

PANEL 1 - EARTHQUAKES

Chairman : S.J. Duda

Opening Statement of the Chairman

Ladies and Gentlemen !

It is for me an honor and a privilege to open the Panel Session 1, of the Sixth World Conference on Earthquake Engineering. The title of the Session is "Earthquakes". During the Session the following three papers will be presented:

1. D.E. Hudson: Reliability of Records
2. M. Wyss : Earthquake Mechanism - Preparatory Phase and Rupture (the paper to be read by Dr. Stepp)
3. L. Esteva : Microzoning.

Each of the papers will be followed by a discussion. Towards the end of the Session the principal points will be summarized by the Reporter.

The Moderator of the Panel Session is Professor G.W. Housner, the Reporter - Dr. D. Tocher.

Before giving the word to the first speaker I may be permitted to make a few remarks on the topic of the Panel Session itself.

All of us are familiar with the concept of an earthquake. We visualize the earthquake as a sudden tectonic motion in the upper part of the earth body.

Modern instrumental investigations of earthquakes begun about 100 years ago. During that time the notion about the earthquake focus and about the focal mechanism has undergone a substantial development. The first model of the earthquake focus was that of a spatially limited, pointlike region from which seismic waves are radiated in a quick, sudden process.

This model was in accordance with the observation of earthquakes made primarily at large epicentral distances relatively far from the object of investigation. Later observations were made at near epicentral distances and led to the conclusion that the radiation of seismic energy occurs from a spatially extended region, in a process of rupturing with finite

rupture velocity. A number of earthquake parameters became measurable from improved recordings made at near and at teleseismic distances. It appears that further progress in the understanding of the earthquake will strongly depend on observations and measurements at close epicentral distances, as near to the object of investigation as possible. Such observations form the basis of one of the major tasks of seismology: the forecasting of the exact occurrence time and place of earthquakes. Though earthquake forecasting has been attempted since the beginning of the science of seismology, it is likely that only in the present years the physical basis of earthquake forecasting is being formed.

At the same time it is not unlikely, that practical forecasting of - at least - shallow earthquakes, on the basis of premonitory phenomena will become a reality during our tenure as scientist.

The Panel Session serves the purpose to assess the present knowledge of aspects of the earthquake, relevant to earthquake engineering. It is my hope that the Panel Session will result in stimuli for future research in Seismology and in Earthquake Engineering.