



Case Study February 2010

Safe Landings: Adult Basic Education at Bristol Aerospace

PROGRAM NAME

Adult Basic Education (ABE) Program

DATE ESTABLISHED

1993

SKILLS DEVELOPED

English verbal and written skills
Communication and teamwork skills
Transferable and job skills

CONTACT

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OVERVIEW

Bristol Aerospace Limited, a subsidiary of Magellan Aerospace Corporation, operates in Winnipeg, Manitoba. Operations at Bristol are divided into three major business units. The Aerostructures business unit manufactures and designs metal and composite aircraft structural components. The Aeroengine business unit manufactures and repairs engine components, while the Defence and Space business unit manufactures rocket systems and motors as well as small satellites and manned space payloads.¹

¹ Bristol Aerospace Limited. Website content.
[Cited October 15, 2009.] www.bristol.ca/Company.html.

Bristol has almost 80 years of history in the aviation and aerospace industries and strives to maintain its reputation for manufacturing quality products that are defect-free. The company encourages all its employees to abide by Bristol's Quality Policy: "We will provide our customers and colleagues with defect-free products and services in conformance with agreed requirements."²

In the 1990s, Bristol Aerospace embarked on a workforce skills upgrading program in response to a business need to expand into new markets. Successful expansion hinged on Bristol's ability to be competitive by upgrading the skills of its workforce. Three key factors determined the need for upgrading the workforce at Bristol:

1. A strategic decision was made to move beyond military contracts into the civil or commercial aviation business. The commercial side of the business prefers its suppliers to employ workers with skills that meet national or international standards. This move thus required that workers upgrade their skills so that they could be certified in their respective trades.
2. Company restructuring resulted in the creation of new job classifications that required broad knowledge and skills. With some workers' jobs now expanded, they needed training to be able to perform all of their "new" job tasks.
3. The adoption of new quality management systems, such as WHMIS (Workplace Hazardous Materials Information System) and ISO 9000, required documentation certifying that workers had sufficient knowledge and skills for their respective trades. A process was needed at Bristol to document the skills and knowledge of the workforce.

OBJECTIVES

Implementation of a statutory WHMIS training program revealed a need to improve the functional literacy and numeracy skills of Bristol workers. To meet the business case for workforce upgrading, as outlined above, four key objectives were established at Bristol to achieve this outcome:

1. Develop a process to compare workers' knowledge and skills to the required core competencies in their trades, as defined by national standards.
2. Obtain objective evidence from a recognized educational institution of Bristol's workers' knowledge and skills.
3. Mitigate training costs by delivering training only to those who require it.
4. Provide opportunities where workers can gain credits for demonstrated knowledge and skills that can be applied toward an apprenticeship or other certified college-level program.

Half of the training was taken on workers' personal time and the other half on paid company time.

TARGET GROUPS

All workers at Bristol were permitted to take part in the Adult Basic Education (ABE) program. Shop floor workers, however, were the primary target group for this training initiative. While over 100 workers expressed interest in attending at the start of each course, 25 to 30 workers typically participated in each training course.

ACTIVITIES

Bristol Aerospace began its literacy skills upgrading initiative with a workplace-based ABE program. The first courses offered included Shop Mathematics, Oral Communications, and English as a Second Language. Course participants committed to a total of 80 hours of training (4 hours per week for 20 weeks). Bristol used a model of shared time for training, where half of the training was taken on workers' personal time and the other half on paid company time.

Following the success of its ABE program, the company then embarked on developing technical training programs,

² Bristol Aerospace Limited. Website content. [Cited October 15, 2009.] www.bristol.ca/Company.html.

which were delivered by a recognized educational institution, Red River Community College. The DACUM³ (Developing a Curriculum) approach was used to establish the company's training requirements. These requirements were carefully aligned with those of nationally recognized occupational standards, such as apprenticeship programs.

Prior Learning Assessment and Recognition (PLAR) strategies were used to potentially reduce the amount of time needed for workers to meet the training standards required for certification. As a result, workers took part in only those training elements for which they lacked skills, rather than in an entire course (80 hours of training).

At the end of each program, learners' successes were celebrated at a recognition event, where each participant received a certificate of accomplishment. Photos of participants with their certificates were published in Bristol's corporate newsletter, along with an article about their achievements.

RESOURCES

Bristol obtained funding for the program from the Province of Manitoba, Workplace Education Manitoba (WEM) Department. WEM funded the needs analysis study (completed in the summer of 1993) and then funded half of the cost of the first wave of training (delivered in 1994). Since that time, Bristol has funded the literacy program in full.

The training took place at Bristol facilities in various conference rooms. The classes were delivered at the end of the day to accommodate the shared time commitment of the company and participants. The mutual agreement to donate equal time to the program demonstrated that both the company and the participants took seriously their commitments to learning.

Bristol approached WEM for assistance with finding appropriate trainers and was accordingly provided with referrals to trained workplace literacy professionals. These professionals had the experience and ability to facilitate workplace learning efforts and to incorporate workplace-based materials into the program.

INNOVATIONS

A joint management–union training committee was established early on as a result of a new collective agreement. The agreement allowed for the amalgamation of job classifications on the understanding that training would be provided to workers in support of their transition to the new classification structure. After some discussion, the Joint Training Review Committee recommended a workplace-based Adult Basic Education program to address the priority needs identified by WHMIS.

Finding an educational partner willing to assist with the development of flexible assessment strategies and to be amenable to flexible training delivery was an initial challenge.

An in-depth organizational needs analysis was implemented to determine the level of literacy and basic skills in the workplace and to establish a foundation for the ABE program. Over 150 interviews were conducted with representatives from all areas of the company. In addition, activities and reading materials used by various representative groups were observed and reviewed. One recommendation of the needs analysis study was to establish an ABE program focused on math and communication skills. The report and its recommendations were presented to both senior management and labour representatives who agreed to proceed with the implementation of an ABE program.

3 "The DACUM approach uses a storyboarding process that provides a picture of what the worker does in terms of duties, tasks, knowledge, skills, traits and in some cases the tools the worker uses. The information is presented in graphic chart form and can include information on critical and frequently performed tasks and the training needs of workers." DACUM. Website content. [Cited October 15, 2009.] www.dacum.org.

CHALLENGES

Bristol encountered a few obstacles in its efforts to provide literacy and numeracy skills training opportunities to workers. Finding an educational partner willing to assist with the development of flexible assessment strategies and to be amenable to flexible training delivery was an initial challenge. Not all educational institutions or national accreditation bodies that were approached by Bristol were willing to participate in a venture of this nature, as it deviated from their normal operations.

Training programs were made relevant through customization to individuals' specific learning needs.

Support for the new training initiative was another major challenge. The resources needed to deliver PLAR (for instance, a modular curriculum) were significant. Management was forced to seek external sources of financial support for the development of the required infrastructure. Furthermore, additional funding from governments and other partners was needed to continue to apply PLAR to existing technical programs.

Generating enough worker interest to justify the delivery of specialized technical training was an ongoing challenge. While the level of interest and participation in the training was initially solid, maintaining this level of engagement was an ongoing source of concern.

SOLUTIONS

A number of principles formed the foundation of the successful training model at Bristol. Training was based on adult learning principles and practices, as well as the recognition of prior learning. All stakeholders, and especially the learners themselves, were involved in the decisions made around training design and delivery.

Bristol partnered with Red River Community College to facilitate the development of a flexible assessment strategy.

Flexible assessments (i.e., not limited to written examinations) and flexible training delivery aimed to accommodate individual learning styles and schedules. The training program was viewed as a perpetual “work in progress” so that the changing needs of learners could be continually addressed over time.

The results of the needs assessments were discussed and approved with workers prior to their participation in training. Training programs were made relevant through customization to individuals' specific learning needs. Participants' receptivity to change was managed through a modular curriculum delivery that incorporated learning outcomes in its design. The instructors were experienced adult educators who themselves received ongoing development training.

OUTCOMES

Bristol realized a number of accomplishments from its Adult Basic Education program. Skills needs were assessed and core job competencies were identified so that a relevant training program could be designed. The competencies were comparable and linked to courses or programs offered at Red River Community College. By addressing skills gaps and establishing competency thresholds, the company was able to meet national quality standards.

Training was streamlined and cost-effective due to the use of PLAR.

Workplace literacy was viewed as an integral part of Bristol's overall training strategy. Without these core skills, many workers were not able to complete the technical training programs required for certification in their trade. A high percentage of workers who participated in the ABE program were able to move on to take part in more advanced technical training courses.

In support of PLAR, worker training files were updated and their training accomplishments documented. As a

result of Bristol's use of PLAR, Red River Community College expanded its PLAR services to include the mechanical/manufacturing engineering technology department. The company's use of PLAR was also promoted to institutions beyond Red River Community College. Bristol developed new training courses that incorporated PLAR strategies for company classifications that were not yet aligned to a national standard. As a result, Bristol has more opportunities to share PLAR services with other industrial and manufacturing companies in relevant areas.

IMPACTS AND BENEFITS

From management's perspective, the Adult Basic Education training program afforded the following benefits:

- ◆ The upskilled workforce was better able to meet the requirements of WHMIS health and safety regulations.
- ◆ The quality of products and customer service improved.
- ◆ Workers were better prepared to meet the current and future challenges of the competitive commercial business.
- ◆ Training was streamlined and cost-effective due to the use of PLAR.
- ◆ The company gained the ability to benchmark worker qualifications against national standards.

From labour's perspective, the training program resulted in benefits that included:

- ◆ a safer workplace;
- ◆ portable credentials for workers;
- ◆ job security and employability, as well as enhanced job mobility through improved skills and trade certification; and
- ◆ reduced duplication of training due to the use of PLAR.

USE AS A MODEL

Workplace literacy skills development was intertwined with technical training at Bristol. The company recognized the importance of literacy skills and used PLAR to build workers' capacity to take advanced training. Advanced training permitted workers to use higher-level technical skills in their job tasks while meeting safety and quality regulations. Overall, a comprehensive training program that parlayed literacy skills training into advanced training opportunities allowed the company to expand successfully into new markets.

Due to changing markets and organizational needs, the Adult Basic Education program is not currently operating at Bristol. However, its past initiatives offer a solid model of literacy skills upgrading in a highly regulated industry.

About the Organizational Effectiveness and Learning Case Studies

The Organizational Effectiveness and Learning case studies examine outstanding education and lifelong learning programs and initiatives. This case study addresses the impact of workplace literacy and essential skills on employee safety and health.

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by *Alison Campbell*

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