

CONFERENCE REPORT & RESOURCE GUIDE

WWestnet Presents:

Essential Skills & The Northern Oil and Gas Workforce



Photo courtesy of Jan Curtis

May 3 - May 5, 2005 • Explorer Hotel • Yellowknife, NT

Hosted by WWestnet with support from the National Literacy Secretariat
(Human Resources Skills Development Canada)
Government of the Northwest Territories: Education, Culture & Employment
Mackenzie Gas Project Producer Group

***Essential Skills
&
The Northern Oil and Gas Workforce***

Monday (May 2, 2005)

19:00 - 21:00 Registration: Explorer Hotel Lobby

Tuesday (May 3, 2005)

07:15 - 8:15 *Continental Breakfast / Registration*

08:15 - 08:45 Prayer, Welcomes, Introduction and Day 1 Overview

08:45 - 10:30 Training in the North

10:50 - 12:00 Essential Skills Overview

13:00 - 14:30 Sector Council Approaches to Essential Skills

14:50 - 15:45 An Integrated Training Model

15:45 - 16:30 Pipeline Training Programs / Wrap-up of Day 1

17:00 - 20:00 *Dinner - DND HQ*

Wednesday (May 4, 2005)

07:30 - 8:30 *Continental Breakfast*

08:30 - 08:45 Day 2 Overview

08:45 - 10:15 Elements of Training

10:35 - 11:05 The Role of Literacy Councils

11:05 - 12:00 Job Design

13:00 - 16:00 Assessment / Wrap-up of Day 2

16:00 - 18:00 *Networking - cash bar/appetizers*

Thursday (May 5, 2005)

07:30 - 8:30 *Continental Breakfast*

08:30 - 08:45 Day 3 Overview

08:45 - 09:45 Hands-on Experience with Essential Skills Training Approaches

10:15 - 12:15 Integrating Essential Skills; Overview of a Delivery Model and Hands-on Learning Opportunity

13:00 - 14:00 Discussion: What Next?

14:00 - 14:30 Evaluations / Wrap-up / Prayer

Conference Sessions - Katimavik A / Dinner May 3rd DND HQ
 May 3 - 4 Breakfast / Lunch / Social - Foyer Katimavik A & Melville A&B
 May 5 Breakfast / Lunch Foyer Katimavik A

The Honorable Charles Dent
Minister of Education Culture and Employment
Government of the Northwest Territories

Essential Skills and the Northern Oil and Gas Workforce was officially opened by the Honorable Charles Dent. Minister Dent brought greetings from the GNWT Department of Education, Culture and Employment and welcomed the delegates and speakers to Yellowknife. The Minister commented on the importance of appropriate effective training as a key ingredient in preparing northerners for the opportunities that will accompany the economic boom in the north.

Minister Dent's comments were as follows:

Good morning. I am pleased to be here to welcome all of you to *Essential Skills and the Northern Oil and Gas Workforce* and for those of you from outside the NWT, I would like to welcome you to our territory.

This workshop is of great interest to me as it focuses on strategies for improving the skills of the northern workforce. The NWT has a lot to be optimistic about as we look forward to the future. In March 2005, nearly 73% of our population aged 15 years and older was employed, compared to 62% of all Canadians. At the same time, only 5 % of our people in the labour force were unemployed, compared to 7% for all of Canada.

These positive developments are happening at a time when we are also seeing increased high school graduation from small communities and among Aboriginal students. We recognize that with these positive developments, we must challenge ourselves to make improvements so northerners can lead happy, healthy, productive and fulfilled lives. We must be prepared to take advantage of this economic development. We need to give Northerners new opportunities to gain skills and ready themselves for the workforce.

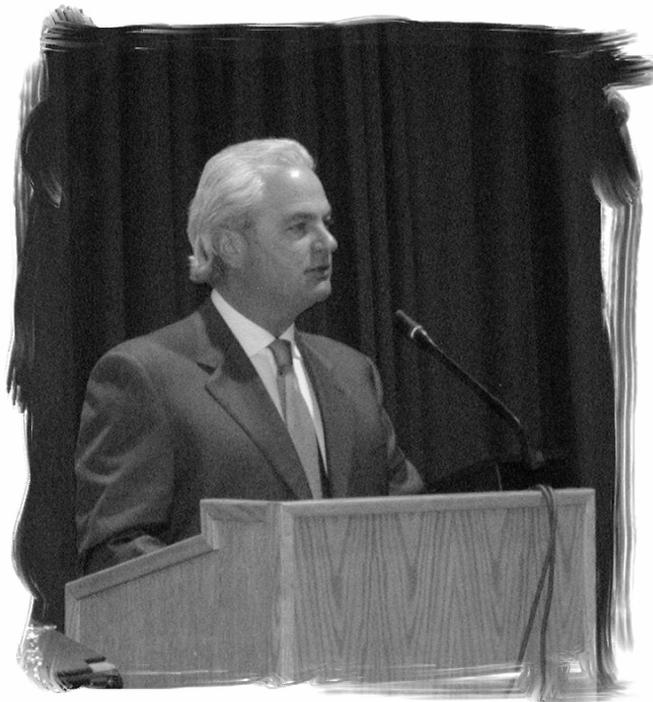
The Government of the Northwest Territories is committed to building and sustaining a skilled northern workforce to meet labour market demands in our growing and robust economy. The development of the oil and gas sector of our economy is providing northerners with many employment and training opportunities. We are optimistic that we will see the Mackenzie Valley Pipeline project proceed.

To capitalize on these opportunities, it is important that we all work together to ensure northerners acquire the essential skills required for work, learning and life. Different jobs require a variety of skills, however, there are a number of skills that are required in almost every occupation. These skills include reading text, using documents, problem solving, critical thinking, teamwork and communication. These are the building blocks for acquiring other skills that may be applicable to any occupation.

These skills are important for helping people to perform their jobs, from acquiring knowledge and adapting to changes in workplace requirements, to retaining employment and moving from one job to another. They help people to work safely, and to fulfill their potential at work, at home and in the community.

In reviewing your agenda for the next three days, I can see that you are going to have many opportunities to learn from each other, to discuss the value of integrating essential skills into training programs and to review the preparation of workers for employment. I also noted the list of attendees for this event and I am impressed by the breadth of representation from industry, Aboriginal governments, educators, labour and non-government organizations.

Please accept my best wishes for a successful and enjoyable event. I look forward to seeing the outcomes of this workshop.



Hon. Charles Dent

WELCOME...

Jonas Sammons, on behalf of the Western Canada Workplace Essential Skills Training Network, (WWestnet), welcomed delegates to ***Essential Skills and the Northern Oil and Gas Workforce***. He explained that the event was possible through the generous support and input of a variety of people and organizations and recognized:

- The National Literacy Secretariat (Human Resources Skills Development Canada) for their major contribution to the conference funding and for their continued support of WWestnet.
- The Government of the Northwest Territories: Department of Education, Culture & Employment for their assistance with planning and for their funding contribution.
- The Mackenzie Gas Project Producer Group for their commitment to the project, assistance with planning and contributions to the funding.

Jonas then asked Margaret Field from Fort Providence to open the conference with a prayer and following the prayer, introduced George Tuccaro who acted as conference moderator for the remainder of the event.

George asked delegates to keep the conference goals in mind over the three days so that they would be able to respond accurately to the conference evaluation questions. He then reviewed the goals which were to:

- ◆ raise awareness around the importance of integrating essential skills into training programs.
- ◆ acquaint delegates with essential skills tools and resources that are accessible and effective.
- ◆ provide delegates with an opportunity to learn about relevant successful training programs currently being delivered by a variety of businesses, institutions and training centres in northern and western Canada
- ◆ deliver practical hands-on train the trainer sessions that would provide insight into techniques for developing and delivering effective employment focussed training
- ◆ provide opportunities for delegates to network and share information with colleagues from across the Territories.
- ◆ explore together, what further trainer development and teaching/learning resources are needed to support the development and delivery of relevant training to current and future workers
- ◆ inform delegates of the Workplace Skills Strategy and the impact of the Strategy on workforce preparation in the future

He thanked the speakers and delegates for taking time from their busy schedules to contribute to the conference.

CONFERENCE RATIONALE

The focus of *Essential Skills and the Northern Oil and Gas Workforce* was on effective training with a particular emphasis on the role of **essential skills** enhancement in the development of the northern workforce. It was hoped that this conference would help to raise awareness of essential skills and provide a jumping off point for increased essential skills integration in education and workplace training programs.

The Mackenzie Gas Project, the diamond mines and the oil sands projects will all require workers in the next several years. In their recently completed study *The Decade Ahead*, the Petroleum Human Resources Sector Council (PHRSC) identified seven key human resources issues that will face the oil and gas industry in the next decade. These include:

- ◆ promotion of careers in the industry
- ◆ access to the non-traditional workforce
- ◆ skills shortages
- ◆ shifting skill requirements.

As the economic boom in the north continues to grow in size and scope, the opportunities for northern workers to become full economic participants in their local communities and in the broader economy of the north and Canada also increases. In order for this full participation to be realized, however, northerners must have access to relevant, useful training that meets their requirements and the requirements of employers.

The skills shortage is already complicating labour supply in the major industries. Employers need employees who have the ability to adapt to change and transfer skills from job to job. Effective training programs that incorporate essential skills, will lead to a better return on the investment to be made in training for northern-based workers.

But why focus on essential skills?

Essential skills are the skills people need for work, learning and life. They provide the foundation for addressing all other skills and are the cornerstone of lifelong learning. These skills are used in virtually all occupations and throughout daily life in different forms and at different levels of complexity. Without adequate essential skills, individuals are less able to acquire knowledge, adapt to workplace change, and benefit from the global economy. Inclusion of essential skills in training programs has been proven to help increase the success of trainees and enables them to access and retain jobs more effectively.

In order to be able to enhance training programs through the integration of essential skills, northern-based trainers need opportunities to learn about essential skills, essential skills focussed tools and resources that are available, and training programs that successfully incorporate essential skills.

Essential Skills and the Northern Oil and Gas Workforce aimed to raise awareness, promote the exchange of ideas and encourage the integration of essential skills into all training.

WWESTNET – A BACKGROUNDER

In November 1993, representatives from western Canadian business, labour, education and government met to discuss their experiences and concerns regarding Workplace Essential Skills development in western Canada. They discovered that having the opportunity to learn from each other was extremely valuable. As a result, this small group made a commitment to explore the broader needs of western Canadian business and labour in terms of essential skills training, and to become a catalyst for change.

WWestnet (the Western Canada Workplace Essential Skills Training Network) has remained a multi-sectoral group of western Canadian volunteers who recognize that all sectors must share the responsibility for building a workforce with the necessary knowledge, skills and abilities to keep pace with change.

To date, WWestnet has hosted eight very successful Workplace Essential Skills conferences/workshops, and publishes a newsletter, "the bottom line". WWestnet also recognizes champions of workplace literacy, supports the development of workplace practitioner training, promotes research addressing the issues, and uses its network to communicate information about Workplace Essential Skills initiatives.

WWestnet Committee Members:

Rob Despins	Standard Aero
Naomi Frankel	American Federation of Musicians
Herman Hansen	Boeing Canada Technology (MB)
Greg Maruca	AB Union of Provincial Employees
Bob McConkey	Douglas College
Irma Mohammed	BC Federation of Labour
Jonas Sammons	MacSam International Ltd.
Nancy Steel	Bow Valley College
Sue Turner	BC Hydro Generation



George Tuccaro & John Tees

GREETINGS FROM THE NLS

At the dinner on May 3, 2005 held at National Defence Headquarters, Yvette Souque of the National Literacy Secretariat (NLS) spoke about the work of the Secretariat in supporting literacy and essential skills initiatives in Canada. Musical entertainment for the evening was provided by John Tees with support and back-up from George Tuccaro

Yvette's comments were as follows:

The NLS is a small organization. We started, in 1988, with 25 staff and a budget of 25 million dollars and today have 30 staff and a budget of 35 million dollars. Our job was and is to engage all sectors of society in literacy. Since our inception we have worked with provinces, territories, the voluntary sector, literacy organizations, colleges, business, labour and other Government of Canada departments through our Partnership Program.

We realize that, individual Canadian business, labour, and educators etc. will not necessarily buy the government line that literacy and essential skills are an issue that affects daily life, family, community, and the bottom line, even if the research results are there. But, if you are business or a labour organization and you are getting the message from the Conference Board of Canada, Rotary Club, Chamber of Commerce, Canadian Labour Congress, business leaders like Eric Newall, celebrities like Tom Jackson, sports figures and others in all walks of life then, maybe, it is believable. To this end, the NLS has supported and encouraged partnerships amongst all actors to: spread the word, raise awareness and encourage action.

WWestnet has, over the past 10 years, worked successfully to bring together people from many of the areas mentioned above. Funded through the Business Labour Partnership Program, they have held events that raised awareness, events that focussed on research and events that provided hands-on training. In all cases they have encouraged networking and partnership formation as the way forward in increasing awareness of and commitment to literacy and essential skills issues.

When WWestnet came to us regarding this conference we got very excited because of the wealth of partnerships involved; the Producer Group, the Territorial Government, trainers, Aboriginal organizations, colleges, industry, sector councils and voluntary organizations and our HRSDC colleagues who fund ASEP and AHRDA programs were also keenly interested in the event.

I am very pleased to say that today's presentations and discussions have confirmed that our excitement and support were warranted. The sessions have been excellent and it is very rewarding to see so many NLS partners sharing their ideas and expertise. I look forward to the next two days and I want to thank all of the presenters for a job well done and all of the delegates for taking time from their busy schedules to attend and learn from the sessions and from one another.

Thank you for inviting me to be here.

What Are Essential Skills and Why Are They Important?

Essential skills are skills that have been identified as being required in almost every occupation. They are often referred to as the Velcro to which other training sticks. In other words, they are the foundation upon which occupation-specific skills are built.

Essential skills are also:

- enabling skills that help people perform tasks required by their jobs
- skills which allow workers to learn new skills
- skills which enhance a worker's ability to adapt to workplace change
- skills necessary to use printed and written information to perform competently in a workplace and to develop one's knowledge and potential
- basic skills that help workers to fulfill their individual and collective potential at work, at home, in the union, and in the community
- generic skills required by most workplaces in the country
- the skills that help you to keep a job
- the "academic" skills that individuals require on a daily basis

Human Resources Skills Development Canada has identified nine essential skills. They are:

- | | | |
|-----------------------|------------------------------------|------------------------|
| 1. reading text | 6. thinking skills | 7. working with others |
| 2. using documents | including: | 8. computer use |
| 3. writing | • critical thinking | 9. continuous learning |
| 4. numeracy | • problem solving | |
| 5. oral communication | • decision making | |
| | • job task planning and organizing | |
| | • significant use of memory | |
| | • finding information | |

Specific examples of essential skills include:

- | | |
|--|-----------------------------------|
| • reading and responding to an email | • scheduling daily activities |
| • writing in a logbook | • measuring angles |
| • reading instructions in a manual | • interpreting WHMIS symbols |
| • interpreting a blueprint | • completing an expense claim |
| • making a call to a supplier | • calculating square footages |
| • reading a collective agreement | • doing a cost estimate for a job |
| • converting metric measurements to Imperial | |

Without adequate essential skills learners and workers are less able to acquire new knowledge, adapt to workplace change and participate fully in the community, local workplace or larger economy.

SESSION RECAPS

Day 1 SESSION 1: THE TRAINING PICTURE IN THE NORTH

Presenters: *Mark Cleveland (Education Culture & Employment)*
Margaret Imrie (Aurora College)

Overview:

Mark Cleveland, Deputy Minister of Education, Culture and Employment GNWT, and Margaret Imrie Vice President Academic, Aurora College, outlined some of the education, training and employment challenges that are unique to the north. Mark provided an overview of industry in the north, the current labour market situation and discussed some of the challenges and opportunities for northerners in becoming full participants in and beneficiaries of a strong diversified economy. Margaret outlined the education and workforce preparation training situation in the north and some of the challenges for Aurora College in developing and delivering training that meets the needs of learners and employers. She also touched on approaches to meeting the challenges and the resources necessary to do so.

Mark Cleveland

Mark explained that rapid changes are occurring in the north. There is currently a 6% unemployment rate, but there have been radical shifts in the types of employment available. In the past, there was a single industry focus; now there are more opportunities and choices. The expansion of opportunity puts greater emphasis on the importance of making good decisions around how best to build and retain the workforce of the north.

In the past 10 – 15 years, there have been improvements in essential skill levels. In the early 90's, high schools were opened in every northern community; the impact of having a K-12 system available to all young learners has been greatly increased access to skills enhancement opportunities. In addition, Career and Life Management, and technology courses have been introduced at the secondary level to better prepare youth for the workplace. In terms of adult training, community learning programs enable students to pursue everything from Adult Basic Education courses to university transfer credits. Now the challenge will be to fit all the pieces together and ensure the needs of industry are also being addressed.

Because of all the economic activity in the north, the time is right for additional planning to occur, planning that involves all stakeholders. Workers must be able to gain the skills they need and stakeholders must be willing to work together to ensure success on all fronts.

Margaret Imrie

Aurora, the only public college in the north, has for over 35 years had the mandate to provide skills to adults in the NWT, skills defined by labour market demands. Aurora consists of three main campuses and 21 Community Learning Centres. The challenges are not only geographical; they are also related to the expectation that the college can be all things to all people. At this time in the north, there is a need for specialized training yet if there are not enough clients in a region, training programs cannot be sustained. As a result, Aurora has chosen to focus on high demand areas such as education and nursing, and to partner with other institutions in neighbouring parts of the country. Aurora also has to be flexible and to reduce barriers to access; this means better articulation with other training deliverers but in such a way that standards are maintained.

Some of the specific challenges Aurora faces include:

- Lack of technological infrastructure in some areas of the north
- Lower enrolments which means any drop-outs impact program viability
- Low literacy rates which create access issues
- 40% of programming devoted exclusively to adult academic upgrading
- funding issues (currently, the NWT Government provides 80% of Aurora's funding but financial support for Adult Basic Education must be expanded if demands are to be met.)
- lack of employment opportunities in small communities making relocation necessary
- need for funding to provide access to newcomers requiring advanced skills training. These individuals require ESL training and formal recognition of their qualifications; currently funds are not available to pursue either.

Some possible solutions include:

- More partnerships with industry, government, Aboriginal groups, and other trainers (both nationally and internationally) in areas, for example, such as mineral processing and aviation.
- Introduction of unique delivery approaches such as video conferencing and e-learning.
- Increasing staff development and re-framing administrative structures

The Community Learning Centres offer advantages as well. Supported by the GNWT according to population levels, these Centres provide Adult Basic Education and specific program delivery, and are in an ideal situation to integrate essential skills into all training offered. Completing this integration is a priority for Aurora at this time.

Despite the challenges, there is certainly optimism at Aurora College due to the increase in employment opportunities for learners and the opportunity to create a highly skilled workforce for the north.

Day 1 SESSION 2:

PERSPECTIVES ON TRAINING NEEDS IN THE NORTH

Presenters: *Colin MacGregor (Aboriginal Futures)*
Reid Warne (Imperial Oil)
Celina Stroeder (Albian Sands)

Overview:

In this session, delegates heard three perspectives on training needs in the north. Colin outlined, from Aboriginal Futures perspective, what types of programs and training are needed to enable those who wish to enter the workforce to be successful. Reid Warne, of Imperial Oil, focused on the technical and essential/employability skills workers will need in order to acquire jobs related to building and maintaining a pipeline and Celina discussed approaches to skills development and best practices for developing local employment.

Colin MacGregor: Aboriginal Futures

Aboriginal Futures was set up to manage an Aboriginal Skills Enhancement Program (ASEP) funded by Human Resources and Skills Development Canada. The focus of Aboriginal Futures is on training and skills enhancement. One of the challenges for the initiative is that jobs in the oil industry in the north tend to be short term and/or seasonal. As a result, Aboriginal Futures has adopted a legacy approach, that is, the establishment of partnerships to enable the residents of the north, especially those individuals living in small communities, to develop higher level skills. As part of this strategy, Aboriginal students are given grants to study at NAIT and SAIT, and funds are allocated to the introduction of new programs. Aboriginal Futures recognizes that the problem is not a lack of jobs in the north but rather the challenge of accessing and keeping jobs.

Reid Warne: Imperial Oil

I believe there is a definite need for essential skills to aid development of a strong professional workforce in the north (a professional being anyone taking pay for skilled work services). Long-term jobs in the north associated with oil and gas production include those that use construction and operations skills and the skills needed for administration and data management. All jobs associated with construction and operations require well honed essential skills. In addition to providing the basics for effective use of job related skills, it has been demonstrated in other industrial settings that proficiency in essential skills increases worker safety performance.

By enhancing the essential skills of workers in the north, individuals' ability to compete and win jobs, learn on the job, complete documentation correctly, read manuals and procedures, think critically, and transition to other positions and operational areas within the region are enhanced. To capture the benefits of integrating essentials skills into training it is important that industry collaborate with training providers, through initiatives such as this workshop, to help ensure training programs are relevant.

Celina Stroeder: Albian Sands

The Muskeg River Mine, the newest of the oil sands operations, is one of two operations of the Athabasca Oil Sands Project (AOSP) which is owned by Shell (60%), Chevron (20%) and Western (20%). The Muskeg River Mine is operated by Albian Sands Energy Inc. The other operation in the project is the Scotford Upgrader operated by Shell Canada Ltd. The Muskeg River Mine produces 155,000 barrels of oil per day and there are 700 employees and 600 contractors involved in the project.

The Albian Sands business model focuses on four areas:



It was on programs and practices for people that Celina focussed.

The technical skills required for many occupations at the Muskeg River Mine may be acquired through trade certification, college diploma or university degree. Other on the job skills are acquired through understanding of workplace health and safety codes and safety certification such as Confined Space Training (CSTS), Workplace Hazardous Materials Information System (WHIMS) and Mine Driver Training.

Albian has been integral in the creation of a new career and education organization, the Community Careers Cooperative, and is supportive of the Registered Apprentices Partnership (RAP) program in high schools and the Alberta Aboriginal Apprenticeship Program. Albian hires based on merit and with a particular emphasis on the essential skills of team work; oral and written communication; and the thinking skills; problem solving, decision making and critical thinking. They are supportive of summer employment programs, new graduate programs and coop programs

Discussion Points

Developing the essential skills of workers has been challenging. One solution has been to introduce computer-based on-site training and to encourage individuals to upgrade their literacy and numeracy skills.

The Mackenzie Gas Producer Group is supportive of activities that target the people of the north. In 2001, industry stakeholders, Aurora College, and the GNWT formed a committee to determine what training will be necessary in terms of both the technical stream and the trades' stream of occupations that will be required during pipeline construction.

In a 2004 targeted recruitment approach, 41 people applied to become apprentices. Of the 41, 22 qualified and out of that group, six apprentices were recruited. Several of the remaining members of the group of 22 were hired as employees of the oil and gas companies working in the north. Also through targeted recruitment efforts, 11 learners entered Aurora technical programs, and one entered NAIT. About 90% of the applicants were Aboriginals.

At present, there are no programs in place to encourage more women to enter non-traditional occupations (about 15% of industry employees are women). However, increased numbers of women are becoming heavy equipment operators, and more women than men are pursuing post-secondary training in the north.

The issue was raised that companies are not providing enough opportunities for young apprentices. This seems to be due to a lack of qualified journeypersons willing to take apprentices. In response, the rules have recently changed to allow one journeyperson to be responsible for two apprentices. The problem is exacerbated by the fact that it is 3-7 person businesses that tend to train apprentices and not the larger firms. There was also agreement that many young people who pass pre-trades programs do not have the employability skills to succeed on the job. The ARDHA holders are in a position to identify those prospective apprentices in need of essential skills enhancement and employability skills programs. With a more coordinated and concerted effort, these problems can be addressed.



Colin MacGregor & Celina Stroeder

Day 1 SESSION 3:

WHAT ARE ESSENTIAL SKILLS

SOME ESSENTIAL SKILLS TOOLS AND RESOURCES

Presenter: *Chris Bates (Human Resources Skills Development Canada)*

Overview:

Chris Bates leader of the Essential Skills Outreach Team with the Human Resources Partnership Directorate, Government of Canada provided an overview of the Essential Skills and Workplace Literacy Initiative and the Government of Canada's Workplace Skills Strategy. He also explained why essential skills are considered so important and what the Government is doing to improve the essential skills of Canadians. Chris then described for delegates some of the many essential skills tools and resources available and provided information on how to access them.

Chris pointed out that essential skills are not a silver bullet. They are also not the same as employability skills.

- **Essential Skills** are the skills deemed necessary by employees
- **Employability skills** are those skills identified as critical from the point of view of employers and tend to be more attitudinal in nature.

Essential skills are not technical skills. Rather, they are nine transferable skills seen as integral to successful participation in life, work and community. It should not be assumed that essential skills are simply basic skills. Essential skills proficiency is a continuum, measured on a five point scale and at the upper levels of the scale (levels 4 and 5), essential skills are very advanced.

One of the reasons essential skills have become so important in today's workplaces is that workers, more than ever before, must be life long learners. For example, new demands have been placed on workers with the introduction of universal standards such as ISO and the pressure for Canadians to be more productive due to the global economy. Without the underlying essential skills, workers will have difficulty adapting to change and acquiring new technical skills.

Businesses can address the Essential Skills issue more effectively by:

- avoiding the word "literacy" when offering training
- embedding essential skills training in technical training
- approaching employers through other employers (stressing the competitive advantage of developing the essential skills of workers)
- encouraging training partnerships and ensuring unions are involved

Slide 01

Essential Skills

Skills to Build On

Les compétences essentielles

Des compétences pour réussir



Slide 04

Why Essential Skills matter

- Link between Essential Skills and health and safety in the workplace (*Canadian Trucking Human Resources Council, 2004*)
- 1% literacy increase = 1.5% GDP increase per capita and 2.5% increase in labour productivity (*Literacy scores, human capital and growth, 2004*)
<http://www.statcan.ca/english/research/89-552-MIE/89-552-MIE2004011.pdf>
- Over 40% of working-age Canadians have low Essential Skills levels (levels 1 and 2) (*International Adult Literacy Survey, 1994*)

Slide 02

The 9 skills have been identified and validated through extensive research by HRSDC and other national and international agencies

For each skill there is a 4 or 5 point complexity scale

"Essential" was chosen carefully to avoid the negative connotations associated with "basic"

Literacy, as per IALS, is defined as Reading Text, Document Use and Numeracy

- There are nine essential skills:

Reading Text	Document Use
Writing	Numeracy
Oral Communication	Thinking Skills
Working with Others	Computer Use
Continuous Learning	

- They are foundational skills used by every worker in every job
- They are drawn from and applicable to Canadian workplaces
- They are among the most transferable skills an individual has; both from job to job as well as from work to home
- They enable people to evolve with their jobs, adapt to technological change, and advance professionally

Slide 05

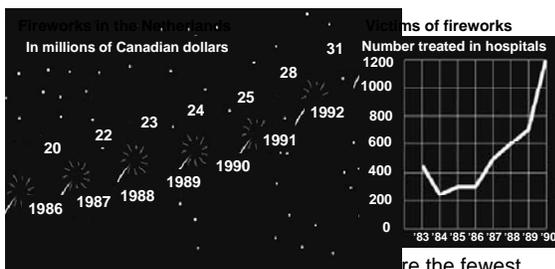
Fédération des travailleurs et des travailleuses du Québec

"A few years ago, we introduced new tools in a firm of 550 employees. The union thought thirty or so employees would need assistance. An inquiry revealed that 178 employees experienced difficulties, at different degrees."

Source: "Démystifier le rapport à l'alphabétisation," *Le Devoir*, September 6, 2003.

Slide 03

International Adult Literacy Survey (IALS)



Are the fewest number of people in the Netherlands injured by fireworks?

Level 3 (Document Use) Describe the relationship between sales of fireworks and injuries due to fireworks.

Slide 06

The workplace is changing

- Rapid pace of technological change requires life-long learning
- Shift to a knowledge-based economy
- Increased focus on industry credentials and standards (e.g. ISO)
- Unprecedented global competition
- Shrinking labour force (demographics)

Slide 07

Benefits of improving ES levels

- **Statistics Canada** correlates increased Essential Skills capacity with stronger labour force attachment, higher earnings and better health among individuals
- Pilot studies in **PEI** and **Alberta** demonstrate that targeted essential skills upgrading dramatically increased apprenticeship certification success rates

Slide 10

CBoC Case Studies - Soft Returns

Employees demonstrated improved:

- ✓ Self-confidence
- ✓ Initiative
- ✓ Problem-solving
- ✓ Communication
- ✓ Cooperation

Slide 08

Impacts of ES training – NAIT

Group	Number of Participants	Carpentry Success Rates (2002 – 2003)						
		Results						
		Pass	%	Fail	%	Other*	%	Province Exams
1	20	22	75.0	2	6.0	10	34.5	76%
2	42	30	71.4	1	2.4	11	26.2	73%
3	27	26	96.3	0	0	1	3.7	81%
4	29	29	100	0	0	0	0	81%
5	44	27	61.4	11	25	6	22.2	71%
Total	171	134	78.4	14	8.2	28	16.4	76.4%

* The 'Other' column represents apprentices who withdrew from the program, received a conditional pass, or needed to complete supplemental course work because of poor performance.

Slide 11

Here's what we are up to...

Slide 09

Organization

Hard Returns

- Syncrude Canada Ltd.** ✓ Syncrude employees who failed apprenticeship exams passed their tests after taking ERIC and SAM
- BHP Billiton Diamonds Inc.** ✓ Safer and more productive workplace
- National Silicates** ✓ Zero voluntary turnover - employees do not leave when they get training
- Minas Basin Pulp & Power Company Ltd.** ✓ Absenteeism reached an all-time low at 6.9 days absent per employee in 2003 (previously 10.91 days)
- Durabelt Inc.** ✓ Employees developed a dictionary of workplace terminology for new workers

Slide 12

In 2004, the Speech from the Throne announced a new Workplace Skills Strategy to help workers to continuously enhance their skills to keep pace with constantly evolving workplace requirements.

- **Objectives of the Workplace Skills Strategy:**
 - Ensure that the Canadian workforce is highly-skilled, adaptable and resilient;
 - Build a labour market that is flexible, efficient and productive;
 - Promote participation by helping those who face labour market barriers to find and maintain employment; and
 - Respond to the needs of our workplaces to ensure that they are safe, productive and innovative.

• **HRSDC programs and activities feeding into the Workplace Skills Strategy include:** Sector Council, Apprenticeship, Essential Skills, and Foreign Credential Recognition.

Recent Budget underscores the Government of Canada's commitment to develop a highly skills workforce by proposing, for example, \$125M to the Workplace Skills Strategy for the next three years.

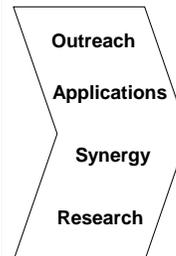
Slide 13

Mandate of the Essential Skills and Workplace Literacy Initiative

- To improve the Essential Skills levels of Canadians entering or in the labour market in order to optimize participation, facilitate transitions and improve productivity in the workplace.

Slide 16

The Essential Skills and Workplace Literacy Initiative



- Outreach** Build a national understanding of the importance of and ways to acquire Essential Skills with a focus on the workplace.
- Applications** Provide funding to support the development of projects designed to enhance Essential Skills.
- Synergy** Expand partnerships to integrate Essential Skills tools into other Government of Canada programs.
- Research** Undertake research to expand the knowledge base while increasing the number of Essential Skills profiles.

Slide 14

- Expand the essential skill knowledge base and research capacity
- Promote and solidify strategic partnerships with key workplace stakeholders (e.g., learning institutions and provinces/territories) to increase essential skills awareness, understanding and utilization
- Develop products and support mechanisms that will promote and facilitate essential skills integration in the workplace
- Promote and disseminate essential skills knowledge, tools, and best practices

Slide 17

Outreach

- Over 60 presentations to 2,500+ stakeholders in the past two years
- Communication materials/revamped website
- Online learning tool to demonstrate levels
- Workplace Essential Skills Strategy – CBoC Case studies

Slide 15

- While the Essential Skills Initiative is focused on the workplace at a macro level, some adult population groups form the main target audience:
 - members of particular population groups (e.g., **youth at risk, Aboriginal People, people with disabilities, and immigrants**) whose low level of essential skills compound the multiple barriers they face to social and economic inclusion; and
 - **unemployed** Canadians with low essential skills and may face difficulties re-entering the workplace and achieving sustainable employment;
 - **Employed** Canadians with low essential skills who may be having trouble accessing employer-sponsored training and may be least able to afford upgrading on their own.

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Applications

- 26 projects undertaken since April 2003
- Ongoing intake; projects must be national in scope
- Generally one of five themes:
 - Research
 - Awareness
 - Assessment
 - Curriculum Development
 - Sector Skills Analysis

Slide
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Synergy

- Collaborating with HRSDC's Employment Programs Branch on three initiatives: the establishment of a network of regional HRSDC ES Champions and two pilot projects.
- Pilot projects (ESCORT/PLATO, and TOWES) are supporting the integration of ES into EBSM delivery to improve outcomes of unemployed Canadians.
- Supporting Aboriginal Affairs Directorate in the delivery of new ALOES initiative by providing ES expertise, presentations, and sharing best practices
- Working with other government departments to incorporate ES programming (e.g. CIC)

Slide
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Research

- There are now close to 200 profiles
- Currently 40 new profiles are being developed (professional and technical)
- Re-evaluating computer use scale
- National Symposium held in October on Essential Skills Research

- Priority occupations for new ES profiles aligned with Workplace Skills Branch business lines of:
 - ✓ Foreign Credential Recognition (e.g. regulated occupations in health)
 - ✓ Apprenticeship (e.g. Red Seal and other skilled trades)
 - ✓ Sector Councils.
- New profiles (NOC Skill Levels A & B) include:
 - ✓ Pharmacists, Opticians, Nurses, Veterinarians, Medical Radiation Technologists, Mechanical Engineers;
 - ✓ Automotive Painters, Automotive Service Technicians, Machinists, Gas Fitters, Stationary Engineers;
 - ✓ Construction Estimators, Supervisors - Railway Transport Operations, Aquaculture Operators and Managers, Geological and Mineral Technologists and Technicians.



TOOLS AND RESOURCES

Slide 01

Tools and Applications

Slide 04

- A collection of authentic workplace materials covering a variety of workplace documents (e.g., forms, tables, graphs, regulations, contracts, etc.)
- The purpose of the collection is to stimulate educators and trainers to explore new approaches to instruction and to build a stronger link between skills developed in learning activities and skills used in the workplace
- The Collection focuses on reading text, document use and writing, though some materials also illustrate the use of other skills (e.g., oral communication, numeracy)
- Full collection is available online

www.hrsdc-rhdcc.gc.ca/essentialskills

Slide 02

Essential Skills profiles

- Explain how each Essential Skill is actually used by workers in an occupational group
- Generally includes:
 - description of the occupation
 - example tasks
 - complexity ratings
 - future trends
 - physical aspects
 - attitudes needed

www.hrsdc-rhdcc.gc.ca/essentialskills

Slide 05

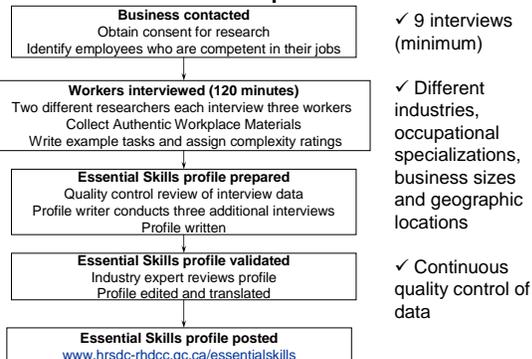
Test of Workplace Essential Skills (TOWES)

- Assesses the reading, document use and numeracy skills of workers or job applicants
- Uses authentic workplace documents to re-create tasks as source items for test
- Measure-up is a free self-assessment component of Web site

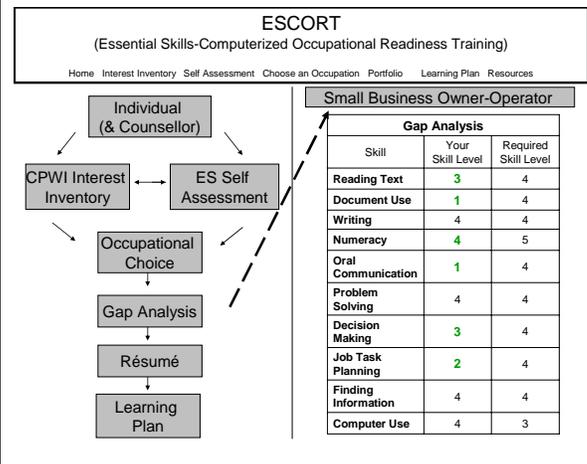
www.towes.com

Slide 03

How to write a profile



Slide 06



Slide
07

The ES Learning Tool

- Interactive, web-based tool
- Gives users firsthand sense of the various Essential skills and their complexity levels
- Demonstrates differences between each level of the 9 skills
- Uses Authentic Workplace Materials (AWMs)
- Answer key with rationales

Slide
10

Business Results Through Literacy

- CME's guide to workplace literacy training includes workshop materials for:
 - Needs assessment
 - Business case development
 - Program implementation

www.cme-mec.ca/on/documents/Literacy_Guide_CD.pdf

Slide
08

Applications of Working and Learning (AWAL) Innovations

- Educators develop classroom activities that link curricula to the world of work using the lens of Essential Skills.
- AWAL Innovations takes the idea further:
 - bring the workplace to the classroom; and
 - students go to the workplace.

www.awal.ca

Slide
11

The Conference Board of Canada

- *Excellence in Workplace Literacy Award Winners* are honoured at annual conference
- Some examples:
 - Elmsdale Lumber Company (2004)
 - Minas Basin Pulp and Power Company (2004)
 - Dofasco (2004)
 - J.D. Irving (2003)
 - BHP Billiton Diamonds (2003)
- The *Workplace Literacy Central* Web site provides information and tools for employers
www.conferenceboard.ca/workplaceliteracy/default.asp

Slide
09

Ontario Skills Passport – Pilot

- Provides youth and unemployed with documentation of their skills.
- Records which Essential Skills have been demonstrated.

Slide
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Canadian CEO

- In the premier issue, ABC Canada profiled six successful workplace literacy programs across Canada:
 - Dofasco
 - North West Company
 - Palliser Furniture
 - Cameco
 - Diversified Metal Engineering
 - Boeing Canada Technology

Slide
13

CHALLENGES AHEAD

- Moving from awareness to incorporation of ES
- Uptake of ES in the workplace remains low - SMEs a particular challenge
- Must address specific needs of groups facing barriers to inclusion in the labour market
- Need for informed data on most important needs and key demographics in the workplace

Slide
14

Future Directions

- Complete ES profiles for most of NOC by 2007
- Foster partnerships with workplace stakeholders
- Develop an ES Workplace Toolbox
 - Business case, HR tools, etc.
- Research ways to assess ES levels
- Improve ES levels of various groups:
 - Immigrants, Aboriginals, unemployed

Thank you!

chris.bates@hrsdc-rhdcc.gc.ca
www.hrsdc-rhdcc.gc.ca/essentialskills



Chris Bates

Day 1 SESSION 4: APPROACHES TO ESSENTIAL SKILLS DEVELOPMENT

Presenter #1: *Linda Gauthier (Canadian Trucking Human Resources Council, CTHRC)*

Overview:

Linda Gauthier, Executive Director of the CTHRC explained the role of the Council within the trucking industry and some of the human resource challenges and opportunities the Council encounters. She also provided an overview of training in the industry, the Council's role in developing training and the reasons essential skills are considered such an important element of training programs.

CTHRC Background:

Created in 1994, the Canadian Trucking Human Resources Council (CTHRC) is an incorporated non-profit organization with a volunteer board of directors, representative of stakeholders from the Canadian trucking industry. The mission of the Council is "to assist the Canadian trucking industry to recruit, train and retain the human resources needed to meet current and long-term requirements"

The CTHRC plays a national leadership role in coordinating human resources research and development for the trucking industry. The Board of Directors includes representatives of the Canadian Trucking Alliance, the Private Motor Truck Council of Canada, unionized labour, owner-operators, professional driver agencies, professional drivers, the insurance industry, training institutions, the federal government, as well as provincial sector and sector-like councils.

Historically, members of Canada's trucking industry have had few opportunities to upgrade their skills or access professional development and training despite the fact that the industry recognizes the need to increase the knowledge base and skill level of its members. The CTHRC went to work to develop and to make available the best materials for professional development and the upgrading of skills for members of today's trucking industry. Graduates of all CTHRC training programs receive a diploma stating that they are certified to the applicable National Occupational Standard.

National Occupational Standards are documents and tools that serve as a roadmap for the development of training programs, assessment tools, hiring, allocation of work, career planning, etc. They are benchmarks, or points of reference against which occupations, and the proficiency of people in those occupations are measured or assessed. All CTHRC National Occupational Standards also contain Essential Skills Profiles, which are associated with the specific occupation.

To date the CTHRC has developed National Occupational Standards for four occupations in the industry: Professional Driver, Dispatcher, Professional Driver Trainer, and Transportation Safety Professional.

For more information visit www.cthrc.com

Slide 01

Essential Skills and the Northern Oil and Gas Workforce Conference

“Approaches to Essential Skills Development - Trucking Perspective”

Linda Gauthier, Executive Director, CTHRC
Yellowknife, May 3, 2005

Slide 02

About the CTHRC

The Canadian Trucking Human Resources Council (CTHRC) is a modern non-profit organization with a board of directors representative of industry stakeholders.

Our mission is to *“assist the Canadian Trucking Industry to recruit, train and retain the human resources needed to meet current and long-term requirements.”*

Slide - 03

Work with Other Sector Councils

The CTHRC works closely with other of sector councils to build partnerships and to share information.

Slide 04

Trucking Industry

Highlights

- In 2003, trucking accounted for 1.2% of GDP out of 4.0% for all transportation industries *
- \$48 billion in revenues in 2003 *
- Over 50,000 + companies
- 80 % of companies are small and medium
- 15 % of industry is unionized
- Over 400,000 + employees *

* Transportation in Canada 2003 – Transport Canada

Slide 05

Issues in Trucking

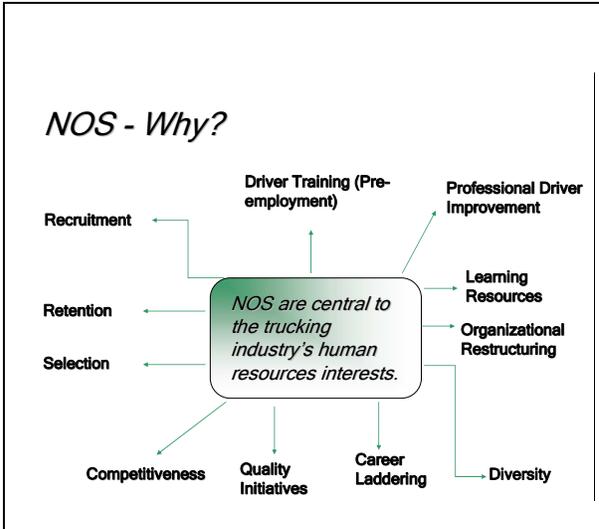
<p>Non-HR Issues</p> <ul style="list-style-type: none"> Regulatory – Hours of Service; Cargo Securement; Customs and Security... Economic – Projected Uptake; Fuel Prices; Exchange Rate; Insurance; BSE Fallout... Technological – Second Generation Electronics... Environmental – Kyoto; Operating Practices; New Technologies... 	<p>HR Issues</p> <ul style="list-style-type: none"> ➤ <u>Qualified driver shortage</u> ➤ Worker retention and turnover ➤ <u>Lack of a learning culture</u> ➤ Weak uptake of national standards ➤ <u>Lack of training to standards</u> ➤ Training funds not tied to national standards ➤ Aging workforce ➤ Perceived image and attractiveness of driver occupation ➤ <u>Low level of literacy of drivers</u> ➤ Lack of HR management practices (Labour Code Part 2 & 3)
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Slide 06

Future Requirements

Employment projections of for-hire trucking in Canada – 37,300 new drivers needed each year for next 5 years

Slide 07



Slide 10

Essential Skills Needs Assessment of the Trucking Industry (2002)

Slide 08

NOS Customized Chart

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- ### Key Findings
- Many Professional Drivers have poor Reading Text skills.
 - Reading materials developed for Professional Drivers are often too complex.
 - The Test of Workplace Essential Skills (TOWES) would meet industry needs better than the assessment tools currently in use.
 - *An Essential Skills strategy should be considered in establishing Aboriginal recruitment, training and retention methods.*

Slide 09

Objective

National Essential Skills Strategy

To promote best practices and innovation in integrating Essential Skills assessment and upgrading strategies among stakeholders in the trucking industry - training providers, carriers, etc.

Slide 12

- ### Aboriginal Initiatives
- Building an Aboriginal Labour Market for the Trucking Sector through the Application of Standardized Essential Skills Assessments*
- Round table meetings on Essential Skills organised by CTHRC and AHRDCC's Aboriginal Inclusion Network
- ✓ London, Ontario with the Ontario Trucking Association, AHRDAs and industry;
 - ✓ Calgary, Alberta with AHRDAs and industry; and
 - ✓ Yellowknife, NWT co-sponsored by ECL Group of Companies with Denendeh Development Corporation.

Slide 13

Aboriginal Initiatives

Building an Aboriginal Labour Market for the Trucking Sector through the Application of Standardized Essential Skills Assessments

Phase I : develop and pilot a standardized/ customized assessment tool - Employment Readiness TOWES that can be used by employers and AHRDA holders to identify Aboriginal candidates' essential skills and learning needs.

Phase II of the project would be the upgrade training of essential skills for those individuals requiring it.

Phase III would be the provision of technical training and experience as truck drivers.

Partners: Aboriginal AHRDA community, ECL Group of Companies of Alberta and Denendeh Development Corporation AHRDCC's Inclusion Network

Slide 16

Essential Skills Assessment Tools - Applications



Training providers:

Use TOWES – Professional Driver (Pre-employment) as part of screening protocol to identify and address Essential Skills learning needs.

Carriers:

Use TOWES - Professional Driver (Mastery-Level) as part of a professional driver improvement program.



Both:

Use TOWES - Professional Driver (Mastery-Level) to track and support the ongoing skill development.

Use TOWES – Other Transportation Occupations (Mastery-level) to identify and address the professional development needs of Instructors.

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Essential Skills Toolkit & Applications



Slide 17

Essential Skills Upgrading Tools



A suite of upgrading modules are in the CTHRC's Essential Skills Toolkit.

The CTHRC is developing an additional module to build Numeracy skills.

A Clear Language guide will soon be available.

Slide 15

Essential Skills Assessment Tools



A suite of TOWES assessment tools are in the CTHRC's *Essential Skills Toolkit*.

- > TOWES – Professional Driver (Mastery-level)
- > TOWES – Professional Driver (Pre-employment)
- > TOWES – Other Transportation Occupations (Mastery-level)
 - > Dispatcher
 - > Professional Driver Trainer
 - > Transportation Safety Professional



Slide 18

Essential Skills Upgrading Tools - Applications



Training providers and provincial sector councils:

Use upgrading modules to build Essential Skills: (1) before training applicants take TOWES-Professional Driver (Pre-employment); (2) after training applicants take TOWES-Professional Driver (Pre-employment) and before starting training program; (3) in an integrated way during the training program.

Carriers:

Use upgrading modules as part of a professional driver improvement program.

Training providers and carriers:

Use clear language resource to prepare user-friendly materials.

Slide 19

National Essential Skills Toolkit



- ⇒ HRSDC/HRCC
- ⇒ Training providers
- ⇒ Carriers
- ⇒ Other Sector Councils

Slide 22

Essential Skills & Safety Performance

CPPI-certified Petroleum Professional Drivers with higher scores for:

- ✓ Reading Text and Document Use were less likely to have had a spill incident.
- ✓ Reading Text were less likely to have had an incident when returning from delivery.
- ✓ Document Use were less likely to have had an incident at the customer's location when unloading.
- ✓ Reading Text, Document Use and Numeracy were less likely to have had any type of incident at any location.

Slide 20

Findings from Essential Skills Pilot Projects



Slide 23

Essential Skills & Safety Performance

CPPI-certified Petroleum Professional Drivers who did not meet or exceed the upper end of the CPPI's standard for:

- ✓ Reading Text (i.e., Level 3) were 1.58 times more likely to have had an incident than those who did meet the standard.
- ✓ Document Use (i.e., Level 4) were 1.69 times more likely to have had an incident than those who did meet the standard.

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CPPI Essential Skills Pilot

Shippers	Carriers	CTHRC
   	    	 

Slide 24

Essential Skills and CAAT

- Replacing CAAT with TOWES-Professional Driver (Pre-employment) aligns industry-endorsed screening protocol to CTHRC's National Occupational Standards and *National Essential Skills Strategy*.
- Recommended pre-employment standards: Reading Text, Level 2; Document Use, Level 1; Numeracy, Level 1.




Commercial Safety College

Slide 25

Other Pilots / Applications

- Use TOWES as a province-wide industry-endorsed screening protocol for driver training school candidates.
- Develop a system to track skills develop of training provider graduates as they acquire industry experience.
- Use TOWES in professional development of Professional Driver Trainers.
- Use TOWES as a diagnostic tool to identify learning needs.



PROFESSIONAL TRANSPORT TRAINING





Atlantic Transport Training Academy, NB

New Brunswick Department of Training & Development, Saint John Region

Slide 26

Other Pilots / Applications

- ✓ Use TOWES as a career planning tool.
- ✓ Make upgrading modules available to community colleges; private training providers will refer learners.
- ✓ Integrate the Note Taking and other modules into entry-level driver training curriculum.
- ✓ Use clear language resource to prepare user-friendly materials



PROFESSIONAL TRANSPORT TRAINING





Atlantic Transport Training Academy, NB

New Brunswick Department of Training & Development, Saint John Region

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Essential Skills

Challenges faced by Sector Council

- ❖ *Creating Awareness*
- ❖ *Demonstrating Value added*
- ❖ *Getting Buy-in*

§

For additional information about Essential Skills Initiatives contact:

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www.cthrc.com



Linda Gauthier

Presenter **Rosemary Sparks (Construction Sector Council, CSC)**
#2:

Overview

Rosemary Sparks, Director of Projects for the CSC explained the function of the Construction Council in the construction industry and some human resource challenges and opportunities. She also reviewed the training picture in the industry and described the role of the Council in developing training. Rosemary showcased some of the training initiatives in which the CSC is involved and outlined the role of essential skills in existing and upcoming programs.

CSC Background:

- Construction represents 12% of Canada's economy
- 1 in 17 jobs is construction related
- There are almost one million workers in many diverse trades and professions
- 128,000 contractors are involved in construction in Canada

The Construction Sector Council (CSC) is a national organization committed to the development of a highly skilled workforce – one that will support the current and future needs of the construction industry in Canada. Created in April 2001, and financed by both government and industry, the CSC is a partnership between labour and business. Today, the CSC represents a broad base of expertise; the Board of Directors speaks for a variety of interests within the construction industry, both union and non-union. Board members are nominated by the construction sector they represent — currently more than 40 national and provincial construction organizations.

With the help of partners in labour, business, education and government the Construction Sector Council (CSC) has identified critical human resources challenges in the construction industry, including the need to:

- accurately forecast labour demand and supply
- increase the mobility of workers from province to province
- make the most of new technologies
- cope with an aging workforce.

The CSC is now working with its partners to find common solutions and approaches and has identified four key priorities:

- Labour Market Information
- Technology at Work
- Career Awareness Programs
- Standards and Skills Development

Standards and skills development are at the core of CSC's mandate to identify and address the current and future human resources needs of the Canadian construction industry. The CSC's work in these areas will help create new opportunities for long-term sustainable employment and continuing job creation.

For more information visit www.csc-ca.org

Slide 01

Construction Sector Council

Essential Skills for the Construction Industry

 May 3, 2005
 Yellowknife, NT

Slide 04

Strategic Priorities

- The CSC is currently focusing its efforts on five strategic priorities:
 - providing better information and research on the demand for skilled labour and other issues
 - improving the recruitment and retention of youth in the industry
 - promoting apprenticeship training and delivery
 - advancing career and workforce training
 - expanding partnerships

Slide 02

Construction Sector Council

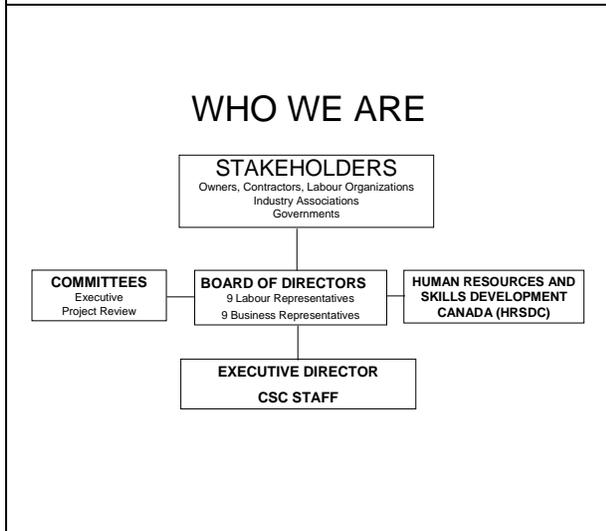
- Established in April 2001
- Mandate
 - **The mandate of the CSC is to identify and undertake human resource projects and initiatives geared toward meeting the current and future human resource needs of the industry**

Slide 05

Program Areas

- LMI Program
 - e.g. Labour supply & demand forecasts
- Career Awareness
 - e.g. Ironworker Aboriginal Career Awareness Project
 - e.g. Construction Careers Portal
- Learning Technology
 - e.g. Pipeline Safety Training Program (e-learning)
- Standards and Skills Development
 - e.g. Essential Skills
 - e.g. Supervisory Training

Slide 03



Slide 06

Importance of Essential Skills

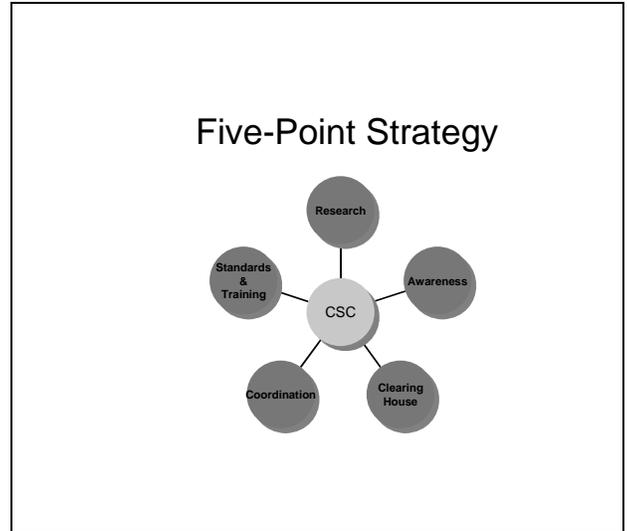
In the Construction industry Essential Skills are critical because of:

- Increasing reliance on new technology.....
- Importance of safety.....
- Greater emphasis on reporting....
- Need for ongoing upgrading of skills.....
- Increasing use of computers.....
- Need for communication on the job.....
- Heavy reliance on mathematical skills.....
- Need to read blueprints and other documents...
- Need to maximize the full potential labour pool including new immigrants.....

Slide 07

Safety

Slide 10



Slide 08

- ### What We Did
- The CSC hosted a construction industry workshop on Essential Skills
 - Opportunity to:
 - Identify industry priorities;
 - Raise awareness of the issue of essential skills and best practices in the Construction industry; and
 - Develop an essential skills strategy for the Construction industry.

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- ### Research
- Undertake new research initiatives necessary to support the needs of the Construction industry and the CSC's work in Essential Skills
 - Essential skill elements incorporated into other research

Slide 09

What Did We Learn?

Issues	➡	Actions
<ul style="list-style-type: none"> – Lack of awareness – Fear factor – Funding support needed – Responsibility and accountability 	<ul style="list-style-type: none"> ➡ ➡ ➡ ➡ 	<ul style="list-style-type: none"> – Get the message out – Address psychological and other barriers to learning – Pool resources – Make funding more readily accessible – Recognize existing “best-practices” for assessing essential skills and put them to use

Slide 12

- ### Awareness
- Engage the industry on the topic of Essential Skills.
 - Initiate and be open to partnership opportunities that will:
 - Raise awareness among employers and the workforce on the importance of essential skills;
 - Raise the industry's awareness of resources and tools available and how to access and use these materials;
 - Educate the general public about the importance of essential skills in construction work; and
 - Incorporate essential skills into career awareness information.

Slide 13

Clearinghouse

- Provide a clearinghouse for Essential Skills information relevant to the Construction industry:
 - Make available the results of CSC in-house research;
 - Share best practices resulting from CSC projects and other key stakeholder group projects;
 - Make information, tools and resources easily accessible for use by the industry; and
 - Partner with groups who wish to share the results of their work with the industry.

Slide 16

Where Are We Now?

- Translated the strategy into a funding proposal
- The elements of the CSC's strategy to be addressed first are:
 - Inventory of essential skills resources and tools relevant to the construction industry
 - National Essential Skills Coordinating Committee
 - Standards guide book for construction industry essential skills assessment tools
 - Essential skills brochure
- Will begin the implementation in May 2005

Slide 14

Coordination

- Ideally positioned to play a coordinating role regarding Essential Skills for the Construction industry.
- Facilitate the pooling of resources, thereby enabling the industry to achieve economies of scale and a more efficient use of resources.
- Link organizations wishing to do work in Essential Skills to the Construction industry
- Partner on projects that build on, adapt existing material, or explain why new development is necessary.

Slide 17

How does the CSC incorporate Essential Skills into activities?



Slide 15

Standards & Training

- Incorporate Essential Skills into existing and new standards and training development projects where appropriate.

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Ironworker Aboriginal Campaign

- Our objectives for this project are to:
 - Develop a national ironworker awareness campaign aimed at Aboriginal youth
 - Promote the ironworker trade to Aboriginal youth and encourage them to get into ironwork as soon as possible
 - Expand the number of skilled Aboriginal persons in ironwork to meet identified labour market needs
 - Share generic aspects of the campaign across Canada with other trades facing shortages

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Supporting Aboriginal Youth

- Many supports are required to ensure a successful connection between Aboriginal young people and a career in Ironworking:
 - Raise awareness
 - ↓
 - Provide counselling
 - ↓
 - Mentoring/coaching
 - ↓
 - Essential Skills training
 - ↓
 - Cultural orientation

Slide
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Closing

- Essential skills are critically important to the construction industry
- We need to integrate Essential Skills into our projects and activities
- Watch for future developments as we begin to implement our Essential Skills Strategy.

For additional information about Essential Skills Initiatives contact:

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Email: sparks@csc-ca.org



Rosemary Sparks

Day 1 SESSION 5:

AN INTEGRATED MODEL FOR EMPLOYMENT PREPARATION

Presenter: *Colin MacGregor (Inuvialuit Regional Corporation)*

Overview:

In 2002, the Inuvialuit Regional Corporation (IRC) commissioned a study by Price Waterhouse Coopers to provide a quantitative assessment of the Inuvialuit Settlement Region's capacity to sustain benefits derived from the Mackenzie Valley Gas Pipeline Project – in particular, to develop a 10 year Human Resource Strategic Plan. An observation made by the authors was that many people in the Inuvialuit Settlement Region are not prepared for work on a major development project yet employers expect candidates to have the skills, attitudes and behaviours necessary for successful employment.

Another study done for the IRC, by Price Waterhouse Coopers concluded that many northerners have insufficient education to obtain or succeed in the higher skilled jobs provided by the project. In addition, the Introduction Section of the NWT application for the Oil and Gas Industry under the ASEP program points out that without intense and directed employment skills development programs, Aboriginals will not be able to take advantage of employment opportunities.

These observations have been reinforced by industry. Simply put, employers want employees who are ready, willing and able to work. While tremendous strides have been made to train and develop workers, there are still many Inuvialuit Beneficiaries unable to enter the work force due to lack of education or work skills.

The Workplace Readiness Program (WRP) is designed to transition Inuvialuit Beneficiaries into the workplace by providing basic essential skills and job exposure through work placements. This is not a new concept but a new approach. It is not meant as a single remedy to the larger issue of a skilled workforce but it is one solution. The program is flexible and can be delivered in the classroom, in the workplace, and in small communities, and will be individually focused. The WRP is also hoping to offer different modes of delivery. To be successful, the Program will have to engage people in remote communities with limited access to jobs.

This program brings together a number of components through 7 phases, a practical approach that will hopefully make a direct link to the goal of employment. The program anchor is the work that HRSDC has done in developing job profiles outlining the essential skills required for various occupations. The TOWES assessment and supporting curriculum will be used to benchmark and upgrade participants' workplace essential skills. With all of the economic activity currently in the Delta and the positive forecast for the future, the IRC needs to aid beneficiaries to obtain long term career focused employment that will help break the normal "boom and bust cycle" of short term unskilled jobs.

Slide 01

Colin MacGregor
WWestnet May 2005

WORK READINESS PROGRAM
INUVIALUIT REGIONAL CORPORATION

Slide 04

INUVIALUIT REGIONAL CORPORATION

Challenges

Employers

- Finding qualified employees
- Demand due to Mackenzie Valley Pipeline, increase oil & gas exploration
- Baby-boomers retiring shrinking labour force

Learner / Training

- Gain education, skills, experience needed to effectively participate in and benefit from both short and long-term developments in the Beaufort Delta Region
- A significant number of IRC beneficiaries lack the prerequisites and employability skills necessary to meet present and future labour market demands
- The number of IRC beneficiaries with grade 12 diplomas and post secondary education is growing, but not fast enough

Slide 02

INUVIALUIT REGIONAL CORPORATION

"Many northerners have insufficient education to obtain or succeed in the more skilled industrial jobs that the project provides. Increasing the overall levels of education will allow more individuals access to more skilled, better paying positions."

Price Waterhouse Coopers Report for the Inuvialuit Regional Corporation Feb 17, 2000 titled "MacKenzie Delta Energy Development Business and Employment Opportunities".

Slide 05

INUVIALUIT REGIONAL CORPORATION

"Many people in the ISR are not yet suitably prepared to enter the world of major resource development projects of this magnitude at this time. Most employers will expect candidates to have the skills, attitudes and behaviours, outlined in the Employability Skills Profile: What Employers are Looking For, published by the Conference Board of Canada, which refers to:

- **Basic Academic Skills:** Communicate, Think Learn
- **Personal Management Skills:** Positive Attitudes and Behaviours, Responsibility, Adaptability
- **Teamwork Skills:** Working With Others

Additionally, programs for drug alcohol awareness and how substance abuse impacts responsibility may also be appropriate."

From a study by Price Waterhouse Coopers in September 2000 called Oil and Gas Human Resources Strategic Plan Final Report, commissioned by the Inuvialuit Regional Corporation Human Resources Dept.

Note: ISR = Inuvialuit Settlement Region

Slide 03

INUVIALUIT REGIONAL CORPORATION

Workplace Readiness Program

Demographics

- Population of Beaufort Delta Region approx. 5,064
- Unemployment rate in the NWT is at 9.5%
- Unemployment rate in the BDR is 16.2% (582 unemployed individuals)
- Inuvialuit, Gwich'in, various ethnic origins

Program Objective

- To provide Aboriginals with literacy and job skills to acquire and sustain employment

Partners

- IRC currently working with Bow Valley College
- Looking to involve Industry, Aboriginal Groups, Educational Institutions, Governments and Support Organizations
- Plan to pilot training with Akita Drilling Ltd., Northern Transportation Company, and others

Slide 06

INUVIALUIT REGIONAL CORPORATION

Solution

Workplace Readiness Program addresses challenges

- 10-month program (approx.), 7 phases, variety of skill levels, variety of learning and work readiness requirements, flexible format, individual focus, work experience component

Participants

- Identified by the IRC
- Sign a contract of commitment to program

Integration

- Essential and employability skills integrated throughout program
- Contextualized numeracy and literacy activities in all program activities

Slide 07

INUVALUIT REGIONAL CORPORATION

Phase 1 - Orientation

2-day orientation to program

- Program candidates will learn about program:
 - Purpose
 - Components
 - Content
 - Delivery modes
 - Intended outcomes
- Expectations and responsibilities clearly communicated
- Contract signed by participant before progressing to Phase 2

Slide 10

INUVALUIT REGIONAL CORPORATION

Phase 4 – Essential Skills Upgrading

Essential Skills

- Offered to ensure success in the workplace
- Training is modeled on TOWES problem set approach using real-world workplace documents and tasks
- Directly covers workplace-based reading, document use and numeracy
- Addressing individual needs according to a participant's chosen occupation
- Aligns with HRSDC essential skills profiles
- Integrated within all program activities

Learning to Learn

- Compulsory sessions covering:
 - Time management, task organization and planning, study strategies, note taking, research skills, team work
 - One-on-one tutoring, mentoring provided

Slide 08

INUVALUIT REGIONAL CORPORATION

Phase 2 - Assessment

Work Readiness

- TOWES (Test of Workplace Essential Skills)

Other Assessments

- Literacy, aptitudes, interests
- Learning abilities, disabilities, personal management
- Physical evaluations, ie. dexterity, colour blindness, strength, substance abuse
- Assessors culturally sensitive individuals
- Those with physical, social, mental health issues offered interventions outside program

Career Goal Setting

- Participants assigned a Career Mentor
- Access provided to resources such as HRSDC Essential Skills web site, sector council information, apprenticeship, regional opportunities and local market demands
- Career Mentor guides participants on career goals and objectives

Slide 11

INUVALUIT REGIONAL CORPORATION

Phase 5 – Streaming

Preparing for work

- Employability skills and workplace environment training such as:
 - Workplace habits
 - Nature of work
 - Punctuality and absenteeism
 - Self-management
- Career preparation training such as:
 - Pre-trades
 - Health and safety
 - Computer training

Job shadowing

- Job shadowing and short-term work experience opportunities also possible in this phase to practice employability and workplace environment skills

Slide 09

INUVALUIT REGIONAL CORPORATION

Phase 3 – Individual Career Action Plan

- Based on assessments and career path selected in Phase 2
- Career Mentor assists with developing CAP, including identifying learning objectives using a competency skill development system
- Career development strategies such as Guiding Circles (AHRDC) will be utilized
- Phase 3 outcome - each participant will have a comprehensive plan outlining:
 - Learning/training needs
 - Specific plans for learning environment orientation, essential skills upgrading, post-secondary training, vocational/ apprenticeship training, personal and professional development,
 - Milestones and timelines

Slide 12

INUVALUIT REGIONAL CORPORATION

Phase 6 – Work Practicum

Workplace Mentor

- Participants each assigned a workplace mentor (preferably Aboriginal) in their goal occupation

Employer/Mentor Training

- Training provided to workplace employees involved in program covering:
 - program overview, roles and responsibilities, Aboriginal cultural awareness, mentorship training

Work Practicum Coordinator

- A coordinator will liaise with employers to ensure all parties meet their obligations

Linkage Model

- Entrepreneurship training will be offered to participants interested in self-employment
- Linkage model integrates business skills, essential skills, design skills, and problem solving skills

Slide 13

INUVIALUIT REGIONAL CORPORATION

Phase 7- Program Completion

Upon successful completion program participants will:

- Access employment with an organization, or self employment, or
- Pursue trades training, or
- Pursue apprenticeship or other on-the-job training, or
- Pursue other post-secondary education,

And

- Participate in the evaluation of the program

Slide 15

INUVIALUIT REGIONAL CORPORATION

Next Steps

- Needs Assessment
 - currently underway
- Securing partners in the project
 - currently underway
- Program Development
- Program Delivery
- Program Evaluation

Slide 14

INUVIALUIT REGIONAL CORPORATION

Other Options

Additional elements that could be incorporated into the program include:

- Essential skills awareness programs for employers and safety training providers
- Ongoing coaching clinics on sustaining employment for employees
- Workshops for employers on worksite improvements for accommodating new employees

Slide 16

Questions

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Hard at work

Day 1 SESSION 6: NORTHERN PIPELINE PROJECTS

Presenter: Doug Anguish (Northern Pipeline Projects)

Overview

Doug Anguish, Project Manager Northern Pipeline Projects and President of External Solutions described some of the training programs delivered by the various pipeline trades. He focussed on programs of particular relevance to northern workers who would like to enter trades training and emphasized the range of trades involved in pipeline construction.

Northern Pipeline Projects was created to:

- Provide people with information about pipelines, from the perspective of those who actually build pipelines.
- Network and build enduring relationships with people, organizations, first nations, communities, and all those who consider themselves to be stakeholders in the construction of pipelines.
- Promote the value and quality received when utilizing organized contractors, and their cooperative construction approach with the four craft unions that build pipelines.
- Pay particular proactive attention to Canada's north where pipeline construction will have a significant impact on local economies.
- Assist in the coordination and delivery of training that is specific to pipeline construction.

Training Specific to Pipeline Construction:

Organized training that is specific to pipeline construction is within the mandate of the four Craft Unions that have supplied the skilled worker pool for construction of virtually all of Canada's mainline transmission system. Training is regularly scheduled at a number of permanent training locations across Canada. Training ranges from very basic pre-employment to highly technical state of the art. There are four general categories into which training can be grouped:

- welding
- equipment operators
- professional drivers
- skilled labour.

Instructors, curriculum and facilities are provided by the unions, and the Pipeline Contractors Association of Canada is often an active participant in providing equipment and consultative advice. Distance education technology and mobility of training programs are available in almost all instances.

Slide
01

Essential Skills & The Northern Oil and Gas Workforce
May 3, 2005

Northern Pipeline Projects Ltd.
Canada's Mainline Pipeline Construction Industry

Slide
04

Why We Are Qualified

- Safety
- Experience
- Capacity
- Training
- Commitment

Slide
02

Who We Are...

Northern Pipeline Projects Ltd.
www.northernpipelineprojects.com

- Pipe Line Contractors Association www.pipeline.ca
- United Association www.ua.org
- Operating Engineers www.iuoe.org
- Labourers www.liuna.org
- Teamsters www.teamsters-canada.org

Slide
05

Training

- Pre-apprenticeship
- Cultural Understanding
- Safety
- Pipeline Specific
- Apprenticeship
- On the Job

Slide
03

What we do...

- Focus on Proposed Northern Pipelines
- Communications
- Relationship Building
- Educate/Train
- Cooperate
- United and Single Voice

Slide
06

Pre-Employment Skills

- Reading
- Writing
- Math
- Work Ethic
- Oral Communication
- Problem Solving
- Logistical Thinking
- Willingness to Continued Learning
- Work Site Harmony



7

Cultural Understanding

- Southern Bias Toward Northerners
- Northern Bias Toward Southerners
- Aboriginal Culture
- Pipeline Culture
- Tolerance
- Understanding
- Accommodation
- Owner Expectations

10

Who does What...

- United Association
- International Union of Operating Engineers
- Laborers' International Union of North America
- Teamsters Canada

- Pre-construction Preparation
- Understanding the Timeline

8

Safety

- Industry Standardization

- Utilization of Distance Learning

- Modular

11

Pre-construction Preparation

- Identification of Specific Jobs
- Determination of Required Skills
- Selection of Northern Candidates
 - Interest
 - Aptitude
 - Skills Assessment
- Individualized Training Plan
- Identify Delivery Agencies
- Training Locations
- Coordination Responsibility

9

Pipeline Specific

- Permanent Locations Across Canada
- Distance Learning
- Mobility in Most Instances
- True Pipeliner...Combines State of The Art Training and Experience on the Job
- Indenture...Apprenticeship...Journey Person
- Four Craft Unions With Individual Specialties

12

Best Practices

- Hire Experienced and Qualified People

- Utilize Workers in Jobs You Know They Can Handle

- Identify People With and Without Appropriate Skills in Advance of Construction

- ALL Workers Should Attend Cross-Cultural Training

13

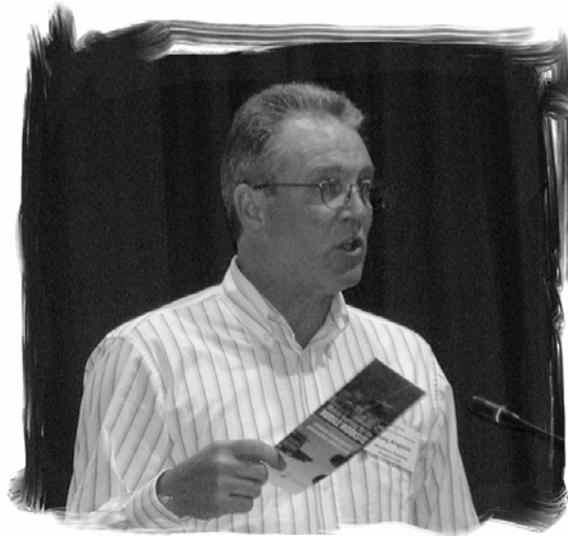
Best Practices

- Training Should be Tailored to Meet the Needs of the Individual.
- Mentoring and Work Site Support Increase Success
- Hire the People you Train.
- Resolve Issues as Soon as They Arise
- Establish Processes Before Construction Starts

14

Follow-up & Inquiries

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Doug Anguish

Day 2 SESSION 1: AKITA DRILLING

Presenter: John Pahl (Akita Drilling)

Overview

John Pahl, Northern Contract Manager for Akita Drilling described how the drilling industry operates in the north and described the components of training for work in the drilling industry that are considered to be critical. He discussed some training and employment challenges and described how Akita has met those challenges.

Akita Background:

Akita has 850 employees of which 15% are Aboriginals. Akita estimates that it costs \$10,000 to train a rig worker: therefore, there is incentive to retain skilled workers. In order to work on drilling rigs, employees must be able to adjust to a two week on and 21 days off schedule. In addition, rig workers are required to be physically fit, alcohol and drug free, and able to work in an almost exclusively male environment that is loud and demanding. Drilling is also seasonal employment (four months per year) which can be unappealing for those seeking full time, year-round employment.

Because of these conditions and demands, there is a very high turnover in the industry and in addition, the eight month down time in drilling activity in the north results in skill erosion and a lack of opportunity for advancement. Akita is countering these challenges by:

- offering a lump sum pay-out at the end of the four month season, a sum which is increased every year to encourage employees to return.
- offering cross-cultural training to make Aboriginal workers to feel more comfortable on the rigs.
- assigning an experienced worker to mentor and assist a new worker – this close association builds confidence in the new employee, especially during the critical first week on the job
- moving northern workers down south during the “off season” to provide paid employment on operating rigs.
- doing everything it can to be the employer of choice
- becoming part of the communities in which they work and giving something back
- focussing on the young people in the region; spreading the message to finish school and to stay clean
- providing a simulated rig experience at trade fairs to young people interested in drilling jobs

Slide
01

Key Components of Training in the Drilling Industry May 2005

John Pahl
Akita Drilling

Slide
04

Partnerships

- Equity based
- Board of Directors
- Risk
- Meaningful participation

Slide
02

Akita Drilling Ltd.

- 37 rigs (+ 1)
- 3 service rigs
- 825 employees
- Western & Northern Canada and Alaska
- Offices in Calgary, Nisku, Inuvik, Fort Liard, Norman Wells & Penhold
- TSX / AKT

Slide
05

Northern Partnerships

- Akita Equitak Drilling Ltd.
– **Inuvialuit Development Corporation**
- Akita Sahcho Drilling Ltd.
– **ADK Holdings Limited (Fort Liard)**
- Akita Sahtu Drilling Ltd.
– **Sahtu Oil Incorporated**
- Akita Kaska Drilling Ltd.
– **Kaska Tribal Council (Yukon)**
- Akita Trailbreaker Drilling Ltd.
– **Gwich'in Beneficiary**

Slide
03

Akita and Aboriginal Business

- Attached in some way to 71 First Nations, Metis, Inuvialuit or Aboriginal Groups
- 23 year history
- \$50 Million invested with Akita

Slide
06

Aboriginal Partnerships

- Akita Coastal Drilling Ltd.
– Naut'sa Mawt Tribal Council
– Yiasulth Management Corp.
- Akita Wood Buffalo Ltd.
– Chipewyan Prairie FN
– Fort McMurray First Nation
– Wood Buffalo Metis Alliance



Slide 07

Drilling Rig Crew

- Leasehand
- Roughneck (Dummy and Stud)
- Motorman
- Derrickhand
- Driller
- Toolpush (Rig Manager)

Slide 10

Training

- Akita Drilling Ltd.
- Federal Gov't (DIAND)
- Yukon Territorial Gov't
- NWT Government
- Aurora College
- Industry Partners

Slide 08

Northern Workforce Challenges

- Limited labour pool
- Physically able
- Cultural differences
- Drugs and alcohol
- Seasonal nature of work

Slide 11

On the job training...

...the most important component of oilfield career development

Slide 09

Solutions

- Northern Retention Bonus
- Cultural training
- Roustabout crew
- Drug testing and zero tolerance policy
- Community presence and involvement
- Training programs
- Southern summer employment and continued development

Slide 12

Thank you

For further information contact

John Pahl

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Day 2 SESSION 2: IS IT ALWAYS AN ESSENTIAL SKILLS ISSUE

Presenters: *Susan Devins (BHP Billiton)*
Bob Marshall (Aboriginal Pipeline Group)
Kerry Robinson (Aurora College)

Overview

In this session delegates heard of some of the issues, aside from essential skills proficiency, that must be taken into consideration in developing effective workforce preparation and training programs. Susan Devins, Adult Educator at BHP Billiton, spoke from the perspective of a workplace based adult educator; Bob Marshall, Technical Director, Aboriginal Pipeline Group, as a professional engineer whose national and international experience has given him insight into a wide variety of training approaches and Kerry Robinson, Manager of Program Development at Aurora College, provided a college viewpoint.

Susan Devins

The BHP-Billiton Ekati diamond mine is 300 km northeast of Yellowknife. It employs 900 workers of which 15% are females. Employees work two weeks on and two weeks off each month

Ekati has now eliminated a minimum literacy requirement for employment; instead it accepts workers at all levels of proficiency, including pre-literate workers. The latter are offered paid release time to pursue essential skills enhancement. The Ekati learning centre operates on an open door policy that respects learner confidentiality. However, the bi-weekly rotations and twelve hour shifts can pose access issues for many learners. In addition, many workers with low reading and numeracy skills have no experience with formal learning cultures, which can also be a deterrent. Ekati attempts to overcome these challenges by incorporating essential skills into safety training, technical training and production planning. The learning centre also responds to identified needs by listening to workers and ensuring lessons target actual work assignments. For example, a worker may develop better symbol recognition skills while learning how to read the Vital Information Management Systems onboard trucks. They may learn how to organize tasks by planning their own work days and schedules. They may improve their numeracy proficiency by analysing pay stubs and salary grids. In fact, the employees and their supervisors drive the content of the Essential Skills program, to the extent that learning center sessions have become a documented part of all daily shift assignments. Other essential skills initiatives have included the creation of pocket-sized glossaries to assist with log book and form completion.

The Ekati learning centre operates according to the PRICE principle – Patience (paced learning and continuous enrolment), Respect (awareness of learner backgrounds and readiness to learn), Interest (actively engaging in the coaching process), Confidence (instilling self-assurance and pride), and Encouragement (counselling and mentoring for success). In the words of Susan Devins, “for my learners, goals are dreams with a timeline.”

Susan provided several examples of the kinds of learners she assists. One of her students, Leo, works in the waste management area, putting waste labels on drums and access information in a database. He has very low literacy skills and memory problems. As part of the Essential skills training Leo receives, Leo regularly works with digital photos of information he must process. Another learner carries a glossary of terms with him and phones Susan anytime he requires assistance with essential skills applications.

Susan believes that literacy enhancement is extremely important but that programs only works if businesses remember that essential skills are about people.

Bob Marshall

The Aboriginal Pipeline Group (APG) was created in 2000 following meetings in Fort Liard and Fort Simpson. Thirty Aboriginal leaders from all regions of the Northwest Territories signed the resolution that created the APG and set its goals. The APG represents the interests of Aboriginal people in the Northwest Territories in maximizing the ownership and benefits in a Mackenzie Valley natural gas pipeline. The main reason for creating the APG was to offer a new model for Aboriginal participation in the developing economy, to maximize ownership and benefits from a proposed Mackenzie Valley pipeline and to support greater independence and self-reliance among Aboriginal people.

When the idea for the APG first emerged in 2000, there was no money available due to the fact that the pipeline itself was still in the project analysis phase. Eventually, Transcanada Pipelines agreed to fund the APG's share of all pipeline costs, an amount that has risen to 140 million dollars from an original commitment of 80 million. After all debts have been paid, (in approximately twenty years), the APG will earn 15-20 million dollars per year from pipeline activities.

The APG is very focused on emergent business and employment opportunities for Aboriginal populations and the skills development necessary to access employment. As a result, the APG is a member of the Pipeline Operators Training Committee, a group dedicated to improving the technical and trades skills of Aboriginals and northerners. The APG also participate in Aboriginal Futures, which funds oil and gas industry training in four regions across the north. Through its active involvement in these initiatives, the APG has come to realize the importance of essential skills as a foundation to successful training.

Kerry Robinson

Kerry works with Aurora College conducting training needs assessment, developing programs and writing proposals for new training projects. During his presentation, Kerry outlined some problems faced by Northwest Territory learners:

- **Relocation:** With the exception of Yellowknife, the NWT comprises small, remote communities, which means that learners usually have to move in order to pursue post-secondary certification. This means adapting to new school environments and leaving family and cultural supports behind. Often class sizes are very large compared to those in the north, and there is a need to source affordable housing and local transportation options. The pressures of all these changes, often combined with the need to find part time work, can be overwhelming.

- **Education versus a hot northern economy:** with so many entry-level jobs available, there is a temptation for young people not to pursue further education and training. In fact, many do not see the point of completing grade 12, when incomes can be earned without a diploma. Although solid experience in the workforce can be important, skills development is still critical. This is because many industry-based jobs are cyclical and job evaporate, leaving debt and lifestyle expectations in their wake.
- **Programs:** Sometimes training programs are introduced that do not meet identified workplace needs. This leaves learners ill-prepared for the realities of today's northern workplaces. In order to avoid training "mismatches," stakeholders must be involved at the program planning phase, and technical experts must play key roles as curriculum development advisors.
- **Application processes** need to be made more realistic: Often employers require grade 12 even though the actual academic demands of the job are at a grade 10 level or lower. Also, there is a need for better career research and investigation on the part of learners. This would prevent learners from applying for jobs that are inappropriate or unrealistic. Currently, there is a tendency for students to rely on the College to supply all occupation-related information. Learners should be encouraged to undertake some of the research and to view the college application process as a job application exercise. Once a student is accepted, there should be strict expectations in terms of attendance, task completion, punctuality, and accountability.
- **Transferability and occupational standards:** Learners must be taught how to break career aspirations into steps and to view training programs as the first step in the employment process. Colleges need to ensure that courses address occupational standards, skills and competencies identified by industry. These must be presented in such a way that learners can accumulate credits and transfer credits from one institution to another. Without this formal recognition of learning, skills transference and career laddering becomes difficult.
- **Work placements and work experience:** Having learners participate in the workplace allows them to link theory to practice. It also prepares students for the demands of the workplace by providing "reality therapy." During a work practicum, students become part of the production activity, allowing them to understand that what they have learned is, in fact, relevant. Work experience can occur within small communities; it does not have to take place exclusively at large industrial sites.

Day 2 SESSION 3:

NORTHERN WORKPLACE / WORKFORCE LITERACY CONSORTIUM

Presenters: *Helen Balanoff (NWT Literacy Council)*
Havi Echenberg (Researcher)

Overview

The NWT Literacy Council was established in 1989. In 1999 when Nunavut was created, the Council split into two groups and the Nunavut Literacy Council was created. Both organizations have NGO status and both operate on a project-based framework. The two Councils currently have a joint initiative that aims to promote and support quality workforce/workplace literacy programs in the NWT. The project stakeholders are employers, trainers/educators, funders, policy makers and the two Literacy Councils.

In the context of the North, there are legal commitments to meet with regard to employing and promoting First Nations people and Inuit. In a context of a high demand for skilled labour, that sometimes means helping people to develop the underlying literacy and essential skills they need to even start on the job. Development of this project was prompted by requests from employers and colleges asking for resources, models, and examples of promising practices.

The project distinguishes between two kinds of literacy programs: those usually based in a workplace, designed to meet the needs of existing employees for a particular company or industry and those that precede labour market participation, usually preparing people more generally for the workforce. It is believed that both have an important role to play.

The literacy councils from the two territories joined forces on this project because they were dealing with similar industries (resource extraction, particularly oil and gas and diamonds), because there are commitments in both territories to meeting employment targets (impact agreements in NWT, Clause 23 in the context of Nunavut) and because many of the institutions involved in workplace and workforce literacy cross the territorial border as do some employers.

Activities to date:

- developed a discussion paper that is a “snapshot” of the state of workplace and workforce literacy in the two territories and provides some indication of the state of literacy training.
- first stakeholder meeting took place April 05 in Yellowknife
- next meeting, spring 06 to formalize collaboration and develop shared goals and co-ordinated strategies with regard to expanding the pool of literate and skilled workers.
- developing a compendium of resources to be available to employers and existing and potential employees in print or web-based form

The question now to be asked is, “Who is responsible for preparing a skilled northern workforce?”

Slide 01

Workplace and Workforce Literacy in the NWT and Nunavut:

Project Overview

For Wwestnet Essential Skills and the Northern Oil and Gas Workforce Workshop

May 2005



Slide 04

Project History

- Similarity of issues ? collaboration between the NWT and Nunavut Literacy Councils
- Proposal to National Literacy Secretariat in 2004 for three-year project
- Project approval in September 2004



Slide 02

Context

- New attention nationally and more locally on workforce and workplace literacy
- Increasing demand for information about workplace and workforce literacy from literacy councils
- Lack of information, awareness among stakeholders about current situation



Slide 05

Year 1 Goals

- Environmental scan of the state of workplace literacy in Nunavut and the NWT
- Explore models for collaboration among stakeholders
- Development of “snapshot” discussion document



Slide 03

Working Definitions

- Workplace literacy: workplace-based programs and initiatives that improve an individual’s basic literacy skills or “essential skills”
- Workforce literacy: programs and services that enable people to “up-skill” in order to find employment, move into a new job in a specific labour market or enter training such as the trades



Slide 06

Year 2 Goals

- Stakeholder meeting
- Development of promotion campaign
- Focus groups in two communities in each of the territories
 - With employers to identify their needs and resources
 - With employers and learners to identify needs and resources of potential and existing employees



Slide 07

Year 3 Goals

- Convene stakeholders to plan future collaboration
- Develop inventory of existing resources, models and promising practices
- Develop and implement promotion campaign
- Develop “how-to” materials for communities
- Develop workplace/workforce literacy promotion kit



Slide 10

Project Outcomes

- Workplace/workforce literacy resource manual
- Collaboration mechanisms
- Greater clarity about roles and responsibilities
- Co-ordination to ensure gaps are being filled to meet needs of learners and employers



Slide 08

Progress to Date

- First draft of discussion document complete
- First meeting of stakeholders in Yellowknife in April 2005
- Priorities for collaboration:
 - Identification of and consolidation of existing resources among Northern stakeholders
 - Sharing information and experience among stakeholders



Slide 11

Project Outcomes

- Workplace/workforce literacy resource manual
- Collaboration mechanisms
- Greater clarity about roles and responsibilities
- Co-ordination to ensure gaps are being filled to meet needs of learners and employers



Slide 09

Next Steps

- Revision of discussion paper based on updated information from stakeholders
- Development of on-line access point for workforce and workplace literacy resources relevant to northern employers
- Exchange among stakeholders of approaches to new literacy data
- Focus groups in four communities of employers and employees



Slide 12

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Day 2 SESSION 4: JOB DESIGN

Presenters: *Rob Despins (Standard Aero)*

Overview

When training programs have been completed and the graduates are ready to go to work, they have a collection of skills (essential and technical) that are readily available both to them and to the employer. Unfortunately, research shows that many people who enter the workforce with numerous available skills, no longer have some of those skills a few years later. This is often a direct result of being employed in jobs that do not fully utilize their potential, a poorly designed job.

Currently there is a great deal of concern in all of Canada, including the north, around the shortage of skilled labour. The Canadian labour force is predicted to experience shortages due to greater worker demand than worker availability and skill demands that cannot be met by the existing workforce. There are a number of approaches that can be utilized to combat skills shortages. Skills can be upgraded, emigration reduced and immigration increased and, of increasing interest to employers and workers, workplace and human resource management patterns can be revised. This is where ideas on job design can be incorporated.

Job design refers to the way work is organized. How a job is designed has a major effect on the retention of workers' skills once they enter the workplace, degree of job satisfaction, worker retention and productivity. Jobs may be organized by task or by skill sets. Organizing by task narrows the scope of the skills required and may not utilize an individual's full potential. Organizing jobs by skill set enriches the work experience by creating opportunities for individual achievement and recognition by broadening the scope of the skills required and increasing responsibility and accountability.

Strong essential skills are critical to worker success in enriched jobs. Designing jobs to include elements of team work, communication and thinking skills including critical thinking, problem solving and decision making is of paramount importance for the maintaining essential skills of workers.

Slide 01

Impact of Job Design on Skill Utilization and Retention

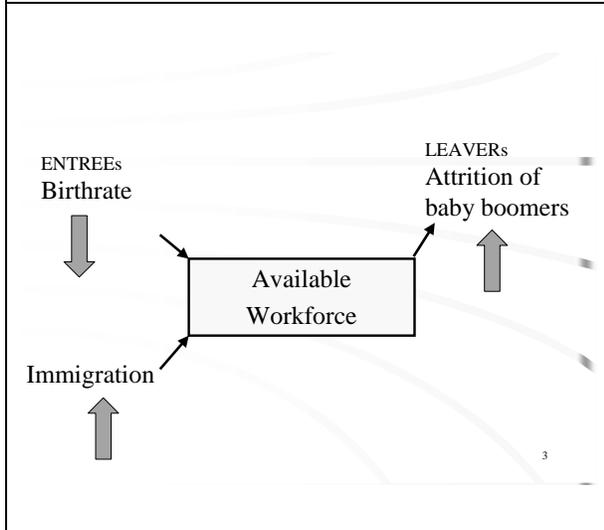
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Slide 02

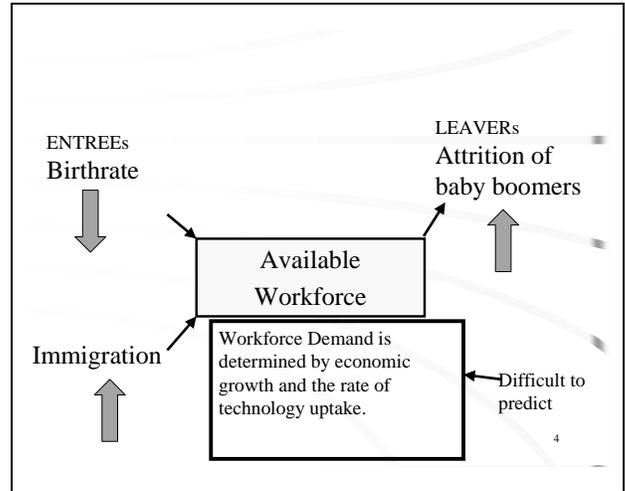
What does job design have to do with skill shortages? (including essential skills)

2

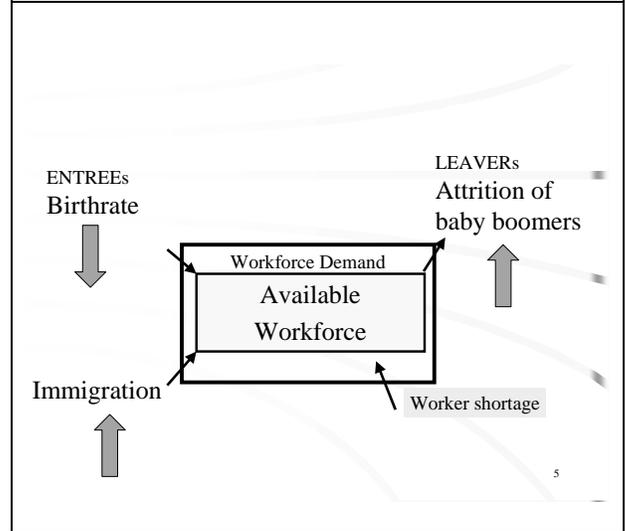
Slide 03



Slide 04



Slide 05



Slide 06

Skill shortage can be created by two situations or any combination of the two:

1. Greater worker demand that worker availability
2. Skill requirement which can not be met by the existing workforce.

Prediction for the Canadian labor market is to experience both types of shortages, however there is a greater concern over #2, since this results in under utilization of human capital..

6

Slide 07

Solutions to skill shortages

- Δ Skill Upgrading
- Δ Reduce Emigration
- Δ Increase Immigration
- Δ Restructuring of the Workplace & the HR Management approach

7

Slide 10

What does this have to do with Job Design?

10

Slide 08

Research suggests that we still under-utilize our workforce

- Research done by Harvey Krahn with respect to literacy skills determined that in the current labor force about 26% of employees were mismatched in skill requirement.
- But rather than being employed beyond their current skill level the researchers found that 21% of these mis-matched employees were under-employed for their skill level.
- In the 21% (under-utilized) there was a higher representation by women and young workers.

8

Slide 11

• Job Design has a huge influence on the effective use of Human Capital

11

Slide 09

More research suggesting skill degradation

- The new ALLs (Adult literacy and lifeskills survey) to be released this Oct confirms:
- the level of essential skills (literacy and numeracy) actually decreased in a group of students from the time they graduated from school until 6 years later in the workforce.
- Another example of under-utilization of skills in the workplace, you lose what you don't use.

9

Slide 12

• Job Design has a huge influence on the effective use of Human ~~Capital~~ Potential

What people are capable of achieving

12

Slide 13

What is Job Design?

- Job design is simply the way we organize work, or how we create what is called a job.
- Traditionally, jobs are designed by the task to be done. We try to match a task to a job, it is very much a one to one alignment.

13

Slide 16

Re-thinking the human potential

- Humans and many so-called “lower” animals do a great job of interacting with a complex environment,
- We perceive situations, we recognize patterns quickly, and we learn, in real time, via hundreds of thousands of processors (neurons) working in parallel.
- No one yet has thought of a way to get a computer to problem solve the way a brain does.

16

Slide 14

Traditional Job Design Approach

- Management Determined Process: Breaking work down into its simple elements
 - training of workers is simplified
 - workers are easily substituted
- Workers: will act like rational economic beings, set a course to maximize their self interest and act accordingly

Dumbing down the workforce

Dumbing down the workforce

14

Slide 17

Innate Intelligence

- Volumes of research supports the fact that primates have highly developed intelligence allowing them to communicate, and learn through a problem -solving approach.
- On top of the primate chain are the best communicators, the best learners and the best problem-solvers: homo-sapiens

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Slide 15

Traditional Job Design Approach

Management
Min pay for max output

vs.

employee (union)
Max pay for min effort

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Slide 18

Problem Solving Challenge

DECIPHER THE HIDDEN MESSAGE

W I G E
 H L E A
 E L T T
 N W T
 W E O

24

Slide 19

Conclusion

- The lack of skill, or knowledge in society is not an issue of ABILITY, it is an issue of
- MOTIVATION and OPPORTUNITY

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Slide 22

Job Design Ingredient #1

- Do not design jobs narrowly. Design them broadly in both the scope of job tasks (breadth), and the degree of problem-solving & decision making (job- enrichment).

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Slide 20

How should we design jobs?

- By considering the skills sets and not the tasks.
- Jobs differ mostly in the knowledge and context components, not the core essential skills.
- Approaching job design in this manner we learn that the job of a: “mechanic, machinist, carpenter and welder are more similar than different”, .

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Slide 23

Job Design Ingredient #2

- Human capability and cognitive fitness requires a motivator (stimulus) to maintain its currency. Without a motivation (desire, reason) to use the skills, the skills will be lost (atrophy)
- In the case of the lemurs, the motivator was survival.
- In the case of humans the motivator will be a range of items but common to all will be: acceptance & social inclusion, reward & recognition

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Slide 21

Common skills

<ul style="list-style-type: none"> • Machinist • Mechanic • Welder • Carpenter 		<p><u>Skills</u></p> <ul style="list-style-type: none"> manual dexterity spacial reasoning numeracy problem-solving document literacy understanding of basic laws of physics
--	--	--

Proficiency is a function of experience, and experience is a function of the amount of time spent problem solving in the tasks of these trades.

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Slide 24

Job Design Ingredient #3

- Team environment (design the work to be performed in groups, communities)
- Humans are social animals who have adapted by working in groups which allows them the best means to learn, and problem solve.

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Slide 25

Evolution of Job Design

- Job enrichment: aims to create great opportunities for individual achievement and recognition by expanding the task to increase not only variety but responsibility and accountability (huge impact on the set of skills used on a regular basis).
- However this needs to be considered in the context of the social work environment. Evolution of job design is now moving to an open system: primarily work groups as subsystem of the total organization.

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Slide 28

At Standard Aero, we define a Cell as...

A team of people grouped around "like processes"



Responsible for the
- Cost
- Quality
- Delivery
of the products or services



With dedicated equipment and tools



And dedicated support

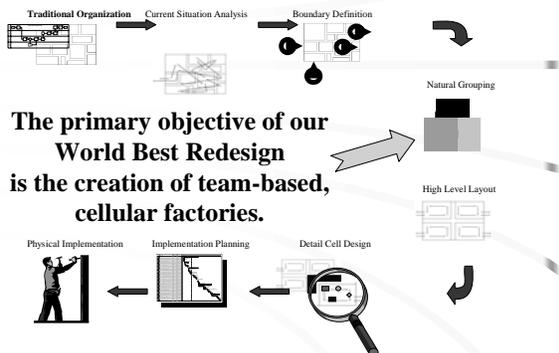


A "Cell" is a Natural Group

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Slide 26

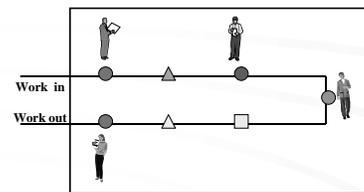
Standard Aero's Approach to the organization of work



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Slide 29

'Process Ownership' is the primary indicator of the potential success of any redesign....



For 90% Process Ownership, 90 of the steps on a 100 step routing should take place in the cell.

Return on Investment should be measured at the cell level, not at the individual equipment level.

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Slide 27

We believe that 'Natural Groupings' and Teams are the basic building blocks of Operations Excellence

Behaviors

- multi-skilling
- driven by overall process efficiency
- co-located processes
- focused on removing queue
- small batches
- quick changeovers
- minimal WIP and reduced inventory
- effective but simple controls
- low indirect labor



Effects

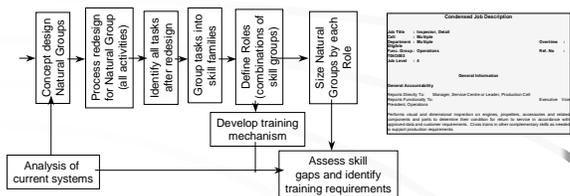
- fuller utilization of employee capability
- Short lead times
- Low cost
- Flexibility to meet customer needs

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Slide 30

Job Design

- A structured approach is used to define the roles within the new organization



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Slide 31

Job design concludes with the development of a skills matrix Skills Matrix

TOPIC SKILLS	STANDARD AERO Skills Matrix														
	MANAGER	TEAM LEADER	SENIOR	EXPERIENCED	PROFICIENT	INTERMEDIATE	ENTRY LEVEL	NEW HIRE	TRAINING	INDUSTRY	ACADEMIC	RESEARCH	TECHNICAL	SALES OR Mktg	OTHER
John															
Mitch															
Rob															
John															
Mike															
Jeff															
Scott															
Chris															
John															
Mike															
Blaine															
Staff															
ACTUAL	7	1	2	1	2	2	2	3	4	2	1	2	2	3	1
REQUIRED	7	1	2	1	2	2	2	3	4	2	1	2	2	3	1
TO BE TRAINED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Slide 33

With high Process Ownership....

- Teams willingly accept accountability for their output.
- Teams are empowered to make a wide range of decisions.
- You can use Visual Controls instead of complex IT systems to prioritize and manage a team's workload.
- Product quality - and pride of ownership - is a natural result.

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Slide 32

Control Systems

- The redesign team must consider all things that must be controlled with the cell's boundary - production, material and information.

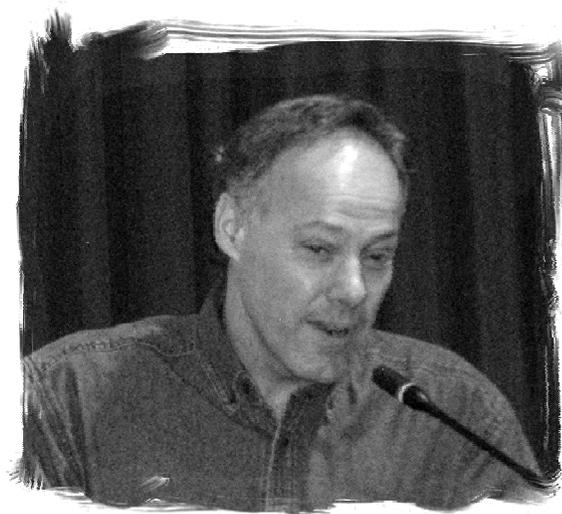


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Slide 34

- The most successful organizations on the globe today have team based work structure:
- Autonomous team behavior includes:
 - the self-regulation by the group of work content,
 - critical self-evaluation of group work performance
 - self-adjustment to cope with change

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Rob Despina

Day 2 SESSION 5: TEST OF WORKPLACE ESSENTIAL SKILLS (TOWES)

Presenters: Conrad Murphy (Bow Valley College)

Overview

TOWES is the “made in Canada” Test of Workplace Essential Skills (www.towes.com). It assesses individual ability in three of the nine essential skills identified by Human Resources and Skills Development Canada – *text reading*, *document use* and *numeracy*. These three key dimensions to literacy have been found to be closely linked to success in the workplace. They are basic skills that contribute to a foundation for satisfactory job performance, skills that are essential for learning new skills. The Test of Workplace Essential Skills is significantly different from other tests of literacy skills. TOWES uses authentic workplace documents – such as catalogues, order forms, labels, schematics, regulations and manuals – as the source materials for problem set construction. And, the responses required from test takers mimic actual workplace tasks.

A TOWES test consists of 17- 20 problem sets in a pen and paper format which can be completed in 1.5 to 2.5 hours, depending on the difficulty level of the test items and the ability of the test taker. Each TOWES problem set is presented in two parts: a question page where the test-taker reads the question and provides a response, and a workplace document (e.g. a manual or a form) from which the test-taker obtains the required information to respond to the question. The test-taker assumes the role of a worker who needs to use information embedded in documents to complete tasks.

All TOWES tests are marked by specially trained evaluators, and rigorous quality control processes are in place. Scores are referenced to the requirements of the occupation(s) relevant to the test taker. TOWES reports scores using the same internationally accepted scales as the *Essential Skills Research Project* and the *Essential Skills and Workplace Literacy Initiative* (Human Resources and Skills Development Canada) and the *International Adult Literacy Survey* (Organisation for Economic Co-operation and Development). However, it should be noted that actual scores are less important than providing individual workers and educators with a meaningful interpretation of assessment results. There are sufficient items on a TOWES test to discriminate across the full range of skill levels demanded by jobs in Canadian workplaces.

TOWES is a more accurate assessment of workplace literacy skills than conventional assessment tools. This is because:

- standardized achievement tests tend to be created for children in school, not adults.
- school-based tests look backward to the academic curriculum and miss workplace topics such as document use.
- adult tests of basic skills generally reflect a community rather than a workplace-based context.
- workplace tasks are not normed to grade level equivalents.

Reading Text - the ability to understand and use information contained in prose passages.

Document Use - the skills and knowledge needed to understand and use information from documents such as tables, catalogues, maps, and scale drawings.

Numeracy - the ability to understand and use numerical information embedded in print materials.

How can TOWES be used?

For the employer, TOWES provides an objective measure, which relates skill levels to international standards. With the growing importance of competency and certification issues, such credible measurement is a necessity. TOWES can also be used:

- to target the essential skills that should be included in training programs (including starting levels and end points)
- as a pre-test and post-test to determine how much learning has occurred
- to determine the kinds of training programs that have to be introduced when new technology or processes become part of a workplace
- to help workers move from one position (within a company) to another by targeting the skills required for advancement
- to help assess worker abilities when the worker does not have Canadian credentials
- to help assess worker ability to perform job requirements (a more inclusive and reasonable approach to recruitment than simply using a grade level as a qualifier)
- to help workers plan careers and to make realistic re-deployment decisions (a worker's TOWES results can be compared to essential skills profiles for a variety of occupations)
- to help develop job descriptions that more closely match the requirements of the occupation
- to help identify candidates for new positions
- to assist career counsellors to provide realistic employment options to clients

TOWES promotes the transference and training of workplace essential skills.

What are the TOWES G-Series Tests?

TOWES G-Series Tests accurately measure essential skill competencies in the areas of reading text, document use and problem solving with numbers. These competencies can be compared to the national benchmarks required of individual occupations as determined by HRSDC via the essential skills occupational profiling process.

The TOWES G Series Tests comprise problem sets from a range of occupational areas. Each problem set has several related questions, which test literacy/numeracy skills at different levels of complexity (to match the range of complexity demanded by actual workplace tasks.) The names of the problem sets often reveal their origins - 'Grain Drying,' 'Marine Radio,' 'Mine Emergency,' and 'Shipping Order' problems. Each problem set is a particular instance of tasks using essential workplace skills. (See the following example of a TOWES problem set.) In other words, each TOWES G Series Test is a selection of problem sets taken from the validated TOWES test bank.

To ensure that the worker has mastered literacy and numeracy skills to the required levels, TOWES includes tasks and documents from a variety of occupations. These tasks assess the worker's ability to apply skills in a number of workplace contexts, a strategy called **essential skills transference**.

Slide 01



TOWES – Assessing Workplace Essential Skills

WwestNet – Essential Skills and the Northern Oil and Gas Workforce Conference

Yellowknife, NWT
May 4, 2005




Slide 02

Outline

1. TOWES sample test
2. What is TOWES and why was it developed?
3. Essential Skills requirements in Oil and Gas occupations
4. Safety, Productivity and essential skills
5. Using TOWES in training and development of Northern Oil/Gas Workers

Slide 03

Test Of Workplace Essential Skills

TOWES is an assessment that uses authentic workplace documents to test ability in the areas of:

- Reading Text
- Document Use
- Numeracy

Slide 04

Workplace Essential Skills

- “Enabling” skills that help people perform tasks required by their jobs.
- Skills that provide workers with a foundation for learning other skills.
- Skills that enhance the ability to adapt to change.

Workplace essential skills are the *Velcro* to which other training sticks.

Slide 05

Skills Measured by the ESRP

<ul style="list-style-type: none"> ➢ Reading Text ➢ Use of Documents ➢ Numeracy 	}	Tested by TOWES
<ul style="list-style-type: none"> ➢ Writing ➢ Oral Communication ➢ Thinking Skills ➢ Working with Others ➢ Computer Use ➢ Continuous Learning 		

Slide 06

Origin of TOWES

- First developed in 1998 in partnership with SkillPlan
- Funding provided by HRSDC
- Driven by the need for a valid measure of workplace skills

7

Test Design

- Pencil & paper test that assesses workplace literacy skills
- Uses a bank of problem sets with varying levels of complexity
- Each test is made up of 20 problem sets involving 60 items
- Test results are reported on a 500 point scale which is broken down into 5 levels

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Test Design cont...

- Tests are hand marked and results are entered into a database for scoring
- Broadly based or custom based on the requirements of a sector or business
- TOWES places test takers in the role of a worker who must process information to complete a task
- TOWES uses authentic workplace documents

9

Quality Features

- Extensive research & development
- Expert design team
- Standards in test administration, marking & scoring
- Support services including: consulting, training, and custom design
- Online & French language versions in development

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Example: Academic-based Question

Question 1 - Alberta English 33 Grade 12 Diploma Exam (1999)

In the phrase “a sorrow wandering in the halls of memory” (line 5), the author effectively uses:

- a) imitative harmony
- b) personification
- c) alliteration
- d) irony

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Example – Workplace-based Question

What is the catalog number and description of the part from the 7700 series mask shown below?

Note: supporting document not shown



_____ Catalog number

_____ Description

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Why was TOWES Developed?

- Results from International Adult Literacy Survey (IALS)
- Essential Skills Research Project
- Need for a valid measure of workplace competency
- Need for remediation programs that focus on workplace requirements

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International Adult Literacy Survey

- Surveyed adults in 22 countries to determine the impact of literacy on economic success and global competitiveness
- Described literacy in three domains: prose literacy, document literacy, and quantitative literacy
- Used a 500 point /5 level scale to measure literacy skills in each of the three domains. TOWES uses IALS international scales.

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Essential Skills Research Project

- Established a process called job profiling, where the literacy requirements and complexity of individual jobs are based on the 500 point scale used by IALS
- Determined the essential skill requirements of over 200 NOC job classifications; over 3000 interviews were conducted across Canada to create national occupational standards
- TOWES assesses skills based on the national standards determined by the ESRP.

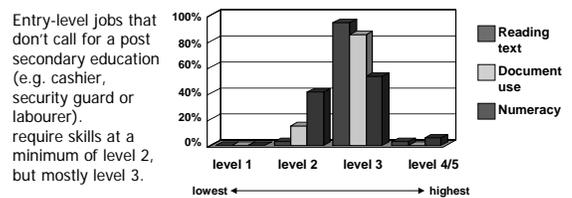
14

IALS Findings

- Literacy is firmly linked to economic success and productivity
- Anticipated changes in the workplace will require higher levels of literacy
- Respondents scoring <3 out of 5 lack the skills needed to transfer existing knowledge to new environments
- Many Canadian adults have limited literacy skills

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Workplace Demands



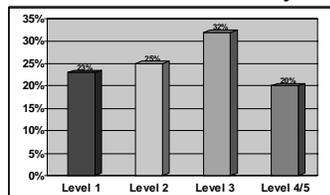
Source: Matching Canadians' Literacy Attainment to Actual Occupational Requirements, May 2001.

15

Performance of Canadians

A significant portion of Canadians are at the two lowest levels in three important essential skill areas.

Canadian Workforce Distribution by Level



Source: Matching Canadians' Literacy Attainment to Actual Occupational Requirements, May 2001.

18

What's important to Oil and Gas Employment?

- Safety (including the environment)
- Quality (technical quality and productivity)
- Cost
- Schedule

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IMPACT ON SAFETY

Research by the Canadian Trucking Human Resources Council:

Drivers with level 1 reading skills are 176% more likely to be involved in a workplace incident than those at levels 3 to 5.



Source: Essential Skills as a Predictor of Safety Performance among CPPI-Certified Professional Drivers in Alberta

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Using TOWES in the Training and Development of Northern Oil and Gas Workers

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WORK INJURIES

Table 2. Number of Fatalities, by Province, 1993 - 2003

Province	1999	2000	2001	2002	2003
Nfld and Labrador	27	38	26	23	23
P.E.I.	3		5	1	
N.S.	17	16	8	14	18
N.B.	20	7	15	17	7
Quebec	164	180	180	188	175
Ontario	283	301	328	383	378
Manitoba	23	19	25	19	24
Saskatchewan	34	31	35	23	35
Alberta	114	118	118	101	127
B.C.	147	167	168	158	170
N.W.T. & Nunavut	2	13	11	6	5
Yukon	1	2	1	1	1
Total	787	882	919	934	963

Note: This table has been reformatted for publication on the AWCBBC web site.

http://www.awcbc.org/english/NWISP_Stats.htm

(Association of Workers' Compensation Boards of Canada)

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What are the Required Workforce Skills?

Combination of:

Job/Workplace Skills (J S)

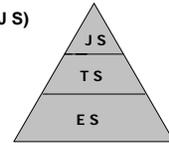
- Employer and Position specific

Technical Skills (T S)

- Occupational specific

Essential Skills (E S)

- Foundational and transferable



Source: Province of Alberta, Department of Education, Essential Skills Framework

TRAINING

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Essential Skills & Productivity

- Individuals at level 1&2 lack the skills needed to transfer learning to new environments
- Training and development for highly skilled individuals has poor ROI
- Increasing essential skill levels of lower skilled individuals by 5 points (1%) results in a permanent 1.5% increase in GDP and a 2.5% increase in labour productivity
- Investment in human capital such as education and skills training, is three times as important to economic growth in the long run and investment in human capital (from Literacy, Numeracy and Labour Market Outcomes in Canada, Statistics Canada)

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Essential Skills Requirement for Front Line Oil and Gas Occupations

(from Essential Skills Typical tasks) www15.hrde-drhc.gc.ca

Occupation	NOC	Reading Text	Document Use	Numeracy
Equipment Operators	7421	2	2	2
Bus Drivers	7412	2	2	2
Welders	9515	3	3	2
Labourers (Fitters)	7263	3	5	2
Oil Well Drilling, Workers & Service - Operators	8412	3	3	3
Oil Well Drilling, Servicing and Related Labourers	8615	2	3	2
Camp Cook	6242	3	3	2
Kitchen Help	6542	2	2	2
Emergency Medical Personnel	6631	3	3	3
Purchasing Clerks	1474	3	3	3
Administrative Assistant	1411	3	3	3
Security Guard	6651	3	2	2

25

Analysis and Planning

- Establishing workforce requirements for organizations and industries
- Needs assessment of existing or future workforce
- Informing best practices in training and development

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Training

- Accurate measure employment readiness compared to occupational standards as part of an assessment system
- Work readiness, career, integrated training, and apprenticeship programs
- Career counselling
- Accurate indicator of prior learning

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Example: NAIT STUDY

Group	Number of Participants	Carpentry Success Rates (2002 – 2003)						Province Exams	Essential Skills Training
		Results							
		Pass	%	Fail	%	Other*	%		
1	29	22	75.9	2	6.9	10	34.5	76%	
2	42	30	71.4	1	2.4	11	26.2	73%	
3	27	26	96.3	0	0	1	3.7	81%	
4	29	29	100	0	0	0	0	81%	
5	44	27	61.4	11	25	6	22.2	71%	
Total	171	134	78.4	14	8.2	28	16.4	76.4%	

* The 'Other' column represents apprentices who withdrew from the program, received a conditional pass, or needed to complete supplemental course work because of poor performance.

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TOWES Example Respirator Parts Problem

Updated: November 2004

8.2 PREPARE FOR USE

- 1) Install a new pair of air-purifying elements.
- 2) Perform a fit check to make sure that components are functioning properly.

9. REPLACEMENT PARTS

COMPLETE ASSEMBLIES		
CATALOG NUMBER		DESCRIPTION
5500 SERIES	7700 SERIES	
5500-30S	7700-30S	Facepiece Assembly Complete, Small
5500-30M	7700-30M	Facepiece Assembly Complete, Medium
5500-30L	7700-30L	Facepiece Assembly Complete, Large

COMPONENTS (See Figure 1.1)			
ITEM	CATALOG NUMBER		DESCRIPTION
	5500 SERIES	7700 SERIES	
1	5500-16	7700-16	Inhalation Connector
2	5500-17	7700-17	Inhalation Valve
3	5500-18	7700-18	Exhalation Valve
4	5500-19	7700-19	Exhalation Valve Seat
5	5500-20	7700-20	Exhalation Valve Guard
6	5500-92	7700-92	Cradle Suspension System
7	5500-11S	7700-11S	Basic Facepiece, Small
7	5500-11M	7700-11M	Basic Facepiece, Medium
7	5500-11L	7700-11L	Basic Facepiece, Large

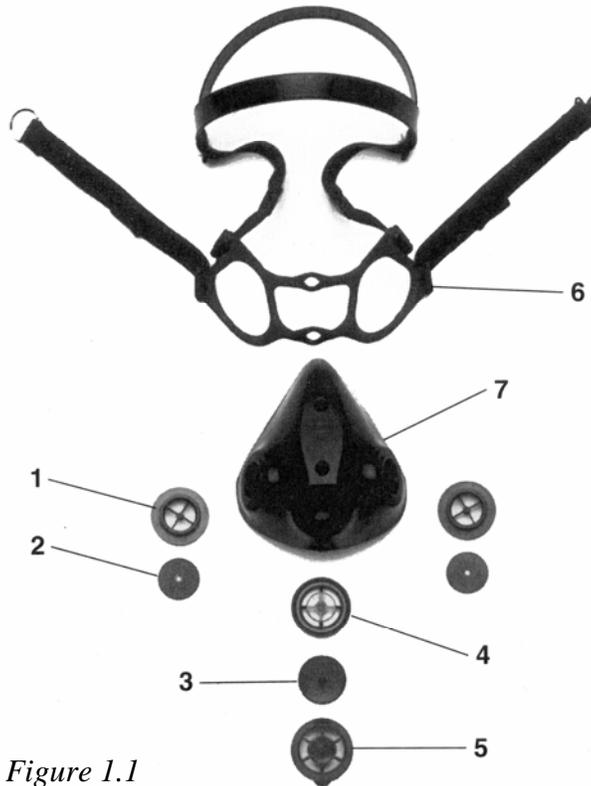


Figure 1.1

Solving the Respirator Parts Problem

The respirator parts problem, like most other TOWES problems, requires a number of reading and document use skills. In this problem, the test taker is asked to find catalog numbers, which are ‘buried’ in a four-column table.

The first step in solving the three questions is to identify the task required. After looking at the questions, the test taker is better able to frame the ‘requested’ information (the answer to the question) in language that matches the ‘given’ information (the question itself). The answer can be found on a page from a respirator manual, which shows an exploded view of a respirator with the various parts numbered for reference. Above the picture of the respirator, two four-column tables relate the reference numbers in the illustration to catalog numbers and part descriptions.

Question number 1 asks for a catalog number of a named part. In terms of reading skills it asks the test taker to ‘scan’ the chart for the words: ‘basic facepiece,’ ‘medium,’ and ‘7700 series.’ As the search terms are in the exact language used in the chart, no inference is required. However, some understanding of row and column information is needed to ‘extract’ the answer. Note that the task of finding the catalog number requires the test taker to search the final ‘description’ list, which is actually ordered according to the number shown in the illustration. For the purpose of this question it is ordered ‘randomly’ and presents a more difficult search task than if the list had been organized alphabetically.

The second question adds the requirement for visual discrimination to the search task. It also asks the test taker to synthesize information from two source documents and two information formats (the exploded view of the respirator and the four-column nested list above it). The test taker has to first locate the pictured part in the illustration, then ‘recycle’ this information as part of the ‘given’ for the next search. This search uses the numerically ordered list in the first column of the table—an easier search task than scanning the randomly ordered list in the first question.

The third question adds another level of difficulty to question two. Unlike the ‘inhalation connector’ in question two, the ‘cradle suspension system’ shown in question three has different catalog numbers for the 5500 and 7700 models. The test taker has to select the correct sub-heading from the two possibilities nested under the ‘Catalog Number’ heading.

In spite of the specific setting, the skills demonstrated in this problem are all transferable skills, which can be applied to other situations and other contexts. TOWES tests the wide range of applied reading, document use, and numeracy skills found in all jobs.



Conrad Murphy

Day 2 SESSION 6: ASSESSING LEARNING AND WORK READINESS

Presenters: *Hildy Hanson (Keyano College)*
John Pahl (Akita Drilling)
Lana Roeland (I&D Management)

Overview

TOWES can assess proficiency in three of the essential skill domains, reading text, document use and numeracy but, there are other skill domains and attributes that also need to be considered in preparing for learning and work. The members of this panel, Hildy Hanson, Keyano College, Lana Roeland, I&D Management, and John Pahl, Akita Drilling, described some of the tools and approaches that can be used for determining learning and career paths, readiness for work, and occupational 'fit'. Each panel member had a perspective that is informed by his or her own work. Hildy described some of the tools used in an education setting, Lana, those used by a human resource management company and John, assessment tools typical of the drilling industry. Delegates were encouraged to ask questions and discuss issues around assessment.

Keyano College

At Keyano College, anyone who wants to take a 3 day contextualized reading workshop can do so with no assessment expectations attached. However, if a learner requests a reading assessment, a two hour test can be administered. In terms of numeracy, a math assessment is used to screen learners into essential skills programs, although the college is moving away from the use of assessment scores as pre-requisites for essential skills courses.

Keyano's clients, Syncrude and Suncor, use TOWES as a pre-employment screening tool for three occupations. In these cases, job applicants write the test, and must achieve 85% to be considered for employment. In the mine operations program, TOWES is used as part of learner assessment procedures in response to employer demands. In this case, the program, itself, addresses the kinds of problem sets TOWES uses, enabling most learners to achieve passing scores.

In terms of assessing English as a Second Language (ESL) learners, the Canadian Language Benchmarks are used. The Test of Basic English (TABE) is administered in the trades programs.

I&D Management

I&D Management screens and hires truck drivers for Diavik Diamond Mines Inc. I&D currently has 150 employees on the Diavik site. I&D does not use formal assessment tools or grade level attainment to screen individuals into employment positions. Instead, workers are initially given a verbally administered assessment based on three lists of word (single syllable, 2-3 syllable and 3-4 syllable) and a signage test targeting signs found on site. They must also pass document use assessments involving materials from safety manuals. These documents range from short text pieces with accompanying pictures to more complex forms.

Again, all assessments are based on real documents that workers are expected to use on their jobs. The last step is an interview process.

Workers who pass the minimum required to be safe on site, are then hired. **After** they have been hired, employees are given the G1 TOWES test to help determine gaps in essential skills proficiency so that the adult educators at the Diavuk site can design individualized training programs for those who choose to improve their education and increase their opportunities for advancement.

Akita

At Akita, the application process itself is viewed as a preliminary assessment tool. Prospective employees must complete an interview, fill out an application form, and submit to a vision test. The next step involves safety courses such as WHMIS, H₂SO, and MSDS comprehension. In many ways, these courses serve as literacy screening tools in that all workers must obtain safety certification to work on site. The final step involves on the job training. Workers must be proficient in terms of their communication skills, mechanical abilities, measurement and estimation, and teamwork. They must also demonstrate a strong work ethic, responsibility and appropriate temperament. On the job training outcomes are assessed through observation and other informal means.

Discussion Points

At Keyano College, there is some controversy around TOWES being used by corporations as an employment screening tool rather than as a training gap identifier. For example, those applying to work for Syncrude and Suncor as heavy equipment operators, office managers, and mine operators must score at a certain level to be eligible for employment. This sometimes means people with good potential are turned away with no options other than to write the test again at a later date. To assist those who do not pass the TOWES test, Keyano offers a short course in successfully completing a TOWES test. After taking the short course, the majority of people who did not achieve 85% the first time, are successful the second time. Those who are enrolled in Keyano programs such as Mine Operations perform well on the TOWES test because they receive integrated essential skills training as part of their studies.

Diavik uses TOWES solely as a literacy training placement tool and learners do not write TOWES until they have the literacy levels to succeed. Akita, on the other hand, uses no formal essential skills testing instruments.



John Pahl & Lana Roeland

Day 3 SESSION 1:

TOOLS FOR ASSESSING LEARNING AND WORK READINESS

Presenter: *Hildy Hanson (Keyano College)*

Overview

ERIC – Effective Reading in Context Safety and Workplace Reading

The Effective Reading in Context (ERIC) program was developed by Keyano College in partnership with Syncrude Canada. The core curriculum has remained basically the same since the launch of the program in 1987, although the documents addressed change depending on the specific learner group. Since 1987 it has been delivered to over 1500 Syncrude employees. ERIC is intended as an interactive workshop that presents participants with the opportunity to practice efficient workplace reading using proven and effective strategies. The key word here is practice.

From a safety and business perspective, efficient reading of workplace documents benefits all levels of an organization. Safe Work Practices require, in part, the reading of procedures, instructions, notices, and numerous other workplace documents. Many workplace accidents occur, not because workers cannot read, but because they are not “in the moment”; that is, workers are not focusing and **actively** processing written information.

Human performance has a significant impact on workplace safety. Since workers are responsible for their own reading, effective reading courses offer the worker a means to manage their workplace reading. Each of the strategies discussed in the ERIC workshop is meant to keep the workplace reader in the moment for that particular task. An increase in worker attention for reading tasks produces a safer workplace environment.

SAM – Syncrude Applied Math

SAM was introduced to Syncrude employees in 1997 and was originally called WIN Working in Numeracy. SAM focuses on the math most commonly used in the workplace using workplace applications. As a refresher course, its focus is to ensure a solid understanding of basic math skills. SAM participation improves workplace efficiency in areas including budgets, inventory, blue print reading, angle applications for crane booms, grades and welding, safety and loss management and the math required for most trades. The customized workplace examples and exercises ensure employees are interested and involved.

Both ERIC and SAM have been adapted to meet the needs of a variety of clients. The adaptation involves incorporating authentic workplace documents into the course material. Past partners include the Communications Energy and Paperworkers Local 707, Northern Lights Health Region, Westwood Community High School, Alberta Power (ATCO Electric) and the Construction Owners Association of Alberta.

Slide 01

Essential Skills Training
@ keyano college

Keyano College and Syncrude Canada Ltd.

Partners in Essential Skills for 16 Years

Slide 02

Essential Skills Training
@ keyano college

“ Essential skills training ensures that Syncrude employees have the skills and confidence required for today’s workplace to prepare them to meet the challenges of the future.”

Eric P. Newell, Former Chairman & CEO of Syncrude Canada Ltd.

Slide 03

Background
@ keyano college

1987 - Syncrude partnered with Keyano to develop ERIC- Effective Reading in Context which grew into Safety and Workplace Reading (2004)

1997- SAM - Syncrude Applied Math

2003 – WWF - Workplace Writing Fundamentals

Slide 04

The need for safety & workplace reading

Slide 05

Workplace Reading Concerns
@ keyano college

What are the Top Ten Workplace Reading Concerns?

- Recall
- Concentration
- Comprehension
- Speed
- Quantity
- Rereading /rereading
- Flexibility
- Training others
- Overall efficiency
- ESL Concerns

We hear the same concerns from candidates of all ages, workplace experience, and education. Reasons to improve workplace reading efficiency include a change of position, added reading responsibilities, fatigue or a combination of factors. Keyano College students have many of the same concerns.

The initial focus of ERIC was to enable employees to better digest the vast quantities of information required in ever changing roles. Over 1500 Syncrude employees, from every occupation, have participated in ERIC and SAM in the past 16 years.

Slide 06

What is workplace reading?
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From an industry perspective, workplace reading is

- A self-organizing process of acquiring information
- An process structured by workplace communication
- A process impacting workplace efficiency and safety
- A process controlled by the workplace reader

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Ultimately, control of the reading process must be given to the reader through awareness of reading strategies and choices.

Slide 07

Reading and Safe Work Performance
 @ keyano college

Workplace reading and workplace tasks are interconnected.

Procedures
 Memos
 Instructions
 Signs
 Manuals
 OH&S

Workplace Reading

Safe Work Performance

Operation
 Training
 Daily routines
 Workshops
 Job mentoring
 Meetings

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This graphic places reading in the context of the workplace. Workplace Failure is classified as human failure when **procedures** are not followed.

Example: When reading a hazard sign on a construction site, it doesn't matter whether you read at a Grade 7 level or whether you have a college degree, you must be *in the moment* (focus) at the time and you must read with 100% accuracy.

Reading, therefore, is a safety issue; the score you got on your last reading test is not recorded in the incident report. **BUT your attention level can be recorded on the safety report!**

Slide 08

The Elements of Safety and Workplace Reading

Know your purpose

Preview

Navigate for patterns

Skim

Scan

Map

Study to upgrade

Actively choose strategies

Manage reading habits

Definition & Purpose of the Workshop:

3-day workshop, provides a base of essential workplace reading skills

How is the Workshop organized?

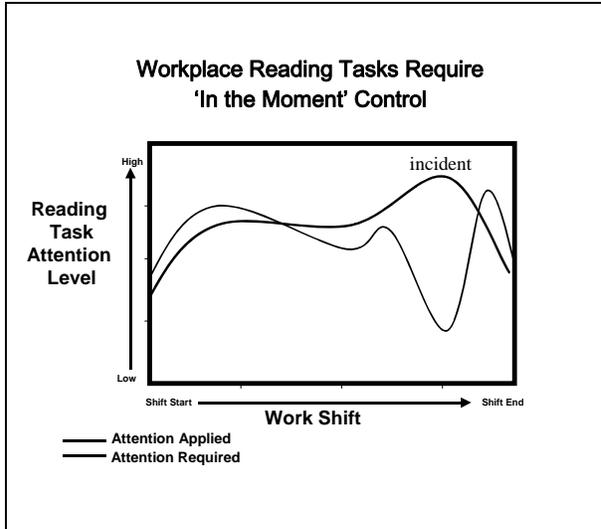
Ovals are the core influences on the effectiveness of reading strategies: know your purpose before using any strategy.

Triangle represents reading strategies applicable to workplace documents

Begin by teaching previewing. All strategies are taught using workplace relevant material.

Activities include, post-reading discussions, timed readings, follow-up tests, and a selection of comprehension exercises for the purpose of evaluation

Slide 09



Visual representation of the importance for workplace readers to manage their reading tasks: **attention applied** should be greater than **attention required**.

The visual works for employees because it separates them from the notion that “I don’t read!” and gives them workplace reading control and responsibility. The ability to effectively manage reading pays **Due Diligence** to industry safety.

Slide 10

Reading / Memory Task
@ keyano college

NATO Phonetic Alphabet

A=Alpha	J =Juliett	S= Sierra
B=Bravo	K= Kilo	T= Tango
C=Charlie	L= Lima	U= Uniform
D=Delta	M= Mike	V= Victor
E=Echo	N= November	W= Whiskey
F=Foxtro	O= Oscar	X= Xray
G=Golf	P= Papa	Y= Yankee
H=Hotel	Q= Quebec	Z= Zulu
I= India	R= Romeo	

Syncrude

What does it take to be in the moment, to be an active reader?

This reading/ memory task tests ability to manage workplace memory habits. The NATO alphabet is used to communicate messages over the radio in a variety of worksites.

Divide into groups and do whatever it takes in 4-5 minutes to memorize the NATO alphabet. Realistically, time is money in the workplace and often there is not much time to read and act. Also, distractions are part of the workplace.

Ask each group to phonetically spell a word from relevant workplace material.

Slide 11

Managing Memory
@ keyano college

Were you *in the moment* for this reading task?

- Did you re-organize the data?
- Did you engage your senses through speaking, writing, listening?
- Did you repeat the data?

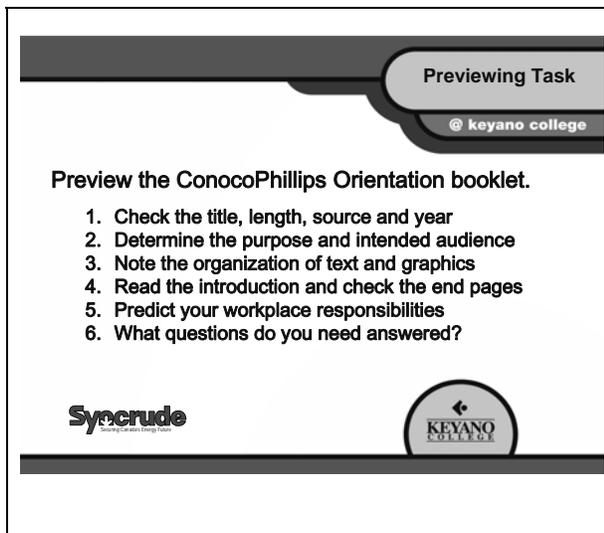
Syncrude

Being **in the moment** for reading tasks begins with **AWARENESS** of your: **purpose, strategies, and habits.**

Being **in the moment** requires replacing **passive reading** with **active reading.**

Almost all workplace reading requires some form of action.

“adults lose sight of the fact that reading requires attention and energy.”

Slide
12


Previewing Task

@ keyano college

Preview the ConocoPhillips Orientation booklet.

1. Check the title, length, source and year
2. Determine the purpose and intended audience
3. Note the organization of text and graphics
4. Read the introduction and check the end pages
5. Predict your workplace responsibilities
6. What questions do you need answered?

Syncrude

KEYANO COLLEGE

Previewing: a quick visual survey; can determine the purpose and strategy for further reading.

Group Task: Allow 3 minutes for preview of material; (in this case the ConocoPhillips handbook).

Activity:

1-4 should inform you of the purpose of the document. (Listen to answers)

#5: Adds the **ACTIVE** to the reading process. What action is to be taken?

Sample answers:

Understand ConocoPhillips policies and commitment to safety, be able to **answer 8 questions** at end, **keep** signed copy of orientation card AND booklet in toolbox or vehicle. Change reading from passive to active!

#6: Questions

For example: **What** is the meaning of PPM in the Table on the back cover? (Parts per Million) Would everyone know this? **Why** is there a grey band across the third level of the Toxicity Table? (It is the ceiling of the exposure Limit so wear PPE) Does this need to be explained? Are there questions about how to read the document?

NOTE to Trainer: As part of the safety training, does the audience require an explanation of how to read this table? **Every** safety graphic requires **Due Diligence** for comprehension **at that moment in time** when it is presented. Never assume that your audience reads all graphics with the same level of comprehension.

Research supports that memory is best served if **training material** is explained accurately **the first time** it is presented.

Slide 13

Previewing Rewards
@ keyano college

- Preview rewards for trainers**
 - saves time and explanation
 - quickly places reading in a workplace context
 - reveals training needs of employees
- Preview rewards for employees**
 - clarifies reading purpose and reduces stress
 - aids comprehension and memory
 - provides a strategy for large quantities of reading

Extra task:

Without looking...What is the biggest potential emergency on site? How many steps? Who would like to try to name all seven? If you can only name a few, then remember that you were not asked to memorize. And the preview is the first strategy.

For the trainer:

a simple 5 minute **preview** can save time and promotes greater understanding and confidence for the employee. Encouraging questions from the preview reveals levels of understanding that may require further training or upgrading.

For the employee:

Previewing sets the stage for recall and comprehension and reduces stress because the reader sees the scope of the task quickly; we are more stressed by what we don't know. It is also the first step in tackling a large quantity of reading. Previewing is one strategy which keeps the employee **in the moment**.

Slide 14

Participant Comments
@ keyano college

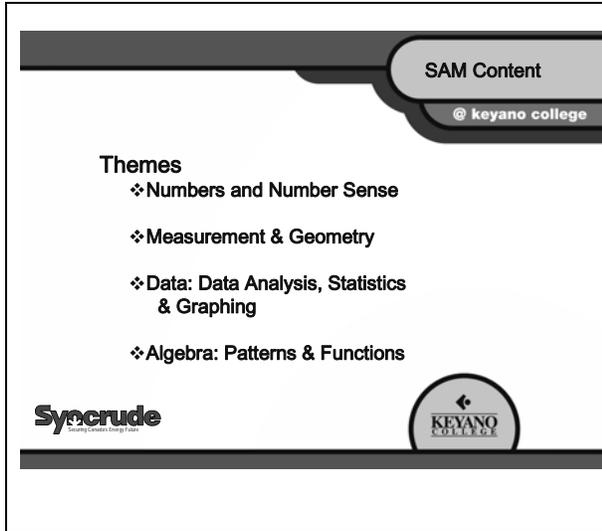
- ❖ "I will use these reading strategies on the job; it will help ensure the job is done right and safely."
Syncrude participant
- ❖ "This is an excellent program. I wish had taken it 3 years ago, before I started the OH&S certificate. I will use the strategies at work as well as in my studies."
OH&S participant
- ❖ "I learned new ways to approach reading. I will focus on being in the moment. I will read procedures differently."
Shapotowak participant

Slide 15

Syncrude Applied Math
@ keyano college

Syncrude Applied Math

- ❖ Foundation skills for business literacy, trades specific math and everyday use
- ❖ Program:
 - workplace specific math applications
 - trained workplace math instructors
 - individual assessment
 - small delivery

Slide
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SAM Content
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Themes

- ❖ Numbers and Number Sense
- ❖ Measurement & Geometry
- ❖ Data: Data Analysis, Statistics & Graphing
- ❖ Algebra: Patterns & Functions

Syncrude 

Four themes include

Numbers and number sense: fractions, decimals, percentages, ratios rate and proportions. *Workplace examples include:*

1. calculations of number of barrels of bitumen per year given barrels per day;
2. number of people needed to do a specific task if one person can do the task in a specified number of hours.

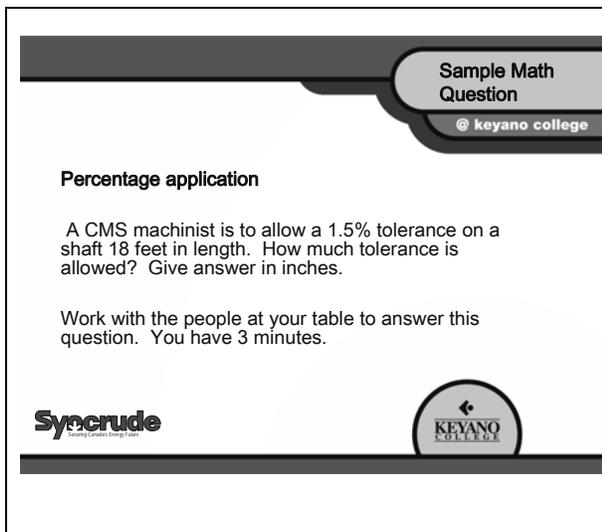
Measurement/Geometry covers imperial and metric measurement and conversions between the two and geometry. *Workplace examples include:*

1. metric to imperial conversions
2. division of a pipe into two pieces of specified length, how much is left over after the cutting;
3. Length of conduit needed given angles of the path it will travel

A little graphing and stats

Introduction to algebra, solving equations, transpositions of formulas and signed fractions and decimals. *Workplace examples include:*

1. Reading graphs to assess the number of barrels of oil produced in a certain year
2. Reading projected increases in manpower needed.

Slide
17


Sample Math Question
© keyano college

Percentage application

A CMS machinist is to allow a 1.5% tolerance on a shaft 18 feet in length. How much tolerance is allowed? Give answer in inches.

Work with the people at your table to answer this question. You have 3 minutes.

Syncrude 

Sample math problem from Number Sense

Numbers –Percentage application

Workplace examples include:

1. Finding the R value of insulation given the thickness of the insulating material and the thermal conductivity of material
2. Calculating total weight of truck and overburden

Slide 18

Solution
@ keyano college

To teach this we instruct that all practical percentage applications have three basic parts:

- Actual amount
- Base (whole or original amount)
- Rate (%)

And the idea that: Actual amount = Rate(%) x Base (whole amount)
 = 1.5% x 18 feet = 27/100 = .27 feet

Measurement conversion = .27 feet x 12 in /1 ft
 = 3.24 inches

Working Exercise from Number and Number Sense Theme

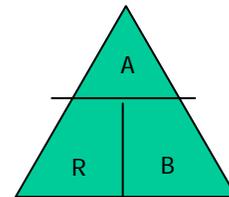
Give 3 minutes

To teach this we instruct that all practical percentage applications have three basic parts:

- **A**ctual amount
- **B**ase (whole or original amount)
- **R**ate (%)

And the idea that:

Actual amount =
 Rate(%) * Base (whole amount) =
 1.5% * 18 feet = 27/100 = .27 ft



Measurement conversion =
 .27 feet * 12 in / 1 = 3.24 inches
 (cover this in Measurement theme)

Slide 19

SAM Workshops
@ keyano college

Assessment

- ❖ Interview and math tasks
- ❖ Online assessment now available

Workshops

- ❖ Numbers and Number Sense
- ❖ Numbers, Measurement, Data Analysis, and Algebra
- ❖ Small groups (8)

Slide 20

SAM Participant Comments
@ keyano college

❖ "I will use these skills to pass my apprenticeship exam after New Years. There are a lot of exam questions with math in them."
Syncrude participant

❖ "Just about every trade that I want to get into requires all kinds of math. This was an excellent course to refresh my math skills."
Shapotowak participant

❖ "I am a planner at Aurora and am now more confident with budgets, graphs and spreadsheets."
Syncrude participant

Slide 21

Essential Skills Integration
 @ keyano college

Keyano College integrates *Safety and Workplace Reading* and *SAM* into a variety of programs and workplace training:

- Syncrude Canada Ltd
- Mine Operations Certificate
- Shapotowak
- Aboriginal Skills Employment Partnership (ASEP)
- Health Sector
- English for Skilled Immigrants (ESI)
- Public non-credit

Slide 22

Partnerships

- ❖ Construction Owners Association of Alberta
- ❖ Alberta Power (ATCO)
- ❖ Communications Energy and Paperworkers Union Local 707(Suncor)
- ❖ Westwood Community High School
- ❖ Northern Lights Health Region (2004)
- ❖ Lethbridge Community College(2004)
- ❖ Apprenticeship Preparation for Aboriginal People (2005)



Hildy Hanson



Marilyn Lumsden & Elsie Casaway

Day 3 SESSION 2: THE LINKAGE MODEL

Presenter: Pat Salt (Bow Valley College)

Overview

The Linkage Model is a competency-based training approach that promotes an entrepreneurial mindset and the skills necessary to achieve sustainable livelihood. This “made in Africa” model integrates technical skills, business skills and **workplace essential skills** (literacy, numeracy, and communications with a workplace focus).

The model is unique in that it approaches entrepreneurship training not as the delivery of *Start Your Own Business* and Small and Medium Sized Enterprise (SME) management “add-ons”, but as an on-going exercise in **critical thinking, problem solving and decision-making**. According to the Linkage Model, entrepreneurship is more than well-honed technical skills and enterprise management theory – entrepreneurship is *a way of thinking and approaching possibilities*. To accomplish this, a project-based methodology is used, one that incorporates a five-phase design and problem-solving matrix.

In the Linkage Model, all training is delivered in a “real world” context. This means that actual customers and applied market research play a leading role in every project undertaken, and that costing and pricing, production planning, clearly defined design specifications, and quality control are integral components of the product generating process. Trainees address **workplace essential skills** (WES) and production-related business concepts in the same way entrepreneurs do – as integrated, contextualised aspects of SME activity.

Technical, business and **workplace essential skills** are acquired through the design, development and evaluation of “sellable” products and services that respond to targeted market demands. The Linkage Model operates from the premise that entrepreneurial skills are gained as a result of working through a number of projects – trainees need to practice and apply what they learn to gain expertise.

The Linkage Model assumes not everyone can or will be self-employed. Skills learned via the Linkage Model allow learners to be problem solvers within the workplace. In this Model, training for employment and training for self-employment are not mutually exclusive.

Because the Linkage Model is a training *delivery* model, it can be used with a wide range of technical and vocational subject areas. Implementation involves grouping technical skills into projects then inserting business and **workplace essential skills** at appropriate integration points – a format that reflects what actually exists in the SME sector.

Slide 01

The Linkage Model

An Integrated Entrepreneurship Training Model for Wage or Self-Employment

Slide 02

What Is The Linkage Model?

An integrated approach to entrepreneurship training

Linking....

- Technical skills
- Essential Skills (as defined by HRSDC)
- Design skills
- Small business production and marketing skills

Slide 03

How we define Essential Skills:

- Skills people need for work, learning and life.
- Skills that provide the **foundation** for learning all other skills.
- Skills that enhance the **ability to anticipate change and adapt** to it.

Slide 04

- Skills that enable people to **innovate**, think critically, solve problems effectively, and make well considered and **responsible** decisions.
- Skills required by human beings to be able to survive, to develop their full capacities, **to live and work in dignity**, to participate fully and **responsibly** in development, to improve the quality of their lives, and to continue learning, all in the context of a **global community**.

Slide 05

HRSDC's List

Essential Skills

• Reading text	▪ Critical thinking
• Document use	▪ Job task planning and organizing
• Writing	▪ Significant use of memory
• Numeracy	▪ Finding information
• Thinking skills	• Continuous learning
▪ Oral communication	• Working with others
▪ Problem solving	• Computer use
▪ Decision making	

Slide 06

The Linkage Model and Entrepreneurship Training

According to the Linkage Model:

- Entrepreneurship is **NOT** merely business studies.

Successful entrepreneurship requires:

- an appropriate level of technical skills
- an appropriate level of business start-up, management and operational skills
- an appropriate level of literacy and numeracy skills

The above skills can be taught & assessed directly.

Slide 07

BUT entrepreneurship also demands...

- critical thinking
- effective and responsible decision making
- innovative problem solving
- the implementation of original ideas
- the ability to identify possibilities and the willingness to exploit opportunities
- calculated risk taking

How do you address these skills?

Slide 10

Projects: 5 Phase Problem Solving and Creative Thinking Exercises

Phase 1

- Learner addresses needs of a real customer or researched market niche (or customer invented by the instructor).
- Learner develops **design brief**.
- Learner conducts market and product **research**.
- Learner develops product **specifications**.

Slide 08

Solution:
The Linkage Model

- Uses a 5 phase, project based, **problem-solving** / design approach to develop technical, business and *relevant* essential skills
- Is a competency-based **delivery model** that uses existing technical curricula
- Integrates **production-related** business skills into technical training
- Integrates **relevant** Essential Skills into technical and business skills training

Slide 11

Phase 2

- Learner **designs** products to meet product specifications. These are presented as drawings, sketches, models, write-ups, etc.
- Learner selects the best solution using informed, well considered and supported **decision making** (customer consultation, market **research**, design specifications, logic and reasoning).

Slide 09

Why an integrated approach?

To address complaints about the traditional way entrepreneurship training is delivered:

- there is often no connection between business studies concepts and technical skills training
- business subjects are too theoretical and “academic”
- there is too much lecturing with few opportunities to apply information learned in a realistic context
- literacy and numeracy training are not related to technical or business concepts
- an entrepreneurial mindset is not developed

Slide 12

Phase 3

- Learner develops the product idea in detail.
- Learner produces **working drawing**, pattern, strategic plan, etc.
- Learner **plans the production** or service delivery process, and identifies tools & resources needed.
- Learner **estimates** production times and calculates quantity of materials needed.
- Learner may explore re-design possibilities.
- Learner develops relevant technical skills.

Slide 13




Phase 4

- Learner uses technical skills to produce the product or service (based on product specifications and production planning).
- Learner given additional technical skills development and skills reinforcement where necessary.

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An example: The Cabinet Project (Woodworking)

- Every learner had to find a customer who wanted to buy a handmade cabinet.
- Each learner designed and produced a cabinet to meet his or her customer's specific needs.
- The result – a range of styles (each cabinet was developed from a different set of specifications).

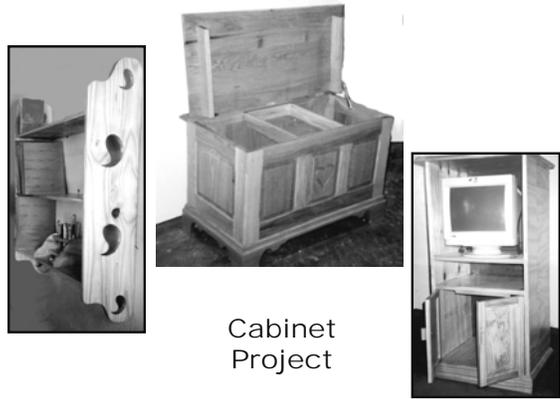
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Phase 5

- Learner **assesses** product in terms of client feedback and product specifications.
- **Learner** develops product assessment criteria (must reflect specific quality standards addressing form, function, finishing, esthetics).
- Learner undertakes quality control using criteria.
- Learner re-designs and re-develops the product and the process to improve results and documents.
- Learner files documents for future reference.

Slide 17



Cabinet Project

Slide 15




Other information...

- Technical, business and essential skills are acquired by working through **a number of projects** that target specific skills.
- Learners assume the role of **entrepreneurs** – there is no production without a client or target market, a design brief, a specifications list, a production plan.
- **Costing and pricing** (and eventually customer quotations) is a part of every project.
- Trainees create their own business names and identities, and produce **business cards**.

Slide 18

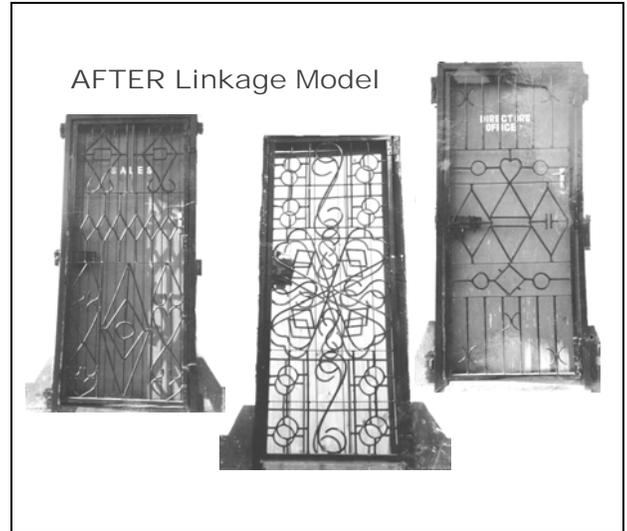


Slide 19

Additional Information ...

- We always start with a **design** module.
- **Business topics** that do not integrate (bookkeeping, business plans, sourcing financing, etc.) are addressed separately.
- Learners design and compile **portfolios**.
- **Research** skills are emphasized.
- Technical teachers are trained to address the **integrated** business and essential skills components.
- Skills developed can be used for **employment** or **self-employment purposes**.

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THE LINKAGE MODEL

BEFORE & AFTER

Slide 23

Another example:

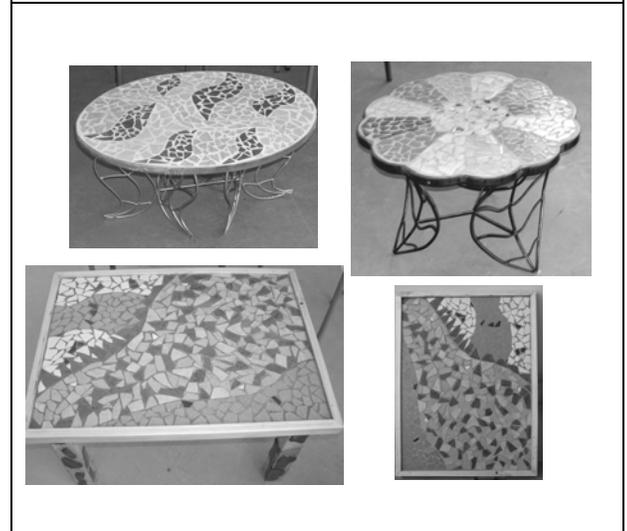
Scenario

The Otjibamba safari lodge has a veranda area where tourists can sit. The lodge management would like to order small decorative tables with tile mosaic tops. The mosaic must reflect the natural environment of Africa. The tabletop should be no larger than 800 x 600 mm. It can be rectangular or circular. The base can be metal or wood. The table design should be unique.

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Slide 24



Slide 25



Slide 28



Slide 26



Yet another example:

Scenario

Mrs. Durango owns a home decorating shop. She wants to order unique metal and wooden frames to sell in her store. The frames should be able to hold photos, small pictures OR a handcrafted item.

The size of the object to be framed will not exceed 150 x 300mm.

The frame size should not exceed 300 x 450mm.



Slide 29

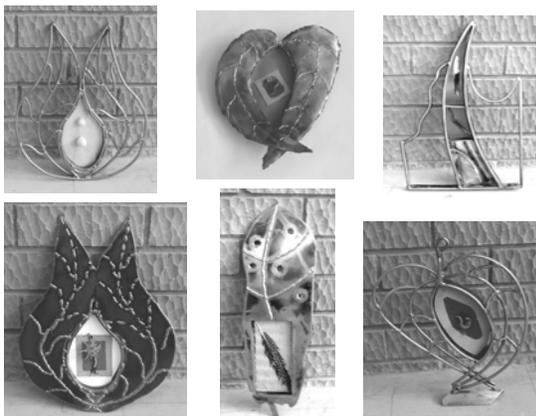


Linkage Model Results:

- Quality of trainee work increased dramatically.
- Learners expressed pride in their work.
- Learners began to take ownership of their learning.
- Learners were able to realistically assess their work and identify design and process changes.
- Learners began thinking like entrepreneurs.
- Learners became better problem solvers.
- Instructors expressed greater job satisfaction.



Slide 27



Slide 30



A Word on Ethical Entrepreneurship:

It must be recognized that entrepreneurship flourishes during times of war, economic instability, famine and natural disaster, and in situations where governments turn a blind eye to lucrative illicit activities. The Linkage Model supports **ethical** private sector development and **responsible** entrepreneurship. This means encouraging business practices that are legal, transparent, fair and honest, and promoting a definition of entrepreneurship that does not focus exclusively on cash flow and bottom lines.





Thank-you!

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Pat Salt

Day 3 SESSION 3:

Integrated document use

Presenter: Pat Salt (Bow Valley College)

Document Use refers to tasks that involve a variety of information displays in which words, numbers, icons and other visual characteristics (eg., line, colour, shape) are given meaning by their spatial arrangement. Graphs, lists, tables, blueprints, schematics, drawings, signs and labels are documents used in the world of work.

Document Use includes:

- print and non-print media (for example, computer screen or microfiche documents, equipment gauges, clocks and flags)
- reading / interpreting and writing / completing / producing of documents – these two uses of documents often occur simultaneously as part of the same task, e.g., completing a form, checking off items on a list of tasks, plotting information on a graph, and entering information on an activity schedule.¹

Every occupation profiled by the Government of Canada in the Essential Skills Research Project was found to require some use of documents.

Pat took participants through a document use exercise involving flowcharts. The point of the exercise was to demonstrate that:

- Document use skills can be taught
- With only a few minutes of training, workers are able to navigate documents much more efficiently
- Some documents are not designed well and some basic principles help to improve document usability
- Practice improves document use efficiency

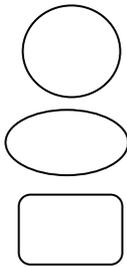
¹ (information retrieved June 25, 2005 from:
http://www15.hrdc-drhc.gc.ca/english/general/Readers_guide.asp?section_number=14)

Flowchart SkillBuilder

A flowchart shows a sequence of steps in a process. It sometimes indicates the amount of time each step should take. Flowcharts are an easy-to-read format for procedures that have many steps. They give us a “big picture” view. Usually the flowchart starts at the top of the page and works its way down the page. Text is short and to the point. Many abbreviations are used. A *label or title* explains the process being described.

How to read Flowcharts:

Start / Stop



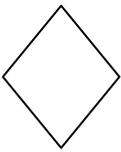
A circle, oval or rounded off rectangle usually means the *start* or *end* of a process. The “start” could mean gathering materials, equipment or information needed for a project. The “start” refers to an action which must be completed before the process gets underway or to an event which activates the process. The “stop” means the final product or outcome. Sometimes **ovals** are used to mean starts or stops in the middle of process. A **circle with a number** inside can mean that the flowchart is continued somewhere else on the page or on a different page.

Step / Task



A rectangle means a step or a task. Variations in rectangles can mean sub-steps or sub-processes. (parallelograms , squares )

Decision



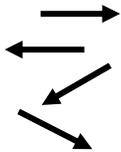
A **diamond** means a decision point (an if/then point). A question is asked or a statement is made. A *yes* or *true* answer results in one specific path or set of actions, and a *no* or *false* answer leads to a different path or set of actions.

Storage / Handling / Packaging



Companies sometimes use a triangle to mean storage, handling, filing or packaging of materials or documents.

Process Flow

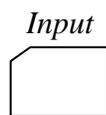
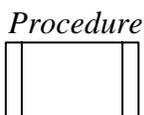


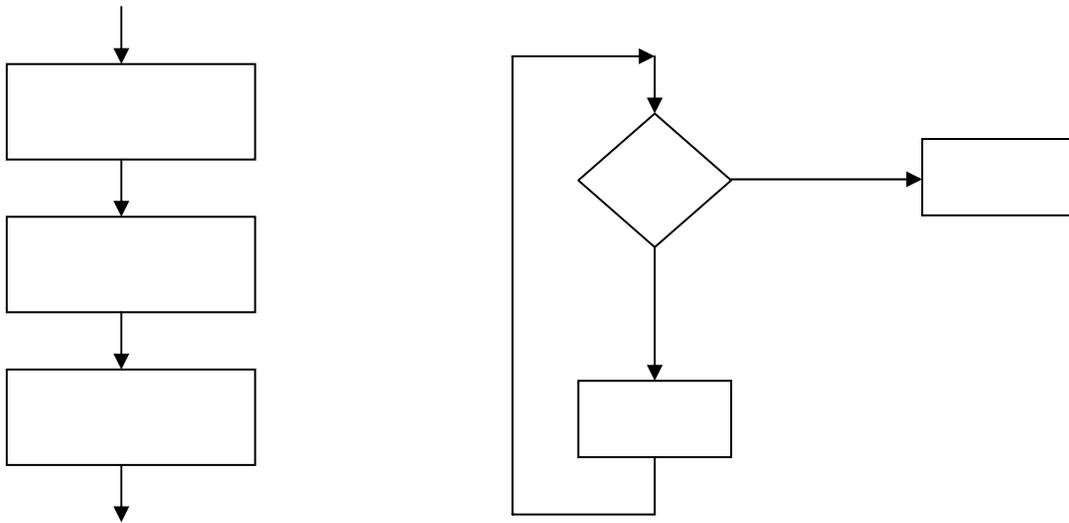
Arrows indicate the direction of the process. Only *one* arrow leads to the next step. Several arrows can go to the same activity box. The boxes in a flowchart are like nouns and the arrows are like the verbs directing the action.



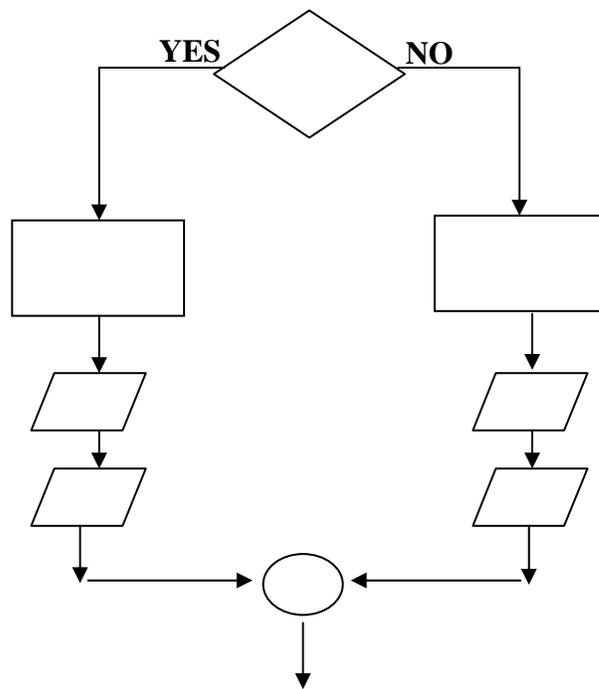
A broken or dashed line means a separation between categories or areas of responsibility. It can also mean an indirect path between two points.

Other common symbols:





Examples of flowchart layouts:



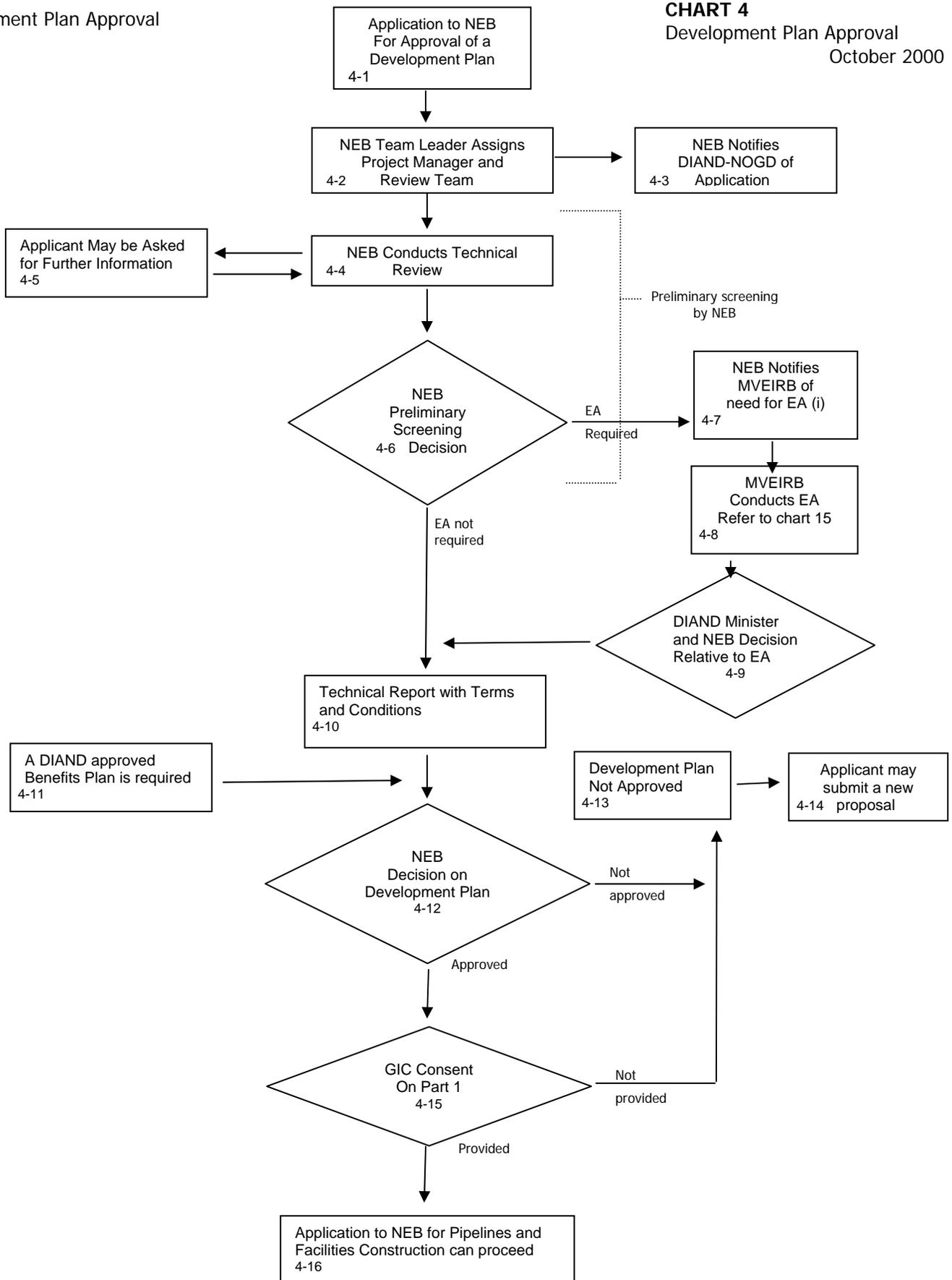
Examples of customized flowchart symbols (created by companies for their own use):



This kind of box means that a document must be filed (it is a special flowchart symbol used by a company).

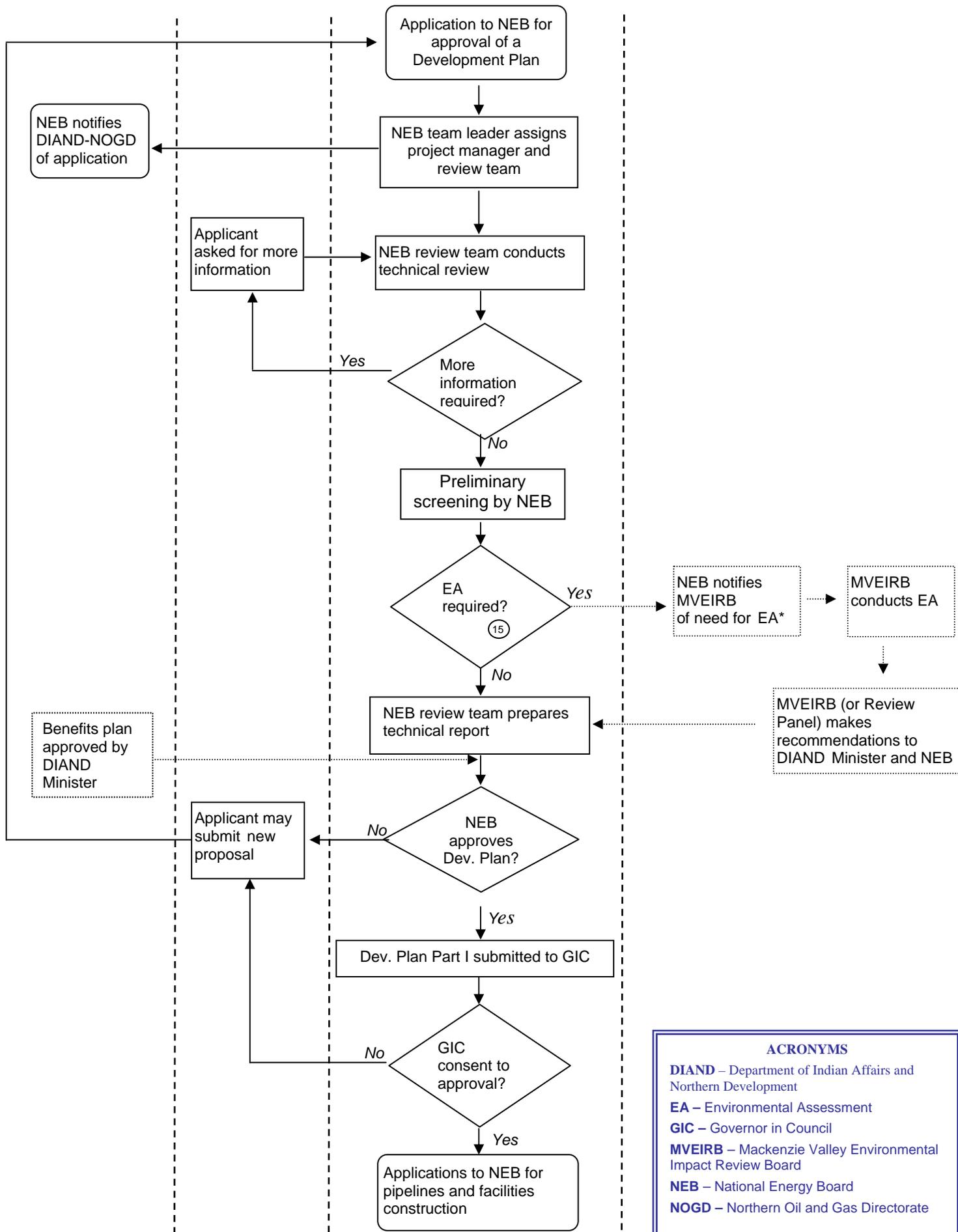


This kind of box means that a document must be generated from the computer (it is a special flowchart symbol used by a company).



i Other parties may also refer an application to the MVEIRB for environmental assessment (see also 15-1, para.2)

DEVELOPMENT PLAN APPROVAL PROCESS (Flowchart 4 Revised)



ACRONYMS

- DIAND** – Department of Indian Affairs and Northern Development
- EA** – Environmental Assessment
- GIC** – Governor in Council
- MVEIRB** – Mackenzie Valley Environmental Impact Review Board
- NEB** – National Energy Board
- NOGD** – Northern Oil and Gas Directorate

* Other parties may also refer an application to the MVEIRB for an EA.

Development Plan Approval Process Flowchart Questions (Refer to Flowchart 4 and Flowchart 4 Revised.)

Flowchart Chart 4 and Flowchart Chart 4 Revised refer to the Development Plan Approval Process. They are the SAME flowchart laid out in different ways. Use either or both versions to answer the following questions:

1. Complete column 2 of the following table.

Action or Duty	Who is Responsible?
Approving the Benefits Plan	
Conducting the Technical Review	
Assigning the project manager	
Deciding if an Environmental Assessment is necessary	
Conducting the Environmental Assessment	
Making recommendations based on the EA	
Submitting the Development Plan to the GIC	
Approving the Development Plan	
Writing the Technical Report	
Notifying the DIAND-NOGD of the application	
Consenting to Part I	

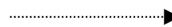
2. What happens if the Development Plan is not approved?

3. What happens if an Environmental Assessment is required?

4. If you were asked to label the four columns in Flowchart 4 Revised, what labels would you use?

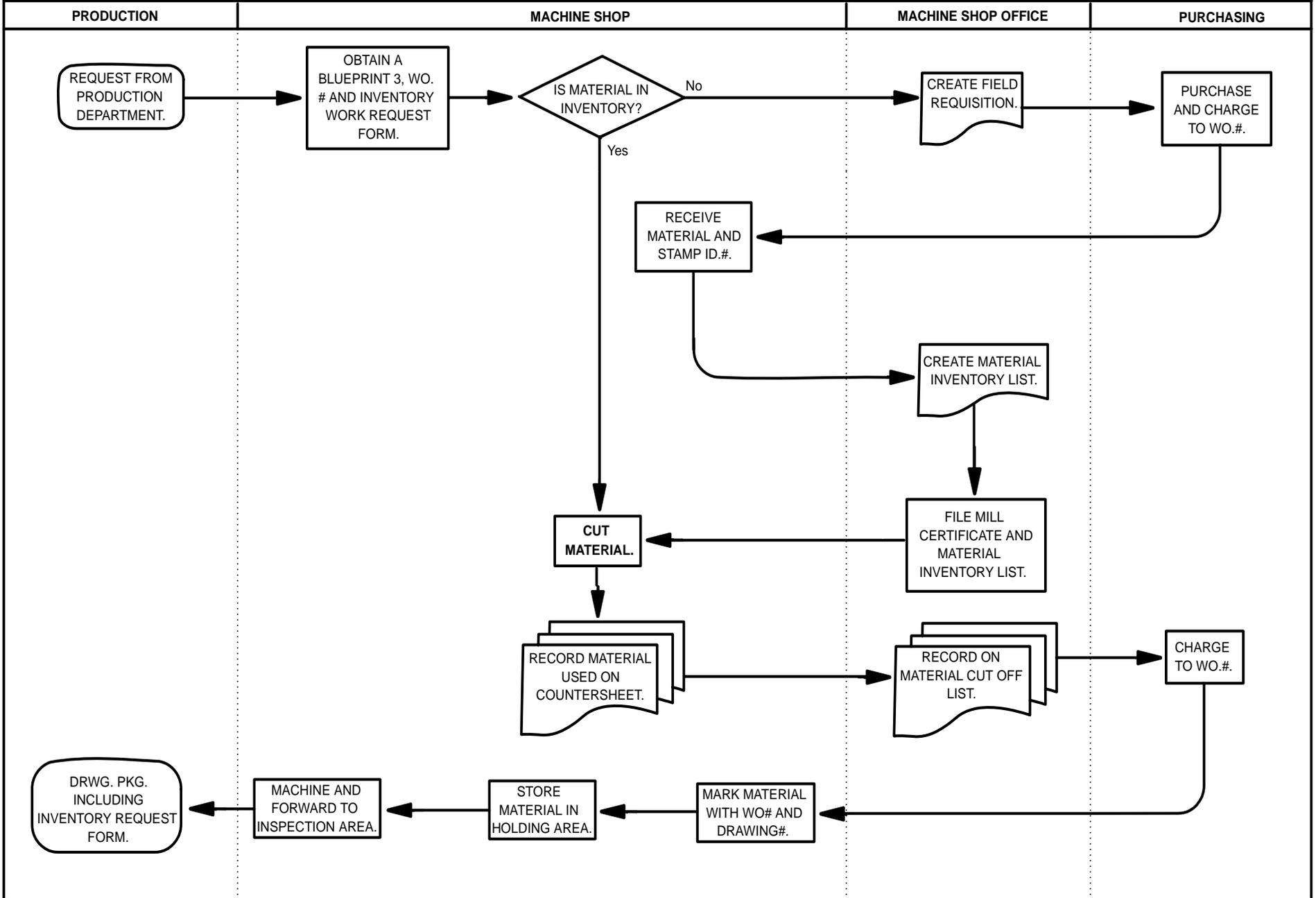
5. Which of the two flowcharts did you use most? Why?

6. What do the following symbols mean?



MACHINE SHOP MATERIAL IDENTIFICATION AND TRACEABILITY

WO# = WORK ORDER #



1. Which department creates material inventory lists?

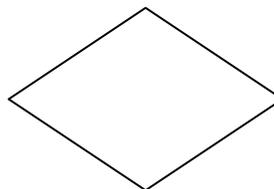
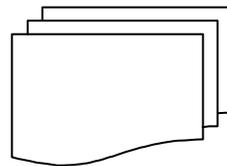
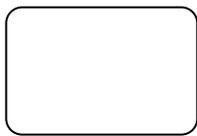
2. What happens if the material requested is not in stock?

3. In this flowchart, how many times can materials be charged to a work order number?

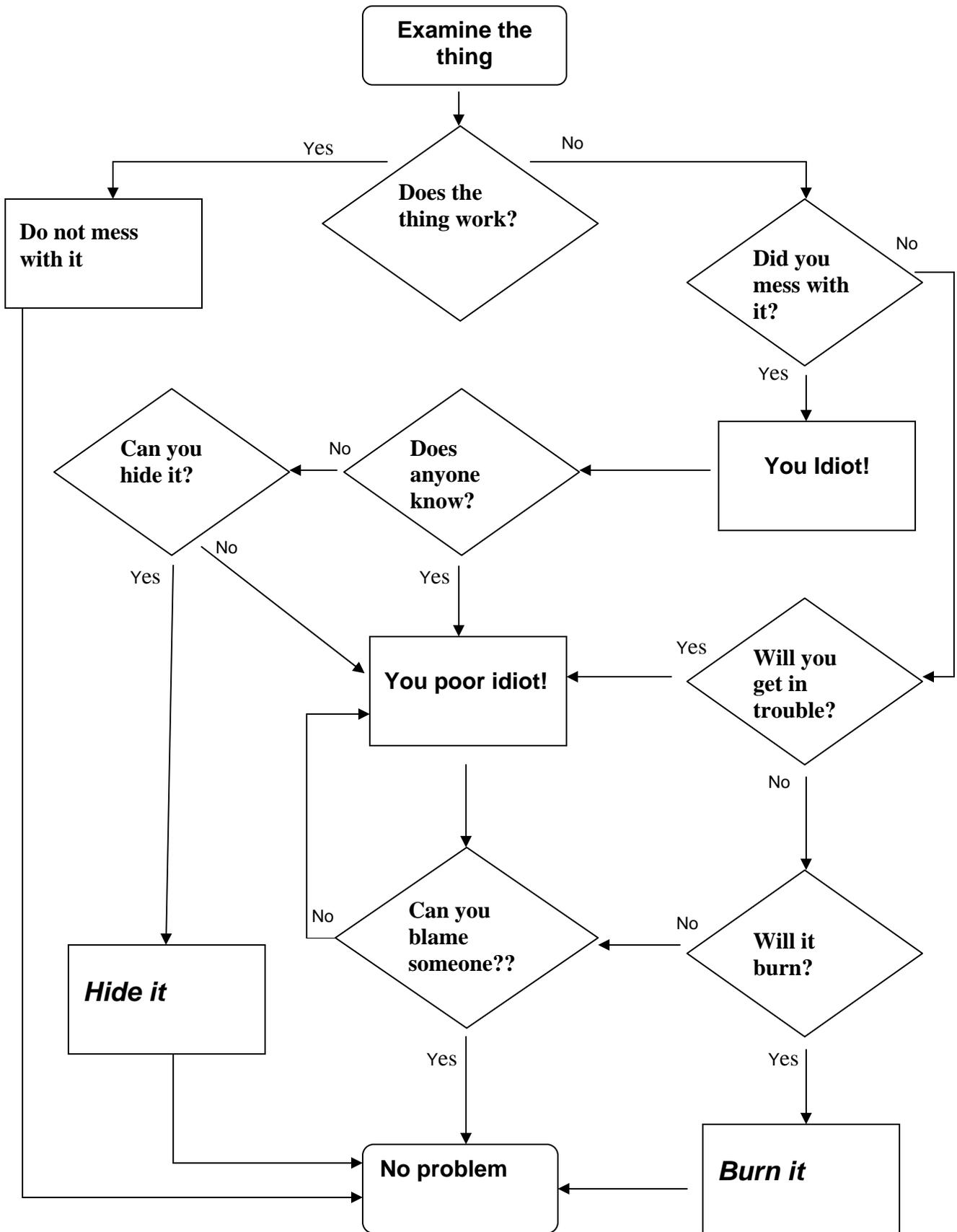
4. How many departments are addressed by this flowchart?

5. Where is the material sent after it is machined?

6. What do the following symbols mean?



Problem Solving Flowchart



Day 3 SESSION 4: LARGE GROUP DISCUSSION

Panel: *Elsie Casaway*
Margaret Imrie
George Tuccaro

What did you hear that will be valuable in your life and in your work context?

- Being able to measure Essential Skills levels is valuable to industry and training providers (benefits everyone).
- Good document design is important to safety and productivity; this is especially true when one considers how much information workers are expected to extract from documents.
- There is a shortage of information about the actual essential skills and training needs of the people – what is really important.
- Standards in the workplace are really important especially in terms of safety; compromises cannot be made – instead, literacy levels must be improved.
- There must be more essential skills interventions made available and these must be introduced at the earliest stages.
- There is a language issue in the north – the language of the workplace is English which is causing youth to abandon traditional languages in order to focus on English.
- Many workers are operating in translation which is a safety issue.
- In the north, there has been a renewed commitment to the ABE curriculum with a focus on actual workplace materials and tasks. Adult educators are doing the right thing in stressing the workplace context in all that they teach.
- Everyone is waiting for the pipeline but training and essential skills development must start now and must proceed whether the pipeline is built or not.
- Industry requirements must be met but not at the expense of personal development requirements. Workers and learners must deal with personal issues as well – they need to build their confidence and their self-esteem; this must be considered in all training programs developed.
- Essential skills can be a good vehicle for teaching people how to learn, how to build on success, and how to seek and provide support.
- The long term goal must be sustainable employment – the pipeline project needs more than welders and operators – it must become a catalyst to promote life visions.
- Often grade levels are not indicative of real ability. People must be put in situations where they can succeed.
- The north tends to rely on band-aid solutions. The education system must change and ensure students have the skills they need to access work.
- In some jobs such as construction jobs, workers will have to face the fact that they will have to move where the jobs are. Operators have more opportunity to work at one site.
- Workers should focus on developing transferable skills; for example, a person can acquire transferable skills in construction jobs which can then be used to pursue sustainable employment in operations.

- Training and skills development in the north is bringing people from diverse sectors together. People who don't usually talk to each other now have a common cause. This must continue – all stakeholders must meet and find solutions together.
- The GNWT must make vocational training a priority. Aboriginal groups want a sense of belonging to something sustainable. In order to accomplish this, people will have to think creatively – go outside the box for answers.
- There must be trust relationships to talk about needs; and actions will only be relevant if needs have been explored.
- A trades skills school is needed – the money is there. But the will must be there too.
- People living in the north must learn to see themselves as having a competitive advantage. They already know how to live and survive in the north: southern workers won't have this advantage when pipeline construction begins and workers are needed.
- Analysis has been done on what kinds of jobs the pipeline will create – now, it must be determined how capacity can be developed. Capacity is the answer. Work will breed more work whether the pipeline comes now or later.

What next?

- Information must be widely disseminated in terms of what skills industry wants workers to have.
- There is a database being compiled of all workers available for pipeline-related work.
- The Work Readiness Program will be implemented.
- All examples used in ABE should be from real life and real workplaces, and should be culturally aware.
- Introduce the Linkage Model.
- Involve and engage the school system.
- Personalize essential skills for the oil and gas industry (more focus on the learner, take the lead from the trainers who understand that essential skills are all about people)
- Core values must be identified and shared by all involved in developing capacity in the north – workers must be safe, workers must be given training, workers must have the opportunity to succeed.
- There should be a central organization to warehouse information and essential skills resources (a clearinghouse). This hub would be a nerve centre for all involved in building the essential, employability and technical skills of the north.
- The conference networking list is important for establishing a group of supporters to move forward.
- There must be a cross-industrial approach in the north – all stakeholders must be at the table (industry, education, 2 levels of government).
- Aboriginal Futures is an excellent example of collective and shared responsibility.
- Creativity will be important as the north attempts to overcome barriers and create a skilled workforce.
- There should be a follow-up workshop, one that focuses on the north as a community of people, one that highlights success stories.

APPENDIX

Conference Evaluation

Networking List

The Presenters

Mackenzie Gas Project Information

Conference Evaluation

Conference participants were asked to evaluate sessions based on the following rating scale:

5 = high / very good 1 = low / poor

May 3, 2005 - Day One

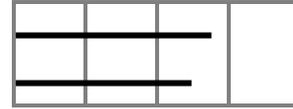
	1	2	3	4	5
Session: The Training Picture in the North					
quality of presentation	-----				
usefulness to you and your organization	-----				
Session: Perspectives on Training Needs (Panel)					
quality of presentations (overall)	-----				
usefulness to you and your organization	-----				
Session: What are Essential Skills/Tools and Resources					
quality of presentation	-----				
usefulness to you and your organization	-----				
Session: Canadian Trucking Human Resources Council					
quality of presentation	-----				
usefulness to you and your organization	-----				
Session: Construction Sector Council					
quality of presentation	-----				
usefulness to you and your organization	-----				
Session: An Integrated Model for Employment Preparation					
quality of presentation	-----				
usefulness to you and your organization	-----				
Session: Northern Pipeline Projects					
quality of presentation	-----				
usefulness to you and your organization	-----				

May 4, 2005 Day Two

1 2 3 4 5

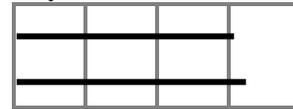
Session: Akita Drilling

quality of presentation
usefulness to you and your organization



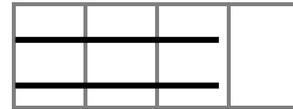
Session: Is It Always an Essential Skills Issue? (panel)

quality of presentations (on average)
usefulness to you and your organization



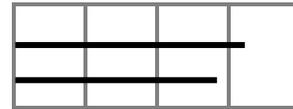
Session: NWT / NU Literacy Councils

quality of presentation
usefulness to you and your organization



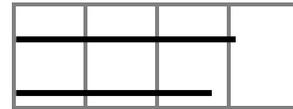
Session: Effective Job Design

quality of presentation
usefulness to you and your organization



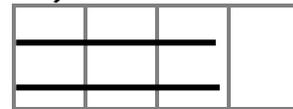
Session: TOWES

quality of presentation
usefulness to you and your organization



Session: Assessing Learning & Work Readiness (Panel)

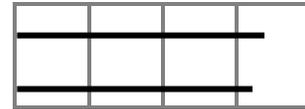
quality of presentation
usefulness to you and your organization



May 5, 2005 Day Three

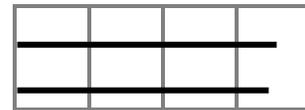
Session: Essential Skills Training Program Examples

quality of presentation
usefulness to you and your organization



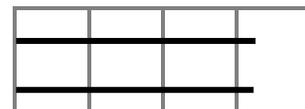
Session: Linkage Model

quality of presentations (on average)
usefulness to you and your organization



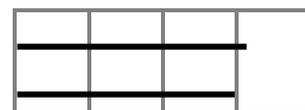
Session: Integrating Essential Skills

quality of presentation
usefulness to you and your organization



Session: Large Group Discussion and Recap

quality of the discussion
usefulness to you and your organization



Essential Skills Understanding Before

overall rating



Essential Skills Understanding After

overall rating



Conference Organization

overall rating



Conference Facilities

overall rating



Conference Success

Overall rating



Did We Accomplish Our Goals?

To raise your awareness of the importance of integrating essential skills into training programs



To acquaint you with essential skills tools and resources



To provide you with an opportunity to learn about relevant successful training programs



To deliver practical hands-on train the trainer sessions



To provide opportunities for you to network and share information



To explore what further trainer development and teaching/learning resources are needed



To inform you of the Workplace Skills Strategy



Comments

Conference Sessions:

- ◆ Excellent speakers, very useful to my work.
- ◆ Disappointing to see there were no Aboriginal speakers.
- ◆ Glad there were opportunities to ask questions.
- ◆ I have a better idea of the types of jobs available on pipeline construction ...and the importance of certification so that workers can get other jobs after the pipeline is built.
- ◆ Overall, excellent presenters and hosts. Look forward to another conference.
- ◆ Will share the information with other organizations in my community.
- ◆ Dialogue was extremely interesting.
- ◆ Interested in the Literacy Council work. Very applicable to small communities.
- ◆ Great discussion end of day two. It is important for people to understand that TOWES is just one assessment tool and not meant to be the 'be all and end all'.
- ◆ Will share the information with Deh Cho ASEP/AHRDA groups and use with our training programs.
- ◆ Need a follow-up.
- ◆ Would have liked to learn more about how to integrate essential skills into training.
- ◆ Would really like to see a workshop around the psychological impacts of relocation for people from remote communities and ways to off-set the effects of the dislocation.
- ◆ George Tuccaro is a superb moderator and time keeper.
- ◆ John Pahl was excellent.
- ◆ Linkage Model very interesting and effective.
- ◆ Felt there was a lot of honesty in the room.

Other

- ◆ Room too small, too hot, too noisy.
- ◆ Not enough room to move around.
- ◆ Very well organized.
- ◆ Lots of fun, good networking.
- ◆ Great networking opportunity.

Networking List

Essential Skills and the Northern Oil and Gas Workforce: Networking List

Last	First	Position/Title	Organization	Mailing Address	P. Code	Telephone	Email
Anguish	Doug	Project Manager	Northern Pipeline Projects Ltd.	48 Mount Copper Green SE Calgary, AB	T2Z 2L2	403 257-3657	dkanguish@shaw.ca
Balanoff	Helen	Researcher	NWT Literacy Council	Box 761 Yellowknife, NT	X1A 2N6	867 873-2176	Helen@nwtliteracy.ca
Bates	Chris	Program Analyst	HRSDC	112 Kent St. Tower B, 21 st Floor Ottawa, ON	K1A 0J9	613 957-1012	Chris.bates@hrsdcc.gc.ca
Bird	Pearl	Career Counsellor	NWT Métis Nation	Box 1508 Ft. Smith NT	X0E 0P0	867 872-3630	ssmtf@auroranet.nt.ca
Casaway	Elsie	Senior Policy Analyst, Aboriginal Skills and Employment Partnership	Aboriginal Affairs Directorate HRSDC	140 Promenade du Portage, Phase IV, 5th Floor Gatineau, Quebec	K1A 0J9	819 997-5550	elsie.casaway@hrsdcc.gc.ca
Case	Anna	Career Development Officer	GNWT – ECE	P.O. Box 1320, Joe Tobie Bldg. Yellowknife, NT	X1A 2L9	867 766-5107	Anna_case@gov.nt.ca
Cleveland	Mark	Deputy Minister,	GNWT Education, Culture & Employment	Box 1320 Yellowknife NT	X1A 2L9	867 920-6240	Mark_Cleveland@gov.nt.ca
Crawford	Barb	Manager, Education & Training	Gwich'in Tribal Council	Box 30 Fort MacPherson, NT	X0E 0J0	867 952-2592	Barb_crawford@gov.tetlitzheh.ca
Daniels	Dan	Assistant Deputy Minister	GNWT Advanced Education & Careers	Box 1320 Yellowknife NT	X1A 2L9	867 873-7252	Dan_daniels@gov.nt.ca
Despins	Rob	GM Standard Aero Corporate University	Standard Aero (WWestnet)	500 – 1780 Wellington Ave Winnipeg, MB	R3H 1B3	888.372.8648	rdespins@standardaero.com
Devins	Susan	Adult Educator	BHP Billiton Diamonds Inc.	#1102 4920 52 St Yellowknife NT	X1A 3T1	867 880-2274	Susan.r.devins@bhpbilliton.com
Douglas	Terri	Employment Development Specialist	Tlicho Logistics	Box 65 Rae NT		867 920-7288	tdouglas@tlichologistics.com
Doyle	Donna	Manager Workplace Skills Branch	HRSDC	Place de Ville 112 Kent St. Tower B, 21 flr. Ottawa, ON	K1Y 0J9	613 957-9347	Donna.doyle@hrsdcc.gc.ca
Echenberg	Havi	Researcher/Facilitator Workplace/Workforce Literacy Project	NU & NWT Literacy Councils	1 – 11 Granville Ave Ottawa, ON	K1Y 0M5	613 728-6345	havi@havidave.com
Elanik	Sandra	Manager, Education	Inuvialuit Regional Corp.	Bag 21 Inuvik, NT	X0E 0T0	867 777-7029	Sandra.elanik@irc.inuvialuit.com
Elleze	Delphine	NWT Advisor ASEP	HRSDC	5020 48 th Street Yellowknife, NT	X1A 2N8	867 669-5043	Delphine.elleze@hrsdcc.gc.ca
Field	Margaret	Community Adult Educator	Aurora College	Fort Providence NT	X0E 0L0	867 699-3231	mfield@auroracollege.nt.ca
Fyten	Phila	Career Development Officer	GNWT - ECE	P.O. Box 1320, 1 st floor Joe Tobie Bldg. Yellowknife, NT	X1A 2L9	867 766-5116	Phila_fyten@gov.nt.ca

Gargan	Shirley	Career Development Officer	Deh Gah Gotie Dene Council	Box 162 Fort Providence, NT	X0E 0L0	867 699-7005	S_gargan@hotmail.com
Gauthier	Linda	Executive Director	Canadian Trucking HR Council	203 – 720 Belfast Rd. Ottawa, ON	K1G 0Z5	613 244-4800	lgautier@cthrc.com
Genest	Mélanie	Adult Educator	Aurora College	General Delivery Fort Laird, NT	X0G 0A0	867 770-3061	mgenest@auroracollege.nt.ca
Gustafson	Vivian	Educator / Trainer		48 Rycon Drive Yellowknife, NT	X1A 2V6	867 873-3365	vgustafson@theedge.ca
Hansen	Carley	Community & Regulatory Affairs Advisor	ChevronTexaco	500 – 5 th Ave SW Calgary, AB	T2P 0L7	403 234-5311	cjhansen@chevrontexaco.com
Hanson	Hildy	Coordinator Essential Skills Training	Keyano College	8115 Franklin Ave Fort McMurray, AB	T9H 2H7	780 791-4858	Hildy.hanson@keyano.ca
Heron	Kevin	Benefits Advisor	Imperial Oil Resources Mackenzie Gas Project	9925 – 102 Ave Fort Simpson NT	X0E 0N0	867 695-2629	Kevin.i.heron@esso.ca
Hope	Delona	Community & Aboriginal Involvement Coordinator	ConocoPhillips Canada	P.O. Box 130, 401 – 9 th Ave SW Calgary, AB	T2P 2H7	403 233-3854	Delona.k.hope@conocophillips.com
Howes	Andrew	Adult Educator	Aurora College	PO Box 75 Lutselké, NT	X0E 1A0	867 370-3013	ahowes@auroracollege.nt.ca
Hritzuk	Cathrine	Career Development Officer	GNWT – ECE	P.O. Box 1320, Joe Tobie Bldg. Yellowknife, NT	X1A 2L9	867 766-5118	Cathrine_hritzuk@gov.nt.ca
Hughes	Faith	Manager Human Resources	Tlicho Logistics	Box 758 Yellowknife, NT	X1A 2N6	867 920-7288	fhughes@tlichologistics.com
Hunt	Sarah	Employee Relations /Benefits Officer	I&D Management Services Ltd.	P.O. Box 1895 Yellowknife NT	X1A 2P4	867 766-4914	shunt@internorth.com
Imrie	Margaret	Vice President Academic	Aurora College	Box 1290 Fort Smith NT	X0E 0P0	867 872-5143	mimrie@auroracollege.nt.ca
Jacobsen	Charles	Superintendent	GNWT Education, Culture & Employment	PO Box 740 Fort Simpson, NT	X0E 0N0	867 695-7332	Charles_Jacobson@gov.nt.ca
Jumbo	Ruby	Band Manager	Sambaa K'e Dene Band	Box 10 Trout lake NT.	XoG 1Z0	867 206-2800	rjumbo@direcway.com
Louie	Linda	Senior Development Officer	HRSDC	Box 1170 Yellowknife, NT	X1A 2N8	867 669-5044	Linda.louie@hrsdc-rhdcc.gc.ca
Lovely	Sherry	Coordinator Impact Assessment Employment Development	GNWT	Box 1320 Yellowknife, NT	X1A 1K7	867 920-6384	Sherry_lovely@gov.nt.ca
Lumsden	Marilyn	Policy Analyst	HRSDC	Phase IV 5 th flr. 140 Promenade du Portage Hull QU	K1A 0J9	819 994 4333	Marilyn.lumsden@hrsdc-rhdcc.gc.ca
MacDonald	Jim	Adult Educator	Aurora College	Box 31 Aklavik, NT	X0E 0A0	867 978-2224	jmacdonald@auroracollege.nt.ca

MacGregor	Colin	Chief HR Officer	Inuvialuit Regional Corp.	Bag 21 Inuvik, NT	X0E 0T0	867 777-7090	cmacgregor@irc.inuvialuit.com
MacPherson	Mike	Instructor	Aurora College	Box 1045 Fort Smith, NT	X0E 0P0	867 872-7589	mmacpherson@auroracollege.nt.ca
Manickum	Krish	Sr. Instructor Management Studies	Aurora College	Bag Service 9700 Yellowknife, NT	X1A 2R3	867 920-3041	kmanickum@auroracollege.nt.ca
Marlowe	Eileen	Admin. Officer	Mine Training Society	5110 – 49 Street Yellowknife, NT	X1A 1P8	867 765-0445	emarlowemts@yk.com
Marshall	Robert	Technical Director	Aboriginal Pipeline Group	Suite 757 – 450 1 st St. SW Calgary, AB	T3E 6N4	403 234-3178	marshall@aboriginalpipeline.ca
Maruca	Greg	Rep. / Education	AUPE (WWestnet)	10451 – 170 St. Edmonton, AB	T5P 4S7	780 930-3392	g.maruca@aupe.org
Maus	Lin	Coordinator, North Slave Community Programs & Education	Aurora College	Bag Service 9700 Yellowknife, NT	X1A 2R3	867 920-3039	lmaus@auroracollege.nt.ca
McDonald	Linda	Benefits Advisor	Imperial Oil Resources Mackenzie Gas Project	151 Mackenzie Rd. Inuvuk, NT	X0E 0T0	867 678-6102	Linda.m.mcdonald@esso.ca
Miron	Barb	Coordinator, Literacy & Basic Education	Education Culture & Employment GNWT	Box 1320 Yellowknife, NT	X1A 2L9	867 920-3482	Barbara_miron@gov.nt.ca
Murphy	Conrad	Business Leader	Bow Valley College	332 – 6 th Ave SE Calgary, AB	T2G 4S6	403 410-3195	cmurphy@bowvalleycollege.ca
Olivier	Steve	Economic Development Officer	Deh Goh Gotie First Nation	General Delivery Fort Providence, NT	X0E 0L0	867 699-7000	Steve_Olivier3000@hotmail.com
Orbell	Tracey	Education, Training, Career Development Officer	Sahtu Dene Council	P.O. Box 155 Deline, NT	X0E 0G0	867 589-4719 ext. 24	Tracey_Orbell@gov.deline.ca
Pahl	John	Northern Contracts Manager	Akita Drilling	900, 311 – 6 Ave SW Calgary, AB	T2P 3H2	403 292-7979	John.pahl@akita-drilling.com
Petersen	Leslie	ASEP Coordinator	Deh Cho First Nations	Box 89 Fort Simpson, NT	X0E 0N0	867 874-5850	lpetersen@northwestel.net
Pope	Elizabeth	South Slave Coordinator	Aurora College	12 Lepine St. Hat River, NT	X0E 1G1	867 874-6455	lpope@auroracollege.nt.ca
Pretty	Mel	Adult Educator	Aurora College	General Delivery Holman NT	X0E 0S0	867 396-4213	
Purdy	Margaret	Career Development Officer	GNWT – ECE	P.O. Box 1320, Joe Tobie Bldg. Yellowknife, NT	X1A 2L9	867 766-5108	margaret_purdy@gov.nt.ca
Robinson	Kerry	Manager, Program Development	Aurora College	50 Conibear Cres. Box 1290 Fort Smith NT	X0E 0P0	867 872-7014	krobinson@auroracollege.nt.ca
Roeland	Lana	General Manager	I&D Management Services Ltd.	P.O. Box 1895 Yellowknife, NT	X1A 2P4	867 766-4914	lroeland@internorth.com
Rogers	Tammy	Corporate Manager	Gwich'in Tribal Council	Box 1509 Inuvik NT	X0E 0T0	867 777-7902	trogers@gwichin.nt.ca

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The Presenters

Doug Anguish

Doug Anguish has had a significant career in both the public and private sectors. He spent 20 years, from 1976 – 1996, in the politics of Canada's prairie province of Saskatchewan. During that time he was a Member of Parliament and later a Member of Saskatchewan's Legislative Assembly. While serving in the Provincial Legislature he was appointed to Executive Council where he was Minister of Energy and Mines and, later, Minister of Labour. Following his retirement from politics Doug moved to the Northwest Territories where he was Vice President of Marketing for the Northwest Territories Development Corporation. In 1998 Doug moved to Calgary, Alberta where he was part of the corporate management team for Renaissance Energy one of Canada's top ten oil and gas producers. In late 2000 Doug became President of External Solutions a position he currently holds.

Helen Balanoff

Helen Balanoff has lived in the Northwest Territories for more than 30 years, working in the field of education and learning. She has taught people of all ages in a variety of places. She later became Director of Early Childhood and School Services in the Department of Education, Culture and Employment. She also worked as a researcher for the NWT Special Committee on Education and the Special Committee on the Review of Official Languages. Today she works for the NWT Literacy Council on family literacy, literacy research and workplace literacy projects.

Chris Bates

Chris Bates leads the Essential Skills Outreach Team with the Human Resources Partnership Directorate, Government of Canada. He has been promoting this initiative to networks across Canada, for the past 3 years. Chris received his undergraduate degree from the University of Waterloo with honours and has completed a certificate in human resources management at Conestoga College.

Mark Cleveland

Mark Cleveland is currently serving as Deputy Minister of Education, Culture & Employment with the Government of the Northwest Territories (GNWT). He has worked for the GNWT for over twenty-five years in a wide range of roles – from community to regional and territorial levels. For the past eight years he has served, in several departments as a Deputy Minister. Mr. Cleveland's primary service has been in the field of adult learning and organizational development. He was directly involved in the establishment of the first regional education authorities in the NWT and played a key role in the establishment of a decentralized public college system in which he served as president for six years. For this work, he was recognized by the Association of Canadian Community Colleges and was awarded the National Leadership Award. In his work with government departments, Mr. Cleveland has been actively involved in a number of major change activities. He led the establishment of long-term corporate plans for two government departments; managed the division of a department as part of the creation of the Nunavut Territory, directed the redesign of major programs including the NWT Income Support and Student Financial Assistance Programs and served in both leadership and participatory roles on a number of internal and external committees and boards.

Rob Despins

Rob Despins is the General Manager, Standard Aero Corporate University. In this capacity he is responsible for development and delivery of training to both management and front line staff. Rob was previously the Director of Marketing Systems for Standard Aero Ltd, an aircraft engine repair and overhaul facility headquartered in Winnipeg. He has been employed with Standard Aero since 1987 serving in the capacity of Manager of Training, Manager of Employee Relations, and Operations Manager. Rob is currently a member of the Premier's Economic Council for Manitoba and chairs the committee on Renewable Resources. He is past Chair of the Board for Canadian Manufacturer's and Exporters, Manitoba Division and has served on the board for over 10 years. He is the business co-chair of WWestnet.

Susan Devins

Susan Devins has been involved in community and workplace literacy for the past 17 years. Susan was hired by BHP Billiton Diamonds Inc. in 2001 to develop and implement the Workplace Learning Program at their mine in the Northwest Territories. Previously she worked in assessment, curriculum development, and training both in Canada and overseas. Susan is a graduate of the University of Alberta, Masters of Adult Education program. Her hobbies include travelling, hiking, cooking and playing flute.

Havi Echenberg

Havi Echenberg has been an independent consultant working with government and non-government organizations on issues related to social and fiscal policy, for fifteen years. Based in Ottawa, Havi has extensive experience working in intersectoral initiatives as a researcher and facilitator at local, provincial/territorial and national levels, on issues ranging from housing and homelessness, literacy, and income security, to labour market policy, diversity, and disability. She is currently the researcher and facilitator for the workplace/workforce literacy project of the Nunavut and Northwest Territory Literacy Councils. Her educational background includes graduate studies in history, journalism, public administration and public policy.

Linda Gauthier

Since joining the Canadian Trucking Human Resources Council (CTHRC) in 1995, Linda has been involved in developing and delivering train-the-trainer workshops, facilitating focus groups and developing Essential Skills Profiles and Occupational Analysis for a variety of occupations in the industry. Linda has been instrumental in the Council's achievement of a range of leadership, research and program goals. A detailed knowledge of the challenges facing the trucking industry and over 25 years of experience in program development, have earned Linda the respect of industry stakeholders. In December 2002, Linda was named to the position of Executive Director for the Council. She holds the degree of Master of Science from Florida State University.

Hildy Hanson

Hildy has worked in a copper mine in the Yukon, as a ranch hand in southern Alberta, as a high school teacher and for Dow Jones in Dallas, Texas. For the past 15 years, she has been employed at Keyano College in a variety of divisions, most recently in Workforce Development. Hildy took over Essential Skills training (including the Syncrude Canada Ltd. ERIC–Safety and Workplace Reading program, SAM–Syncrude Applied Math, and WWF–Workplace Writing Fundamentals) at the College in 2000. Her responsibilities also include the English as a Second Language (ESL) programming at the College, Construction Safety and Training Systems (CSTS) testing and TOWES testing for industry. Hildy has worked closely with oilsands industry stakeholders and other partners to meet the training needs of a diverse clientele including labour, trades, skilled immigrants, Aboriginal organizations and the federal and provincial governments.

Margaret Imrie

Margaret Imrie has been with Aurora College for 10 years and is currently the Vice President Academic at the College. During her time with Aurora, Margaret has worked at all three of the campuses; Yellowknife, Inuvik and Fort Smith. A long time resident of the north, Margaret has lived in locations throughout the Territories and Nunavut.

Colin MacGregor

Colin MacGregor is Chief Human Resource Officer for the Inuvialuit Regional Corporation and a Director of the Aboriginal Futures Society, a partnership consortium. Colin is also a member of the Inuvik District Education Association and the Inuvik Regional Training Partnership. Colin has held senior human resource positions in a number of major organizations including Nova Corp., Raytheon Canada, Spar Aerospace, Conestoga College and Casco Inc. He has extensive experience in organization design, organization alignment, employee development and succession planning in both Canada and the United States. Colin has taught part-time for 10 years and holds the distinction of being the first Community College Graduate in Ontario to become Chairman of the Board of Governors. He received a Bachelor of Science in Business from Syracuse University and a Diploma in Business from Lambton College.

Robert Marshall

Robert Marshall, a professional engineer, is currently the Technical Director for the Aboriginal Pipeline Group (APG). Mr. Marshall has over thirty-five years of experience in infrastructure development primarily related to natural gas transmission systems worldwide. Prior to joining the APG, Mr. Marshall spent several years in South America as a Director of Engineering and later as construction manager for the Gas Pacifico pipeline which traversed the Andes Mountains between Argentina and Chile. More recently he spent almost four years working for the Minerals, Oil & Gas Division of the GNWT as a senior pipeline advisor helping the government to prepare for their role in a future Mackenzie Gas Pipeline. Robert is the industry representative on the Board of Directors of Aboriginal Futures and a member of the POTC Committee.

Conrad Murphy

Conrad Murphy is the Business Leader of the TOWES (Test of Workplace Essential Skills) Department at Bow Valley College. He has been employed at Bow Valley College for 23 years and has extensive experience in college and workplace assessment and training. Conrad is an original partner in the creation of TOWES and has guided its development for more than 7 years. As a result of the initial TOWES project, Bow Valley has developed essential skills services that include broadly based and custom designed versions of TOWES; hard copy and on-line preparatory curriculum; and consulting services.

John Pahl

John Pahl started as a roughneck with Akita Drilling in 1995 while on hiatus from a Bachelor of Arts degree at the University of Alberta. After graduation, he returned to the oil patch and Akita until 2000 when he moved to Australia to complete an MBA at the Queensland University of Technology and work on drilling rigs in South Australia. John returned to Canada and Akita in late 2001 and moved to Akita's head office in Calgary. His current title is Northern Contracts Manager, responsible for frontier area business development and Akita's seven Aboriginal joint ventures. John holds a variety of oilfield certifications and won an award from the Australian Institute of Management Consultants.

Kerry Robinson

Kerry Robinson has lived in the NWT for 23 years, and for the last 20 years he has worked for Aurora College. For the past 10 years he has been the Manager of Program Development. Kerry's first 10 years with Aurora were spent as an instructor in the Observer / Communicator Training Program. Most of Kerry's duties are in the areas of program development, proposal writing, needs assessment, and program evaluation. Kerry has a B.A. (English) from the University of Waterloo, a Certificate in Adult and Continuing Education (CACE) from the University of Alberta, and a Masters Degree in Education (Adult Education) from the University of New Brunswick.

Lana Roeland

Lana Roeland is the General Manager of I & D Management Services Ltd in Yellowknife. Ms. Roeland has been with the 100% Aboriginal owned human resources company since its inception in July 2002. I&D Management Services Ltd. currently employ over 150 people. Ms. Roeland has 12 years of experience in the management of Aboriginal controlled public & private organizations.

Pat Salt

Pat Salt is the Coordinator of Special Projects at Bow Valley College (Calgary). In 2005, she completed a five year award-winning CIDA-funded project in Zimbabwe which focussed on the creation of an integrated entrepreneurship training model for vocational centres, the establishment of occupational standards for apprenticeship and trade testing, and the incorporation of Workplace Essential Skills into training and assessment practices. Pat is currently managing a similar project in Namibia for the College. As a private consultant, she develops and delivers training curricula, works as an essential skills profiler and reviewer for HRSDC, writes proposals and reports, and edits and writes manuals. Pat has conducted training sessions across sub-Saharan Africa, in the former Czechoslovakia, in Germany, Chile and Brazil.

Yvette Souque

Yvette Y. Souque is Program Manger responsible for Business-Labour Partnerships and Workplace Literacy at the National Literacy Secretariat (NLS). From 1991 to 2002 Yvette worked in the NLS federal-provincial/territorial partnership in the four western provinces and three territories. Prior to joining the government, Yvette worked in refugee and immigrant settlement, treatment of emotionally disturbed children and psychiatric nursing. Yvette holds a M.A. in Social Welfare, BSW with focus on Community Development, and is a Registered Psychiatric Nurse.

Rosemary Sparks

Rosemary Sparks had an 18 year career with the Ontario Provincial Government before leaving in 1989 to start her own consulting firm. For the next 13 years Rosemary was a consultant with the majority of her work in the construction industry. She specialized in human resource and labour market issues helping organizations with planning, research, group facilitation, and program evaluation. In 2002 Rosemary began working as a consultant for the Construction Sector Council and subsequently joined the staff of the council in 2005 as the Director of Projects.

Celina Stroeder

An accomplished manager accustomed to working and living in the Canadian North, Celina Stroeder moved south to Ft. McMurray, AB in 2004 and joined Albian Sands Energy as the Manager of External Affairs. Ms. Stroeder previously lived in the Northwest Territories for 16 years. Her last position was with the territorial government as the Assistant Deputy Minister responsible for the Mackenzie Valley Development Project. Prior to transferring to her position in Yellowknife, Ms. Stroeder was the Regional Superintendent, Resources, Wildlife & Economic Development based in Norman Wells, NT. In Norman Wells she managed a staff of 25 in a 286,000 square kilometer region that included five communities with only air access. Her responsibilities included forest fire management, resource management, land claim implementation, oil and gas and economic & business development. Now happily living in Fort McMurray and continuing her northern adventure, Ms. Stroeder enjoys the extended summer season to ride the Harley Davidson motorcycle with her partner Rick Doyle.

George Tuccaro

George Tuccaro is a member of the Mikisew Cree First Nation from Fort Chipewyan in Northern Alberta. He moved north to Yellowknife in 1970. George is now a retired broadcaster after 30 years with CBC North. During his tenure in journalism, George became a household name as an emcee, a comedian and as a performing artist in the Northwest Territories. He has hosted national and international festivals and showcases including Yellowknife's "Folk on the Rocks" numerous times over the past two decades. Recently he and his good friend Gordon Cormier from St John's Newfoundland teamed up to produce and record a comedy CD titled "Salt Beef and Bannock", a mixture of east coast and Aboriginal humour. The CD has since sold out and plans are underway to produce another. On a more serious side, George is enjoying his personal healing journey and now has 25 years of sobriety.

Reid Warne

Reid Warne graduated from the SAIT Power Engineering program and has worked for Imperial Oil for 35 years. During that time he has worked in Production operations, Beaufort Sea/Mackenzie Delta exploration, and the Safety Health and Environment department. Reid has been a plant operator, foreman and superintendent of construction and logistics for Arctic exploration, Drilling Rig Operations Manager and Emergency Response Advisor. Reid is now a Benefits Advisor for the Mackenzie Gas Project.

Mackenzie Gas Project Information

Mackenzie Gas Project

Four major Canadian oil and gas companies and a group representing the Aboriginal peoples of Canada's Northwest Territories are partners in the proposed Mackenzie Gas Project.

ABORIGINAL PIPELINE GROUP (APG)

www.aboriginalpipeline.ca

The Aboriginal Pipeline Group (APG) was formed in 2000 to represent the interests of the Aboriginal peoples of the Northwest Territories in the proposed Mackenzie Valley Pipeline. Two other related organizations have also been formed.

- Mackenzie Valley Aboriginal Pipeline Limited Partnership (**MVAPLP**):

MVAPLP holds the APG's financial interest in the Mackenzie Valley Pipeline. MVAPLP is to be owned primarily by organizations under the direction of the Deh Cho, Sahtu, Gwich'in and Inuvialuit. The other Northwest Territory settlement areas (the Akaitcho, Dogrib, Salt River, North Slave Metis Alliance and South Slave Metis Alliance) will be given an opportunity to participate in the MVAPLP at the discretion of the Deh Cho, Sahtu, Gwich'in and Inuvialuit.

- Mackenzie Valley Aboriginal Pipeline Corporation (**MVAPC**).

MVAPC is the general partner of MVAPLP. In October 2001, the Mackenzie Valley Aboriginal Pipeline Corporation entered into a Memorandum of Understanding with the four producing companies. In June 2003, the APG became a full participant in the Project following funding and participation agreements between the four producers, the APG and TransCanada PipeLines Limited.

THE PRODUCER GROUP

The Producer Group consists of four oil and gas companies that hold interests in the Niglintgak, Taglu and Parsons Lake natural gas fields in the Mackenzie Delta. In addition to being co-owners of the Mackenzie Valley gas pipeline with the APG, the producers will also be joint owners of a smaller system of pipelines that will gather the natural gas from those natural gas fields, a gas processing facility near Inuvik that will separate natural gas liquids from the natural gas, and a liquids pipeline from the facility near Inuvik to Norman Wells.

Imperial Oil Resources Ventures Limited

www.imperialoil.com

Imperial Oil Resources Ventures Limited holds a 100% interest in, and operates, the Taglu natural gas field. Imperial is also the operator for the gathering system and the Mackenzie Valley Pipeline. Imperial Oil Resources Ventures Limited is a wholly owned subsidiary of Imperial Oil Limited, one of Canada's largest corporations. Imperial is also one of the largest producers of crude oil in the country and a major producer of natural gas, as well as the largest refiner and marketer of petroleum products.

**ConocoPhillips Canada
(North) Limited**
www.conocophillips.ca

ConocoPhillips Canada (North) Limited holds a 75% interest in, and operates, the Parsons Lake natural gas field. ConocoPhillips Canada (North) Limited is a wholly owned subsidiary of ConocoPhillips Canada Limited, one of Canada's largest oil and natural gas exploration and production companies and a leading marketer and distributor of crude oil, natural gas and natural gas liquids.

Shell Canada Limited
www.shell.ca

Shell Canada Limited holds a 100% interest in, and operates, the Niglintgak natural gas field. Shell Canada Limited is one of the largest integrated petroleum companies in Canada. It is the country's largest producer of sulphur, a major producer of natural gas, natural gas liquids and bitumen, and a leading manufacturer, distributor and marketer of refined petroleum products.

ExxonMobil Canada Properties
www.exxonmobil.com

ExxonMobil Canada Properties holds a 25% interest in the Parsons Lake natural gas field. ExxonMobil Canada Properties is a partnership of ExxonMobil Canada Ltd. and its wholly owned subsidiary, ExxonMobil Resources Ltd. It is one of Canada's leading producers of conventional crude oil, heavy oil, natural gas and natural gas liquids.

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Did You Know?

The proposed Mackenzie Gas Project would become one of the most complex undertakings in the NWT to date:

- to assist with community consultation, the project has staff in three regional offices.
- during the peak construction season, up to 7000 people will work on pipeline construction
- the pipeline system will be built in sections "or spreads" ranging in length from 120 to 160 kilometres
- more than 40 self-sufficient camps will be needed to house the thousands of construction workers and support personnel
- the project will make use of four to five million cubic metres of natural construction material such as gravel and sand
- about 19 barge landing sites will be required to land materials transported by barge down the Mackenzie River – eight of these sites already exist
- initially, four compressor stations could be built but as new natural gas discoveries are developed, more compressor stations may be added
- compressor stations will be monitored 24/7 from a central operations control center
- total length of the gathering system, natural gas liquids pipeline and natural gas pipeline is about 1900 kilometres
- the natural gas pipeline will take gas from a processing facility near Inuvik to an interconnect facility in northwestern Alberta – a distance of about 1,200 kilometres.
- 1200 kilometres is about the same distance as driving the round trip from Edmonton to Calgary and back **twice**.



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Norman Wells Regional Office

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(information retrieved June 25, 2005 from www.mackenziegasproject.com/moreinformation/publications/documents/Who_We_Are.pdf and MGP Overview Article, April 1,2004)

For further info please visit the MGP web site at www.mackenziegasproject.com.

Front cover photo:

Curtis, Jan (06 September 1996) *Part of the auroral bands with rays*

Retrieved April 03, 2005 from: www.geo.mtu.edu/weather/aurora/images/aurora/jan.curtis/index5.html

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