



## Current Articles 2004 - December

### Earthquake!!!

We have a tendency to believe that earthquakes just “don’t happen to us.” We tend to believe that they are only prone to happen in faraway places such as Japan, India, Mexico, etc. But earthquakes do happen in Canada. In fact, Canada experiences more than 1,500 earthquakes each year. In recent years, All Saints Anglican Church at the corner of Queen St. and King Street in Hamilton suffered earthquake damage to their 75-foot tower, which has since been removed. Many years ago, St. Paul’s Presbyterian Church on James Street lost its spire. It was displayed on land to the north of the Church and identified by a plaque as being toppled from the roof by an earthquake.

In less than 30 seconds an earthquake can cause considerable loss of life, injuries, and property damage. In 1995, more than C\$150 billion in earthquake damage occurred in Kobe, Japan.

Earthquakes are violent movements or trembling of the earth by shifting tectonic plates below the thin crust of the earth. When these crustal plates move they can become jammed, causing a build-up of pressure. The sudden release of this stress results in an earthquake.

A recent study was done by the Institute for Catastrophic Loss Reduction to develop Canadian earthquake hazard maps (Hazard Zones). This project was done specifically for insurers and analyzes the probability of expected losses from earthquakes.

Three major cities in Canada are located in regions of high to moderate risk of earthquake damage – Vancouver, Montreal and Ottawa. Other vulnerable communities include Victoria and Quebec City. It is likely that severe loss of life and property damage will be experienced some time around these centres.

British Columbia is highly vulnerable. It is named the “Ring of Fire” which circles the Pacific Ocean including Canada’s west coast. Although some are too small to be felt, approximately 1,000 earthquakes are recorded each year on the west coast. Significant earthquakes on the west coast will cause shaking damage to buildings, resultant fires and trigger tsunamis that will flood coastal areas.

The risk of earthquake damage is moderate in Eastern Canada. Small earthquakes are recorded regularly in regions surrounding Ottawa, Montreal and Quebec City. The threat of seismic damage is low in southwestern and northern Ontario.

Although there will be variations in buildings such as when the building was built, height, type of construction, etc., all of which may vary the exposure to earthquake damage, the study updated the **Cresta Zones** (Catastrophic Risk Evaluation and Standardizing Target Accumulations). In conjunction with the updated Cresta Zones and the new earthquake Hazard Zones, it will simulate all potential major earthquake types and includes 100,000 potential earthquake events for 34

defined seismic sources. The model process includes: (1) what is subject to loss; (2) estimate of the hazard (frequency, location, magnitude); (3) effect on nearby locations; (4) estimate damages to insured properties; (5) compute the loss estimates.

A quick review of the Earthquake Hazard Zones for Ontario (and which is done by postal code areas) indicates that for all the areas prefixed by the letter "L" in the postal code, in other words – our area – the risk is very low. There are some areas of Toronto and particularly close to Lake Ontario that have a slightly elevated exposure. Much of this is attributed to the "Ohio Fault" which originates in Ohio and travels under Lake Ontario and surfaces between Toronto and Kingston quite frequently.

Earthquakes are real and the indication is that they will increase. Overlooking the peril of earthquake, which is usually excluded, can result in uninsured damages. If the IBC and the insurers effect the proposed exclusion for fire damage following an earthquake, (Jim's Corner – February, 2004) the excluded damages could be even greater. Making your clients aware of the exclusion and the availability of earthquake coverage should be an increasing priority of responsible brokers and more importantly if the "fire following" exclusion becomes a reality!

**James E. Bonnay,**  
C.I.P., C.C.I.B.  
Insurance Consultant

Phone 905-333-1727  
Fax 905-333-0683  
E-mail - [jamesbonnay@cogeco.ca](mailto:jamesbonnay@cogeco.ca)