

PREFACE

The Physical Research Department at Sandia Corporation has encountered many impact problems in its past and current activities. In order to become familiar with past work in this field, a systematic search and study of the literature was undertaken. This bibliography is the result of the literature search and is being published since comparison with other bibliographies shows it to be more complete in certain areas.

The subject of wave propagation is an important consideration in most impact problems but it was decided not to search the literature for articles dealing with wave propagation, as such, since this extensive field is the subject of several recent survey articles and books. 1, 2, 3, 6, 7, 8*

The bibliography in its final form deals with wave propagation as it applies to specific areas of interest in impact problems. The references have been assembled into groups according to the main topic of the reference. The major subjects included in the bibliography are:

1. Plastic Wave Propagation in Bounded Solids
2. Behavior of Metals Under Explosive Conditions
3. Dynamic Photoelasticity and Related Topics
4. Penetration Phenomena

All of the references listed under these subjects are articles which are technically related and which normally follow the same general trend of thought in the literature. These subjects are felt to be well developed in the bibliography. That is, the references listed can be considered as representing a high percentage of the total references on this subject. To obtain this extensive coverage a search was made of the indexes of well known applied mechanics and physics publications. The articles listed in these indexes were then obtained and the references in each article were added to the bibliography. This new list of references was searched for more references, this method being continued until the list of references given by the various articles converged.

The subjects listed below are also included in this bibliography but do not necessarily represent extensive coverage of the subject:

5. Behavior of Materials at High-Strain Rates
6. Impact Measurement Devices
7. Lateral Impact-Beams and Plates
8. Miscellaneous

The general references listed at the beginning of the bibliography are a group of articles or books which cover the field of impact rather completely. No attempt has been made to duplicate the bibliographies given in these references.

* Superscripts refer to reference numbers in the bibliography.

To improve the usefulness of the bibliography, a complete author index has been prepared along with a chronological listing of the references within a particular subject. The chronological listing is particularly helpful in giving the proper perspective to the various references.

The abstracts included are either the author's abstracts or short reviews made by this author.

To obtain current information on activities throughout the nation, an extensive trip has been made to the various centers of activity in this field. The observations made on this trip have been very enlightening and have served to give information which would not appear in the literature for some time. A report on this trip will be published in a Sandia Corporation Technical Memorandum.

The author hopes that users of the bibliography will call attention to errors or omissions.

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