



Sylvie Farrell, P.Eng.: *In the driver's seat*



by Sharon Van Ihinger

Being one of only seven women in a graduating class of 120 at the University of Western Ontario was a good primer for Sylvie Farrell, P.Eng. Armed with an engineering education and a broad business focus, Farrell's career shifted into high gear in 2000 when she became the first female engineering manager at General Motors Defense in London. Farrell has close to 100 design engineers, process engineers, logistics engineers and CAD modellers in the Concurrent Product Development (CPD) Engineering department reporting to her.

The department, made up of seven teams, is responsible for all aspects of the design for the family of light-armoured vehicles (LAVs). One of these vehicles, the new eight-wheeled Stryker, bridges the gap between heavy and light units. The U.S. Army will require 2131 vehicles over six years—a hefty \$6 billion (Cdn.) contract. Over 300 vehicles have been delivered to the army's first brigade who are currently undergoing training. Reports are that approximately 3500 American soldiers will be set to deploy by May 2003.

The Stryker can carry a total of 11 personnel, including the driver and vehicle commander. While the U.S. Air Force's main C-130 aircraft can transport the Stryker at a maximum weight of 38,000 pounds (17.2 tonnes), the vehicle was designed for performance up to a weight of 18.5 tonnes. The vehicle, says Farrell, operates well in urban settings as well as rugged and steep terrain, can travel up to speeds of 100 km/h and is built to carry out combat missions in the battlefield with good tactical mobility.

Farrell recently had the opportunity to speak with American soldiers at a large military tradeshow in Washington. The soldiers told her that front-line personnel training on the Stryker say they really like the product, which, Farrell says, is very gratifying to hear.

Prior to her work on the Stryker, Farrell worked as a design engineer on Canadian military programs and the U.S. Marine Corps program, in addition to other international work. Developing the ballistic steel specifications and approving all drawings for materials, paint specifications, adhesive and rubber specifications were all part of a typical work day. She also had subsystem design responsibilities for the NBC (nuclear, biological, chemical) warfare protection system, fire suppression systems and other variant unique subsystems.

In terms of recent Canadian projects, Farrell says that GM Defense just completed manufacture of 42 Forward Observation Officer (FOO) vehicles and that they are continuing to refit older units with the latest technology for the Department of National Defense.

Moving in the right direction

Farrell's fascination and aptitude for math and science led her to pursue studies in engineering. Her father, a highly-educated teacher, and her mother, a university-trained nurse, encouraged her to set her sights high, says Farrell, and it was a high school guidance counsellor who suggested she apply to the engineering faculty. The thinking was that this was a profession where she could apply math and science and leave university with a degree that would qualify her immediately for a job. During her time at Western, Farrell spent a summer working in the factory at GM and another summer as a sales engineer at GM Detroit Diesel.

Shortly after graduating with a Bachelor of Engineering Science degree in materials science (similar to metallurgy but a broader discipline, where plastics, composites, etc. are studied in addition to met-

als), Farrell started working in the LAV division as an engineer. She became a licensed member of PEO in 1985.

Her pursuit of new knowledge and experiences eventually steered her to pursue further studies in an executive MBA program at the University of Toronto. She continued to work full-time at GM in London, while studying part-time over a two-year span. "I studied and completed homework on the train," says Farrell, who recalls making the four-hour London-Toronto round trip once a week along with a group of other students from London.

In 1991, Farrell received her Master of Business Administration degree and became the engineering administration supervisor overseeing a group whose



Sylvie Farrell, P.Eng., leads a diverse group of engineers responsible for the design of wheeled armored vehicles at General Motors Defense in London, Ontario. Farrell is proud to be part of a strong management team at GM Defense which was recently acquired by General Dynamics, whose headquarters are located in Falls Church, Virginia. The Stryker, of which there are 10 different types, is pictured here with Farrell.

responsibilities included engineering schedules, budgets, and coordinating contract change proposal activities.

Lessons learned

Farrell became Chair of GM's Local Women's Advisory Council in 1991 and in 1995 chaired the General Motors of Canada National Women's Advisory Council. While working on a subcom-

mittee on the council, she helped create a personnel development workbook that staff can use to map career plans.

Drawing on her career and life experiences, Farrell has been able to share valuable insights with many women and men, gained through her work on committees and as chair to the advisory council. She says she often urges them to take advantage of opportunities for further educa-

tion or training, stressing that qualifications give credibility. Farrell says she believes breadth of experience is also important, and that experience in as many areas of the business as possible is vital. "It's a good idea to accept a position that may be offered to you. Although the value of a job may not be immediately apparent, you will always learn something or meet people whom you can learn from,"



she says. "I think if someone has made the effort to offer you a position, they've seen something in you."

Farrell also urges young engineers to develop coping strategies in tough situations in order to maintain credibility in the work environment. When dealing with aggravating circumstances or people, Farrell suggests drafting an email response before

frustration boils over: "It's a good way to vent when you're angry, but don't send it until the next day when you've had a chance to cool down and make appropriate revisions." More sage advice from Farrell—don't neglect your responsibilities in your current position, even if it's not exactly where you want to be. What often happens, she explains, is that people set their sights on

career advancement, while neglecting to do a good job in their current position, or they pay attention only to those aspects of their job they feel can help them advance. Continuously building on her own project engineering, planning and management skills, while focusing on the job at hand, is something that seems to come naturally to Farrell. And above all, emphasizes Farrell, treat everyone with respect: "It's just the right thing to do."

Team spirit

A career highlight for Farrell was when the first Stryker was shipped to the U.S. this past February. "It was definitely a team success and a proud moment. I think it's a really neat product," she says with typical enthusiasm. Working in a great organization with really good people goes a long way to building positive outcomes, she explains.

Farrell is quick to credit all team members for the vital role each plays in ensuring scheduling, budgets, and quality are on target. Prior to her current position, Farrell was manager of the business process improvement department. A task group charged with exploring ways to enhance processes ultimately found strategies to reduce costs and lead time. The end result was a shift to a multi-disciplinary approach that put designers, 3-D CAD modellers, process engineers and logistics engineers onto teams. The team was then able to develop more robust designs that required much less subsequent design modifications. Although this process takes a little longer, "ultimately what you end up with is a more reliable product that's easier to build and easier to maintain," says Farrell.

Speaking engagements have also kept Farrell busy. She's equally comfortable talking with children as part of "Take our Kids to Work Day," or with military personnel about technical issues. Farrell, part of a panel speaking at a January 2003 meeting to celebrate the 20th anniversary of GM's National Women's Council, will talk about how participation with the council has affected her career. When she needs to unwind and re-energize, Farrell heads off to the golf course or, when time allows, stows away to an exotic island destination with her husband Ken. ❖

