



Chris Hodgson discusses the Sudbury Neutrino Observatory project at an underground ceremony recently. For Mr. Hodgson's reaction and more on SNO see pages 8 and 9.

INCO Triangle

Printed on Recycled Paper

April/May 1996

Ontario Division

Vol. 55, No.4

Top 'New Faces' reside at Inco

From the rock face to the shop floor.

From the blue skies to the blue box.

Inco Limited's Ontario Division employees are leading the way in technological change and sound environmental practices in the Canadian mining industry.

Inco's Sudbury operations yielded four winners in the recently concluded New Faces of Mining search launched by the Keep Mining In Canada campaign — double that of any other organization.

Patti Reynolds of Environmental Control, Trevor Rickwood of Occupational Health, Joseph 'Chico' Villeneuve of Mines Research and Bob Martindale of Supermarine Aircraft — a key player in Inco's aerial seeding program — were among 30

individuals selected as the top New Faces of Mining in Canada.

The nation-wide search attracted 127 nominations from 55 different organizations from every province and territory except Prince Edward Island. Sudbury accounted for 22 of those nominations with 12 originating from Inco.

Candidates had to meet the following criteria:

- Work in a mining-related job that did not exist five to 10 years ago.

- Work in Canada for a mining company, union, supplier/contractor, association, consulting firm, government, academia or other type of organization related to mining.

- Hold a job that shows how mining is a high-tech industry for the future, or an

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Creighton drillers target savings

Accuracy, accuracy, accuracy.

Pulitzer's three rules of journalism are being taken to new extremes by in-the-hole drillers at Creighton.

Blasthole drilling conducted earlier this year on the mine's 4350 level yielded results previously unheard of in the industry.

Of 16 holes, each 135 feet long, one was within three feet of its plotted breakthrough point, two were within two feet and the remainder broke through within a foot to six inches of target — an amazing 0.3 per cent deviation.

"That kind of accuracy is unbelievable," said mine foreman Ed Gravelle. "In the past, it wasn't unusual for drill holes to be off as much as 10 feet. More accurate holes result in less secondary blasting, better fragmentation and improved geological control of the ore."

It is also saving the company a considerable amount

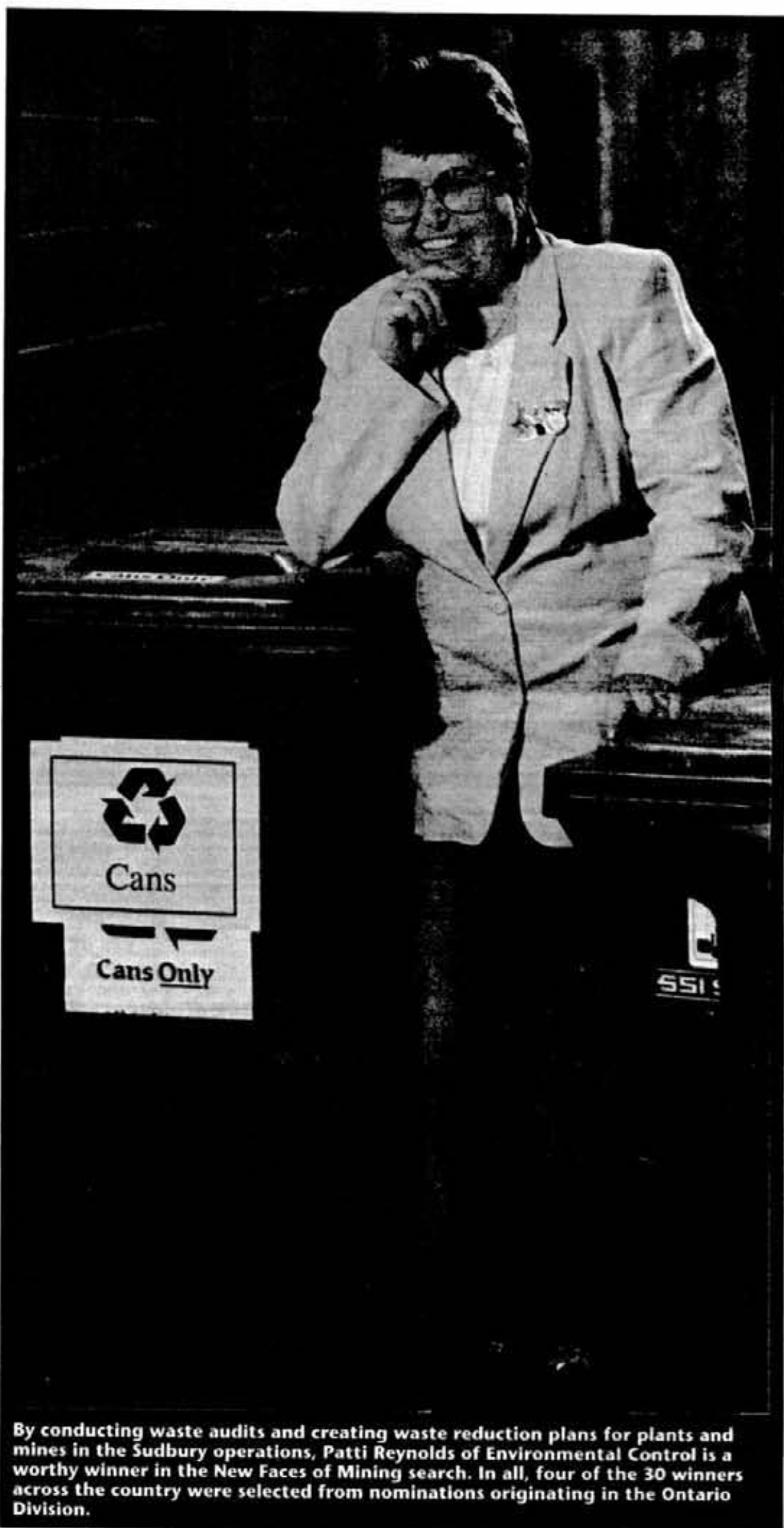
of cash by eliminating the need to re-drill for deviations deemed too great.

Smaller muck fragments and fewer secondary blasts save money on blasting powder and have enabled the mine to expand its traditional 10 foot by 10 foot drill pattern to 10 x 11, 10 x 12 and eventually 12 x 12. With fewer holes and less explosives to load the mine is saving time and money on every stope.

"Drilling is one of the first steps in the delivery of our product and we used to pay no attention to it — just drill and break through," said Creighton superintendent Fred Stanford. "In-the-hole drilling costs \$10 a foot and Creighton mines 70 stopes a year. Moving to a 10 x 11 drill pattern will save approximately \$800,000 annually. A 10 x 12 pattern will double that."

In addition to all the other cost-saving benefits, the accurate placement of holes

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By conducting waste audits and creating waste reduction plans for plants and mines in the Sudbury operations, Patti Reynolds of Environmental Control is a worthy winner in the New Faces of Mining search. In all, four of the 30 winners across the country were selected from nominations originating in the Ontario Division.

580 join Quarter Century Club

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Even in the most ordinary products, you'll find Inco's extraordinary people

Lorri McCann, Fred Janiszewski and Sheldon Latendre are the toast of Inco.

At least that's what co-workers are telling them after the trio appeared in the Ontario Division's latest ad staring back at readers from a shiny stainless steel toaster.

The ad, produced here in Sudbury by the audio-visual component of Public Affairs, debuted in the Sudbury Star's souvenir 'progress edition' entitled *Sudbury Region '96* earlier this year.

"It certainly seems to have been well read," said Lorri, an engineer-in-training who joined Inco in 1994. "Everybody has noticed it and I'm getting teased big-time as the 'toaster queen'."

"I think the ad was a very good idea," she said. "It's hard to find something of stainless steel on which you can easily superimpose a picture of employees. But a toaster is so obvious and it's something everyone can relate to."

Fred and Sheldon have both been with Inco since 1968 — Fred a senior analyst with Central Process Technology and Sheldon a scooptram operator at South Mine.

"A lot of people were impressed by the ad," said Fred. "I've heard a lot of good comments."



"It's highly innovative and original. Everybody's wondering how in the world they came up with our pictures in a toaster."

The intent of the ad was to focus "some well-deserved attention on our employees and the variety of skills they bring to the workplace," said Public Affairs coordinator **Aurel Courville**.

The text of the ad reads as follows:

"Whether you realize it or not, we are surrounded by nickel. It is in our workplaces, our hospitals, our vehicles, communications and electronic equipment . . . even common household appliances. Thousands of the products that fill our everyday lives are made with nickel."

Inco is proud to be a supplier of nickel that is among the highest quality available in the world today. We are equally proud of the thousands of women and men at Inco's Sudbury operations who produce that nickel. Their contributions on the job and to the communities in which they live reflect well on us all."

The ad will appear in several other publications over time, said Aurel.

NEWS BRIEFS

Helping to celebrate

Inco Alloys is part of Huntington, West Virginia's 125th anniversary (1871-1996) celebration in more ways than one. A part of the city's history and its largest manufacturer, Inco Alloys is donating nickel alloy to be made into a commemorative medallion. The \$50 medallions will be made by the Royal Canadian mint and only about 250 will be produced. The medallions will feature the city's logo on one side and the state's 'Homecoming '96' logo on the other.

The right way to rent

The ordering and negotiating of rental rates with suppliers is the function of Purchasing, Warehousing and Traffic's Equipment Rentals group, which is available to assist and can be reached at 682-6770. Contracting with suppliers that are not covered by a signed Equipment Rental and Operation Agreement can lead to problems with rates and rental conditions that may be detrimental to the company. Equipment rentals — through the on-line system 'HIREQUIP' — are the appropriate people to obtain equipment and protect the company's interests. For further information contact **Terry Sullivan** at 682-5490 or **Ken Heron** at 682-6770.

Manitoba's mine rescue

Ed Chuckrey's team will represent the Manitoba Division at Provincial Mine Rescue competitions May 24 and 25 in Flin Flon, Manitoba. The team, which topped four other Manitoba Division competitors, includes **Ron Stadnek, Ken Lacroix, Ron Robertson, Neil Spencer, Bruce Pearce** and **Robert Oleschak**.

Electroless nickel grows

Electroless nickel plating grew about five per cent per year between 1975 and 1995 in the United States. Electroless nickel has increased the demand for high-purity nickel sulfate. EN grades of nickel sulfate are often made from Inco nickel powders that are very pure and easily dissolved.

Electric vehicle coming

General Motors will be the first major automaker to market an electric vehicle in the U.S. The two-seater to be sold this fall in Los Angeles, San Diego, Phoenix and Tucson will be priced in the mid-\$30,000 range. Powered by a lead-acid battery it will need recharging every 90 miles. The marketing of an electric vehicle by GM should help define demand and may accelerate the search for improved batteries. If nickel batteries are applied, then demand for nickel plating and powders will increase.

Rolling mill renovations

Construction of a 6,680 square foot hallway-type structure to connect buildings at the Inco Alloys Elkhart Rolling Mill in Elkhart, Indiana will reduce materials handling delays and increase worker efficiency. The connecting structure became necessary to address storage concerns brought on by a highly successful and profitable toll conversion business. The facility is helping Inco Alloys increase its business by cold rolling, bright annealing and slitting products for other alloy and metal manufacturers.

Nickel plated bumpers

The newly redesigned Ford F-150 XLT pickup truck will sparkle with steel bumpers plated with decorative nickel plus chromium coatings. The bumpers will come as standard equipment instead of as an option in prior years. The Ford F-150 XLT pickup is America's best selling and most popular vehicle.

Energy-wise tips

A good insulating jacket can reduce heat loss through the walls of a hot water heater by 80 per cent . . . A waterbed costs about \$32 annually in electricity . . . A proper engine tune-up can save \$100 a year in fuel costs. An overly rich air/fuel mixture caused by a sticking choke can increase

fuel consumption by 30 per cent.

Wire plant acquired

Inco Alloys is expanding its manufacturing of high nickel alloy products beyond its Hereford, U.K. plant into other European and Asian markets. In December, Inco Alloys acquired majority ownership of Rescal, S.A., a major supplier of electrical resistance alloy wire and ribbon products. Rescal, located in Epone, France, about 19 miles west of Paris, will keep its own name and will operate under its existing management. The acquisition allows Inco Alloys to expand into the fine wire industry through a company that's already well-established in that market.

P.T. Inco earnings

P.T. International Nickel Indonesia (P.T. Inco) announced earnings of \$21.4 million (U.S.) for the first quarter of 1996, compared with \$25.8 million for the first quarter of 1995. The decrease in net earnings, relative to the corresponding 1995 period reflects lower nickel price realizations.

Birchtree project deepens

One hundred feet down and 710 feet to go — that's the status of the Birchtree Mine Deepening Project in the Manitoba Division. The deep-

ening has included rehabilitation of about 450 feet of existing shaft, removal of water and slimes and the driving of about 810 feet of drift on the 3450 level.

External clients sought

IncoTest, a new business division of Inco Alloys International, is using existing resources at the Huntington plant to offer commercial testing to the world and generate added revenues. Inco Alloys is IncoTest's number one customer and will remain the first priority. Additional business will be brought in by IncoTest to fill the gaps when its own mill production is not filling testing capacity.

Calling all Garsonites

Organizers of the Garson-Falconbridge Secondary School 'Reunion '96' are looking for Inco employees, past and present, who may have had children attend the school or may have attended the school themselves. The reunion, scheduled for June 28 to 30, is the third since the school closed in 1986 and offers an opportunity for past students, teachers and staff to get together and reminisce about old times and old friends. For more information or to pre-register, write to: G.F.S.S. Homecoming '96, Box 173, Garson, Ont., P3L 1S6.

Division leads Canada's 'New Faces'



Research miner Joseph 'Chico' Villeneuve operates two tele-remote scooptrams underground at North Mine from his chair at the Garson Arena during Prime Minister Jean Chrétien's visit in 1994. The Prime Minister later took a turn at the controls.

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environmentally sustainable industry, or a cornerstone of Canada's economy.

Winners will be featured in various promotional campaigns across the country including newspaper articles and advertisements, campaign videos or a travelling 'urban mining display'.

Here is a closer look at Inco's winners:

Patti Reynolds

Patti is a 20-year Inco veteran who has recently turned her talents to waste management. Using the principles of reduce, re-use and recycle, she conducts waste audits and creates waste reduction work plans for all areas of the Sudbury operations.

News of her selection evoked strong feelings of pride in the Division's dedicated waste watcher.

"It feels great," said an elated Patti. "It's definitely a surprise but I think it's fabulous. The nomination itself was great but I never imagined I would win. It makes me feel good to be recognized for the work I'm doing."

"Here in the Ontario Division we generate a lot of waste and that amount can be reduced or diverted from landfills through proper re-use and recycling. If Inco is recycling it has a positive spin-off effect on the community because an

employee who recycles at work is probably recycling at home.

"The mining industry is becoming increasingly sensitive to waste management concerns — as is the public. It's become a noticeable issue that requires addressing. By doing so, Inco is helping the community as well as itself."

Trevor Rickwood

With just two years under his belt, Trevor is a new face at Inco as well as a new face in mining.

An ergonomist with a degree in kinesiology, he conducts the scientific study of the physical interaction between workers and work — taking into account the work environment, tools and tasks involved in a person's everyday job.

"When people think of mining today, high technology and automated machinery come to mind," said Trevor. "But it's the people in the mines, mills, refineries and smelters who are the heartbeat of the industry."

"Just like machinery will break down if mistreated, so too can the human body. By designing jobs to fit human capabilities, we enhance our safety, health and productivity."

Trevor, whose brief career has taken him to virtually every Ontario Division plant, office and mine, says ergonom-



Inco's aerial seeding program has treated more than 2,000 acres of stressed land with agricultural limestone, fertilizer and grass seed. It also helped Bob Martindale of Supermarine Aircraft become one of Canada's New Faces of Mining.

ics can play a strong role in the industry's future.

"I'm really happy the mining industry, and particularly Inco, are recognizing the potential benefits offered by ergonomics and I feel privileged to be in this line of work."

Joseph 'Chico' Villeneuve

A 27-year Inco veteran and the first man in the world to operate a tele-remote scooptram, Chico is no stranger to the spotlight.

Two years ago Chico operated two underground scooptrams at Copper Cliff North Mine from a stage at the Metro Toronto Convention Centre before an audience of more than 800 at a Canadian Institute of Mining and Metallurgy conference.

Just weeks later, he was centre-stage again, operating the same two scoops at the same mine from 20 kilometers away at the Garson Arena. His audience this time was the Prime Minister of Canada Jean Chrétien.

"It's nice to be picked for something like this," said Chico upon hearing of his selection as a New Face of Mining. "Not many people have their work recognized in this way."

Although it will take people time to learn the technology, Chico said automation will eventually become standard practice in mining.

"Everytime you do something in robotics you see something else you can do," he said. "We can now operate three drills from surface with a single operator — and we're still in the early stages of robotics, having just started about six years ago."

An underground scooptram operator for 10 years at South Mine, Chico said operating from surface is cleaner, more comfortable and safer.

Bob Martindale

President of Supermarine Aircraft in Alymer, Ontario, Bob was nominated by Paul Yearwood, supervisor of Decommissioning and Recla-



Ergonomist Trevor Rickwood measures the height of a drill leg support rack at the North Mine Reconditioning Shop. Looking on is drill leg repairman Tony Hall.

mation, for his work with Inco's innovative aerial seeding program which topped the 2,000 acre mark last fall.

Bob, who has flown over Sudbury for more than 20 years to douse fires, spray crops and support reforestation, has a unique perspective on the region. "In 1975 I worked on many fires in the Sudbury area and had the chance to see that area from the air quite extensively. The impact mining had on the vegetation definitely left a problem to be addressed."

Two decades later, Bob became part of the solution — using his aviation skills for aerial applications of lime, fertilizer and grass seed.

"Traditionally we would require a lot of manpower and do only about 15 acres a year," said Paul. "Now, with Bob and his aircraft, we did more than 400 acres last year in about a week."

Bob finds it gratifying to be part of Inco's extensive land reclamation work. "Restoring the land and leaving it lush and green shows the mining industry is a productive and contributing member of society which wants the best for the environment."

Inco's other nominees

Andy Chamberland

A geological technologist at Stobie Mine with 28 years service, Andy maps underground geological features with methods that have progressed from freehand sketches with pencil and paper, to a 486-DX2 Pen computer and AutoCAD software.

Murray Cotnam

Using the latest in automated technology, Murray operates a Datasolo drill from surface at Stobie Mine. The benefits of this tele-remote operation include cost savings, productivity improvements, and improvements in health and safety.

Bob Huzij

A heavy duty equipment mechanics instructor with 29 years service, Bob is pioneering the development of computer-based training at Inco.

Mike McCann

A project engineer with Inco's Decommissioning and Reclamation group, Mike is heavily involved in developing environmentally-sound closure plans for mines and existing properties.

Joanne Muldoon

A crusher operator at South Mine who spent most of her career at Inco in the offices, Joanne is considered a pioneer in helping erase gender barriers underground.

Rob Seguin

A process engineer with five-and-a-half years at Inco, Rob has been involved from the beginning with the Nickel Refinery's innovative nickel foam production process.

Rod Stuparyk

An environmental engineer at the Copper Cliff Mill, Rod has worked on several projects contributing to acid mine drainage control during his two-and-a-half years at Inco.

Heather Wallingford

Operator of Wallingford Therapy Services, Heather is a physical and occupational therapist who works with Occupational Medicine to effectively rehabilitate injured workers and educate all employees on general wellness measures.



Celebrating 25 years



Time flies for Quarter Century members

Diane Flynn never imagined planning her own party 25 years after she joined Inco.

"Never in my wildest dreams," said Diane, Public Affairs' special events/tour coordinator coordinating this year's Quarter Century Club celebrations.

Like others among the 580 new members this year, she has seen a lot of changes in her own career and the operation of the company since 1971.

"There are fewer people and more things going on," said Diane, whose career started in Accounting and lasted 19 years before moving to Public Affairs in 1990. "The pace of work has increased dramatically today, especially in my current position where every day brings a new challenge."

"It really has gone by fast. It seems like only yesterday I joined the company. A lot of people who were here when I started have retired in the last five years but there are still familiar faces."

When Claude Pennarun joined the company in July, 1970, sticking around to collect a Quarter Century pin wasn't even a consideration.

"I never thought I'd make it," said Claude, a heavy duty equipment mechanic at Little Stobie. "It was just a job at the time but I'm here until I retire now."

Twenty-five years ago, in May 1971, Claude's picture graced the pages of the Inco Triangle's *Family Album* alongside his parents and eight siblings. His father Roger, now deceased, was a Kirkwood Mine skip tender at the time and brother Mark, who left Inco around 1980, worked at the Copper Refinery. Claude was at the Clarabelle Open Pit in those days, although his career actually started at Garson Mine less than a year

earlier.

"I've been to Frood, Creighton, Kirkwood, Clarabelle, Little Stobie — you name it," he said. "As an apprentice you got shifted around a lot because they wanted you

to become familiar with all the mines."

Claude has seen a lot of changes in his career, particularly in people and equipment. He used to service the

smaller ST2 scooptrams with air brakes. Today, he spends most of his time servicing the larger, eight-yard ST8B scooptrams with hydraulic brakes.

"In the old days a lot of

the repair work was done on the spot in a cut-and-fill stope," he said. "Now I do most of my work in an underground garage."

"There are also a lot fewer people, but the tools we have today — the air impact tools — have made the job easier. Before, everything was done by hand."

With underground mining equipment becoming more and more automated, Claude said keeping up with change has been a continuous learning process.

Technology has been the single largest change in Wayne Prowse's 25-year career at Inco — specifically computer technology.

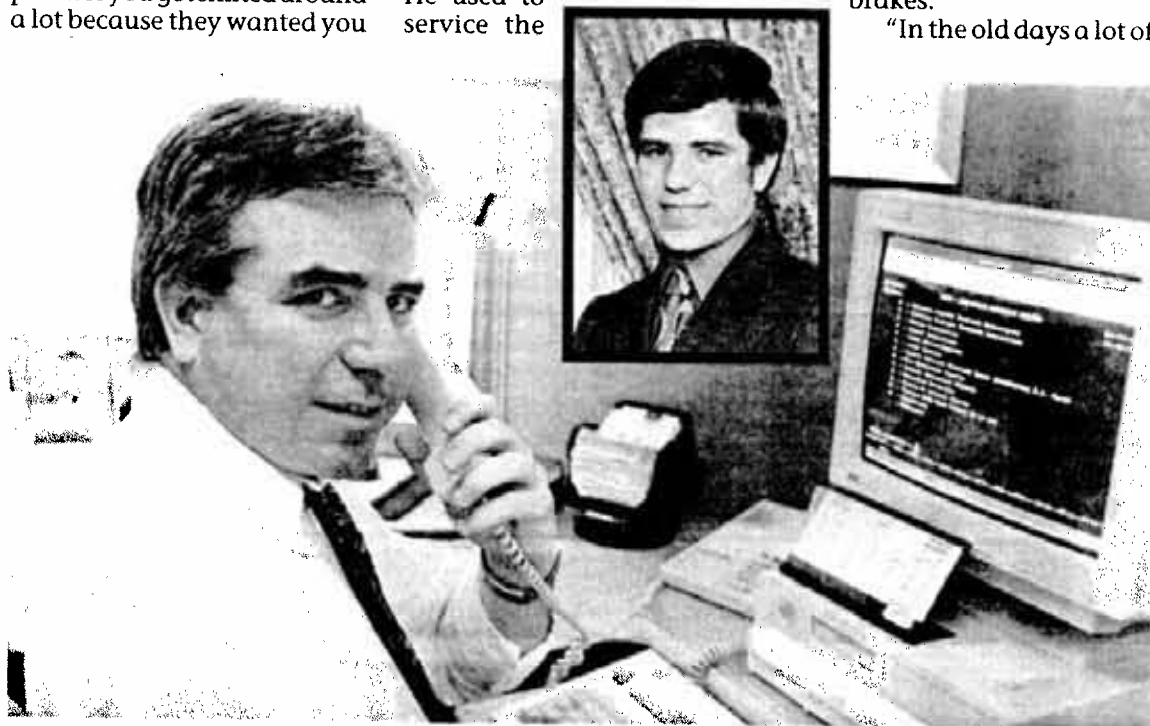
"Twenty-five years ago the personal computer was unheard of," said Wayne, a buyer in Purchasing. "Now everything we do is linked to computers. We're dependent on it today and the technology is constantly changing."

Wayne spent the first 18 months of his Inco career underground at Creighton before joining the Accounting department for 20 years and Purchasing for the last four.

Like Claude, Wayne's family photo appeared in the November 1971 Triangle. His father Lloyd retired from Creighton 12 years ago with 37 years service and brother Gary is a Nickel Refinery maintenance mechanic with 31 years service. The framed Triangle photo remains in his parents' lively home.

"It went by fast," he said. "It doesn't feel like I've been here 25 years."

"When I hired on underground it seemed as though there were five or six new guys coming in every day, but I guess there were just as many leaving. One of the results of technology is that fewer people are now able to do more of the work."



Purchasing's Wayne Prowse today and (inset) as he appeared in the Triangle 25 years ago.



Claude Pennarun of Little Stobie — now and then (inset).



April Lilley, Diane Flynn and Kathy Foisey sort through replies for the Quarter Century Club dinners.

Early planning key to success

Six months of planning for three nights of celebration.

That was the situation facing organizers of this year's Quarter Century Club festivities slated for three nights May 14 to 16 at the Ramada Inn in Sudbury.

"We began generating computer reports in January which told us who the new members were and where they were located," said Diane Flynn, special events/tour coordinator in Public Affairs.

"The members were broken down by area and a lengthy

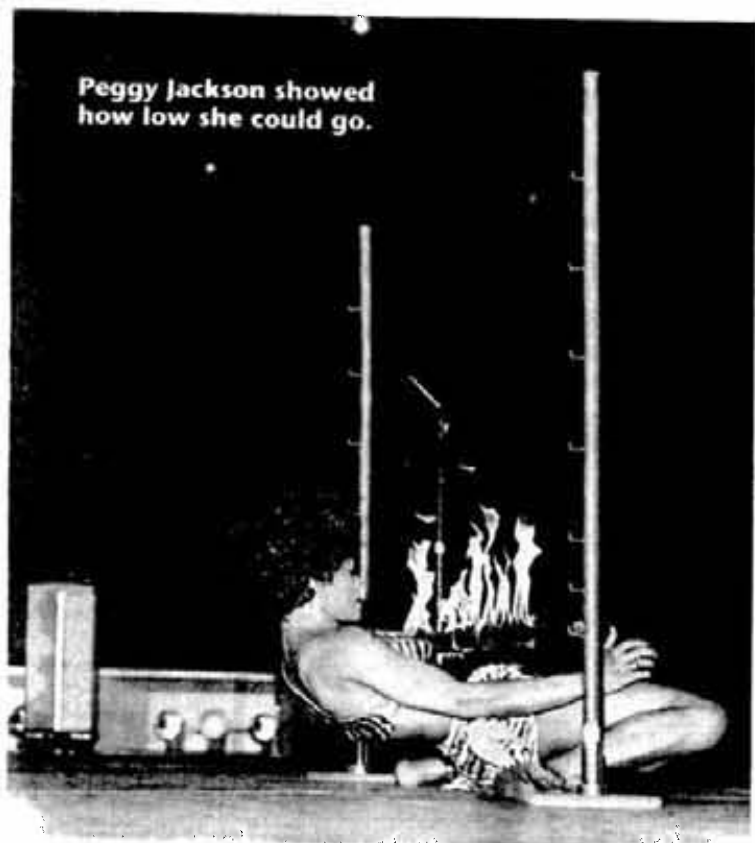
process began of sending out invitations, coordinating replies, creating a seating plan, lining up volunteers and designing a program and name tags."

Diane was aided by Cambrian College Public Relations students Kathy Foisey and April Lilley who were on work placements in Public Affairs.

The Quarter Century Club grows by 580 new members this year swelling the total membership to 13,915. The 1996 inductees represent some 14,500 combined years of service.

Celebrating 25 years

Far fewer members in 'Class of 1971'



The Sudbury Arena was the setting 25 years ago when the Quarter Century Club welcomed 123 new members in the 'Class of 1971'.

Times were different then, but the festivities and fellowship were much the same as today. The spacious arena was a necessary setting as many of the Sudbury District's 1,361 pensioners at that time attended the festivities, bringing the single evening's audience to 2,000.

Today, new members alone number close to 600 and pensioners more than 13,000.

The crowd on that hot June 17 evening 25 years ago was treated to a high-class stage show emceed by Montreal comedian Dave Broadfoot and headlined by the amazing Almiros Trio, who dazzled with their incredible juggling feats.

The evening's entertainment included limbo dancer Peggy Jackson, Canada's Trampchamps (trampoline experts), the tumbling and balancing stunts of the Williams Brothers and the violin/accordion duo of Florence Hansen and Edith Eaton.



Florence Hansen and Edith Eaton provided musical entertainment.



The Williams Brothers showed incredible balance 25 years ago.



Guests at the 1971 Quarter Century Club banquet enjoyed the show.



Class of '96



PRESIDENT

Stewart Gendron
John Kelly
Cathy Senior

Public Affairs

Diane Flynn

Employee Relations

Nancy Baldisera
Robert O'Brien

Safety, Health & Environment

Luther Birt
Gary Card
Miroslaw Czerkas
Phillip Dyer
Mitchell Filiatrault
Fernand Frappier
Richard Furniss
Gratien Gelineau
Rene Guinard
Wayne Gutjahr
Dale Hand
Philip Izzard
Carole Jones
Larry Lacasse
Graham Laporte
Brendan Madden
Bernie McCosham
Leslie McGrayne
Mitchell O'Connor
Alex Paguandas
Vince Perdue
Philip Perras
Maurice Ratelle
William Rose
Franz Sabel
Jack Tupling
William Wilkinson
Gordon Winch

Occupational Medicine

Patricia Dailey

Quality & Human Resource Development

Karen DeBenedet
Wayne Kenyon
William Romas

COMPTROLLER'S

Accounting

James Bullock
Jeannine Menard
Robert Leblanc
James Robinson
Susan Savignac

Purchasing & Warehousing

Coleen Cascanette
Gary MacDonald
Wayne Prowse
Beatrice Withers

Traffic

Ken Heron

Information Systems

Helen Fasan
Arlene Julian
David Lerpiniere
Noreen St Germain

MILLING, SMELTING & REFINING Mills

Gordon Barry
Larry Berta
Roland Boesch
Eric Brown
Marcel Courchesne
Gerard Dellaire
John Fera
Daniel Greenwell
Daniel Guindon
Douglas Howard
Roy Joeveer
Kurt Koski
Jacques Lafreniere
Yves Levesque
Dietrich Liechti
Robert Littlejohn
Eugene MacDonald
Eleanor Marynuk
Raymond Mathon
Matthew Murray
Cleo Roy
Carmen Spadafore
Harvey Thibeau
Michael Throssell
Richard Turner
Ronald Vaillancourt

Transportation

Daniel Brazeau
Rejean Frappier
Neil Gobbo
Bruce Godda
Eliseu Goncalves
Henry L'Heureux
John Lafleur
Royal Levesque
Junior Newman
Ephriam O'Connell
Ronald Pender
Larry Stevenson

Copper Cliff Smelter

Stephen Arbeau
Gaston Binette
Joe Caridade
Ron Carver
Andre Contant
Kenneth Cornthwaite
Richard Cowx
Gary Cull
Michel Deschenes
Guy Doiron
Cecil Fleming
Charles Galipeau
Hector Gauthier
Jagjit Gill
Clarence Grant
Albert Green
Robert Hazell
William Holland
Sam Kalleekal
Wesley Lambert
Gaetan Lamontagne
Gerard Larade
Paul Llewellyn
Cheryl Malleau
Max Manitowabi
George Methe
William Moore
Thomas More
Giuseppe Muscolino
Geoffrey Osborne
Stephen Palfrey
Dennis Pella
Gerard Pigeau
Lawrence Pilon
Mike Podvorac

Daniel Reinhart
Jean-Paul Robillard
Guy Rondeau
Sidney Segsworth
George Smith
Raymond St Louis
Pavo Terzic
Edward Thompson
Dan Tohill
Gottfred Tulk
Rocco Tummino
Harold Wall
Oswin Wells

Matte Processing

Georges Beaudry
Bruce Cardinal
Jacques Carre
George Chomitsch
David Corbiere
Garret Cull
Jack Curry
James Dinwoodie
James Dorzyk
Douglas Dougherty
Arturo Espinoza
Antonio Farese
Chris Flick
Clifton Fournier
Everett Hopkin
Richard Kirkland
Phillip Lapointe
Denis Lavoie
William Lawson
Richard Lecuyer
Gerard Leduc
Lubo Lehocky
Paul McDonald
Robert Morris
Marcel Nainee
James Rafuse
Teuvo Tikkanen

Utilities

Wilf Cutler
Harold Kinnear
Marcel Lapalme
Ray Larocque
Barry Wall

Copper Cliff Copper Refinery

Fikret Arif
Yvon Beauchamp
Henri Breault
Raymond Brisebois*
Mike Brujic
Laurentino Carneiro
Paul Constantineau
Raymond Cottin
Edward Coupal
Kenneth Cox
John Da Silva
Gurmit Dhaliwal
Donald Dicks
Alfred Doherty
Emile Dupuis
Roger Foucault
David Frost
Noel Gauthier
Graham Gertz
Jean Gibson
Gerald Gorman
Gary Hawkins
Reginald Hibi
Dennis Jensen
Dale Krueger
Richard Lalonde
John MacIsaac
Marcel Maisonneuve
John Marshall
Gary Mathers
Stephen Maville

Maxie McGann
Len McGuire
Phil O'Neil
Jan Patnaik
Margaret Paul
Etienne Rainville
John Rice
Russell Robertson
Roger Robichaud
William Rogers
Gioacchino Ruggieri
Lloyd Russell
Paul Rybiak
James St Amant
Joseph Salinas
Edward Smyth
Donald Strain
Robert Tuttle
Drago Valic
Raymond Van Embden
Ronald Wall
Berno Wenzl
Donald Zazelenchuk

Copper Cliff Nickel Refinery

Didier Aubry
William Banks
James Barclay
Donald Benoit
Seija Binmore
Christopher Briggs
Robert Brunelle
Edwin Chapman
Allan Chevrier
Pete Chiasson
Michael Dagostino
Norman Desforges
Phillip Frantz
Richard Gagne
Kenneth Hickson
John Huntington
Larry Jacques
Randall Johnson
Julien Julien
Charles Keyes
Aurele Labrosse
Stanislav Lorenc
Robert MacGregor
Philip McFarland
Jim McLaren
Keith Morin
Garry Nahwegahbow
Leo Perdue
Tom Plexman
Gordon Quinn
John Quinn
Thomas Rumley
Miro Santek
Marcel Servais
Ronald Simpson
Earl Switzer
Michael Terry
Maurice Tushingham
Leonard Wiseman

Maintenance

James Cunningham
Claude Kerr
Frank Moss
Lloyd Strong
Peter Yannacoureas

Construction

Eduardo Balias
Edward Donnelly
Frank Etlinger
Roland Fuller
Richard McIvor
Kevin Poirier
Gregory Smorhay
Donald Stephens
Ivan Villeneuve



Those were the days'



Divisional Shops

Hamid Abouhanna
Charles Baird
Jean-Louis Belanger
Kenneth Cummins
Gary Hancharyk
Peter Keegan
Pierre Latour
Gilbert Lavoie
Ronald Menard
Terrence Muncaster
Howard Neeley
Vernon Olson
James Philp
Spencer Rooney
Norman Seguin
Terance Stuckless
George Thoms
Sidney Wasitis
John Wierzbicki
Ronald Ylitalo
Bernard Young

Power

Claude Genereux
Wayne Lachance
Roger Lafleur
Paul Lavigueur
Louis Lee
Robert Tosato
Bill Wickenden
Vincent Wierzbicki

Process Technology & Production Planning

Donald Bryson
Hilda Gomez
Philip Gougeon
Burnham Grant
Stanislav Keckes
Aldege Levesque
Gilbert Lux
Hana Susil

MINING

Copper Cliff South

Reginald Brisebois
Larry Chipp
William Cyr
Robert Keyes
William Lachance
Rejean Latreille
Maurice Leveillee
Gary Lonsberry
Dennis McGregor
George Mountain
Jean Paquet
Donald Pullen
Bernard Roy
Lawrence Russell
Hikmet Taha
Rickey Teahen
Daniel Thompson

Copper Cliff North

Robert Aney
Dennis Babcock
Normand Barriault
Gilbert Belanger
Gerard Brideau
Randolph Burdenuik
Preston Byer
Guy Clement
Denis Collin
Leo Demore
Steven Dow
Sterling Fillier
Robert Gauthier

George Gawryluki
Michael Inkster
Charles Jarvis
Melvin Labine
Bernard Leclair
Larry Lynch
George Martel
Ante Martic
Brian Mercel
Gilles Paquette
Jacques Pare
Ambrose Peplinskie
Yvon Pigeon
Brian Restoule
Allan Richer
Gerard Robichaud
Dennis Ross
Oliver Scott
Machfoed Sidik
Kenneth Silver
Gary Spray
George Watmore
William Williamson

Creighton

Terrence Armitage
Michael Arsenaunt
Roger Badour
Grant Chisholm
Gerry Cormier
Raymond Cousineau
Gaetan Gagne
Roy Goulbourne
Roger Hachey
Wendell Irvine
Floyd Jenkins
Neville Johnson
James Jones
Roland Lapping
Hugh MacDougall
Kenneth MacLean
Robert Marier
Walter Mariga*
Louis Martin
Albert McCallum
Glen McCosham
Joseph McLeod
Kenneth Migwans
Ronald Mott
Randolph Naponse
Joseph Noel
Ivan Oates
Donald Organ
Mike Palmer
Roman Pysker
Roger Santerre
Lawrence Schooley
Fred Stewart
Charles Thedorff
Wayne Uttley

Levack

Gaston O'Bomsawin

Crean Hill

Wayne Casey
Lawrence Dagenais
Llewellyn Daniel
Robert Dellezay
Maurice Giroux
William Hanthorn
Dale Heise
Barry Lodge
Donald MacGregor
Emile Mainville
Frank Matewish
John McKinnon
Paul Menard
Rene Messier
Calvin Parrill
Donald Peloquin
Paul Quinn

McCreedy East

Stephen Mitchell

Frood

Joseph Almeida
Robert Ballantyne
Edmond Bedard
Gary Cameron
Michel Chaloux
William Crossen
Fernand Dumoulin
William Himsl
Dermott Kinsella
Gordon Stewart

Stobie

Roger Anand
John Arthurs
Andy Baronette
Normand Bellemare
Norman Bouillon
Andre Brassard
Aubert Castilloux
Alain Charbonneau
Bernard Charette
Anthony Chouza
David Coulson
Clifford Demerchant
Marcel Demore
William Dunlop
James Dunn
Joel Dworski
Richard Fortin
Dino Fregonese
Guy Guerrette
Anthony Hall
Gifford Hamilton
Joseph Hennessey
John Huggins
Serge Jobin
David Kelly
Rolland Lalande
Raymond Lauzon
Marcel Lavallee
Garfield Lawson
Marcel Legault
Milton Lennard
Daniel Lewis
Robert MacKinnon
Stjepko Maljkovic
Lawrence Mirka
Brian Mizuik
Ralph Moulard
John Neeley
Anthony O'Brien
John Pretz
Denis Quesnel
Bernard Richard
Bruce Riddle
Patrick Ryan
Maurice Scott
Larry Seguin
Jules St Aubin
Lorne Tkachuk
Wayne Tonelli
Thomas Tremblay
Gerald Walsh
David Yantha
Ronald Young

Little Stobie

Carl Castilloux
Donald Champagne
Michel Cloutier
Richard Currie
Thomas Lacroix
Richard Lagrandeur
Michel Lefrancois
Lawrence Meunier
Ronald Montpelier

Claude Pennarun
Maurice Renaud
Bruno Rivet
Charles Skinner
Clarence Wheatley

Garson

Camille Belanger
Marcel Cote
Benjamin Daigle
David Fairbairn
Stanley Goral
John Molloy
Garfield Pelky
Raymond Pellerin
Gerald Rancourt
Anthony Ruiz

All Mines Training

Wilfred Goulet

Engineering

Gregorio Aling
Christopher Dixon
Kalevi Hellsten
Karl Lahti
Neil MacDonald
Eero Mansikka
Robert McDonald
John Miranda
John Moore
Richard Roach
Allan Uildersma
Nicolae Volf
Gary Willock

Mines Technical Services

Robert Banks
Richard Bourget
John Cummings
Douglas Goodale
Elaine Lalonde
John Okell
Robert O'Reilly
Edwin Skene
Dueane Sly
William Worthington

Mines Research

Richard Beaupre
Stan Cole
Roy Cousins
John Laronde
Edward Reynolds

Environmental Audit

Blaine Parrington
Jim Middleton

Internal Audit

Bob Forsyth

Exploration

Alan Clark
Cesar Battocchio
Ed Debicki
Gordon Morrison

* Deceased

There's no business

At the Sudbury Neutrino Observatory (SNO), the underground economy is booming.

In fact, the economic view from 6,800 feet below the surface at Creighton Mine is nothing but up.

Lost in the hoopla marking the recent completion of the upper hemisphere of the acrylic heavy water vessel is that SNO is banking on impressive scientific and economic benefits from the international collaboration.

With little fanfare, the \$70 million project has created more than 70 jobs each year that it's been under construction since 1990, spent more than \$30 million with Northern Ontario firms and made technological breakthroughs with applications for other industries.

Beyond its impact on advancing the fundamental knowledge in the fields of astrophysics and particle physics, SNO's economic spin-offs caught the attention of political leaders at the milestone event.

Chris Hodgson, Ontario's Minister of Natural Resources and Northern Development and Mines, described the SNO partnership with industry, government and the international academic and scientific community as the kind the Ontario Heritage Fund wants to support.

"It's the kind of infrastructure our government is talking about. Not just bridges and roads but attractions that will create wealth in our province," he said. "So far, in this development, we have applications that will even help our Ontario construction industries and there are applications that will benefit other industries."

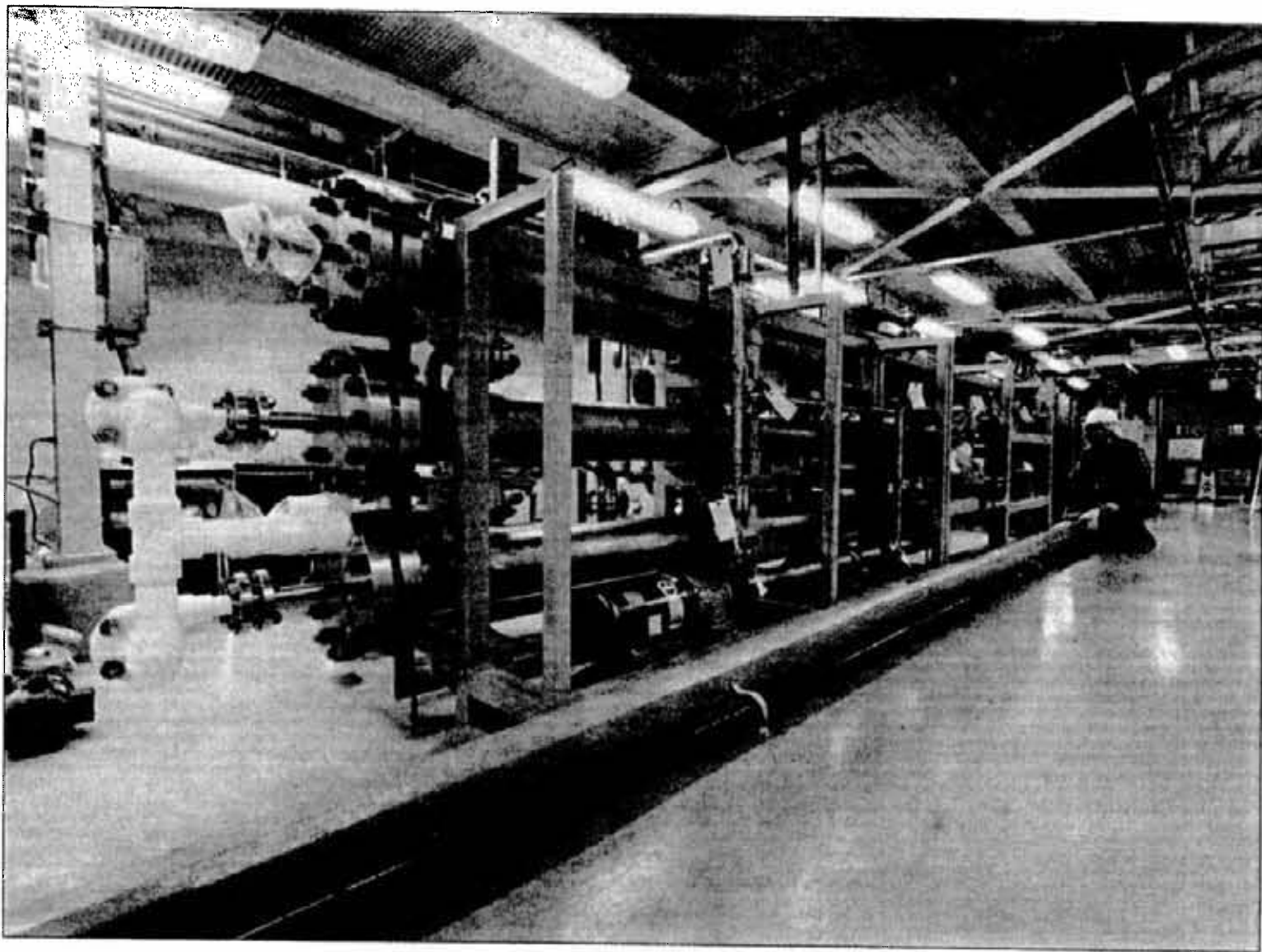
Dr. Jon Gerrard, the federal Secretary of State, Science, Resources and Development, said Ottawa is so impressed with the quality of the project it's negotiating to maintain funding for SNO which is set to begin operating next January. He singled out Inco for special praise, adding that Creighton Mine was "probably the only place in the world" where these neutrino experiments could be conducted. It is estimated it would cost as much as \$200 million to build an observatory anywhere else.

"We're going to have a uniquely Canadian find in terms of what happens with neutrinos from the sun. With the collaboration (of scientists from Canada, the United Kingdom and the United States), we have the best brains in the world," he said.

Even Sudbury locals are inspired by the economic turn of events.

Sudbury regional chair Tom Davies, who was the project's earliest booster when it was first broached to the region and Inco in the early 1980s, said SNO is already reaping benefits for the scientific community through technological innovation and training.

"It is having an extremely



Dr. Doug Hallman examines an area of the observatory marked by extensive use of stainless steel and Hastelloy — a corrosion-resistant alloy containing more than 60 per cent nickel.

MILESTONES

January 1990	SNO funding announced
March 1990	Start of excavation at Creighton
May 1993	End of cavity excavation
November 1994	Start of cleanroom assembly phase
June 1995	Start of acrylic vessel assembly
August 1995	End of light sensor upper hemisphere assembly
April 1996	End of acrylic vessel upper hemisphere assembly

positive impact on the Sudbury region in stimulating economic development and raising the profile of this region as a world centre in science," he told guests at the ceremony.

Dr. Doug Hallman, SNO's director of communications, said up to 25 people will run the observatory once it starts conducting experiments next March or early April and more than 20 international scientists will be on site continually. It will also create a flurry of tourism activity with a planned SNO object theatre at Science North. Of the \$4 million in annual operating expenses, about \$3 million will be spent here in the North.

Ontario Division President Jim Ashcroft also noted the observatory's use of minerals that have placed Sudbury on the map. Stainless steel, Hastelloy — a special corro-

sion-resistant alloy containing more than 60 per cent nickel — and nickel vapor deposition technology developed by Inco in Sudbury are key components in the observatory.

"After almost a decade of day-to-day involvement with SNO, we're excited about the days and months ahead," he said. "Almost 70 years ago, Albert Einstein caught the sense of scientific excitement that we see here when he said: 'The most beautiful thing we can experience is the mysterious. It's the source of all true art and science.'"

Added Dr. Gerrard: "Fundamentally, this is a voyage of discovery, a voyage of discovery in understanding the tiniest particle, the neutrino and its contribution to the largest thing we know, the universe."



A silhouetted surveyor watches work progress on the vessel.

SNO is in the House

The Sudbury Neutrino Observatory at Creighton Mine has made it into the House of Commons.

Nickel Belt MP Ray Bonin drew attention to SNO in a private member's statement recently, terming it a "unique Canadian scientific initiative" which will soon "help unlock the secrets of our universe."

"Sixty-eight hundred feet underground in Inco's Creighton Mine in the town of Walden, the finishing touches are being added to a neutrino observatory. Underground and shielded

from cosmic neutrinos, the observatory is the

"The House of Commons" understanding of

He said international

government and Inco

ments and achieve g

s like SNO business



Mark Tokarsky of the Sudbury Neutrino Observatory polishes the acrylic vessel in anticipation of the ceremony marking the completion of the vessel's upper hemisphere.



Chris Hodgson, left, and Dr. Jon Gerrard are all smiles during a recent SNO milestone event. The two had nothing but praise for the scientific project.



Public and media attention for the observatory impresses Dr. David Morrell, director of the United Kingdom's Particle Physics and Astronomy Research Council. "There's something about it being in a mine that excites people," he says.



s upper hemisphere.

Yes, it's true

- At last count, working with SNO has given 15 scientists their Masters of Science degree and 10 others their Ph.D. degrees. Another 30 are working on advanced degrees.
- More than 400 scientists from around the world are expected to attend a Sudbury Neutrino Observatory conference in Sudbury in 1998.



Dr. Jon Gerrard, federal Secretary of State, Science, Research and Development, praised Inco's important role in the neutrino project at Creighton, calling the observatory a "tremendously exciting" science initiative.

The acrylic heavy water vessel serves as a handy chin-up bar for Jeff Rodgers, technical adviser for the Colorado acrylics firm working on the vessel's upper hemisphere.

Coming soon to your local hardware store?

The Sudbury Neutrino Observatory is one of the cleanest spots on earth. And it is probably the one site in the world with the least radioactivity. But to reach that status, SNO scientists have made technological achievements that could have far-reaching implications for the rest of us.

Among them, please consider:

- Urylon, a material developed by the Mining Industry Research Organization of Canada and Queen's University mining engineering department, provides a coating for the cavity. This is the first large-scale use of Urylon, which is almost impervious to radon. It could be used in other mines or in home basements to suppress radon.
- Geotechnical information from the careful observation of the excavation, ground control and extensive instrumentation of the vast underground cavity will aid future mining engineering design.
- An ultra-pure reverse osmosis has been developed for the first time in cooperation with Canadian industry because ultra-high-purity water systems are needed for SNO. You may see future applications for pure water for the semiconductor industry.
- A very sensitive thickness gauge developed for quality control of the Urylon cavity lining is under investigation to measure ice thickness on aircraft wings.
- A low radioactive background concrete based on sulphur, Sulphurecrete, was developed for the cavity. It has potential for low background rooms for hospitals.
- Advanced technology is in place for SNO's electronic systems. Northern Telecom led the way here.
- The pool of highly skilled workers in the Sudbury region has expanded by working on such a demanding high-technology project.

McCrea event sharpens first aid skills

Daniel Colard's first exposure to the McCrea First Aid Competition didn't last as long as that of his teammates.

Midway through the mock-accident scenario at the Copper Cliff Club, the Stobie Mine industrial mechanic was handed a card instructing him to pass out from heat exhaustion.

Such is the unpredictable nature of a competition designed to test competitors' first aid skills under pressure.

"I thought our team did very, very well," said coach Jean-Paul Coutu, a welder specialist at the Smelter and veteran of past first aid competitions. "It was a small team this year, but a good team. In three weeks of training I saw tremendous growth and bonding."



Jean-Paul Coutu

Nine teams from five locations across Northern Ontario took part in the competition which is organized and sponsored by the Ontario Natural Resources Safety Association.

During the competition, each team is presented with an identical simulated emergency situation. In this year's scenario, the team was a maintenance crew working in a pumphouse on a hot July afternoon with only a phone and first aid supplies. The workers were dropped off at the pumphouse and had no access to transportation.

A security guard calls informing the team of an accident involving two construction workers building rock cribs out of logs for a new hydro line to the pumphouse. The team is asked to go to the accident scene, about 200 metres away, and assist as required.

The team is given the scenario just prior to the competition but is not told what injuries to expect on arrival. Twenty minutes are allowed to complete the task. In this scenario, the team encountered deep chainsaw cuts, fractures and shock — with one casualty barely conscious.

"You have to judge the scene and ask the right questions," said Jean-Paul. "The judges won't tell you anything unless you ask the right questions. Pulse, skin temperature, eyes, breath odor and all vital signs are important."

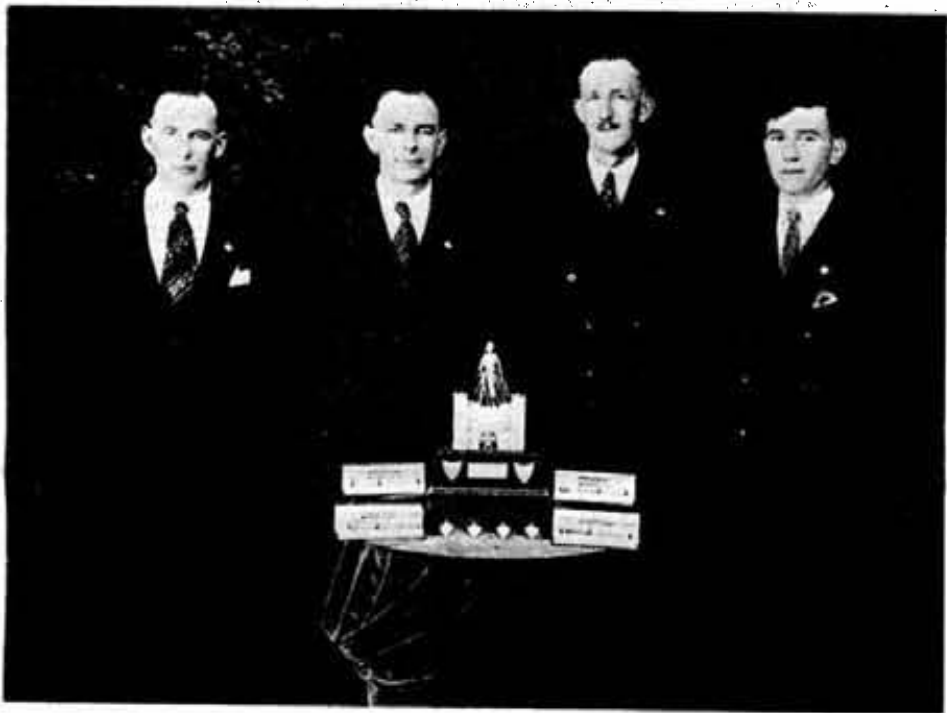
Campbell Mine in



Scott Duncan checks the pulse of 'accident victim' Max Bourgois.



Gilles Roy uses a cool cloth on fallen co-worker Daniel Colard.



Frood Mine's 1931 first aid team captured Inco's first ever McCrea Trophy. Team members from left are Robert Kennedy, Fernand Ribout, Percy Smith and Bertram Debney.



Gilles Roy applies a splint to the left arm of 'accident victim' Bayni Maristela.

Balmertown emerged victorious in this year's competition but Daniel, Jean-Paul and fellow Inco team members Scott Duncan, Lorne Drisdelle and Gilles Roy were justifiably happy with their performance.

"We were pleased with the way we handled the situation and the way the team worked together," said Scott, a first class electrician in the Smelter. "We're getting used to how the competition operates, what questions to ask and the small curves they throw at you. The first aid skills we've acquired are good common knowledge and I've used them off the job quite often. At the camp and around the house I'm sort of the neighborhood doctor. If anyone's child gets hurt they send them over to me."

In past years, Inco has entered two teams in the McCrea competition — one from the mines and another from

surface plants.

This year, with a shortage of volunteers, a joint entry competed, with three of four team members having prior experience.

"We were ready," said Lorne, a Nickel Refinery machinist. "I thought we did a good job and reacted well to the situations they threw at us. We had good coaching and the way we practiced we were ready for anything. In fact, we were probably prepared for more injuries than the scenario presented."

"All in all it's a good competition, a very good learning experience and provides probably the best training we could ever receive," he said. "It gives you the confidence to know you'll react properly in a real situation."

Despite having to feign passing out for a portion of the competition, Daniel is eager to participate again and hone the skills he acquired through training

with his more experienced coach and teammates.

"There should be more people involved in this," he said. "It puts you in a position where you're always ready if something happens on the job, off the job, on the roadside or wherever."

"You're ready for anything."

Daniel Colard has comforting words for a prone Max Bourgois.



Lorne Drisdelle and Gilles Roy prepare to make Bayni Maristela more comfortable.

Inco lineman heads 74,000-member OFAH

When Gerry Courtemanche went on his first hunting trip at the age of 15, it was the beginning of what would become a life-long commitment to the conservation and improvement of Ontario's wildlife and natural resources.

The pinnacle of his lengthy conservation career was realized earlier this year when he was acclaimed president of the Ontario Federation of Anglers and Hunters (OFAH) — the largest conservation organization in Canada with 74,000 members and affiliations with 535 other organizations.

A power lineman at Inco's Power Department, Gerry's love of the outdoors prompted him to attend his first meeting of the Junior Trailsmen Conservation Club in 1973. During his second meeting he was elected President, a position he held for the next two years.

In 1975, Gerry graduated to the club's senior counterpart, the Trailsmen Rod and Gun Club, where, "ironically enough," he was elected President that same year. He said he doesn't know why he was so successful, although he was quite pleased to do it.

"They needed someone to surmount some of the obstacles, who was willing to work hard and do the legwork," Gerry said. "I always really enjoyed it."

During his involvement with the club, Gerry held executive positions for 13 years; seven as president, six as chairman of the Junior Trailsmen and two as auditor.

His involvement in numerous activities during this time led to an affiliation with the Ontario Federation of Anglers and Hunters (OFAH) in 1974. His involvement with the federation increased in 1979, when he became a member of the OFAH Big Game Committee and a year later became chairman of the committee. Gerry eventually became a member of the OFAH board of directors, a position he held for nine terms.

"The OFAH is a grass roots organization which encourages members, on a local level, to become involved in conservation and resource management," he said.

The federation has had a significant impact, "simply through lobbying, questioning the government ministries and making them aware of what is going on. We are the largest watchdog of the government as far as conservation."

Gerry feels Ontario anglers and hunters are "quite ethical" whether or not they belong to OFAH, although he would like to see more sportsmen become federation members to ensure conservation with more hunters doing things to save wildlife.

Gerry has received numerous awards for his contributions and volunteer efforts to conserve wildlife and natural resources in Ontario. The OFAH awarded him the William Barry Memorial Trophy as the top conservationist in this part of the province seven times between 1974 and 1991. He was also awarded the Carling O'Keefe Conservation Trophy,

symbolic of the top conservationist in the province of Ontario three times and was further recognized by The Trailsmen Rod and Gun Club as Sportsman of the Year in 1977, '88 and '90.

He appreciates the respect and recognition shown by his peers in selecting him as President of the OFAH.

"It is a great honor to be selected by my peers for this position," Gerry said. "It's quite humbling actually."

"My whole intent is to continue the work the federation has started doing. If I can help to facilitate to obtain the bigger picture, then that's what I am prepared to do."



Gerry Courtemanche's dedication to conservation and protection of wildlife and the natural environment has garnered him a number of awards over the years — including the presidency of the Ontario Federation of Anglers and Hunters.

LETTERS TO THE EDITOR

Dear Editor,

I would like to thank Inco Limited for sponsoring the art show at the Sudbury Theatre Centre during the play *Driving Miss Daisy*. I would also like to thank Mr. Jim Ashcroft, President of the Ontario Division, for taking time out of his busy schedule to come to the wine and cheese reception and speak to us.

The art scene in Sudbury is a rather fragile one and any publicity, exposure and help we can get is more than welcome.

Sincerely,
Margaret Loney

(Editor's Note: Watch for more on the Inco Art Show in the June Triangle.)

Dear Editor,

I would like to take this opportunity to thank you very much for your recent article on Scouting that appeared in the March issue of the Inco Triangle.

We were really pleased to see recognition given to our numerous volunteers that work at Inco. It is through the work of these people that Scouting is such a success in the Region of Sudbury. We were pleased to see that you presented the program in such a positive manner. Your article certainly showed the wide scope that Scouting covers in its work with the youth of the city.

Many thanks and congratulations on your article.

Yours in Scouting,
Nicole Bergh
District President
Scouts Canada
Sudbury District Council

Dear Editor,

It was with great satisfaction that I read the story about the Inco employees who volunteer as Scout Leaders (March 1996).

In today's society, our youth must face many different challenges which were not present when I was young. To help them meet those challenges and succeed, they need positive role models and assistance in developing self-esteem. I have always believed that the Scouts accomplished these goals very effectively. I was very proud to see so many employees from Inco volunteering as Scout Leaders. I feel that their contribution is invaluable in developing our future citizens. I wish to express my gratitude to all employees who serve a higher purpose which is helping our youth. Please find enclosed certificates for all the employees mentioned in the article. I trust that you will be able to forward these certificates to the recipients.

I would also like to thank you for sending me copies of the Inco Triangle. I find it very fascinating to read and it keeps me informed of the activities at Inco Limited. I look forward to reading future issues.

Sincerely,
Raymond Bonin
M.P. (Nickel Belt)

(Editor's Note: Mr. Bonin's certificates were given to all recipients at a photo session.)



LESS WATT

Energy conservation activities are not isolated to the Ontario Division. Commitment and activities to increase energy productivity and reduce environmental impact are entrenched as part of the business culture in other divisions.

The Manitoba Division publishes a monthly newsletter called *Energy News*. The April edition presents an article entitled *Energy Conservation Benefits Environment* and discusses the Canadian Industry Program for Energy Conservation (CIPEC). **Charles Hantho**, an Inco director is the chairperson for CIPEC, and **Milt Goble** of the Manitoba Division is the chairperson for the mining section.

In CIPEC's last annual report, carbon dioxide emissions in 1994 were 1.4 per cent below 1990 levels which is attributable to improved energy efficiency. In contrast, Canada's overall emissions grew by 4.7 per cent in the same period.

These kinds of results reflect the efforts made, some of which are highlighted in other articles such as *Bazooka Burners Save Fuel, Air*

We are not alone . . .

and Money, and in a previous issue, *MIMS Helps Keep Tabs on Energy Costs*.

Taking a quick jaunt overseas to the Clydach Refinery in Wales, **Terry Redmond**, production manager, summarized a number of energy activities. In the area of monitoring and targeting more meters were installed on water, electrical and fuel lines to increase accountability and better distribute costs based on actual consumption. This led to reduced consumption, costs and increased efforts in finding and repairing leaks.

Other projects involved fuel switching to natural gas from butane and an awareness program. 'Champions' are appointed to work and support the various energy teams. At Clydach, energy conservation and reducing environmental impact is definitely entrenched in the business culture.

These are only a few small examples of ongoing energy activities outside the Ontario Division. Energy conservation and reducing environmental impact is part of our daily activities at Inco.

INCOME ideas

by Susan LeMay, CMA

Risk management and investing

The risk-free investment does not exist.

As an example, let's look at buying a home from this point of view. You are investing in real estate when you purchase your home. You are expecting the value of your investment to increase over time.

The real estate markets have not met expectations over the last few years. Prices have fallen, at least in most of Ontario. The risk in this investment, if you have purchased within your price range, is minimized because you also have been able to live in it and saved your rent payments.

We've all heard the stories of people who hoped to 'flip' property and make a killing. They did not account for the risk of a declining market.

What are the risks?

It seems to me that there are several risks to look at in investing. There is the risk of loss of your investment. The value goes to zero. It does happen, but a much more common scenario is a loss in investment value. This is the most obvious risk.

There is another. You could have invested in something else which would have given you a better return. If your return is reasonable, then this kind of risk is unrealistic. It is easy to see what should have been done after the fact.

Reduce the risks

The risk of losing your investment in your home because of falling real estate prices is reduced because you have diversified your investment.

You have invested in the property, but you have also used it instead of paying rent. You have made the investment do double-duty. That is one way to diversify.

Diversify the investment types

A second way to diversify is to put all your money in different kinds of investments. Real estate is one kind of investment. Bonds and term deposits are another, stocks or equity investments in individual companies is yet another.

Bonds give a better return when interest rates are higher. Higher interest rates make equity or investments in shares sometimes less attractive.

Diversify the industries

You can also diversify within each of these types of investments. You want to ensure you are investing in different types of companies in each investment

to minimize risk.

For example, if you buy only power company bonds like Ontario or British Columbia Hydro, these are both in the same industry. These two investments would be said to be highly correlated. Changes in interest rates that affect one are likely to affect the other in exactly the same way.

Your gains could be great and so could your potential losses.

It is the diversification of companies in a mutual fund that have made these funds so popular with investors. I may not be able to realistically invest in the bonds of a variety of companies, but I can get the same effect by purchasing units of a bond fund.

Diversify the country

The investments in the two power companies are affected by other factors which increase their correlation. Besides being in the same industry, they are also in the same country, so they are affected by the same political considerations. Again, there is opportunity for both high losses and large gains because of correlation.

Investing in foreign markets is often viewed with suspicion. After all, what information does the average investor really have for making a decision? The risks of foreign investment are as varied as the risks of investing at home. It depends on the type of investment.

Consider that investing in a U.S. company is investing abroad! Seen from this perspective international investing may not seem so risky. Investing in the Bricklin automobile was a risky domestic investment. The risk here is from the type of investment, not the country.

Investing in foreign companies gives you an opportunity to reduce the risks that come from confining your investments to only one economic or geographic area. There are three major areas of the world to look at — Central/South America, Asia and Europe. These are not investments to be considered without gathering background information either through research or with the help of a financial advisor.

Applying diversification

In earlier columns I have described the idea of an investment pyramid with a broad base of low-risk investments and progressive layers with more potential for both gains and losses until you get to the top of the pyramid where the risks are the greatest. The risks of loss and the potential for gains in all the levels of this pyramid can be positively affected by diversifying the investments by type, industry and geographical/political location.

Diversification is an additional consideration, not a substitute.



FOR YOUR HEALTH

From the Occupational Medicine Dept.

By Brenda Bresnahan

Osteoporosis is a debilitating disease that makes your bones porous, thin and brittle so that they break easily.

Although the chief risk factor is age for both men and women, it is eight times more common in women than men, making it one of the three most serious health issues for women.

Osteoporosis can result in fractures, a decrease in height and a stooped posture known as *dowager's hump*.

All about bones

• **The myth:** Most people think that bones are solid and unchanging.

• **The fact:** Bones, like your skin and hair, are alive. They are living tissue — a combination of collagen and minerals, including calcium. They are hard like ivory on the outside but spongy and pliable inside.

Bones are about 50 per cent water and they act as a support system and store calcium. To keep the skeleton strong, small amounts of bone are constantly being removed and replaced with new bone. Around the age of 35, the rebuilding process slows down. Bones become thinner and weaker. When bones become very fragile and brittle, osteoporosis is present.

Check out these risk factors for osteoporosis

• **Increasing age** — One in four Canadian women and one in eight Canadian men over 50 have osteoporosis.

• **Being female** — By age 65, the average man still has 91 per cent of his bone mass, but the average woman has only about 74 per cent. Men are less at risk, mainly because they have bigger bones to start with.

• **Estrogen** — Low levels of estrogen, from either the early removal of the ovaries or from the cessation of menstruation before the age of 45, dramatically affect the bones.

• **Being Caucasian or Asian** (usually small-boned).

• **A family history of osteoporosis**

• **Being chronically underweight**, having a slight frame or being short. If you are tall and muscular, or big and stocky, you may fall into a low-risk category.

• **Excessive dieting** or a diet low in vitamins and minerals, especially calcium.

• **Limited exposure to sunlight or a diet low in Vitamin D.**

• **Caffeine** — Drinking more than three cups a day of coffee, tea or cola.

• **Smoking** — In women this lowers the estrogen content of the blood, thus weakening the bones. Smoking is particularly dangerous for women who have other risk factors for osteoporosis.

• **Heavy drinking** — It's not known why heavy drinking weakens bones. Perhaps because heavy drinkers often have a poor diet.

• **Long term use of certain medications.** Both corticosteroids (used for asthma, arthritis and inflammatory bowel disease) and thyroid hormones can diminish bone strength.

• **Being sedentary** and lacking weight-bearing exercise.

If you have more than four risk factors, you may want to consult a health professional concerning osteoporosis.

Detecting osteoporosis

Early detection is not easy. About one quarter of your bone density must be lost before an ordinary x-ray will detect this disease. Most times, osteoporosis is diagnosed only after signs and symptoms appear such as:

- a broken wrist or rib;
- back pain (mid to low spine);
- loss of more than one inch in height;
- stooped, round-shouldered appearance;
- a hump forming in the back; or
- a broken hip.

Densitometry is a test, similar to an x-ray, which measures the amount of bone in the lower spine or hip. It is very safe and is available in Sudbury. If you have more than four risk factors you may want to ask your doctor about this test.

Prevention

- **If you smoke, stop.** Not only for the strength of your bones, but for your general health and well-being.
- **If you drink, drink only lightly or moderately.**
- **Consider hormone replacement therapy (HRT)** if you are menopausal. This consists of low-dose estrogen and progesterone

What you should know about osteoporosis

treatments that can unquestionably slow bone loss and prevent fractures. There are pros and cons to HRT and all women should discuss this with their physicians.

• **Vitamin D helps your body to use calcium.** The body makes Vitamin D by the action of the sun on the skin. Just 15 minutes of sun exposure per day on your hands and face will do it. As well, milk is an excellent source of Vitamin D.

• **Make weight-bearing exercise part of your daily life.** Bone growth is dependent on exercise. Weight-bearing exercises (exercises you do on your feet) like walking, hiking, in-line skating, running, stair climbing, cycling, dancing or weight-lifting — or things like housework or mowing the lawn — help to strengthen both the bones and the muscles. Remember to include weight-bearing activities for the upper body because the thoracic spine is prone to fractures as well. Three to four hours of weight-bearing exercise per week is recommended.

Remember it is never too late to start exercising. Studies have shown that sedentary women, between the ages of 50 and 70, when given a weight-bearing exercise program over one year were able to significantly increase their bone density.

• **Consume enough calcium.** All the cells in the body require calcium to function. When there are low levels of calcium in the blood, calcium will be drawn from the bone cells and released into the blood stream. If your diet is rich in calcium and your blood level calcium is high then calcium is not removed from the bones. Thus the bones remain dense and strong.

Recommended daily dietary allowances of calcium

- Adults — 800 milligrams
- Adolescents and young adults — 1200 milligrams
- Pregnant and lactating women — 1200 milligrams
- Postmenopausal women — 1500 milligrams

Sources of calcium

• Milk	eight ounces (250 mls)	300 milligrams
• Yogurt	eight ounces (250 mls)	300 to 450 milligrams
• Hard cheese	one ounce (30 grams)	200 milligrams
• Ice cream	four ounces	93 milligrams
• Broccoli	half-cup	90 milligrams
• Beet greens	half-cup	90 milligrams
• Kale	half-cup	90 milligrams
• Kidney beans	one cup	90 milligrams

Herring, salmon, and sardines — if eaten with the small bones — are also a good source of calcium, as is tofu.

The lowdown on calcium supplements

Question: I don't drink milk and I hate cheese and yogurt, what can I do to get calcium?

Answer: Although it is preferable to get your calcium needs from food sources, if you can't do this you may use a calcium supplement.

Rules to follow if taking a calcium supplement:

• Because calcium may have harmful interactions with other medications, ask your family doctor or pharmacist if calcium supplements are safe for you.

• Choose your supplement by the amount of 'elemental' calcium it contains. This is the amount of calcium that your body can use.

• Avoid calcium from bone meal, fossil shell or dolomite as these sources can be contaminated with toxic metals such as lead.

• Because bulk-forming laxatives interfere with calcium absorption do not take these two medications together.

• Calcium supplements are best absorbed at mealtimes and at bedtime. Do not take them all at once but try and take them at the same time each day.

• Drink at least six to eight glasses of water a day.

Did you know there is a national Osteoporosis Week? Well there is! It started May 11 and finishes May 18.

So for your health 'moooo . . . ve your bones!' . . . get out and walk.

For more information about osteoporosis please write to:
The Osteoporosis Society of Canada
 33 Laird Drive,
 Toronto, Ontario
 M4G 3S9
 Info line 1-800-483-6842

LET'S TALK SAFETY

with Ron Rafuse

Good safety is good business

Safety and the prevention of personal injury and incidents are good for business both on and off the job.

Every accident comes with a price. It may be loss of enjoyment, loss of wages or loss of a loved one. Then comes the cost of putting things right again, which includes insurance costs, personal costs or workers' compensation costs.

This is why at Inco we have our last of the seven safety principles — **Prevention of Personal Injuries and Incidents is Good Business.**

Good safety performance is a leading indicator of a business that is well run. Each time that a person gets injured at work there is a cost and a price to pay. First is the pain and suffering of the individual who is injured. Second is the monetary cost of the injury which can be broken down into two categories — direct and indirect costs.

Direct costs are the health care and workers' compensation costs for the injury. Then comes the indirect costs which include replacement of the injured person, repair of the equipment or area of the accident, investigation time and production loss while it takes place, and finally the cost of mending relationships with the workforce and the community.

At Inco, average injury costs and lost work days the last three years were in excess of \$14 million. This is over and above the indirect costs associated with accidents and the pain and suffering of the individuals. So you can see that prevention of injuries and incidents is good business for each of us as people are the most valuable resource a company can have.

Over the last seven months we have seen how the safety principles are all closely tied together and become the base of a solid safety program. To eliminate injuries employee involvement is essential, because unless each of us puts safety foremost in our minds both on and off the job we will not eliminate injuries and accidents. Then we must carry it one step further to the point where we care for each other and look out for the safety of the other people in the workplace.

This is the last article on the seven Inco Safety Principles and I would like to recap them.

- All injuries can be prevented.
- Employee involvement is essential.
- Management is responsible for preventing injuries.
- Working safely is a condition of employment.
- All operating exposures can be safeguarded.
- Training employees to work safely is essential.
- Prevention of personal injury and incidents is good business.

With winter behind us and spring activities starting up outdoors a new sort of hazard presents itself, particularly around boats. Each spring we hear

the horror stories of people who drown by boats that capsize or by standing up in a boat and falling overboard.

Remember a few simple rules, make them your standards and enforce your standards with your family — especially children. Always wear a life jacket in a boat, never stand up in a boat on the open lake when it is moving, know how to operate the boat and motor and never drink alcoholic beverages on the water.

Off-the-job accident prevention is no different than on the job. Know the standards and rules that apply to the activity, follow the standards and rules and ensure those with you do the same, and enforce the standards and rules.

Remember, if it can not be done safely, it can not be done.

Ron Rafuse is Superintendent of Safety for the Ontario Division



Port Colborne

Teamwork helps cobalt production

Good ideas come in threes at the Port Colborne Refinery.

Recently, the Cobalt Product Action Team improved their overall product quality through careful thinking and well executed planning.

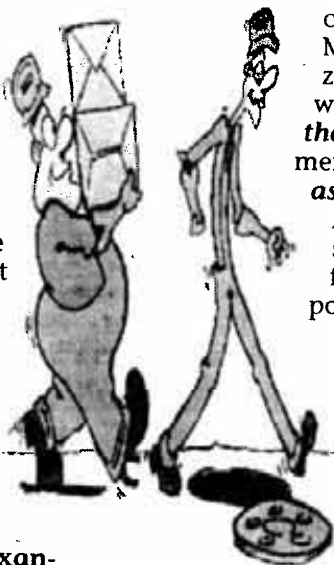
After putting their heads together, the group identified 10 areas which required improvement. They then held a vote to pick the top three. Once this was accomplished, they put their plan into action.

The first change was to replace the cobalt product steam dryer with a new natural gas one hence eliminating the problem of condensate leaking into the customers' product. The next step in this improvement process was replacing the gas pump with a new pump complete with a variable-speed motor. The new gas pump also has one-piece seals which are purged with nitrogen, eliminating the problem of any oxygen from that stage of the process. The old pump, team members point out, occasionally leaked air into the product causing discoloration due to oxidation.

Finally, the team decided to add a catalytic converter to the process. The catalytic converter reacts with any minute amounts of oxygen that manage to get into the cooling gas system.

The members of the Cobalt Product Action Team include Ray Alexander, Rick Bailey, Moe Beauregard, Lora Bruyn, Teresa Chan, Paul Dion, Gary Hoffman, Bill Jennings, Bill Kromkamp, Dick Lambert, Les Lott, Brad Marshall, Jim Orosz, John Overall, Rod Skelton, Al Smith and Dave Souder.

This month, Port Colborne Refinery (PCR) employees have also been



combining a little fun with some good safety common sense. Many employees responded to February's Safety Smart Magazine's slogan contest. Within the PCR, Ben Thomson was the winner for his slogan: **When danger is present and signs are not there, think co-worker safety and show that you care.** Honorable mentions went to Maurice Ottaviano for **Don't let others lead you astray, let common sense lead the way** and Dan Deluca for **Replace the cover, protect another.** All plant entries have been submitted to Safety Smart Magazine and every entry is eligible for a year-end PCR draw for two tickets to either a local play or possible sporting event.

In other news employee interest is building toward taking a first aid course. Occupational health nurse Sheila Orlando would like to offer courses on first aid to any interested employees. All courses, she explains, would contain cardiopulmonary resuscitation (CPR) — a proven life saver.

And talking about health... six refinery employees took the first steps towards 'butting out' this February by enrolling in Patch Plus. The smoking cessation program which offers the knowledge and skills needed to stop smoking with or without nicotine patches, has been well received. In fact, Sheila would like to continue offering the course if interest continues. In the meantime, the refinery is offering Workplace Wellness Workshops this spring designed to help employees who are looking at their cigarettes and pondering the age old question "to puff or not to puff?"

I heard it down at . . .

The Dry



by Jerry Rogers

Inco's old Avro Anson that once saw service in mineral surveying is back home again in Hangar 4 of the Canadian Warplane Heritage Museum in Hamilton.

Not only back but in showroom shape fit to please a Prince.

The latest high-profile admirer of the all-wooden aircraft was Prince Charles who inspected the Anson while in Hamilton late last month.

"He wasn't specific about any one airplane but he certainly enjoyed seeing old planes. He really loves restoration projects," says Rick Franks,

vice-president of the heritage museum. "And the Anson looked wonderful. It looks brand new. He didn't say anything but you knew the Prince, who is our patron here, was taken by it."

No wonder.

The CWH Anson which was donated to the museum by Inco in 1980 only returned to Hangar 4 late last fall after being away for restoration at the Springer Aerospace Company of Sault Ste. Marie. Built by MacDonald Bros., Winnipeg in 1944, the Anson is one of only two flying in Canada and possibly in the world.

Inco acquired the plane in 1956 for magnetometer and spectrometer surveying for field exploration in Canada.

"We took her down for a year. Springer did a total refurb on all the wood in the aircraft. The whole airplane right down to the spars is wood. There was dry wood in it. It was flying well so we flew it to Sault Ste. Marie and they did the whole job. It cost about \$150,000," Rick was saying the other day on the phone.

With government cutbacks, how'd they manage to scrape up that kind of money?

"Through air shows, renting space at the museum and selling souvenirs, donations, you name it."

The Anson has the distinction of being the first monoplane in service with the RAF. Originally designed as a six-passenger commercial aircraft in the 1930s, it quickly got attention as a general reconnaissance aircraft for coastal command. It entered military service in 1936 and retired from combat in 1939. It was later re-employed as a trainer and quickly became the backbone of the British Commonwealth Air Training unit as a multi-engine trainer and light utility transport.

"It's just a marvellous old trainer and people love it around here," says Rick, a flyer himself, noting the Anson still takes to the skies two or three times a month during summer air shows. "It's one of those planes you love to get in, sit up front where it's roomy, with the little slide vent on the side, like out of the movies. It's just a great airplane."

Another spring for seasoned gardener

It's cold and wet at Portlock near Bruce Mines and the last of the eight children of famed prospector James Stobie, Cora Lee Stobie Kettles is fit to be tied.

An avid gardener who walked away with 19 prizes, including 12 firsts at last fall's local flower show, she wants to get on the land again. But this spring is the latest she can recall in her almost 97 years in the north.

"She's doing super," says her son, Joseph, who lives nearby after retiring last year from a 30-year career as a helicopter pilot. "She can't get out in the garden. That's the extent of her frustration. She still starts her own seeds early in the year and her plants are already for planting."

Today, James Stobie's youngest child still lives at the family farm her

Flying the friendly skies in the Inco 'Anson'

father bought at Portlock sometime in the 1860s. When she and her late husband took over the family homestead in 1947, it was a shell. Instead of tearing it down, they chose to restore it, installing the first electricity, new glazing and painting the interior embossed metal walls and nine-foot ceilings.

Until two years ago when she was 95, old 'Cork', as she's known, still painted two to four rooms a year with a brush.

"Her strong faith in God has been rewarded with the blessing of excellent health," her son says in a note.



Cora Lee Stobie Kettles has number one in her eyes. Celebrating her 97th birthday this July, 'Cork' shows off one of her many firsts at last fall's flower show in Bruce Mines.

Inco names in the news

In the arcane world of metallurgy, the appearance of an article on a half century of progress in oxygen pyrometallurgy at Copper Cliff was a definite surprise this winter. In the January issue of JOM, a publication of the Minerals, Metals and Materials Society, the technical paper bore the names of two authors, one revered for decades, the other more contemporary. The collaboration, which took months to complete via correspondence, fax, courier, telephone calls and face-to-face writing

sessions, was the work of Paul Queneau and Dr. Sam Marcuson. Mr. Queneau, who headed Inco's research and development from 1941 to 1948 is a professor emeritus of engineering at Dartmouth College in the U.S. Sam is our manager of Process Technology and Production Planning in Sudbury. . . . Greg Baiden, Inco's manager of Mines Research and a leading authority on mine automation, is the recipient of an honor from the Canadian Institute of Mining, Metallurgy and Petroleum. Each year, the CIM awards the distinguished lecturer status to a select group of members who become available to lend their expertise to meetings and conferences. Greg is a 1995-1996 distinguished lecturer in — you named it — mine automation. . . . Inco's Ontario Division is the only Canadian mining operation with more than two New Faces of Mining in the Keep Mining in Canada publicity campaign. Ergonomist Trevor Rickwood, automated robo-scoop operator Joseph 'Chico' Villeneuve and Patricia Reynolds who deals with waste audits in Environmental Control are joined by pilot Bob Martindale of Supermarine Aircraft in Aylmer who flies Inco's aerial seeding program in Sudbury in the fall. . . . The first all-Inco art show at the Sudbury Theatre Centre was an unqualified hit with playgoers attending the Inco-sponsored play, *Driving Miss Daisy*. The show wouldn't have been the success it was if it hadn't been for the work of Lively artist Ellen Gorecki and Cambrian College public relations student April Lilley. Ellen, who is the wife of Stephen Gorecki, a senior systems analyst with Information Systems, has a major new show of her delightful northern landscapes at The Attic in the City Centre in Sudbury. April was a student on assignment with Kathy Foisey in our Public Affairs department this month.

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Manager Public Affairs
Jerry Rogers

is Editor
Cory MacPhee

The Triangle is published monthly for employees and pensioners of the Ontario Division of Inco Limited. Produced by the Public Affairs Department. Members of the International Association of Business Communicators.

Letters and comments are welcomed and should be addressed to the editor at Inco Limited, Public Affairs Department, Copper Cliff, Ontario P0M 1N0. Phone 705-682-5429