



CHRIS MIKULA, THE OTTAWA CITIZEN

Technologist Rick Guilbeault (left) and Dr. Phillip Lightfoot examine a piece of steel after an explosive charge was attached to it and detonated as part of tests to determine the stress that hydro-tower supports can withstand.

A LAB THAT DOES A BANG-UP JOB



LINDA MONDOUX

If it weren't for the fireworks shooting into the daylight sky several times each week, the Canadian Explosives Research Laboratory would be Ottawa's best-kept secret.

It was curiosity that finally led me to the Natural Resources Canada site off Timm Drive between Kanata and Bells Corners. There, surrounded by green space, with the Queensway on one side, a cornfield on another and a public recreational path on the eastern flank, is CANMET's explosives lab.

The lab has been in existence in various locations since 1919, and has been at the Bells Corners complex since the late 1960s.

Take the winding road through the property (after you've surrendered your driver's licence and signature at the guard station) and you'll come upon small clusters of buildings where engineers, chemists and other scientists are busy testing 300 explosives products each year. In one room, you'll find a lab with computers and gizmos that look like industrial microwaves. That's where the staff carries out its world-renowned research. In another building, there's a giant hulk of a thing known as a blast containment chamber.

Outside, built into a hill, is another blast chamber. You'll find blistered paint on the oversized hatch and dings and dents on the walls and floor inside. Nearby is a testing contraption consisting of a

half circle of concrete with a clothesline-type attachment on which smaller items can be blown up. And over there is a safe place to test fireworks.

Everything that goes bang, from pyrotechnics to air bags to sporting ammunition is tested to international standards at the explosives lab, which boasts clients — both government and commercial — from around the globe.

"We abuse it," is the way Phil Lightfoot, the lab's manager, describes what a product goes through to help improve safety in both the manufacture and transportation of explosives. That's putting it mildly.

The indoor blast chamber, the only one of its kind in Canada, is designed to withstand explosive charges equivalent to up to five kilograms of TNT. The day I was there, testing was being carried out on metal supports for hydro towers. The federal government, said Mr. Lightfoot, wanted to know how difficult, or easy, it would be for someone to destabilize the towers, putting our hydro at risk.

Mr. Lightfoot admits that since the Sept. 11, 2001, terror attacks on the United States, there has been a heightened interest in research on the protection of infrastructure — everything from pipelines to dams to bridges.

There's also a demand for the testing of filmed windows — that's the coating that stops glass from blowing out in all directions in an explosion. You'll find blast-resistant windows on embassies and strategic government buildings around the Ottawa region.

For large-scale testing, such as blowing up an army truck with 20 tonnes of explosives, the lab will use the Defence Department's bases at Petawawa or at Suffield, Alta.

The lab also certifies products used in the mining industry and is involved in

accident investigation. If something blows up, it can answer why.

Mr. Lightfoot is obviously proud of the work accomplished at the Canadian Explosives Research Laboratory. The lab, he says, is responsible for coming up with a technique to achieve long-term "doping" of plastic explosives.

While it didn't invent the process in which explosives are marked with a scent so they can be sniffed out at airports, the lab's research took doping to the next step, ensuring an extended scent shelf life. Its techniques and marking levels are now followed by member countries of the International Civil Aviation Organization.

Canada, he says, has also become a leader in classifying fireworks, an important step in safe storage.

The day I watched the testing of new pyrotechnics from China, Richard Bowes, the head of explosives certifications and hazards analysis, told me that at least one of the fireworks would be ordered excluded from the batch destined for store shelves because it was too powerful for the consumer market. To be approved under the Canadian Explosives Act, it would have to be classified in the professional-market category.

As I completed my tour, I thought it was a pity the explosives lab isn't open to the public. People would be amazed to see for themselves that a mere 25 people at the Bells Corners site are working to keep Canadians safe, not only from everyday hazards, but from potential terrorists.

From where I sit, that more than makes up for the minor annoyance of hearing fireworks whizzing and banging in my neighbourhood every now and then.

LINDA MONDOUX is a Citizen copy editor. Her column appears every other week.