

Responding to disaster: Canada and the Mexico City earthquake

David Montoya, MD

On Sept. 19, 1985, the Cocos plate at the bottom of the Pacific Ocean began to push forcibly under the large North American plate along what is known as the Michoacan Gap. The result was a 4-minute-long earthquake that registered 7.8 on the Richter scale. Thirty-six hours later these restless pieces of the Earth's crust once again interacted to produce a second earthquake. It lasted 1 minute and registered 7.3 on the Richer scale.

From its epicentre off Mexico's Pacific coast, shock waves spread centrifugally like ripples in a pond. Some 400 km away, in Mexico City, the sandy subsoil of what had once been an Aztec

lakebed was liquified and the city's old centre shook like an ice cube in a bowl of Jell-O.

By the time the dust had cleared, the highly urbanized and centralized Federal District of Mexico City had been laid waste and thousands of people were buried. Two hospitals, the national telecommunications centre, all but one television and radio tower, several banks and government buildings and hundreds of businesses and homes had been destroyed. Mexican officials, stunned by the extent of the disaster, soon appealed for international assistance.

When news of the earthquake reached Canada, John Bauman, an emergency medical technician from Edmonton, contacted the Department of External Affairs and offered to organize a civilian search and rescue team to aid the Mexicans.

As Ottawa began to confirm the extent of the disaster and the need for additional manpower, Bauman began organizing a core group of rescue and paramedical personnel. He also approached the president of the Alberta Medical Association (AMA) and requested physician representation on the team. The AMA had no mechanism for providing physicians for emergency disaster response, but the president, Dr. Douglas Perry, began phoning across the province in a search for doctors with disaster, prehospital and emergency experience who had the time and the willingness to join the team.

By the time the Department of External Affairs confirmed Mexico's request for nonmilitary search and rescue manpower, Bauman had assembled a team of 14 firefighters, paramedics and physicians.

Within 24 hours of the confirmation, on Sept. 24, 1985, a Canadian Armed Forces Hercules plane landed in Mexico City with the Canadian team and 9500 kg of emergency medical supplies.

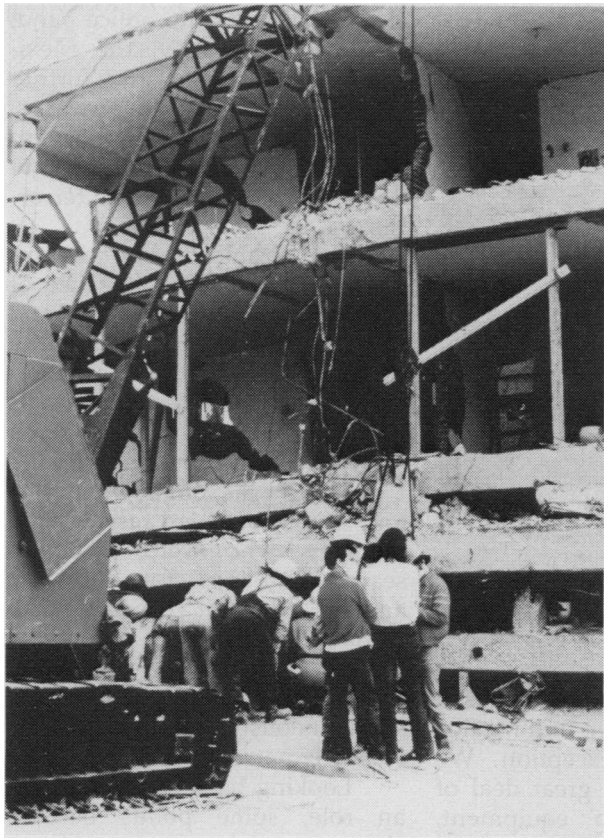
Representatives of the Canadian Embassy met the team and arranged for accommodation.

A briefing was held at the embassy within hours, where plans were made to amalgamate the Canadian and West German teams. The 55-member West German contingent, a very sophisticated, highly technical group with very extensive experience, had already been there for a few days. Despite its strength in the *search* aspect of the search and rescue mandate, it had no medical capability — there were no physicians or paramedics. Its

David Montoya is medical director of the Canadian Search and Rescue Team and staff emergency physician at the Calgary General Hospital.



(L) to (R): Drs. Al Ausford, author Montoya and Peter McGuire loading emergency medical supplies



Flattened building with pancaked floors being propped up and searched



Toppled building on its side. Numerous onlookers created dangers.

members couldn't provide on-site medical treatment for any injured rescue personnel or for rescued victims requiring resuscitation. The Canadian team, with its very strong medical background, was a perfect complement to the West German team.

In all, the Canadian team visited nine rescue sites, working for a total of about 1000 man-hours. A number of bodies were retrieved and identified, but no survivors were found.

A survey of the French, Italian, German and Swiss teams revealed that, with few exceptions, 800 to 1000 man-hours had been expended for every live victim found. As time went by, this yield became more disappointing.

The vast majority of the destruction was confined to the old city centre — beyond that perimeter, evidence of the disaster was sparse.

As one approached the centre, reminders of the earthquake included crumpled sidewalks and seismic waves frozen in time along the ledges of rattled build-

ings. As we drew nearer, the pattern of destruction became more dramatic because of buildings that had lost their façades or entire walls.

The core of the old city looked like a war zone, with buildings destroyed throughout. Pancaking seemed to be the pattern of building collapse — floors fell on to other floors in a chain reaction. In some cases the sway of high-rise buildings caused them to snap off at the base.

The Mexican government was criticized roundly in the press because of its alleged substandard building codes and the lack of disaster preparedness. The search and rescue phase began in a very emotional climate, with the massive Mexican population wanting to help but having very little training or direction.

There had been no formal preparation of a disaster plan in earthquake-prone Mexico, so there was no mechanism to deal with the catastrophe in a coordinated and comprehensive manner.

The country was deluged with rescue teams from around the world, but there was no preparation for this and no one had been assigned to coordinate the incoming teams and their resources. Several days passed before leaders of the international teams began to hold joint meetings in an attempt to coordinate strategy and to minimize confusion and duplication of efforts. The Mexican government was soon represented on this committee, as were the major Mexican volunteer organizations.

Control at the various sites was provided by the Mexican armed forces, a source of frustration and animosity for the Mexicans, who were acutely aware of both the military presence in the streets and the military's distinctly contrasting failure to participate in the search and rescue efforts.

Although there was a clearly defined command structure within each rescue team, there was no commander-in-chief. Each team had a site commander, who in turn reported to the team com-



The white arrow on the left third of the photo points to a "wave" in building created by the earthquake.

mander, but the chain ended there. No one seemed to be in charge of the hordes of Mexicans who were trying to help.

As well, people flocked to the disaster sites and sometimes impeded our efforts or endangered themselves.

Communication is always a problem in a disaster, and Mexico City proved no exception. We had arrived with a great deal of sophisticated radio equipment, but were not permitted to unload or use it: With most communication systems down and function-

al channels, like the police band, jammed to capacity, the Mexicans did not want any further uncontrolled use of the airwaves. There was also some concern about the equipment falling into the hands of criminals and terrorists.

The problem was circumvented by providing free use of public telephones in the city and establishing a phone post at the command centre. However, communication between individuals inside and outside a building at a search site remained a problem.

There was ongoing conflict and debate between rescue team members who were trying to search buildings for survivors and government officials who wanted to demolish potentially hazardous sites. On occasion these forces would be working simultaneously, and catastrophe was only narrowly averted.

Looking back to the Canadian role, some points become clear. Canada must be able to respond to international disasters by sending more than supplies. In the initial search and rescue phase of any disaster, there is no substitute for the trained personnel who look for and attend to survivors and trapped victims.

In order for Canada to raise the level of its own disaster preparedness and to maintain its role as a leader in the international community, it must be able to respond to international disasters with nonmilitary manpower and expertise. This, coupled with the judicious deployment of material and medical supplies, would represent a well-rounded response in the event of international crisis.

The Canadian search and rescue team that went to Mexico City had room for improvement. Its base of expertise could have been expanded to include demolition experts, epidemiologists, dog handlers and radio operators. The Canadian team, although very strong in the rescue area, was weak in the search aspect of its mission, and trained dogs and electronic search equipment would have been a great help to the contingent. ■

After the disaster

Much has happened since the Canadian team returned from Mexico. Its members have formed the Alberta Disaster Response Association to promote the principles of disaster response and preparedness and to provide a potential means of response to any disaster. The association currently includes the firefighters, rescue workers, paramedics and physicians who formed the Canadian team that went to Mexico, but will soon open its membership to other sectors that might have a role to play after a disaster.

The association hopes to attract a large number of members so it can design an optimal response team for any future disaster.

A second development concerns the Alberta Medical Association's need to be able to respond to a request for

physician volunteers on short notice. Dr. Peter McGuire and I have developed the Alberta Physicians Disaster Response Registry, a listing of physicians who have agreed to donate their time and expertise on short notice in the event of a disaster.

The registry is the only one of its kind in Canada, listing 122 physicians from all specialties. It represents a vast pool of resources — its 122 members speak a total of 18 languages, and there are members with firefighting, police or military experience. The registry has been computerized and physicians can be listed by city, specialty or skills — including parachuting.

We hope to expand the registry to the national level in the near future and bring this valuable resource to the attention of potential users.