



The Boeing Company is a major aerospace and defense corporation, headquartered in the U.S. with operations throughout the world. Boeing Winnipeg employs more than 1,500 workers and is the largest aerospace composite manufacturer in Canada. Composites are materials made of two or more substances that together offer a higher stiffness to weight ratio, and where cost effective, can be used to replace aluminum, steel, and titanium on today's aircraft.



When Boeing Winnipeg hired a wave of new employees to gear up for the production of the 787, it added something new to its corporate toolkit: TOWES (Test of Workplace Essential Skills) tailored for the aerospace industry.

"We were familiar with Essential Skills and the benefits to employees and the organization," says Herman Hansen, Manager of Employee Relations, Training and Development, and Security and Fire Protection at Boeing Winnipeg. When it came time to ramp up operations in late 2006, TOWES was their first choice to replace the Canadian Adult Achievement Test (CAAT) as a screening tool.

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The CAAT test has been used in the past by employers and unions to determine equivalence to Canadian education from Grades 1 to 12 based on multiple choice questions in three subject areas: English, mathematics, and science.

In contrast, TOWES measures Essential Skills, which form the foundation for learning. The stronger an individual's Essential Skills, the better able he or she is able to learn technical skills and apply knowledge in new situations. When safety and productivity are top priorities and change is often the norm, Essential

Skills play an important role in achieving excellence.

There are nine Essential Skills, three of which are measured by TOWES: document use, reading text, and numeracy. Using a four-point scale, a test-taker's Essential Skills are rated and can be compared against the Essential Skills requirements of a specific occupation using Essential Skills profiles developed by Human Resources and Skills Development Canada (HRSDC). HRSDC's online inventory of profiles is available free of charge (http://srv108.services.gc.ca/english/general/home_e.shtml).

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Although the TOWES assessment is suitable for all industries, Manitoba's aerospace industry customized TOWES using examples and test questions specific to their sector. They also created customized job profiles.

It was no surprise that, like most occupations in the knowledge and information economy, jobs at Boeing Winnipeg require Level 3 skills or higher in all three Essential Skills areas.

"Even though we were hiring for entry-level jobs in manufacturing, we need that level of Essential Skills," explains Hansen, citing a document use example. "Plastic technicians and assembly technicians have to navigate a lot of specs."

Working with Stevenson Aviation and Aerospace Training Centre of Red River College, Boeing screened 2,100 applicants using TOWES. They found some surprises.

"The pass rate was only 20 per cent. Given that the applicants all had a Grade 12 education or higher, it was surprising how low some of the scores were," says Hansen. "I expected there to be some relationship between senior matriculation and Essential Skills scores."

According to Brian Harris, Stevenson Aviation's Senior Instructor responsible for aerospace programs, document use scores were low. Document use is the ability to enter data in forms and find and use information contained in tables, catalogues, maps, and drawings.

"We saw some people with Level 4 scores in numeracy and reading text who had Level 2 scores in document use."

Although screening was stringent, Harris says he and his instructors see first-hand the rewards that Boeing is reaping. New hires come to Stevenson Aviation for a three to four week training program.

"Compared to the people screened with the CAAT test, the new recruits (screened with TOWES) demonstrate much better learning

skills. We see the difference; they are much more trainable and they demonstrate a higher ability to comprehend."

"That's important," adds Harris, "because the type and level of aerospace training is increasingly difficult. The 787, for example, is new technology and our training reflects that."

Hansen agrees that it's been worthwhile. "TOWES testing was an investment, but compare that to the cost of hiring the wrong employee."

He adds, "We lost very few people during the probation process and our managers are pleased with the overall quality of the people. We figure we will have fewer issues over time because we are pre-screening for Essential Skills."

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And he is encouraged as he looks to the future. "The average age of our workforce is 46 to 47 years, so there will be lots of opportunities for advancement. We want employees who are able to take on new challenges."