

EARTHQUAKE LOSS ACCUMULATION CONTROL

G. Berz ¹

1. INTRODUCTION

When we think of the possible extent of major earthquake disasters, it is generally the case that specific pictures automatically flash into our minds: the earthquakes and subsequent fires in San Francisco in 1906 and Tokyo in 1923 or the earthquake disaster in Guatemala 1976.

The pictures of San Francisco in flames or of a devastated Tokyo only give us a vague idea of what would happen if such disasters were to occur under today's conditions.

There is a whole series of new accompanying hazards which are becoming ever more difficult to assess. In addition, many large cities all over the world are threatened by the 3 most severe types of natural catastrophe: earthquake, storm, and flood.

2. LONG-TERM VARIATIONS IN THE CATASTROPHE POTENTIAL

Looked at in the long term, the catastrophe potential is growing world wide. Not only the rise in world population and the ever-increasing concentration in cities are responsible for this development but also the rising standard of living and industrialization, which is constantly growing. A particularly important factor is that nowadays many high-value --and also highly sensitive-- industries are situated in very exposed areas. Examples are the offshore rigs in the North Sea and the Gulf of Mexico, the petrochemical plants in Japan located on man-made waterlogged ground which is extremely earthquake exposed, nuclear power stations on or near active faults and throughout the world rows and rows of hotels situated on coasts exposed to the hazards of windstorm, surge, and seismic sea wave. The considerable efforts at safety that technology is making and the growing attention paid these questions within state planning can probably only slow up the negative trend to a slight extent. There are, moreover, new types of technical hazards, the catastrophe potential of which is especially difficult to estimate, since the possibilities of comparison are lacking.

Finally, it must not be forgotten that the natural hazards themselves undergo significant changes in the course of time. For instance, there has been increasing indication in the last few years that earthquake activity, after 3 decades of relative quiet, is again becoming greater.

1. Geophysicist, Munich Reinsurance Company, Munich, Germany.