

Chapter Five

Seismic Data Exchange

As in the case of the experiments sponsored by the Group of Scientific Experts in 1980 and 1981, the results of the 1984 International Seismic Data Exchange experiment emphasized the importance of reliable and speedy communication. The transmission network used was that of the World Meteorological Organization, known as the Global Telecommunications System. This data link was originally intended merely for the international exchange of weather data but for about 10 years the World Meteorological Organization has allowed it to be used for "other environmental data." Within this context, six or more countries have been making routine use of it for the exchange of seismic data for global earthquake monitoring.

In view of the quantity of data envisaged, some fears were expressed that the Global Telecommunications System would be brought to its knees by the flood of additional data involved in any comprehensive global seismic experiment. This did not occur, however, partly as a result of restricting seismic traffic to off-peak hours.

The program for the experiment was very well planned by the Group of Scientific Experts and an attempt was made to get as many countries as possible to take part. Three states,

the USA, the USSR and Sweden, agreed to allow their national seismic computing facilities to act as experimental international data centres. More than 30 countries and 70 seismograph stations took part in the experiment.

Each station tried to measure certain agreed parameters recorded by their instruments for every seismic event. These data were then transmitted in a coded format via the Global Telecommunications System. International data centres in Washington, Moscow and Stockholm received the data and produced seismic event bulletins. These bulletins were transmitted to participating states within five days.

Of the more than 100 seismograph stations that Canada operates, three were chosen to take part: the Yellowknife array; Glen Almond, Quebec, about 50 kilometres north-east of Ottawa; and Mould Bay in the Canadian Arctic.

An important aim of the experiment was to determine how many of the data were circulated throughout the entire network and how many were lost. Canada compiled its own statistics on the experiment and took part in an international assess-