

Earthquake Intensities

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Investigations

We are compiling a data base of information on earthquakes prior to 1928 in Washington and Oregon. The data base will allow us to improve the historical catalog by providing convenient access to existing earthquake catalogs, and will provide a framework for storage and retrieval of historical earthquake information. We will use a commercially available PC/Mac data base so that both existing catalogs and our improved catalog will be available to other investigators. We hope to eventually include events up until 1970, when the Washington Regional Seismograph Network was installed.

A number of catalogs of seismicity of Washington and Oregon exist; from Holden (1887), to the DNAG catalog (1990). Later catalogs are usually based on the earlier ones, with some corrections and additions, but usually with minimal review of original source material, and often without documentation or commentary on the sources of data for revisions. The various catalogs generally cover somewhat different time periods or geographic areas. Over the years, attempts were made to quantify and condense the information, and to assign locations to the earthquakes for mapping purposes. These locations were sometimes based on minimal information, such as a single felt report. The DNAG catalog was made by compiling several earlier catalogs and, in addition to locations, supplies magnitudes estimated from maximum intensities. Small time discrepancies between the original sources have also caused multiple entries for a single earthquake to be introduced into the DNAG catalog.

The DNAG type of catalog, consisting of one summary line per earthquake, is inadequate to describe older earthquakes which lack instrumental data. Felt reports and descriptions of damage are important sources of information for these earthquakes. For the purpose of evaluating earthquake hazards, we are accumulating a file of information for each earthquake. We are now collecting and organizing information, and will make available information accessible. We have scanned nearly a dozen existing catalogs, and will soon begin compiling our data base. Each existing catalog (e.g. Holden, Townley and Allen, Bradford, DNAG) will form a table in the data base, which will include the verbatim event entries for events in Washington, Oregon, or southern British Columbia.

Once the existing sources have been compiled, we will begin work on correcting and improving the catalog. We will concatenate all the existing sources, and sort all events by reported occurrence time. Thus sorted, we can create a table for each event which references all accounts of the event. We will be able to identify and correct duplicate entries, flag events which need further documentation, and cross-reference other earthquakes, if a sequence is reported. Additional material, such as newspaper or diary accounts, or references to special investigations will also be included.

Publications

Ludwin, R.S. and Qamar, A.I., 1991 (abstract), Reevaluation of the 19th century Washington and Oregon earthquake catalog using original accounts; the moderate sized earthquake of May 1, 1882, *Seismol. Res. Lett.* V. 62, p 52.