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# BIBLIOGRAPHY OF THE LITERATURE

ON

# THERMAL FATIGUE



by

A. E. Carden
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Report No. MH 67-AEC-3

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Subject: Bibliography of the Literature on Thermal Fatigue

By: A. E. Carden

The purpose of this bibliography is to publish and make available to the contract sponsor and other interested parties the current status of a literature survey on the subject of fatigue at elevated temperature. Our interpretation of elevated temperature fatigue is rather broad: it is fatigue at any temperature where time dependent flow becomes significant. Furthermore we have included reports dealing with isothermal and cyclic thermal; uniaxial and multiaxial; cyclic load and interrupted constant load tests. We are interested not only in "pure" fatigue test results but also in fatigue results as they are affected by other phenomena (e.g. creep-fatigue interactions).

This bibliography is by no means exhaustive nor up-to-date. The author feels somewhat frustrated with the portion of his work that includes literature surveys. Invariably "new" references come to his attention that were published four, six, and ten years ago. We offer our apologies, in advance, to investigators who find their work omitted from this list. Please receive our invitation to communicate reprints to us so that we may, in part, catch up.

This current listing of approximately 960 references has been collected over a number of years but is published at this occasion under the Auspices of NASA Grant NsG-381, Research in the Aerospace Physical Sciences and Engineering. Mr. and Mrs. Kenneth Laborde and Mrs. Gail Gardner contributed significantly to the thankless task of collecting, arranging, typing and proofreading the list. Mr. Marvin Hirschberg of NASA-Lewis graciously exchanged his current listing of references in this area for our final revision. Several items came to our attention after the first typing and rather than re-type we have added these at the end, indexed by year, entry number, and an alphabetical key to slow their proper location. (Alphabetization of author's last name).

Concurrently a second bibliography is being issued that is concerned with fatigue under multiaxial stress states entitled: "Bibliography of the Literature on Multiaxial Stress Fatigue" - MH-67-AEC-2. Interested parties may obtain a copy (as long as the supply lasts) by writing the author. An interlibrary loan copy may be obtained from the Librarian, University of Alabama. Copies are being sent to the United Engineering Center Library and the Linda Hall Library to make the information readily available.

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# APPENDIX I

## Thermal Stress Analysis


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