

Changing gears

Women in engineering

Ask a group of 13-year-old girls if any of them is thinking about a career in engineering, and most of them will probably answer "no."

In many minds, the word "engineering" still paints a mental picture of a man in a hard hat in charge of building a bridge or a skyscraper.

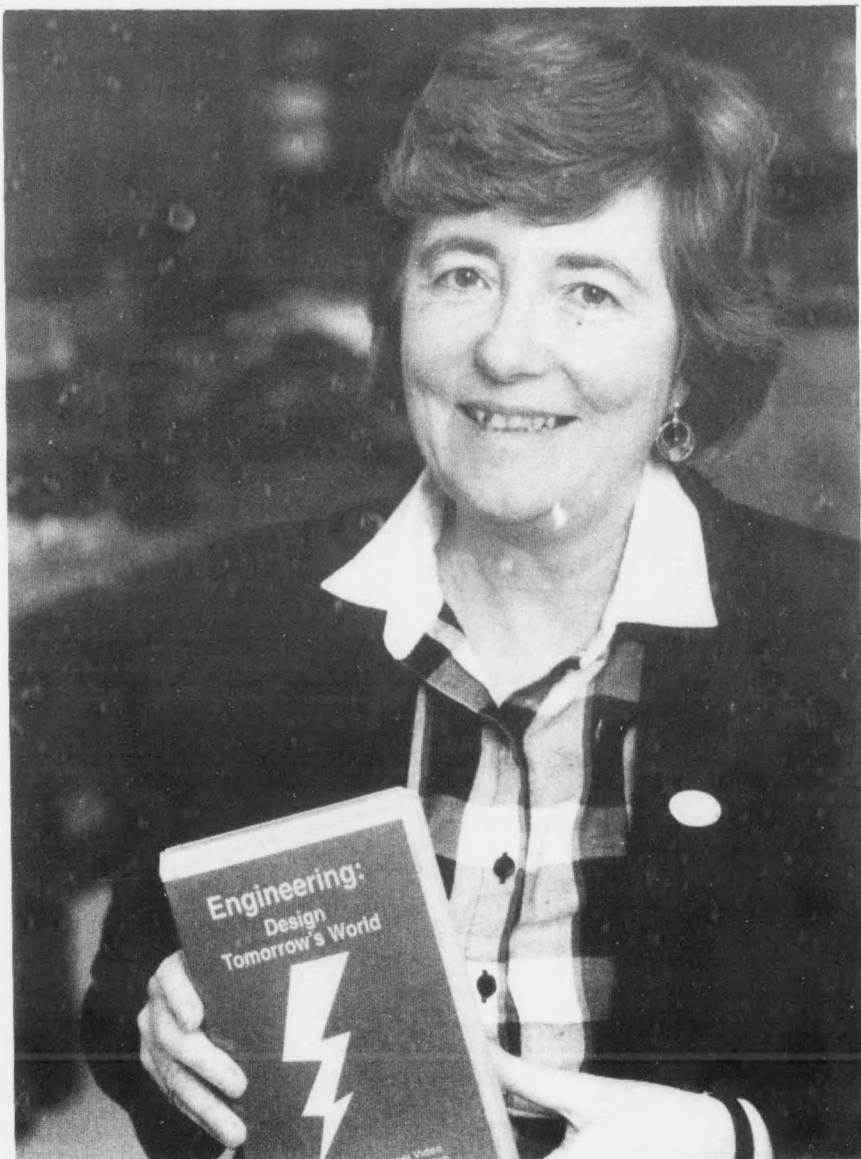
"Too many young girls still don't understand there is a place for women in engineering," says Monique Frize, professor of electrical engineering at the University of New Brunswick in Fredericton. She also holds the Northern Telecom-NSERC Women in Engineering Chair at UNB.

Frize has produced a video called *Engineering: Design Tomorrow's World*. Several young girls were interviewed at the beginning of the film. None knew about the many different kinds of engineering careers they could choose. They also didn't realize women are already working in these fields and enjoying success.

"There is still a lot of mystery about engineering," Frize says. "Some people think only the very smartest students can become engineers. Girls think just because they don't know anything about the gears in a car or how an engine works, they can't be engineers. They think all boys already know about these things."

Frize says students who are "average" in school, with marks around 70 per cent can become fine engineers. And, she says lots of people don't know anything about gears or machinery when they start studying engineering, and that shouldn't effect your decision to choose a career in this field.

The women interviewed in the video work in a variety of engineering roles, and love their jobs. They are engineers working in the fields of chemistry, agriculture, mining, industry, mechanics,



Monique Frize encourages women to become engineers.

transportation, surveying, the environment and biomedical research.

Engineers help create the world we live in by designing buildings, transportation systems and all the machines and gadgets that make our lives better. The things engineers design must be practical and solve everyday problems. That's why Frize believes women have a special contribution to make in the field.

LOVE THEIR JOBS

"Women have a different way of looking at things than men," she says. "When you are an engineer, you have to solve problems. Sometimes, a woman will see a different kind of solution and come up with a design that a male engineer might not have thought about."

There is an example of this in the video. Sherry Sparks is a construction engineer who designed the renovations for washrooms on Marine Atlantic ferries. When they were first built, nobody thought of putting changing tables for babies in the washrooms. But, Sparks knew they would be helpful to ferry passengers, so she put them in her new

design, in both the women's and men's.

"I got a lot of compliments. People with babies really appreciated them," says Sparks. She was thinking of people when she did her designing job. Women engineers say they like the fact their jobs lets them be creative. And, there are lots of other things they like about their work.

Marine engineer Cynthia Burgess says: "I was part of an experiment where I had a trip around the Halifax harbor in a submarine. Just about every week, I do something I find really exciting. And, you can go absolutely anywhere in the world to work if you have a degree in engineering."

Agricultural and food engineer Denyse LeBlanc says: "I always look forward to going to work in the morning because I'm never quite sure what will happen during the day. It's always exciting. This is not a profession only men can do."

"You don't have to decide what you want to be when you're in junior high school. But, all of the woman engineers in this film say it's important to keep your options open. They warn against dropping maths and sciences when you get into high school."

The governments of Canada and New Brunswick realize the value and importance of encouraging women to pursue careers in engineering and other science fields. They showed their support by building a special program into the new federal/provincial COOPERATION Agreement on Entrepreneurship and Human Resource Development. The program urges women to enter careers in science, engineering and entrepreneurship.

The Agreement is between the federal Atlantic Canada Opportunities Agency, Employment and Immigration Canada, provincial Department of Advanced Education and Labor and New Brunswick's Regional Development Corporation. For more information, contact the agreement co-ordinator at 444-4124.

David Foot's forecast What's in your future?

THE 45 TO 54-YEAR-OLDS

These people were born during the late 1930s and the war years of the 40s. Because they are few in number, "they've had a fairly charmed life," says David Foot, a demographic specialist at the University of Toronto. "There's a huge difference between being 49 and 43 today. It may be only six years but it's the difference between having been promoted rapidly to the top of the corporate structure and being a manager who hasn't made the first rung of the senior hierarchy."

Financially, these pre-boomers are in good shape. They laid claim to both urban and rural real estate when both were cheap and will reap big rewards when they sell.

What is most precious to this age group is time, says Foot. They cause urban gridlock by driving their cars everywhere in an often fruitless attempt to save time. And they will pay for extra service. "They'll pay to have their gutters cleaned and for someone to come around on Sunday to put in a new washing machine," says Foot. The biggest concern for the 45-to-54-year-olds in the 1990s will be caring for their aging parents. Old people are living longer than ever, long enough to become afflicted with debilitating diseases such as Alzheimer's and cancer.

THE 55 TO 64-YEAR-OLDS

They had an inauspicious start, being born during the Dirty Thirties, but the Depression generation comprises the luckiest folks in Canada. Because so few of them were born, they had little competition and they are now running the country. As teenagers, they sat out World War II, but as soon as it was over, they rode the reconstruction boom of the 1950s to easy wealth. They profited from booming stock markets. They created the baby boomers who drove up the value of their houses. Now, the Depression kids are retiring early because they can afford to. Depression kids are healthy and energetic, and Foot figures many of them won't be satisfied with a retirement of golf, bridge and travel. Instead, they will want to set up two-day-per-week consulting practices or benefit from their hobby by working part-time in, say, a garden centre. As always, their timing will be perfect. Because of the shortage of young people during the 1990s, there will be plenty of opportunities for part-timers.

Did you know?

FOR WOMEN ONLY?

In Canada, women hold:

- ▼ 99 per cent of all garment-making jobs;
- ▼ 97 per cent of all child care jobs;
- ▼ 92 per cent of all nursing jobs;
- ▼ 79 per cent of all serving (i.e., foods, beverages) jobs and
- ▼ 75 per cent of all clerical jobs.

In Canada, women hold:

- ▼ 17 per cent of all engineering jobs;
- ▼ 10 per cent of all machining jobs and
- ▼ three per cent of all construction jobs.

Statistics Canada, Census of Canada 1986.

WOMEN AND AGING

The life expectancy for women born in 1987 is 79.7 years. The life expectancy for men born in 1987 is 73.4 years. Statistics Canada, Life Tables, Canada and Provinces, 1985-1987.