon, the elements and the zodiac signs relate to gardening is quite complex.

Planting by the Moon by Dr. Clark Timmins in 1939 suggested that "preserves and jellies made while the moon is waning and in a fixed sign (Taurus, Scorpio or Aquarius) will be found to possess exceptional flavor and good keeping qualities." Thomas Tusser wrote in his *Five Hundred Points of Good Husbandrie* in 1562 - "Sow peason and beanes in the wane of the moone. Who soweth them sooner, he soweth too soone... That they with the planet may rest and arise. And flourish with bearing most plentiful wise." Llewellyn's *Moon Sign Book and Gardening Guide* publishes charts and tables. The *Old Farmer's Almanac* also includes planting tables that indicate the best times of the lunar month to plant, cultivate or harvest particular plants.

Folklore associated with the moon and gardening is not without controversy. "To steer by the stars the botanical astrologer needed confidence, not to say effrontery and more than a little luck!"

NICKEL NEWS

Nickel beer

Combine easy-to-clean, noncorrosive and hygienic nickel-containing stainless steel filtration systems, kegs and aging tanks with pure spring water, hops, yeast and malt, and what do you get?

A microbrewery.

Creemore Springs Brewery Limited is one of 10 microbreweries in Ontario. Providing a premium price, premium lager for people who like the taste of a pure beer, the brewery is heavily dependent on stainless steel equipment for the purity of its product.

Sold in oversized glass bottles and kegs, it sells locally and in metropolitan Toronto, never in bulk.

Even the tank trucks that deliver the pure spring water of Creemore to the microbrewery are made of gleaming stainless steel.

Nickel talk

It is costing less for Telecom Australia to operate payphones that are installed in public areas, thanks to nickel-containing stainless steel.

Stainless steel was specified because of its rigidity, security and low maintenance.

Within two years, the Melbourne-based utility expects to have 10,000 of the virtually vandal-proof units installed throughout Australia. The units are wall or pedestal-mounted.

Nickel heat

When Italy embarked on an ambitious expansion program to develop and produce clean geothermal energy, the decision was made to reduce the time lapse between discovery of geothermal wells and the construction of a plant by producing the plant's equipment before completion of drilling for geothermal fluid.

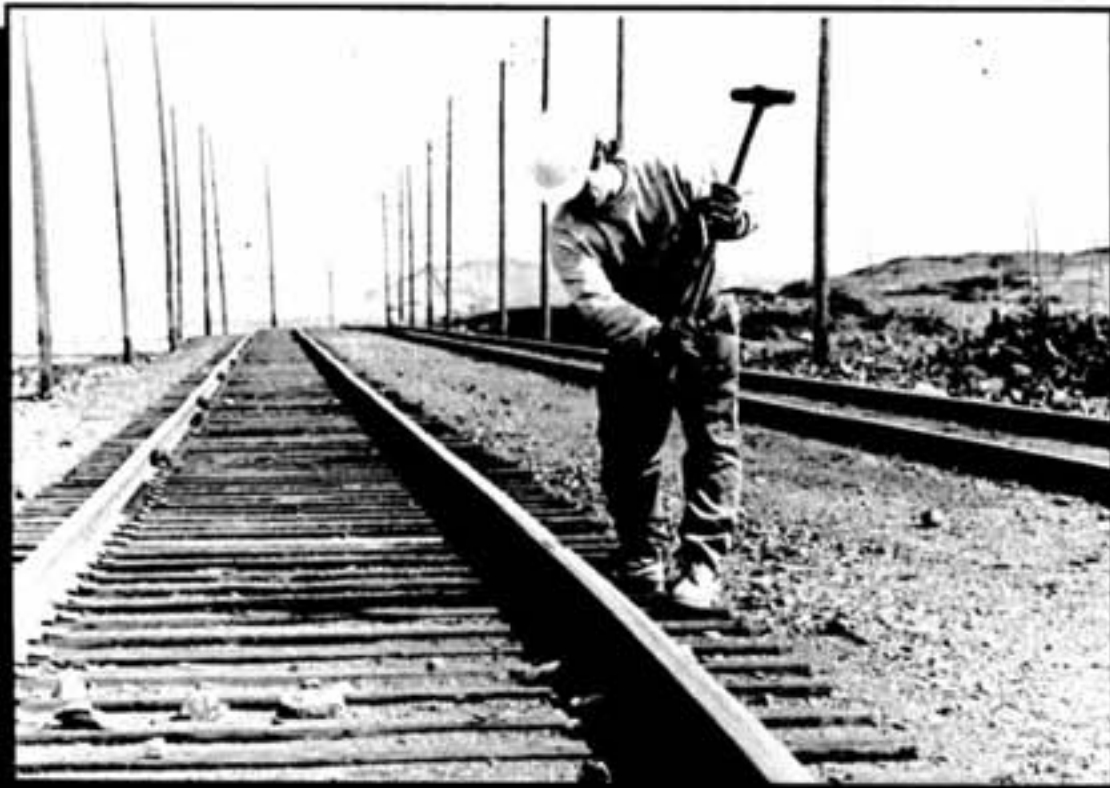
These off-the-shelf, standardized plants reduce the time needed for a power plant to become a reality, since assembly and installation are rapid.

These geothermal power-generating systems are subject to corrosion, erosion and abrasion, so stainless steel was the material of choice for the plants, offering the best corrosion resistance at low temperatures and in condensing conditions.

Nickel with a flair

A high-quality, heat-resistant alloy was required for the construction of flares, used for the disposal of waste combustible gases during normal operations and emergencies. Flares are familiar sights worldwide on offshore platforms, gas processing plants, oil refineries, liquefied natural and liquefied petroleum gas terminals, along hydrocarbon pipelines and petrochemical plants.

To obtain safe and efficient burning and long-term reliability with a minimum of pollution and noise, considerable attention is paid to flare design and material selection. Nickel alloys and stainless steel are being used in construction of the flares to meet these stringent requirements.



Working on the (Inco) railroad

Now that most of the snow and ice is gone from driveways, sidewalks and front steps, Inco is out in force checking some of the wear and tear hidden under the weather for the past six months. Mike Chellew, a co-op student taking the mining course at Cambrian College, who is working in Transportation during his work term, was one of those put on the job of track maintenance. During the recent good weather, he doesn't mind a bit.



Bob Burke and Dale Krueger study the new display at the copper refinery.

Copper refinery display boosts team spirit, morale and quality

The approximately 500 people who work at the Copper Refinery have a better idea these days of where they fit into the Inco scheme of things, thanks to a unique project that features refinery processes, people and end use products.

It's an idea that was spawned from Inco's Total Quality Improvement philosophy, and early indications suggest the project has given employees a new sense of pride in what they do for a living.

The project, conceived by the refinery's Total Quality Improvement steering team, involves a permanent photographic, video and sound display in the foyer immediately outside the main change room.

The display features three sections of photographs and an audio video segment that can be activated with the press of a button. It'll be changed every three months. Display topics are determined by a team consisting of a cross section

of refinery personnel.

"Unlike other displays of this sort, it's not aimed at our customers," said Superintendent of Process Technology Dale Krueger. "This one is aimed at our own people to give them a better idea of how crucial their quality work is in the overall refinery picture."

The display is divided into three basic sections, the first showing some of the many consumer products made with materials the refinery produces, the second showing some of the refinery processes involved in getting our quality products to the consumer product fabricator, and the third showing people involved in those processes.

Part of the display is a television screen and video cassette recorder. The press of a button provides an informative audio visual presentation that will be changed more frequently than the three months for the entire display.

"We hope eventually to get our

customers involved in this display," said Dale. "We'd like them to give us a short video on what they do with our product, how they go about producing the final product for market."

Many people don't realize the wide range of products made from what Inco hauls out of the ground and Dale wants to use the display to help inform employees about everything from silver's use in photography to gold contacts in electronic equipment.

One of the major reasons the refinery is such a fascinating place is because Inco has worked for over 60 years in research, development and implementation of processes that have made the company a world leader. "We are detail guys," he said. "Over the years we have refined every detail of our processes here to provide a quality product."

With the diversity of work at the refinery, Dale expects it'll be



Crane operator Steve Maville turns on the video display.

years before anything in the display will have to be repeated. "There's a lot going on here. One of the advantages of the display is that it informs employees about what's happening in other areas, and how they fit into the picture."

Although installed only two months ago featuring the electrorefining segment of the refinery operations, the project seems to have caught on already.

"We've already had inquiries about when we are going to feature other operations in the display," said Dale.

Dale said that similar displays he's seen that emphasize quality are aimed mainly at customers. "I think we've taken it a step farther. By doing this we are saying that it's our employees that are supplying the quality we sell to our custom-

ers. I don't know if there is this type of a display elsewhere. I've never seen one in my travels."

How to measure effectiveness?

You can't expect people to line up to see the display, said Dale, yet comments "here and there" provide an encouraging indication that the project is catching on.

Tankhouse operator Bob Burke sees the display as a welcome, informative addition to the refinery surroundings. "I think it's a good idea," he said. "A lot of people have never seen the operations in some other departments. This is a good way to keep them informed."

Tankhouse crane operator Steve Maville agrees. "It's a great idea. It's a good way to keep people informed. You can see where you fit in, where all this starts and finishes."

Crisis in education, training

Success or failure up to us, Clement tells grads

The future couldn't look any brighter for the highly-educated and highly-trained entering the Canadian workforce.

"No, it's not you about whom I worry," said Ontario Division president Bill Clement to graduating engineering students at a Laurentian University Engineering Society event recently. "Words alone cannot begin to describe the crisis we face."

"If Canada is to survive and prosper in the changing international world," he said "we must rapidly improve our ability to compete on the world stage."

The hard facts tell the story about how Canada has fallen below its education potential, he said, and hence, has hampered our ability to compete.

"According to the Conference Board of Canada in a report last September," he said, "one of every five Canadian adults is functionally illiterate. In the workforce, one in six workers can't read well enough

to grasp the meaning of a typical newspaper column."

He said that 30 per cent of young Canadians drop out of secondary school. "That's downright scary when you realize that rising educational and skill requirements mean that 64 per cent of all jobs that will be created in the 1990s in Canada will require more than 12 years of education and training. At Inco today, new employees must have at least Grade 12 education and pass a battery of aptitude tests before being hired."

Another sobering number, he said, is that community college and business technology programs report a 70 per cent dropout rate. Our 17-year-olds ranked 11th out of 13 in international secondary school science and technology tests. Only 72 per cent of Canada's 17-year-olds are involved in formal education and training versus 94 per cent in Japan, 89 per cent in Germany and 87 per cent in the United States. "Add all these numbers to-

gether," said Mr. Clement, "and they add up to serious trouble for our society, our standard of living and our future."



Ontario Division President Bill Clement.

"The challenge for Canada," he said, "is become one of the winners or settle for being a loser, and we all have a stake in its solution."

Speaking as a representative of a company that's the Western world's number one producer of nickel, he said that the competitive edge lies with the development of human resources, constantly improving the skills and knowledge of employees and managers alike.

He said that an education system that will prepare Canada's youth for tomorrow's world is being developed, yet "fierce contests" are being waged on the global scale not tomorrow, but today.

He outlined how Inco has kept competitive, from the late 1970s when the company was still heavily dependent on labor and traditional ways of mining to the development of today's new technology, retraining of employees and cost cutting.

He said Inco is "sticking to our knitting," continuing the program of massive investment in new technology and training of employees to ensure a reliable source of ore and the capability to process

it in a manner that's efficient and environmentally sound.

Yesterday's management style, he said, worked in its day but is no longer suitable.

"Today's employees tend to be smarter, better educated, more socially conscious, more demanding about job satisfaction and keener about how their problem-solving abilities can shape company decisions."

"Enter the total quality movement," he said. "In 10 years, total quality has spread from Japan to North American business."

He said total quality is not a management fad and requires patience and discipline to work.

"It's here to stay and it heralds a new breed of employee and new breed of manager who will lead, not control employees, encourage innovation and risk-taking, not conformity."

"In our business at Inco, we are responding to this new sense of urgency in the marketplace."



HERITAGE T H R E A D S

Orville and The Real World

by Marty McAllister

An Inco historian may be pictured as sort of a Huck Finn in a hard hat, getting his kicks out of old share certificates and dusty log books. Not true. I have only one share certificate on my wall and I've really cut 'way down on log books.

We are a nostalgic lot, though. That's what makes it fun and it keeps us out of hotels. But that's not what makes it pay. What does, then? I mean, as Telly would say, we're talkin' bottom line here.

At one time or another, I've read a dozen or so good articles on the practical value of corporate history. The authors tried their damndest to list every good reason that Billy Budget should cough up funds for collecting, storing and generally rooting through old stuff. "It'll help the legal department — or marketing — or public affairs," they argued. They said it would give people a sense of their company's past, to help in wise planning for the future. Amen, but those are pretty once-in-a-while, intangible kinds of things.

Nobody in Harvard Business Review talked about Orville and The Real World. At Inco, we do.

Our hidden historians

Orville Simpson was a swell guy, a loving father and a hell of a plumber. When he walked out the Creighton gate for the last time, a lot of mental blueprints went with him — and locating buried pipelines became a search in the dark for those who had to take over.

We all know an Orville or two, right? They not only have an uncanny knack for remembering things, but they have the wisdom to know what's worth remembering. Out where we do business — in the stope or the tank house, the roaring aisle or the Copper Cliff Mill, the maintenance shop or the Pittsburgh sales office — out where the rubber hits the road, the Orvilles of Inco are worth their weight in gold. They're the ones we turn to when we need an eye on the past, when we have to know how things got to be the way they are. They can tell us how we got Stronger For Our Experience, because they collected a pretty big share of it.

It's more than just knowing their own immediate jobs; they have perspective and insight. They either know answers, or they know where to find them. They've spent a lifetime in the real world — our real world.

When they leave, we miss them in more ways than one. And, we have to hope that some of what they knew is recorded somewhere. And if it is, where are the records? Have they been stored properly, alongside other business information or archival material, or are they tucked in an old cabinet somewhere — or worse?

When we need old information in a hurry, and maybe finally find it in a haystack somewhere, we're like repentant boozers the morning after: "Never again!" we say. "From now on, we're gonna get organized, and we'll send those files and drawings to the record centre."

What's more, those books and periodicals are going straight back to our libraries — today!

... Well, maybe tomorrow, we really are busy today."

What good end?

But, let's get a little more specific. What kind of information am I really talking about and what's it good for?

If you want to rebuild a turbine that was installed in 1917 and you need the drawing that shows how the foundation was built, corporate history can save you money. When you can follow the evolution of smelter technology since The Second World War and see the birth and growth of flash smelting — today's Copper Cliff expansion takes on a whole new perspective.

When the Inco board is asked to approve \$10 million dollars for, say, a building replacement, they can make a sound decision based, in part, on in-house historical research. They should know, and can be shown, when the old building was put up... why its location was right then, but isn't now... how the operating imperatives have changed... and so on. But the story has to be right.

Voltaire suggested that history was "nothing but a pack of tricks that we play upon the dead." Pity the manager who would use Inco history so frivolously.

We've been in this business a very long while, more than 100 years at our Sudbury operations alone. Gosh, you can accumulate an awful raft of stuff in that time and you can spend several billion dollars doing it. The mind can't even get around how much information that involves. And, for darned sure, no mechanic or foreman or chief executive officer is smart enough, nor will he or she live long enough, to know it all. WE HAVE TO GET IT ALL TOGETHER and save what's worthwhile.

What Inco does

Sometimes we fall into that great Canadian habit of self-criticism and we have a grand old time pointing out Inco's flaws. Well, it's true, Inco isn't perfect — but it's way ahead of whoever comes next in our industry.

History has mattered to Inco people, pretty much since the beginning. What D.H. Browne wrote about before the First World War was entertaining and educational, and still has demonstrable value today. The papers of E.A. Collins, written in the '30s, help bring our formative years alive once more.

And, we made films. Oh, what wonderful old 16mm films! As this month's Triangle article explains, we will soon have a chance to see a brand new video that is based on clips of those old movies. I can't wait to see it.

Nostalgia? Of course. But we've earned the luxury. We've used our history and it keeps on paying — because we remember Orville and The Real World.

LETTERS TO THE EDITOR

Underground tour valuable for students

Dear Sir:

I would like to thank you for being so cooperative and helpful in making our mine visit of March 25th a most useful and educational experience.

This trip was in conjunction with a mine blasting course these students are presently taking. Being able to see the actual loading of blast holes not to mention walking over and looking at all parts of the stope is vital to the students understanding.

Bob Parker was very good and took time to clearly explain and demonstrate all aspects of the loading and blasting process. The activity of Frank Cooke and Colin McNulty was also quite helpful. The use of a sequential blaster underground was something new for me and quite interesting. Bob Neveau drove us around the mine and was not shy to talk to the students and answer questions.

On behalf of the students and myself, thank you for helping us make Sudbury a place known for not only our mines but also for the quality of its Mining Education.

Please express our thanks to anyone I may have overlooked.

Sincerely

Dennis Shannon
Professor
Mining Programs
Cambrian College

June 2-7 set for second Mining Week

The second annual week to acknowledge the contributions the mining industry makes to this province is scheduled the same time as national Environment Week.

With that in mind the Ontario Mining Week Committee is exploring the possibility of participating in broad events and venues in Toronto with displays on the environment and end uses of mineral products. In mining communities in Northern and Southern Ontario, the committee is striving to initiate action committees to organize events to celebrate mining. The committee intends to provide promotional materials and other support to these local action groups.

Once again, the OMA's "Meet the Miners" reception which brings together industry people, cabinet ministers, politicians and civil servants has been scheduled during Ontario Mining Week. The event is planned for June 4 at the Sutton Place Hotel Kempinski.

Symbol closes safety verification "loop"

All branches of the Ontario Division are in the business of continuous improvement and safety is no different.

That's why Safety and Training manager Dar Anderson hopes a new symbol will help employees not only deal with problems, but follow through with implementation and verification of solutions.

"We deal fairly well with rectifying problems that arise," said Dar, "but we don't follow through too well. You find that problems sometimes keep recurring and nobody asks why."

"Closing the loop," Dar calls it. Not just fixing the symptom but making sure the patient is cured.

The problem was first considered by the Safety department about a year ago. "It was clear that some of our people weren't sure of the overall concept. We were good at investigating incidents, identifying causes and prescribing immediate remedies, but we weren't all that good at identifying basic causes. We were getting the symptoms but not the sickness."

Most of these problems have been known for some time, he said, but there hasn't been a way to present the overall concept in an easy and understandable way.

That's why the department has come up with a symbol that presents the "closed loop," from identifying

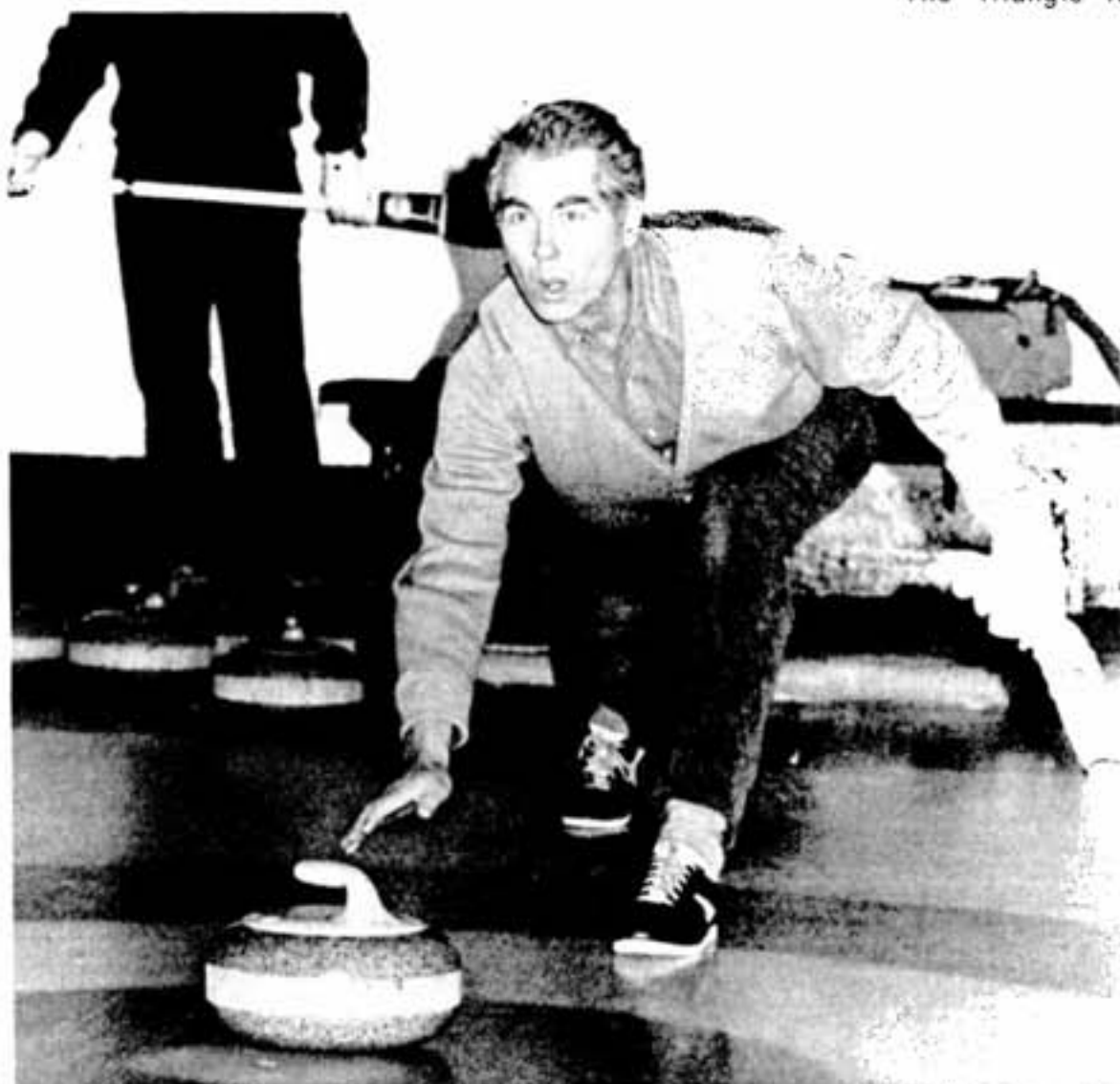


initial problems through a process of coming up with an idea for correction, a strategy, plan and schedule for implementation and follow-up monitoring and verification to ensure the problem has been solved. "There's always room for improvement, in safety and anywhere else."

Dar sees the symbol as a training aid, a way to see the concept at a glance. "Especially the left side of the loop. That's where we tend to have the room for movement. We have to get to the point where we either correct the basic problem or go through the loop again, and you can't do that without a follow-up."



Retired Stobie hoist inspector George Morin directs a shot.



Frood-Stobie Complex Manager Graham Ross: His crew mines even better than it curls.

Frood-Stobie-Garson curlers out in force



Stobie's Wayne Quinn relaxes a minute before the next shot.

For three days it was sliding room only at the Copper Cliff Curling Club as almost 200 Frood-Stobie complex employees turned out for the employees' association annual curling bonspiel.

"We always get a good turnout here," said operating shaft boss Ray Valentino, association president and one of the organizers of the event. "We get so many out that we make it a weekend event. In the past eight years it's been at least two days, and the last four or five years we've had to expand it to a third day."

Just about all of the complex's social events are filled to the rafters. "At the annual golf tournament (Aug. 24 this year) we have to make it first come, first served because there just isn't the space for everybody who wants to take part," said Ray.

Perhaps one reason for the good turnouts is that the complex is more spread out than most, and former co-workers, friends and acquaintances get transferred and

are often out of touch. "This is a good chance to see people you haven't seen for a while," he said.

The complex includes Frood, Stobie, Little Stobie and Garson Mines.

High spirited

But the major reason, said Ray, is the team spirit that the complex enjoys. "Ever since I remember, this place has been a good place to work, a place with a lot of spirit. It seems to get better every year."

It's a place where supervisory staff and management participate as well, according to Ray. "Graham Ross (complex manager) was one of the curlers out there with us."

The bonspiel, held on Friday, Saturday and Sunday, guarantees three games for each team. This year there were 36 men's and 12 mixed teams.

"We all try to win, of course, but having a good time is the main thing."

About 500 people belong to the employees' association.



Stobie industrial evaluator Ron Corelli evaluates his shot.



Gerry Pinard of Little Stobie maintenance keeps rock going.



Waiting for their turn out on the ice are; Guest curler Rick Nadjuwan, Frood shaft leader John Lacey, Stobie drill fitter Ron Tessier and Stobie training instructor John McNeil.

Teenage activist earns provincial recognition

Jennifer Wunsch is not one to rest on her laurels. After winning recognition for a three-year campaign to fight drinking and driving, the Grade 13 student isn't prepared to simply pass on the torch when she graduates from Lively District Secondary School later this spring.

The 19-year-old says her commitment to the battle against drinking and driving will not wane when she leaves home for university this fall. In fact, it's a cause that may help shape her career ambitions, she suggests.

"I wouldn't mind working for some type of watchdog group," to deal head-on with the root causes of drinking and driving and alcohol abuse in society, says Jennifer, who plans to study communications next

fall either at Brock University or the University of Windsor.

"I'd like to see changes in alcohol advertising, to change people's attitudes about drinking," she says.

"The advertising has to change, because it makes alcohol so glamorous. It never shows the downside. From childhood on, people see that, 'hey, you have to drink to have a good time.' To me, that has to change."

The daughter of Garth Wunsch, a senior geological technologist at Frood Mine, Jennifer has been spreading an anti-drinking and driving message to her peers since Grade 10.

"It all started with a summer job I got with the Attorney General's office," through its

Arrive Alive program, she recalls.

"At the time I saw it as just another summer job, but once I realized the seriousness of the drinking and driving problem, I decided to really get involved and do something to reduce drinking and driving."

Her efforts included presentations to students' groups, balloon launches, displays in shopping malls and appearances on local television programs. The message throughout was clear — young people don't need alcohol to enjoy themselves and impaired driving costs lives.

Not long after joining the Arrive Alive program, Jennifer also got involved with the Mayor's Action Committee on Drinking and Driving, set up by Sudbury Mayor

Peter Wong. She currently is the chairperson of the youth awareness committee of the group, which is now known as Action Sudbury.

In March, Jennifer's dedication and unwavering commitment over the last three years were recognized by the Ontario Ministry of the Solicitor General. She was presented with a plaque for helping to prevent crime in the Sudbury region.

Although reluctant to take too much credit, Jennifer says she hopes to have contributed to changing attitudes about drinking and driving.

"I think there's been a shift away from it, generally," particularly among young people, she says. "But it's difficult to show how successful you've been when what you're doing is trying to prevent something."

Jennifer's father, meanwhile, says his daughter and other teenagers like her deserve all the

credit they receive for confronting their peers and making them think about the dangers of drinking and driving.

"I'm very proud of her," says Garth. "She has shown a lot of maturity and initiative. We didn't push her to go into this campaign, she just grew into it on her own."

"I think she's had a mission and I don't think she's prepared to give that up."

Indeed, Jennifer has her sights set on new projects, beginning next fall. She had planned to join a group which fights impaired driving and alcohol abuse at colleges and universities, but she learned recently that the group does not exist at Windsor or Brock.

However, that is not to say that a new chapter of the group won't be operating at one of those schools by fall.

"I think it means that they need someone to start one next year," Jennifer says matter-of-factly.



"P-s-s-s-t, Triangle!!"
Hear the one about the miner who . . .

The Triangle is always interested in hearing from any employees or pensioners who have story tips or suggestions for future issues. It won't be possible for us to acknowledge all story ideas, but you will be contacted if we need more information.

Cut out the form below and send it to Public Affairs or give us a call at 682-5428, 682-5429.

Our address is Inco Limited, Triangle, Public Affairs Department, Copper Cliff, Ontario POM 1N0

News Tip

Name _____

Address, plant, office _____

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Jennifer Wunsch shows off the plaque she received recently from the Solicitor General of Ontario in recognition of her ongoing battle against drinking and driving. The honor was richly deserved, says Jennifer's father, Garth (right).

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