

## **CRISIS MANAGEMENT AND EARTHQUAKE PREPAREDNESS - A REGIONAL PERSPECTIVE**

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### **ABSTRACT**

It's a natural human reaction that when disaster strikes somewhere in the world, we suddenly scramble to see what the chances are of the same type of disaster happening in our own locale.

The vast variety of potential disasters creates a nightmare for our leaders and planners. How do we make the public aware of the problems? How do we analyze the hazards and risks and take steps to mitigate effects? How do you overcome the "Oh, it can't happen here" syndrome? How can you plan unless you know what hazards exist and who and what is a risk?

The public in Canada has become more and more concerned with man-made hazards but in the past three and one half years British Columbians have become more concerned with the earthquake hazard. This is largely as a result of major earthquakes around the world. The probabilities for disasters such as earthquakes are high and the risks are great. There are environmental, political and social impacts following any major incident. If you believe these risks exist, then what do you do about it?

This paper will outline for you some of the initiatives taken in Canada and in particular British Columbia to make the public aware of the risks and to educate planners, politicians and responders as to what can be done to mitigate the effects of disasters.

## **LARRY PEARCE**

Mr. Larry Pearce received his education at the Canadian Army Staff College in Kingston, Ontario and Sir George William and Carleton Universities in Montreal and Ottawa. Mr. Pearce retired from the Canadian forces with 28 years of combined service including being posted to the Canadian Embassy in Washington, D.C. as Community Liason Officer to the U.S. Army. He is currently Assistant Regional Director of Emergency Preparedness Canada in Victoria which covers the areas of British Columbia and the Yukon.

## **CRISIS MANAGEMENT AND EARTHQUAKE PREPAREDNESS - A REGIONAL PERSPECTIVE**

It's a natural human reaction that when disaster strikes somewhere in the world, we suddenly scramble to see what the chances are of the same type of disaster happening in our own locale. Chances are that there is nothing new under the sun and all along you have had these potential disasters right there under your noses, so to speak. In fact, we have identified over sixty natural and man-made disasters which could strike Canadians at anytime-everything from tornadoes to earthquakes and even nuclear war.

This vast variety of potential disasters creates a nightmare for our leaders and planners. How do we make the public aware of the problems? How do we educate the "Guy on the street?" How do we analyze the hazards and risks and take steps to mitigate effects? How do you overcome the "Oh, it can't happen here, eh!" syndrome.

Disaster planning theory dictates that Emergency Planners keep three principles in mind. For example, planning must take place with, not for, the community; planning must not occur in isolation but involve communication at the intra/inter-agency level; and plans, once developed, must be tested and/or exercised.

Having said that, I would like to outline for you some of the initiatives we have taken in Canada to make the public aware of the risks and to educate planners, politicians and responders as to what can be done to mitigate the effects of disasters.

### **HAZARDS AND RISKS**

How can you plan unless you know what hazards exist and what and who is at risk? We don't do this very well. For example: What are the probabilities of the following:

- a. a major oil spill off the Pacific West Coast?
- b. a major industrial accident in large metropolitan areas?
- c. a catastrophic earthquake off the Pacific West Coast?

The probabilities are high and the risks are great. There are environmental, political and social impacts following any major incident. If you believe these risks exist, then what do you do about it? You...

TELL THE PEOPLE  
TO  
TELL THE POLITICIANS  
TO  
TELL THE PLANNERS

## HOW DO WE DO THIS

Well, here's what we're doing to answer the BIG question:

### UNIVERSITIES

Through the academic community we have put in place programs and initiatives. For example:

#### UNIVERSITY OF BRITISH COLUMBIA

- A public seminar on earthquake preparedness was conducted through the department of continuing education;
- An emergency response workshop was conducted for municipal employees and elected officials;
- EPC Fellowships - four Fellows are currently funded by EPC to study doctoral programs in Emergency Preparedness;
- Disaster Preparedness Study (DPS) centre has been created.

#### SIMON FRASER UNIVERSITY (Vancouver, B.C.)

Emergency Communications course:

A unique undergraduate course believed to be the first offered at a Canadian University. The course is designed to provide an overview of Emergency Communications for government and other agencies. The course looks at policy and regulations, government emergency communications, and risk assessment and how it affects the provision of communications.

Emergency Preparedness Information Exchange (EPIX):

A one year pilot project developed by SFU; Department of Communications and Continuing Studies under the sponsorship of EPC. It is a computer based bulletin board system designed to stimulate networking and regular exchange of ideas and information. It puts members of the Canadian Emergency Preparedness Community in direct contact with each other providing disaster related information.

#### CARLETON UNIVERSITY (Ottawa, Ont.)

Emergency Communications Research Unit (ECRU):

This is a standby research unit which has been in existence since 1973. It consists of two faculty, under the direction of Professor Joe Scanlon, and a group of volunteer students. The main thrust of ECRU has been to examine patterns of communication and response to unexpected events (i.e.) disasters. These have ranged from windstorms, fires, hostage incidents, spills, and mud

slides to air crashes. They have occurred in communities across the country from coast to coast. Some of the incidents studied were:

- |   |                        |      |
|---|------------------------|------|
| - | Miramichi Earthquake   | 1982 |
| - | Toxic Spills           | 1983 |
| - | Newfoundland Air Crash | 1986 |

Plus many others.

## **PUBLIC AWARENESS**

The public in Canada has become more and more concerned with man-made hazards but in particular in the past three and one half years British Columbians have become more concerned with the earthquake hazard. This is largely as a result of major earthquakes around the world and the 1985 Mexican Earthquake, the 1988 Armenian Earthquake and their concomitant media coverage. However, there has also been an increased sense of risk generated by the scientific community.

Seismologists with the Geological Survey of Canada at the Pacific Geoscience Centre of Sidney, B.C., a part of the Department of Energy, Mines, and Resources Canada, have come out strongly regarding the increased threat of a great subduction earthquake in B.C. and the accompanying tsunami.

The consequences of such a catastrophic earthquake are tremendous and would affect almost 10% of Canada's population which resides in southwest British Columbia. In particular, a large number of the schools would be seriously affected or might even collapse. If such a subduction earthquake occurred, undoubtedly it would be the largest economic and social catastrophe due to nature, ever to hit Canada.

Emergency Preparedness Canada and, in particular, Fred Cooper and myself in British Columbia have recognized this potential high risk for many years. In fact, we have been preaching earthquake mitigation for the past eight years but up until recently our pleas had largely fallen on deaf ears.

OK; What have Fred and I been doing to spread the gospel? What has EPC done to make folks aware of the earthquake threat?

- Our office has given over 150 earthquake briefings in the past two years to a wide variety of groups including schools, private agencies, government offices, service clubs, corporations, etc., all over B.C. and the Yukon.
- Fred and I have participated in over twenty different seminars and workshops on earthquake preparedness in both Canada and the United States.
- We have both provided interviews to the press, radio and TV and assisted in the development of articles on the earthquake risks.
- We have assisted all levels of government in the preparation of earthquake plans.

- Fred has written and published "Quake: The Prediction No One Wants To Hear." A copy of his article has been provided for you.
- We are constantly providing advice and assistance to communities on earthquake planning.
- We have worked with the Ministry of Education on an earthquake plan for B.C. Schools. You will hear more about this from Neil Jackson.

What about EPC and our Directorate of Public Information? The Director of Public Information, Ms. Lesley Lynn, has not been idle. For example:

- They have produced Earthquake Posters that have been distributed all over the world and, in fact, are producing a new 3 panel earthquake poster which provides information on what to do during and after the "Quake." Hopefully, this will soon be available.
- A 15 minute International Award winning video entitled "Earthquakes In Canada" has been produced in concert with Energy, Mines, and Resources. This video won a gold medal in Houston, Texas during 1987 as the best documentary on advice to the public.
- EPC has produced and distributed literally hundreds of thousands earthquake brochures over the past decade.
- EPC in support of the Victoria Capital Regional District Earthquake Week arranged to place earthquake brochures in 84 supermarkets across B.C. to help stress earthquake awareness.
- EPC in conjunction with the Province of Ontario has provided a School Multi-Media Material Kit to be slotted into the curriculum. This project is now being tested in 15 different schools in Canada in both languages with a view to including it, nation wide, as part of the curriculum. If we can change public attitude towards emergencies through the school system we can change their response.
- EPC in conjunction with the Province of British Columbia's Provincial Emergency Program (PEP) have funded an earthquake information page in the B.C. telephone directories.
- EPC has produced two new 30 second public service announcement videos to stress earthquake awareness;
- EPC has produced a variety of radio tapes stressing the earthquake message; and
- We continue to produce and publish articles in our quarterly Digest on earthquake preparedness.

## WHAT HAS THE GOVERNMENT DONE

Remember I said we have to "tell the people" to "tell the politicians" to "tell the planners?" Well, it must have worked because, here is what has happened:

## NATIONAL EARTHQUAKE SYMPOSIUM

As a result of media and people pressure and strong requests from the Province of B.C. to the Federal Government, a National Earthquake Symposium was held at Arnprior, Ontario in September 1988. The aim was to involve federal departments and ministries of the Province of B.C. at the working level, in drafting a National Earthquake Response Plan to support B.C. in the

event of a catastrophic earthquake. This meeting of minds was successful for two reasons:

- a. It produced a draft concept national support plan; and
- b. It forced the Province of B.C. to come to grips with the earthquake threat and to start to produce their own plan of response.

While this was ongoing, Energy, Mines and Resources (EMR) had put forward a Memorandum to Cabinet (MC) asking for money and person years to do more investigation along the Cascadia subduction zone in an attempt to further define and provide solid geological evidence to support the large thrust earthquake hypothesis. This is still being considered but in the interim the Geological Survey of Canada has increased the Pacific Geoscience Centre's earthquake research budget for the FY 1989/90.

As these events were unfolding in November on 1988, the town of Chicoutimi, Quebec, was hit with a 5.6 earthquake. This earthquake literally and figuratively shook the establishment and perked the interest of not only the scientists but also governments and politicians across Canada. No one was killed but it served to warn Canadians that the earthquake hazard is real and we must get on with our planning.

Meanwhile, momentum was building in the Province of B.C. as a result of the earthquake in Quebec. The media had seized the initiative. Articles appeared in the local press, TV was bulging with earthquake information and then, suddenly, the Armenian earthquake struck with a bang! We all know what a terrible tragedy ensued. The politicians were now very, very interested. A flurry of activity was apparent. The Province established the Seismic Safety Subcommittee with a mandate to report to the Solicitor General, Minister responsible for the B.C. Provincial Emergency Program on the state of earthquake preparedness in B.C. and what had to be done to provide a modicum of safety for the populace.

At this point I should mention that not all of the government ministries in B.C. were sitting on their hands. The B.C. Ministry of Education had for the past three years been involved in earthquake planning and seismic engineering evaluations of schools. Neil Jackson will speak at length on its programs.

B.C. Hydro has spent over 60 million dollars hardening their dams throughout the risk zones over the past ten years and as a result have probably the safest dams in Canada if not North America.

As a result of all this activity and as promised by EPC, the Federal Government conducted a follow-up workshop held in Vancouver to produce the second draft of the National Earthquake Response Plan. This took place in March of 1989.

The Provincial Emergency Program, as a result of this workshop, its need to have a Provincial Earthquake Plan, and the pressure from the Minister, held a crisis management seminar in Vancouver in April 1989. The aim of the seminar was to develop a strategy for the provision of a B.C. Earthquake Response Plan. The Seminar was a great success and hopefully the Province

will by the end of 1989, have an Earthquake Response Plan which will dovetail with the federal National Earthquake Plan.

Many other initiatives by a myriad of agencies both government, corporate and volunteers, have been undertaken as a result of the earthquake hazard and its accompanying risks. However, I will not take anymore of your time to provide further examples of the work that has taken place in British Columbia and across Canada. I sincerely hope I have given you a sufficient overview of our programs and the progress that has been made in a comparatively short time--progress, I might add that came as a result of people and media power.

Earthquake preparedness in British Columbia is in full gear and is steadily moving forward.

Finally, I wish to leave you with this thought: **"Civilization exists by geological consent subject to change without notice"** so anticipate and mitigate.