

LOW-CYCLE FATIGUE LITERATURE SURVEY FOR
METAL PROPERTIES COUNCIL

1. At the request of the Metal Properties Council the writer compiled this Bibliography in order to make available a Literature Survey on Low-Cycle Fatigue.

2. This Bibliography differs from the usual bibliographies in that it was organized on a selective subject basis as indicated on pages 2, 3 and 4. There are 20 subjects or topics listed on page 2.

This division should be very helpful to those who are interested only in a specific topic in the field of LC Fatigue. In addition, selected papers by a number of authors are listed in topics 18 to 24 (see page 3).

3. Another unique feature of the Bibliography are the listings of the available Japanese literature in English (see topic 27) and of German literature in German (see topic 28).

In addition, the Russian literature, both in Russian and translated into English, is divided into (a) Books (topic 25) and (b) according to the better-known authors (topics 26A to 26F).

4. Because of the selective arrangement of the Bibliography it is obvious that individual references which contain discussion of a number of important topics are listed two or even three times under different subjects. It is also possible that if a reference is missing in topic 3 or 3a, it may be listed under one of the 18 others or in topics 18 to 24.

The number of references typed (including duplicates and triplicates) is 536 on page 2, 130 on page 3, 158 on page 4 - Total 824.

5. It should be understood that the Bibliography includes essentially references pertaining to:

- a) Mechanical LC Fatigue under isochronous temperature conditions, and
- b) Thermal Fatigue under variable temperatures.

The Bibliography does not include references to the following related subjects:

Thermal Shock Phenomena

Thermal Stress Relaxation

Thermal Stress Analysis

Shake-Down Phenomena

Thermal Fatigue of Turbine

Nozzle Vanes, Buckets and Discs

6. A number of references came to my attention after the manuscript was typed. These were added at the end of the listings.

This explains some of the apparent inconsistencies and deviations from the original alphabetical listings.

7. I have endeavored to include practically all items on LCF published between 1955 and 1967 inclusive. If some relevant references were inadvertently overlooked the writer would like to be informed about them in order to include them in future revisions or additions.

Note that this compilation does not include references which were not published in periodicals or which are on file in University or Industrial libraries as a result of research performed either for the Industry or for various Government Agencies.

8. In preparing this Bibliography, in addition to my own sources, I have consulted bibliographies listed in this compilation as Items 1A-1 to 1A-4. I am indebted to the authors of the above references for permission to use their work.

9. **This compilation constitutes Part 1 of the Literature Survey.**
Part 2 will consist of the review of references listed in a number
of particularly important subjects enumerated on page 2.

B. M. Wundt

Consultant to Panel III

Metal Properties Council

A. SUBJECTS

- 1. AVAILABLE REVIEWS OF LCF LITERATURE**
- 1A. BIBLIOGRAPHY OF LCF AND THERMAL FATIGUE**
- 2. THERMAL LCF**
- 2A. MECHANICAL LCF**
- 3. MECHANICAL LCF. ISOTHERMAL WITH HOLD TIME OR WITH CREEP**
- 3A. EFFECT OF STRAIN RATE AND FREQUENCY ON LCF**
- 4. BEHAVIOR OF NOTCHES IN LCF**
- 5. LCF UNDER MULTIAXIAL STRAINING**
- 6. ENERGY CRITERIA IN LCF**
- 7. CUMULATIVE DAMAGE IN LCF**
- 8. DESIGNING AGAINST LCF**
- 9. CALCULATIONS OF STRAINS DUE TO CYCLIC LOADING**
- 10. CRACK INITIATION AND PROPAGATION IN LCF**
- 11. LCF OF PRESSURE VESSELS AND PRESSURE VESSEL MATERIALS**
- 12. FLUIDIZED TECHNIQUE FOR THIN EDGES EXPOSED TO THERMAL FATIGUE**
- 13. EQUIPMENT FOR LCF. ALSO TESTING PROCEDURES**
- 14. REVERSED AND ROTATING BENDING IN LCF**
- 15. LCF IN TORSION**
- 16. LCF OF NON-FERROUS ALLOYS**
- 17. BOOKS AND SYMPOSIA ON LCF**

B. AUTHORS

**SELECTED PAPERS ON LCF AUTHORED BY THE FOLLOWING ARE LISTED
IN SEPARATE SECTIONS AS INDICATED BELOW.**

- 18. P. P. BENHAM, ET AL**
- 19. A. E. CARDEN, JR. ET AL**
- 20. L. F. COFFIN, JR. ET AL**
- 21. S. S. MANSON, ET AL**
- 22. JODEAN MORROW, ET AL**
- 23. S. TAIRA, ET AL**
- 24. V. WEISS, G. SACHS, ET AL**

C. RUSSIAN, JAPANESE AND GERMAN REFERENCES

25. SELECTED RUSSIAN BOOKS ON LCF

SELECTED RUSSIAN REFERENCES ON LCF

26A. PAPERS BY U. F. BALANDIN, ET AL

26B. PAPERS BY N. S. MOZHAROVSKI, ET AL

26C. PAPERS BY S. V. SERENSEN, P. I. KOTOV, ET AL

26D. PAPERS BY R. M. SHNEYDEROVICH, A. P. GUSENKOV, ET AL

26E. PAPERS BY N. D. SOBOLEV, ET AL

26F. PAPERS BY OTHER AUTHORS

27. SELECTED JAPANESE REFERENCES - IN ENGLISH

28. SELECTED GERMAN REFERENCES - IN GERMAN

1. AVAILABLE REVIEWS AND ANNOTATIONS OF LCF LITERATURE.

NOTE: Arranged by the year of publication.

- 1-1. "Thermal Fatigue and Thermal Shock"
H. Thielsch
Welding Research Council Bulletin No. 10 - April 1952.
- 1-2. "Thermal Shock and Fatigue - A Literature Survey"
H. Majors, Jr.
Bureau of Eng. Research, Univ. of Alabama
Techn. Report No. 1 Sept. 1956 28 pp
- 1-3. "Relations Governing Low-Cycle Fatigue. A Summary of
Pertinent Literature"
G. Sachs, A. P. Taber
Syracuse Univ. Research Inst., Metallurgical Dept.
Report No. MET575-58511, Techn. Report No. 1, May 1958 66 pp
- 1-4. "Fatigue of Metals Caused By A Relatively Few Cycles of High
Load or Strain Amplitude"
P. P. Benham
Metallurgical Reviews, Vol. 3, 1958, No. 11 pp 203-234
- 1-5. "Thermal Fatigue"
E. Glenny
Metallurgical Reviews, Vol. 6, No. 24, 1961 pp 387-465
- 1-6. "Thermal Fatigue - A Critical Review"
T. C. Yen
Welding Research Council Bulletin No. 72, 1961
- 1-7. "Thermal Shock - An Annotated Bibliography"
Scott J. Buginas
Lockheed Missiles Space Co. SB-62-39 Sept. 1962
- 1-8. "Low Cycle Fatigue: A Review"
L. F. Coffin, Jr.
Applied Materials Research, Vol. 1, No. 3 Oct. 1962 pp 129-141
- 1-9. "Correlation of Thermal Fatigue With Mean Temperature
and Influence of Combined Stress"
H. Majors, Jr.
Seattle Univ. Mech. Eng. Dept., March 1962 AD277107
- 1-10. "Low-Cycle Fatigue of Metals - Literature Review"
J. T. P. Yao, W. H. Munse
Welding Journal Res. Suppl. April 1962, Vol. 41 pp 182s-192s

- 1-11. "Low Endurance Fatigue"
P. P. Benham
Chapter 9 in book: "Thermal Stress"
Edited by P. P. Benham, R. Hoyle, H. Ford
London Isaac Pitman, 1964
- 1-12. "An Abstracted Bibliography of the Thermal Fatigue Literature
For the Years 1954-1963"
A. E. Carden
Univ. of Alabama, Bureau of Engineering Research. MR #26 April 1964
- 1-13. "The Fatigue Toughness of Metals: A Data Compilation"
G. R. Halford
Univ. of Illinois, T & AM Report No. 265, May 1964
Also Proc. ASTM, 1964
- 1-14. "Thermal-Fatigue Resistance: Material, Geometric and
Temperature Field Considerations"
A. E. Carden
ASME Paper 65-GTP-5
- 1-15. "Nonlinear Response Under Cycling Loading Conditions"
T. J. Dolan
Proceedings of the Ninth Midwestern Mechanics Conference
Univ. of Wisconsin, August 1965
- 1-16. "Fatigue: A Complex Subject - Some Simple Approximations"
S. S. Manson
Experimental Mechanics, July 1965 pp 193-226
- 1-17. "A Review of Research On Low-Cycle Fatigue"
J. Marin, K. Ohji
NASA-CR-68704 Aug. 1965 74 pp
- 1-18. "Review On Uniaxial and Biaxial Low-Cycle Fatigue"
J. Marin, K. Ohji
NASA-CR-68645 Aug. 1965 13 pp
- 1-19. "Cyclic Plastic Strain Energy and Fatigue of Metals"
JoDean Morrow
ASTM, Spec. Techn. Publ. STP No. 378, 1965
"Internal Friction, Damping, Cyclic Plasticity" pp 45-87
- 1-20. "Thermal Stress and Low-Cycle Fatigue"
S. S. Manson
Book: McGraw-Hill 1966
Note: Bibliography appended to each chapter.

- 1-21. "High-Temperature Low-Cycle Fatigue: Survey of British Work"
P. P. Benham
Presented at SESA Spring Meeting, Ottawa, Ontario, Canada
May 16-19, 1967
To be published in Experimental Mechanics
- 1-22. "The Metallurgy of Transition - Life Fatigue"
R. K. Ham
Conference on Thermal and High-Strain Fatigue
London, June 1967 Institute of Metals M & R Series No. 32 pp 55-79
- 1-23. "The High-Strain Fatigue Properties of Low-Alloy Creep-Resisting Steels"
A. Coles, G. J. Hill, R.A.T. Dawson, S. J. Watson
Conference on Thermal and High-Strain Fatigue, June 1967, London
Institute of Metals. Monograph and Report Series #32 pp 270-294
- 1-24. "Thermal-Fatigue Processes and Testing Techniques: A Review Of Progress Since 1960"
R. H. King, A. I. Smith
International Conference on Thermal and High-Strain Fatigue
London, June 1967 The Institute of Metals M & R Series No. 32
pp 364-378
- 1-25. "Low-Cycle Fatigue of Metals - A Review of The State of Research"
E. Krempl
Materialprufung, Vol. 9 (1967) No. 2 In German. pp 37-44
- 1-26. "High Temperature-Low Cycle Fatigue: A Summary of Industry and Code Work"
C. W. Lawton
Paper presented at Society for Experimental Stress Analysis Meeting, May 16-19, 1967, Ottawa, Ontario, Canada
To be published in Experimental Mechanics
- 1-27. "High-Temperature Low-Cycle Fatigue"
Edited by W. H. Tupeny, Jr.
Published by the Society of Experimental Stress Analysis, 1968
40 pp

1A. BIBLIOGRAPHIES OF LCF
ARRANGED BY YEAR OF PUBLICATION

- 1A-1. "Bibliography on Thermal Stresses and Low Cycle Fatigue"
D. R. Miller
Gen. Electric Co. Knolls Atomic Power Lab., Schenectady, N. Y.
KAPL-2048, Aug. 20, 1959 29 pp
- 1A-2. "Bibliography of the Literature on Multiaxial Stress Fatigue"
A. E. Carden
Dept. of Eng. Mechanics, Univ. of Alabama
Report No. MH-67-AEC-2 August 1967 71 pp
- 1A-3. "Bibliography of the Literature on Thermal Fatigue"
A. E. Carden
Dept. of Eng. Mechan., College of Engineering, Univ. of Alabama
Report No. MH-67-AEC-3 August 1967
- 1A-4. "Bibliography of Fatigue Literature 1958-1967"
Compiled by M. Hirschberg
NASA-Lewis Research Center, Cleveland, Ohio
- 1A-5. References on Fatigue
Published by ASTM
Special Techn. Publ. 9-0 (1964), 9-N (1963), 9-M (1961-1962),
9-L (1960), 9-BB (1955-1959)

2. THERMAL LCF

- | | | |
|------|-----------------------------------|---|
| 2-1. | BARON, H. G.
BLOOMFIELD, B. S. | "Resistance to Thermal Stress
Fatigue of Some Steels, Heat-Resisting
Alloys, and Cast Irons"
<u>Journal of the Iron and Steel Institute</u>
March 1961 pp 223-232 |
| 2-2. | BARON, H. G.
CAMPION, D. J. | "Surface Effects and Cumulative
Damage in Low Endurance Fatigue Tests"
<u>The Engineer</u> , April 29, 1966 pp 646-648 |
| 2-3. | BENHAM, P. P. | Book: "Thermal Stress"
Edited by P. P. Benham
Pitman & Sons, London, 1964 |
| 2-4. | BENHAM, P.P. ET AL | For other papers by P. P. Benham
see Topic 18. |
| 2-5. | CARDEN, A. E.
SODERGREN, J.H. | "The Failure of 304 Stainless Steel By
Thermal Strain Cycling at Elevated
Temperature"
Trans. ASME Paper 61-WA-200 |
| 2-6. | CARDEN, A. E. | "Thermal Fatigue, Part 1 - An Analysis
of The Conventional Experimental Method"
Proc. ASTM Vol. 63, 1963 pp 735-758 |
| 2-7. | CARDEN, A. E. | "A Discussion of Alternate Thermal-
Fatigue Test Methods"
Memo Report No. 27 Univ. of Alabama
Bureau of Eng. Research April 1964 21 pp |
| 2-8. | CARDEN, A. E. | "Thermal Fatigue of a Nickel-Base Alloy"
Trans. ASME Series D, Journal of Basic
Eng., March 1965 pp 237-244 |
| 2-9. | CARDEN, A. E. | "Thermal Fatigue Resistance: Material,
Geometric and Temperature Field
Considerations"
Trans. ASME Paper 65-GTP-5 |

- 2-10. CARDEN, A. E.
HARMAN, D. G.
FRANCO-FERREIRA, E. A. "Thermal Fatigue Analysis of A
Cryogenically Cooled Rocket Nozzle.
Southeastern Symposium on Missiles
and Aerospace Vehicles Sciences
Vol. II Dec. 1966
- 2-11. CARDEN, A. E.
KYZER, R. D.
VOGEL, W. H. "Low-Cycle Fatigue of Three Super-
alloys Under Cyclic-Extension and
Cyclic-Temperature Conditions"
Trans. ASME Paper 67-MET-19
- 2-11a. CARDEN, A. E.
ET AL For other papers by A. E. Carden, et al
see Topic 19.
- 2-12. CLAUSS, F. J. "Thermal Fatigue of Ductile Materials"
Proc. Fourth Sagamore Ordnance
Materials, Research Conference 1957
pp 175-191
- 2-13. CLAUSS, F. J.
FREEMAN, J. W. "Thermal Fatigue of Ductile Materials.
I. Effect of Variations in The Tempera-
ture Cycle on The Thermal-Fatigue Life of
S-816 and Inconel 550"
NACA, TN 4160, 1958 61 pp
- 2-14. CLAUSS, F. J.
FREEMAN, J. W. "Thermal Fatigue of Ductile Materials II.
Effect of Cyclic Thermal Stressing on The
Stress-Rupture Life and Ductility of
S-816 and Inconel 550"
NACA TN 4165, 1958 43 pp
- 2-15. CLAUSS, F. J. "Thermal Fatigue of Ductile Materials III.
Behavior of Crucible 422 Steel"
NASA TN D-69, 1959 23 pp
- 2-16. COFFIN, L. F., JR. "A Study of The Effects of Cyclic Thermal
Stresses on A Ductile Metal"
Trans. ASME Vol. 76, 1954 pp 931-950
- 2-17. COFFIN, L. F., JR. "Design Aspects of High Temperature
Fatigue With Particular Reference to
Thermal Stresses"
Trans. ASME Vol. 78, 1956 pp 527-532
- 2-18. COFFIN, L. F., JR. "Cyclic Strain and Fatigue Behavior in the
Creep Range"
Proc. International Conf. on Fracture,
Sendai, Japan 1965
Also GE Report 64-RL-3830M

- 2-19. COFFIN, L. F., JR. "An Investigation of the Cyclic Strain and Fatigue Behavior of A Low-Carbon Manganese Steel at Elevated Temperature" International Conf. on Thermal and High-Strain Fatigue. The Institute of Metals, London. June 1967
Also General Electric Co. Report 67-C-017
Feb. 1967
- 2-19a. COFFIN, L. F., JR. For other papers by L. F. Coffin, Jr. et al, see Topic 20.
- 2-20. DINERMAN, A. E. "Cyclic Strain Fatigue on Inconel at 75 to 600°F" General Electric Co. Knolls Atomic Power Lab, Schenectady, N.Y. Aug. 15, 1960 18 pp
- 2-21. DOLAN, T. J. "Non-Linear Response Under Cyclic Loading Conditions" Proc. 9th Midwest Mechanics Conference, Univ. of Wisconsin, August 1965
- 2-22. DONACHIE, M. Y.
BRODY, R. P.
BRADLEY, E. F. "Thermal Fatigue of Turbine Alloys With Special Reference to PWA 663 Nickel-Base Alloy" Soc. of Automotive Engrs. Paper 660056 Presented Jan. 1966, Detroit, Mich.
- 2-23. FORREST, P. G.
ARMSTRONG, K. B. "The Thermal Fatigue Resistance of Nickel-Chromium Alloys" Joint International Conf. on Creep. Proc. Institute of Mech. Engrs. 1963 Session 3, Paper 1
- 2-24. FORREST, P. G. "The Use of Strain Cycling Tests for Assessing Thermal Fatigue Resistance Applied Materials Research, Oct. 1965 pp 239-246
- 2-25. FORREST, P. G.
ARMSTRONG, K. B. "Investigation of The Thermal-Fatigue Behaviour of Nickel-Chromium-Base Alloys by Strain-Cycling Tests" Journ. of the Institute of Metals, Vol. 94 June 1966 pp 204-213

- 2-26. FRANKLIN, A. W.
HESLOP, J.
SMITH, R. A. "Some Metallurgical Factors Influencing
the Thermal-Fatigue Resistance of
Wrought Nickel-Chromium Base High-
Temperature Alloys"
Journal Institute Metals, Vol. 92, June
1964 p 313
- 2-27. GATTS, R. R. "Low Cycle Fatigue In Two Heat
Treatable Steels"
General Electric Co. Report 61-GL-105
May 1961
- 2-28. HERNANDEZ, J. A. "An Analysis of the Thermal Fatigue
Characteristics of Inconel"
Thesis: Master of Science. Dept. of
Engineering Mechanics, Univ. of Alabama
1964 88 pp
- 2-29. HORTON, K. E. "The Effects of Gage Length and Specimen
Configuration on Thermal-Stress-Fatigue
Test Results"
American Radiator & Std. Corp. Adv.
Techn. Lab. Div. ATL-A-136 Topical
Report May 10, 1963
- 2-30. HORTON, K. E.
HALLANDER, J. M. "Investigation of Thermal-Stress Fatigue
Behavior of Stainless Steels"
(Includes A302-B and 2 1/4 Cr 1 Mo)
American Radiator & Std. Corp. Adv.
Techn. Lab. Div. AERAEC, ATL-A-144
Oct. 31, 1964
- 2-31. HORTON, K. E.
HALLANDER, J. M.
FOLEY, D. D. "Thermal-Stress and Low-Cycle Fatigue
Data on Typical Materials"
Trans. ASME Paper 65-GTP-13
- 2-32. HOWE, P.W.H. "Theoretical Prediction of the Comparative
Thermal-Fatigue Behaviour of Two
Nimonic Alloys"
Int. Conf. on Thermal and High-Strain
Fatigue, London, June 1967
The Inst. of Metals M & R Series N32
pp 122-141

- 2-33. **HOWE, P.W.H.** **"Mathematical Techniques Applying
To The Thermal Fatigue Behavior of
High Temperature Alloys"**
Aeronautical Quarterly, Vol. 13 #4
Nov. 1962 pp 368-396
- 2-34. **KATTUS, J. R.**
 WILLHELM, A. C. **"Effects of Surface Imperfections on The
Thermal Fatigue Life of Metals"**
Trans. ASME Paper No. 65-GTP-23
- 2-35. **KENNEDY, C. R.** **"Plastic Strain Absorption As A Criterion
for High-Temperature Design"**
**Proc. of the Fourth Sagamore Ordnance
Materials Research**
Syracuse Research Inst. , N.Y. 1957
 p 193
- 2-36. **KENNEDY, C. R.** **" The Effect of Stress State On High-
Temperature Low-Cycle Fatigue"**
Proc. A.S.T.M. 1962
Also Oak Ridge Nat. Lab. ORNL-3398
- 2-37. **KREMPL, E.** **"On The Fatigue Strength for Finite Life
Of Nimonic 80A Under Cyclic Thermal
Stresses"**
Materialprufung, Vol. 5, 1963 #7 July
(In German) pp 274-283
- 2-38. **KREMPL, E.** **"Deformation Behavior and Fracture of
Nimonic 80A During Thermal Fatigue
Cycling Under Constraint"**
**Proc. of the First International Conf. on
Fracture (1965) Japan. Vol. 2 pp 1637-1662**
- 2-39. **KREMPL, E.**
 NEUBER, H. **"Thermal Fatigue Behavior of
Nimonic 80A and PH 15-7 Mo Stainless Steel"**
Air Force Materials Lab. WPAF Base
Techn. Report No. AFML-TR-65-25
Jan. 1965
- 2-40. **KING, R. H.**
 SMITH, A. I. **"Thermal Fatigue Processes and Testing
Techniques. A Review of Progress
Since 1960"**
**International Conf. on Thermal and High-
Strain Fatigue, London, June 1967.**
The Institute of Metals
M and R Series No. 32 pp 364-378

- 2-41. KUYPER, D. J.
BURGE, H. L. "Simplified Thermal Fatigue Analysis
for Liquid Rocket Combustion Chambers"
Spacecraft and Rockets, Vol. 4, Jan. 1967
pp 126-128
- 2-42. LANDAU, C. S. "Low Frequency Fatigue - A
Rheological Approach"
The Engineer, May 25, 1962 pp 911-915
- 2-43. MAJORS, H., JR. "Comparison of Thermal Fatigue With
Mechanical Fatigue Cycling. Final Report"
Bureau of Engineering Research, Univ.
of Alabama Sept. 1957
- 2-44. MAJORS, H., JR. "Thermal and Mechanical Fatigue of
Nickel and Titanium"
Trans. ASM Vol. 51, 1959 pp 421-437
- 2-45. MAJORS, H., JR. "Correlation of Thermal Fatigue with
Mean Temperature and Influence of
Combined Stresses"
Dept. of Mech. Engineering, Seattle Univ.
March 1962 Contract U.S. Army Research
Office AD 277107
- 2-46. MANSON, S. S. "Thermal Stresses and Low-Cycle Fatigue"
Book: McGraw-Hill Book Co., 1966
- 2-47. MANSON, S. S. "Behavior of Materials Under Conditions
of Thermal Stress"
NASA Report 1170, 1954. 34 pp
(Supersedes NACA TN2933)
- 2-47a. MANSON, S. S. For other papers by S. S. Manson, et al
see Topic 21.
- 2-48. MEHRINGER, F. J.
FELGAR, R. P. "Low-Cycle Fatigue of Two Nickel-Base
Alloys by Thermal-Stress Cycling"
Trans. ASME Series D Vol. 82 No. 3
Sept. 1960 pp 661-670
- 2-49. MORRAY, J.D. ET AL "The Creep and Rupture of 2 1/4%
Chromium, 1% Molybdenum Quality Steel"
Journal Iron & Steel Institute, Vol. 193,
Dec. 1959 pp 354-359
- 2-50. NIPPES, E. F.
UY, J. C. "A Method of Investigating Low-Cycle
Thermal Fatigue"
Welding Journal, Welding Research Supple.
August 1967 pp 371s-379s

- 2-51. PAYNE, T. J. "Thermal Cycling of T-Section Beams" Conference on Thermal Loading and Creep, London. May 1964
Trans. Soc. Mech. Engrs.
- 2-52. PADLOG, J.
HUFF, R. D.
HOLLOWAY, G. F. "Unelastic Behavior of Structures Subjected to Cyclic Thermal and Mechanical Stressing Conditions" Bell Aircraft Corp., Dec. 1960
WADD Techn. Report 60-271
- 2-53. PATTERSON, T. L. "Thermal Fatigue Under Cyclic-Temperature and Cyclic-Extension Conditions" M. S. Thesis; Dept. of Eng. Mech., Univ. of Alabama 1966 73p
- 2-54. RANDALL, P. N.
LANG, H. A. "Thermal-Cycling Test of A Hot Spot on A Vessel" Trans. ASME Paper 55-Pet-2
- 2-55. SMITH, R. W.
SMITH, G. T. "Thermal Fatigue Crack-Growth Characteristics and Mechanical Strain Cycling Behavior of A-286, Discaloy and 16-25-6" NASA TN D-479, 1960
- 2-56. SWINDEMAN, R. W.
DOUGLAS, D. A. "The Failure of Structural Metals Subjected to Strain-Cycling Conditions" Trans. ASME Journal Basic Eng. Vol. 81 1959 p 203
- 2-57. TAIRA, S.
OHNAMI, M.
ET AL "Thermal Fatigue and Cyclic Mechanical Strain Fatigue at Elevated Temperatures of 18-8 Cb Stainless Steel and 2.25 Cr-1 Mo Steel" Bulletin of Japan Soc. Mech. Engrs. 1963 Vol. 6 #22 pp 169-177
- 2-58. TAIRA, S. "Thermal Fatigue and Its Relation to Creep Rupture and Mechanical Fatigue" In Book: "High Temperature Structures and Materials" pp 187-213 Proc. of the 3rd Symposium on Naval Structural Mechanics, Columbia Univ. N. Y. City, Jan. 1963 Edited by A. M. Freudenthal et al MacMillian Co., New York 1964. (Includes many references)

- 2-59. TAIRA, S.
OHNAMI, M.
INOUE, T. "Thermal Fatigue Under Multiaxial Thermal Stresses"
Proc. Eighth Japan Congress on Testing Materials 1965 pp 40-45
- 2-59a. TAIRA, S. ET AL For other papers by S. Taira et al,
See Topic 23.
- 2-60. TILLY, G. P.
BARNES, J. F. "Assessment of Thermal Fatigue Resistance of High Temperature Alloys"
Journal of the Royal Aeronautical Society May 1965 pp 343-344
- 2-61. THOMAS, W. S. "An Investigation of the Stages of Deformation of A Thin-Wall Tube Caused By Cyclic Thermal Stress"
Thesis M. Sc. Univ. of Alabama, 1961
- 2-62. YEN, T. C. "Thermal Fatigue - A Critical Review"
Welding Research Council Bulletin #72 October 1961

2A - MECHANICAL LCF

- 2A-1. D'AMATO, R. "A Study of The Strain-Hardening and Cumulative Damage Behavior of 2024-T4 Aluminum Alloy in the Low-Cycle Fatigue Range"
WADD Techn. Report 60-175, April 1960
- 2A-2. ALLNUTT, R. B. "Relation Between Testing and Performance of Structures for Deep Sea Vehicles"
Relation of Testing and Service Performance. ASTM. STP No. 423. 1967 pp 7-30
- 2A-3. BENHAM, P.P.
MACKENZIE, C.T. "Cyclical Strain Softening of A Heat Treated Steel"
The Engineer, Dec. 28, 1962 pp 1104-1105
- 2A-4. BENHAM, P. P. "High-Temperature Low-Cycle Fatigue: Survey of British Work"
Presented at 1967 SESA Meeting, Ottawa, Ontario, Canada, May 16-19. To be published in Experimental Mechanics .
- 2A-4a. BENHAM, P.P. For other papers by P. P. Benham, et al, See Topic 18.
- 2A-5. BLATHERWICK, A.A. "Stress Redistribution During Bending Fatigue"
Experimental Mechanics, April 1961
pp 123-135
- 2A-6. BLATHERWICK, A.A.
MOWBRAY, D.F. "Stress Strain Relationships In Low and Intermediate-Cycle Fatigue"
Proc. ASTM Vol. 64, 1964 pp 561-578
- 2A-7. CAMMETT, J. T. "Elevated Temperature Low Cycle Fatigue Behavior of Rene 41"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968
- 2A-8. CARDEN, A. E.
SLADE, T. B. "Low Cycle Fatigue of Hastelloy X"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968
- 2A-8a. COFFIN, L.F., JR. For papers by L. F. Coffin Jr. et al
see Topic 20.

- 2A-9. CONWAY, J. B. "Evaluation of the Plastic Fatigue Properties of Heat Resistant Alloys"
Nuclear Materials and Propulsion Operation,
General Electric Co., Cincinnati, Ohio
GEMP-69 Sept. 30, 1967 pp 79-87
- 2A-10. CZYRYCA, E. J.
SCHWAB, R. C. "Effect of Mean Deflection On The Low-Cycle Flexural Fatigue of Annealed 70-30 Cupro-Nickel"
Marine Eng. Lab. Naval Ship Research and Development Center. Annapolis, Md.
AD 652574, July 1967
- 2A-11. DANEK, G. J., JR.
SMITH, H. H.
ACHTEZ, M. R. "High Temperature Fatigue and Bending Strain Measurements In Controlled Environments"
Proc. ASTM 1961 p 775
- 2A-12. DUBUC, J. "Plastic Fatigue Under Cyclic Stress and Cyclic Strain With A Study of The Bausehinger Effect"
Thesis: Ecole Polytechnique, University of Montreal, Canada, 1961.
- 2A-13. DUGDALE, D. S. "Stress-Strain Cycles of Large Amplitude"
Journal of The Mechanics and Physics of Solids, Vol. 7, 1959 pp 135-142
- 2A-14. FELTNER, C. E.
LAIRD, C. "Cyclic Stress-Strain Response of F.C.C. Metals and Alloys - I"
Acta Metallurgica, Vol. 15, Oct. 1967
pp 1621 - 1632
- 2A-15. GERBERICH, W. W. "An Analysis of Several of The Variables Encountered In Low-Cycle Fatigue"
Syracuse Univ. Research Inst. Metallurgical Engineering Dept., Technical Report No. 4
June 1959 Report No. MET575-5961-T4
- 2A-16. GIBBONS, W. G. "Cyclic Strain Fatigue of K-Monel"
ASME Trans. Paper 66-Met-9
- 2A-17. GILLIS, P. P. "Manson-Coffin Fatigue"
Acta Metallurgica, Dec. 16, 1966 pp 1673-1676

- 2A-18. GILLEMOT, L. F. " Low-Cycle Fatigue by Constant Amplitude True Mean Stress"
In book: "Intern. Conference on Fracture",
Sendai, Japan, Sept. 1965. Vol. 3
pp 1461-1477
- 2A-19. GLENNY, E. "Discussion After The Conference on Thermal and High-Strain Fatigue, London, June 1967"
Prepared by Dr. E. Glenny, in book:
'Thermal and High-Strain Fatigue.' Institute of Metals M and R Series No. 32, 1967
pp 416-432
- 2A-20. GROSS, M. R. "Low-Cycle Fatigue of Materials For Submarine Construction"
Naval Engineers Journal, Vol. 75, No. 5
Oct. 1963 pp 783-797
- 2A-21. GROSS, M. R.
SCHWAB, R. C. " Fatigue Properties of Nonferrous Alloys For Heat Exchangers, Pumps and Piping"
Trans. ASME Journal of Engineering For Power. Paper 66-WA/PVP-6
- 2A-22. GROSS, M. R.
CZYRYCA, E. J. "Correlations Between Flexural and Direct Stress Low-Cycle Fatigue Tests"
Marine Eng. Lab. Naval Ship Research and Development Center, Annapolis, Md.
AD 656746 Aug. 1967
- 2A-23. HINTON, R. W. "Stress Relaxation and Cycling Hardening of 12 Ni-5 Cr - 3 Mo Maraging Steel During Low Cycle Fatigue"
ASM Trans. Quart. March 1968 pp 176-183
- 2A-24. JOHANSSON, A. " Fatigue Of Steels at Constant Strain Amplitude and Elevated Temperature"
In book: Colloquium on Fatigue, Stockholm 1955. Springer Verlag pp 112-121
- 2A-25. JONES, R. L.
NORDQUIST, F. C. "An Evaluation of High Strength Steel Forgings"
Low-Cycle Axial Fatigue Properties pp 80-90
Air Force Materials Labor. Report
RTD-TDR-63-4050, May 1964

- 2A-26. KOOISTRA, L. F.
IVES, K. D.
TUCKER, J. T., JR. "Equibiaxial Low-Cycle Fatigue Properties
of Typical Pressure-Vessel Steels"
ASME Paper 65-MET-19
- 2A-27. LANDGRAF, R. W. "Effect of Mean Stress on The Fatigue
Behavior of A Hard Steel"
Univ. of Illinois T & AM Report No. 662
Jan. 1966
- 2A-28. LANGE, E. A.
CROOKER, T. W. "Low-Cycle Fatigue and Crack Growth
Rates in Quenched and Tempered Steels
at Various Strength Levels"
Naval Res. Lab. Rep. 6086, Jan. 1964
- 2A-29. LOW, A. C. "Short Endurance Fatigue"
Int. Conf. on Fatigue of Metals, Proc.
Institute of Mech. Engrs., London, 1956
Session 2, Paper 15 pp 206-11
- 2A-30. MANSON, S. S. "Interfaces Between Fatigue, Creep and
Fracture"
International Journal of Fracture Mechanics,
Vol. 2 N1, 1966 pp 327-363
- 2A-31. MANSON, S. S.
HAL FORD, G. "A Method of Estimating High Temperature
Low Cycle Fatigue Behavior of Materials"
Conference on Thermal and High-Strain
Fatigue, London, June 1967. Institute of
Metals, M and R Series No. 32 pp 154-170
Also NASA TMX-52270
- 2A-32. MANSON, S. S.
HALFORD, G. R. "Application of A Method of Estimating
High Temperature Low Cycle Fatigue
Behavior of Materials"
NASA TMX-52357, Oct. 1967
Also, ASM Trans. Quart., March 1968
pp 94-102
- 2A-32a. MANSON, S. S. For other papers by S. S. Manson, et al
See Topic 21
- 2A-33. MARTIN, D. E. "Plastic Strain Fatigue In Air and Vacuum"
Trans. ASME Series D, Journal of Basic
Engineering, Vol. 87 N4, 1965 pp 850-856
- 2A-34. MEHRA, V.
MOGUL, J.
SLEPITIS, J. "Low Cycle Fatigue Properties of Advanced
Engine Materials"
SAE Nat. Aero. Meeting, New York City
April 1967 Paper 670336

2A-35.	MORROW, JO DEAN TULER, F. R.	" Cycle-Dependent Stress-Strain Behavior of Metals" Univ. of Illinois. TAM Report No. 239 March 1963
2A-36.	MORROW, JO DEAN TULER, F. R.	" Low Cycle Fatigue Evaluation of Inconel 713C and Waspaloy" Trans. ASME, Journal of Basic Engineering, Vol. 87 No. 2, June 1965 pp 275-289 Also Univ. of Illinois TAM Report No. 635 June 1963
2A-37.	MORROW, JO DEAN	" Low-Cycle Fatigue Behavior of Quenched and Tempered SAE 1045 Steel" Univ. of Illinois, TAM Report No. 277 April 1965
2A-38.	MORROW, JO DEAN LANDGRAF, R. W. ENDO, T.	" Determination of The Cyclic Stress- Strain Curve" Paper - Presented at the 70th Annual Meeting, ASTM, Boston, Mass. June 1967
2A-39.	MORROW, JO DEAN ENDO, T.	" Cyclic Stress-Strain and Fatigue Behavior of Representative Aircraft Metals" Paper - Presented at the 70th Annual Meeting ASTM Boston, June 1967
2A-39A.	MORROW, JO DEAN	For other papers by JoDean Morrow see Topic #22
2A-40.	MUNSE, W. H. RADZIMINSKI, J. B.	" The Effect of Plastic Prestrains on The Low-Cycle Fatigue Behavior of Titanium" Univ. of Illinois, Struct. Res. Ser. N294, 1965
2A-41.	MUNSE, W. H. YAO, J. T. P.	" Low-Cycle Axial Fatigue Behavior of Mild Steel" ASTM Special Techn. Publ. STP #338 Fatigue of Aircraft Structures pp 5-24 Also Ship Structure Comm. Paper PB181505
2A-42.	O'REILLY, H. R.	" Range of Stress Accompanying Cycle Plastic Loading of Steel" Thesis M. S. Univ. of Illinois, 1964
2A-43.	POPICHAK, A. P.	" Low Cycle Fatigue and Damage Line Behavior of Inconel 718 and Udimet 700" B. S. Degree Thesis, Polytechnic Institute of Brooklyn. June 1965

- 2A-44. PETERSON, R. E. "Fatigue Of Metals In Engineering and Design"
36th Edgar Marburg Lecture, ASTM 1962
Materials Research and Standards, Vol. 3,
No. 2, Feb. 1963 pp 122-139
- 2A-45. REYNOLDS, M. B. "Strain Cycle Phenomena In Thin-Wall Tubing"
General Electric Co., San Jose, Calif.
Report GEAP-4462, 1964
- 2A-46. ROYLES, R. "Low Endurance Fatigue Behaviour of Mild Steel Beams In Reversed Bending"
Journal of Strain Analysis, Vol. 1, No. 3
1966 pp 239-247
- 2A-47. ROYLES, R. "Incremental Extension of Mild Steel Beams In Reversed Bending"
Journal Strain Analysis, Vol. 1, No. 2
Jan. 1966 p 133
- 2A-48. SACHS, G.
SCHEVEN, G.
TONG, K. "Effects of Hydrogen on Low-Cycle Fatigue Of High-Strength Steel"
Proc. ASTM Vol. 57, 1957 pp 682-697
- 2A-49. SACHS, G.
YEY, T.H.
TONG, K.N. "Strength Properties of Specimens From Autofrettaged Gun Tubes. Cyclic Stress-Strain Relation of A Heat-Treated Gun Steel"
Syracuse Univ. Res. Inst. Metallurgical
Eng. Dept. Report MET345-579T9 May 1957
- 2A-49a. SACHS, G. For other papers by G. Sachs, et al
see Topic 24.
- 2A-50. SUMNER, G. "The Low-Endurance Fatigue Behaviour of A 20% Cr-25% Ni-0.7% Nb Stainless Steel at 25, 650 and 750°C"
International Conf. on Thermal and High-Strain Fatigue, London, June 1967
The Institute of Metals, M and R Series No. 32
pp 295-311
- 2A-51. STOUT, R. D.
PENSE, A. W. "Effect of Composition and Microstructure on The Low-Cycle Fatigue Strength of Structural Steels"
Trans. ASME Journal of Basic Engineering,
Vol. 87 Series D #2, June 1965 p 269

- 2A-52. STOUT, R. D.
GROSS, J. H. "Plastic Fatigue Properties of High-Strength Pressure-Vessel Steels"
Welding Journal, Vol. 34 April 1955
pp 1615-1665
- 2A-53. SLOT, T. "Experimental Developments in Low-Cycle Fatigue Research on Pressure Vessel Steels at Elevated Temperatures"
General Electric Nuclear Materials and Propulsion Operation
GE-TM-66-6-11 June 1966
- 2A-54. SLOT, T.
STENTZ, R. H. "Experimental Methods for Low-Cycle Fatigue Research at High Temperatures"
Presented at 1967 SESA Spring Meeting in Ottawa, Canada. May 16-19, 1967
Exp. Mech., March 1968
- 2A-55. SLOT, T.
MOTEFF, J. "Plastic Fatigue Properties of Heat Resistant Alloys"
Sept. 30, 1966 GEMP-61 pp 133-139
Dec. 30, 1966 GEMP-63 pp 107-110
Mar. 31, 1967 GEMP-475A pp 213-227
June 30, 1967 GEMP-67 pp 133-139
Nuclear Materials and Propulsion Operation,
General Electric Co., Cincinnati, Ohio
- 2A-56. SCHMIEDER, A. K.
CAGNINA, J. J., JR. "Strain Cycling Tests on Large Specimens of AISI Type 347 Stainless Steel and 2 1/4 Croloy"
General Electric Co. Report, DF-58-SL-211
Feb. 1959 LST-G Dept., Schenectady, N. Y.
- 2A-57. SWINDEMAN, R. W.
DOUGLAS, D. A. "The Failure of Structural Metals Subjected to Strain-Cycling Conditions"
Trans. ASME Journal of Basic Engineering
Vol. 81, 1959 p 203
- 2A-58. SWINDEMAN, R. W. "Fatigue of Austenitic Stainless Steels in The Low and Intermediate Cycle Range"
ORN-L-TM-1363
Oak Ridge Nat. Lab., Oak Ridge, Tenn. 1966
- 2A-59. SWINDEMAN, R. W. "Low-Cycle Fatigue Study on Niobium Alloy D-43"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. in June 1968.

2A-59a.	SWINDEMAN, R. W.	For other papers by R. W. Swindeman See Topic 3.
2A-60.	THEVENOW, V. H.	"Low-Cycle Elevated Temperature Fatigue" Materials Laboratory Report MSM6-13 Allison Division, Gen. Motors, 1966
2A-61.	TILLY, G. P.	"Effects of Varied Loading Paths on Fatigue Endurances. Pt. 1: Some Load Fatigue Properties of Nimonic 90 at Elevated Temperature" Ministry of Aviation, Aero. Res. Council, Phamplet C.P. #786 NGTE-M-373, Dec. 1963
2A-62.	TILLY, G. P.	"The Role of Compressive Strain in The Load and Strain Fatigue Behavior of H46 at Room Temperature" ARC-CP-844, NGTE-R-269 Aero. Res. Council, Great Britain 1966
2A-63.	TROLANO, A. R. ANDERS, F. J., JR.	"An Investigation of the Plastic Fatigue Behavior of Alloy Steel Ordnance Material" Final Report - Oct. 1955 Dept. of Metallurgical Engineering, Case Institute of Technology AD-80464
2A-64.	TOPPER, T. H. BIGGS, W. D.	"The Cyclic Straining of Mild Steel" <u>Applied Materials Research</u> , Oct. 1966 pp 202-209
2A-65.	TOPPER, T. H. BIGGS, W. D.	"The Cyclic Behavior of Mild Steel at Low Endurances" <u>Applied Materials Research</u> , July 1966 pp 131-137
2A-66.	VALLURI, S. R.	"A Unified Engineering Theory of High Stress Level Fatigue" <u>Aerospace Engineering Review</u> , Vol. 20 October 1961
2A-67.	VITONER, F. H. COZAN, B. J.	"Bending Fatigue Tests on Type 316 Stainless Steel and 2 1/4 Cr-1 Mo" WADC Techn. Report No. 56-181
2A-68.	WEISMAN, M. H. KAPLAN, M. H.	"The Fatigue Strength of Steel Through the Range from 1/2 to 30000 Cycles of Stress" Proc. ASTM Vol. 50 (1950) p 649

- 2A-69. WEISS, V.
SACHS, G.
GERBERICH, W. W.
LATORRE, J. V. "Low-Cycle Fatigue in Pressure-Vessel Materials"
Proc. ASTM Vol. 60, 1960
pp 512-529
- 2A-70. WEISS, V.
SACHS, G. "Beitrage Zur Kurzzeitermudung"
Zeitschrift fur Metallkunde, Vol. 53
1962 pp 37-47 (In German)
- 2A-71. WEISS, V.
SESSLER, J. G. "Strain-Controlled Fatigue in Pressure Vessel Materials"
Trans. ASME Paper 63-WA-226
- 2A-72. WEISS, V.
SESSLER, J. G. "Low-Cycle Fatigue Damage in Pressure-Vessel Materials"
Trans. ASME, Journal of Basic Engrg.
Vol. 85, 1963 pp 539-547
- 2A-73. WEISS, V.
SESSLER, J. G.
PACKMAN, P. "Effect of Several Parameters on Low Cycle Fatigue Behavior"
Acta Metallurgica, Vol. 11, 1963 July
pp 809-816
- 2A-73a. WEISS, V., et al For other papers by V. Weiss, et al
see Topic 24.
- 2A-74. WELLS, C. H.
SULLIVAN, C. P. "The Low-Cycle Fatigue Characteristics of a Nickel-Base Superalloy at Room Temperature"
Trans. ASM Vol. 57, 1964 pp 841-855
- 2A-75. WELLS, C. H.
SULLIVAN, C. P. "Low-Cycle Fatigue Damage of Udimet 700 at 1400°F"
Trans. ASM Vol. 58, 1965 pp 391-402
- 2A-76. WELLS, C. H.
SULLIVAN, C. P. "The Effect of Temperature on The Low-Cycle Fatigue Behavior of Udimet 700"
Trans. ASM Vol. 60, 1967 pp 217-222
- 2A-77. WELLS, C. H.
SULLIVAN, C. P. "Interactions Between Creep and Low-Cycle Fatigue in Udimet 700 at 1400°F"
To be presented at Symposium on Fatigue At Elevated Temperatures, ASTM Meeting in San Francisco, Calif. in June 1968

- | | | |
|--------|---------------------------------|---|
| 2A-78. | WELLS, C. H.
SULLIVAN, C. P. | "Low-Cycle Fatigue of Udimet 700 at
1700°F "
ASM Transactions Quarterly, March 1968
pp 149-155 |
| 2A-79. | WILLIAMS, W. LEE | "Metals for Hydrospace"
Journal of Materials, Vol. 2 #4
Dec. 1967 pp 769-800
Low Cycle Fatigue pp 777-786 |
| 2A-80. | WILSON, R. B. | "Influence of Variable Mean Stress On
Fatigue Damage"
Univ. of Illinois, T & AM Report #672
June 1967 |
| 2A-81. | WUNDT, B. M. | "Crack Initiation and Propagation in
Low-Cycle (High Strain) Fatigue of
Low-Alloy Steels" A Review
Consulting Project CP-BMW-5 Sept. 1966
(Includes review of Russian Work and
References)
General Electric Co., LST Dept., Schenectady,
New York |
| 2A-82. | WYLIE, R. D.
WATSON, P. D. | "Low Cycle Fatigue Behavior of Dissimilar
Welds"
Trans. ASME, Journal of Engineering for
Power Paper 66-WA/PVP-2 |
| 2A-83. | WOOD, W. A. | "Failure of Metals Under Cyclic Strain"
International Conf. on Fatigue of Metals,
Session 6, Paper 4, Institution of Mechanical
Engineers |
| 2A-84. | YOUNGER, D. G. | "The Cyclic State of Materials and
The Relationship to Mechanical Properties
and Fatigue"
Tech. Report AFFDL-TR-66-125 Nov. 1966
Air Force Flight Dynamics Lab Res. and
Tech. Div., Air Force Systems Command,
Wright-Patterson Air Force Base, Ohio. |
| 2A-85. | RARATY, L. E.
SUHR, R. W. | "Correlation of The Fatigue Properties
of Magnox AL80 In Terms of The Plastic
Strain Range"
Journal of the Institute of Metals, 1966
Vol. 94 pp 292-300 |

2A-86. WOOD, D. S.
 WATKINS, B.

"Low Cycle High Strain Fatigue Behaviour
of A Low Carbon High Manganese Pressure
Vessel Steel"

Joint.International Conf. on Creep, Proc.
Institute Mech. Engrs. 1963-1964 Vol. 178
Part 3A, Paper 70 pp 3-85 to 3-92

3. MECHANICAL LOW-CYCLE FATIGUE. ISOTHERMAL
WITH HOLD TIME OR WITH CREEP

- 3-1. BENHAM, P.P.
RADON, J. C.
BURNS, D.J. "Push-Pull Low-Endurance Fatigue of Cast Irons and Steels"
Journal of the Iron and Steel Institute.
Sept. 1966 pp 928-935.
- 3-2. BENHAM, P.P. "High-Temperature Low-Cycle Fatigue: Survey of British Work"
SESA Spring Meeting, Ottawa, Canada
May 1967.
- 3-3. CARDEN, A.E. "Thermal Fatigue of A Nickel-Base Alloy"
Trans. A.S.M.E. Series D, Journal of Basic Engineering. March 1965 pp 237-244
- 3-4. CARDEN, A.E.
KYZER, R.D.
VOGEL, W.H. "Low-Cycle Fatigue of Three Superalloys Under Cyclic-Extension and Cyclic-Temperature Conditions"
A.S.M.E. Paper 67-Met-19.
- 3-5. COFFIN, L. F., JR. "A Study of The Effect of Cyclic Thermal Stresses On A Ductile Material"
Trans. A.S.M.E. Vol. 76, 1954
pp 931-950.
- 3-6. COLES, A.
SKINNER, D. "Assessment of Thermal-Fatigue Resistance of High Temperature Alloys"
Journal of the Royal Aeronautical Society,
January 1965 pp 53-55.
- 3-7. COLES, A. "The Significance of Metal Fatigue In The Power Generation Industry"
Parson's Journal, Summer 1966 pp 55-64.
- 3-8. COLES, A.
HILL, G.J.
DAWSON, R.A.T.
WATSON, S.J. "The High-Strain Fatigue Properties of Low-Alloy Creep-Resisting Steels"
International Conference on Thermal and High-Strain Fatigue, London, June 1967.
Institute of Metals. M and R Series
No. 32 pp 270-294.

- 3-9. COLES, A.
CHITTY, A. "Ductility and Reverse-Bend Fatigue Behaviour of C-Mo and Cr-Mo-V Steel" International Conference on Thermal and High-Strain Fatigue. The Institute of Metals, June 1967. M and R Series No. 32 pp 328-345.
- 3-10. EDMUNDS, H.G. "Repeated Cyclic Strains" Proc. Instn. Mech. Engrs. 1965-1966. Vol. 180 Pt. 3I pp 373-379.
- 3-11. EDMUNDS, H.G.
WHITE, D. J. "Observations of The Effect of Creep Relaxation On High-Strain Fatigue" Journal of Mechanical Engng. Science. Vol. 8, 1966, No. 3 pp 310-321.
- 3-12. HILL, G. J.
THORNTON, D.V.
QUAASS, S. T. "Elevated-Temperature High-Strain Fatigue of Metals" Journal of The Institute of Metals, Vol. 93 1964-1965. pp 451-453.
- 3-13. HILL, G. J. "The Failure of Wrought 1% Cr-Mo-V Steels In Reverse-Bending High-Strain Fatigue at 550°C" International Conference on Thermal and High-Strain Fatigue. The Institute of Metals, June 1967. M and R Series No. 32 pp 312-327.
- 3-14. HILL, G. J.
DAWSON, R.A. T.
ELDER, W. J.
PRICE, A. T. "High-Strain Fatigue of Austenitic Steels" International Conference on Thermal and High-Strain Fatigue, London, June 1967. The Institute of Metals. M and R Series No. 32 pp 239-269.
- 3-15. KATO, N. "An Experimental Study of The Effects of Hold Time on The Thermal Fatigue of 18-8 Cb Steel" Trans. Japan Society Mechanical Engrs. 1961 #76 pp 410-423. In Japanese. English Summary.
- 3-16. KAWAMOTO, M.
TANAKA, T.
NAKAJIMA, H. "Effect of Heating and Cooling Speed and Hold Time On Thermal Fatigue" Bulletin of Japan Society of Mechanical Engrs. Vol. 7, 1964 #25 pp 21-27.

- 3-17. KAWAMOTO, M.
TANAKA, T.
NAKAJIMA, H. "Effects of Several Factors On Thermal Fatigue"
A.S.T.M. Journal of Materials, Vol. 1 #4
Dec. 1966 pp 719-738.
- 3-18. MANSON, S.S.
HALFORD, GARY "A Method of Estimating High Temperature Low Cycle Fatigue Behavior of Materials"
NASA TM X-52270, 1967.
Presented at the International Conference on Thermal and High-Strain Fatigue, London, June 1967. The Institute of Metals. M and R Series No. 32 pp 154-170.
- 3-19. SMITH, R.W.
SMITH, G.T. "Thermal-Fatigue Crack- Growth Characteristics and Mechanical Strain Cycling Behavior of A-286, Discaloy, and 16-25-6 Austenitic Steels"
NASA Note TN D-479, October 1960.
- 3-20. SWINDEMAN, R.W.
DOUGLAS, D.A. "The Failure of Structural Metals Subjected to Strain-Cycling Conditions"
A.S.M.E. Trans. Journal of Basic Eng. June 1959 pp 203-212.
- 3-21. SWINDEMAN, R.W. "The Strain-Fatigue Properties of Inconel. Part I. General Considerations"
Oak Ridge National Laboratory ORNL-3250 1962.
- 3-22. SWINDEMAN, R.W. "Strain-Fatigue Properties of Inconel Part II. Isothermal Tests With Constant Hold Time"
Oak Ridge National Laboratory ORNL-3250 1962.
- 3-23. TILLY, C. P.
BARNES, J.F. "Assessment of Thermal Fatigue Resistance of High Temperature Alloys"
Journal of The Royal Aeronautical Society, Vol. 69, May 1965. pp 343-344.
- 3-24. TILLY, G.P. "Influence of Static and Cyclic Loads On The Deformation Behaviour of An Alloy Steel at 600°C"
International Conference on Thermal and High-Strain Fatigue. London, June 1967. The Institute of Metals. M and R Series No. 32 pp 198-210.

- 3-25. TIMO, D.P.
SARNEY, G.W. "The Operation of Large Steam Turbines To Limit Cyclic Thermal Cracking"
Trans. ASME Paper 67-WA/PWR-4.
- 3-26. WALKER, C.D. "Strain-Fatigue Properties of Some Steels at 950°F (510°C) With A Hold In The Tension Part of The Cycle"
Proc. of the Joint Conference on Creep, 1963. Paper 3-49. Proc. Instn. Mech. Engrs. 1963-1964. Pt., 3A.
- 3-27. WATSON, S.J. "Creep and Relaxation With Thermal Cycling"
Chapter 13 in Book "Thermal Stress"
Edited by P.P. Benham, Pitman, London, 1964.
- 3-28. WOOD, D.S. "The Effect of Creep On The High Strain Fatigue Behaviour of A Pressure Vessel Steel"
Welding Journal Research Suppl. February 1966 pp 90s-96s.
- 3-29. WALKER, C. D.
KREMPL, E. "The Effect of Creep-Rupture Ductility and Hold Time on The 1000°F Strain-Fatigue Behavior of A 1 Cr-1 Mo-.25V Steel"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968
- 3-30. SWINDEMAN, R. W. "The Interrelation of Cyclic and Monotonic Creep Rupture"
Joint International Conf. on Creep.
Proc. Institute of Mech. Engrs. 1963-1964 Vol. 178, Part 3A, Paper 32 pp 3-71 to 3-76
Discussion: Pages D-162, D-163, D-212, D-213, D-214
- 3-31. WELLS, C. H.
SULLIVAN, C. P. "Interactions Between Creep and Low-Cycle Fatigue in Udimet 700 at 1400°F"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968

3A EFFECT OF STRAIN RATE AND FREQUENCY ON LCF

- 3A-1 COFFIN, L. E., JR. "Cyclic Strain and Fatigue Study of
A 0.1 PCT Carbon, 2PCT Mo Steel
at Elevated Temperatures"
Trans. of the Metallurgical Society
of AIME. V230, Dec. 1964, pp. 1690-1699.
- 3A-2 COFFIN, L. F., JR. "Cyclic Strain and Fatigue Behavior in
the Creep Range"
Proc. International Conference on Fracture.
Sendai, Japan 1965. Also General Electric
Company report 64-RL-3830M, Dec. 1964
(Schenectady, New York -R&D Center)
- 3A-3 CONWAY, J. B. "Evaluation of Plastic Fatigue Properties
of Heat Resistant Alloys"
Nuclear Materials & Propulsion Operation.
General Electric Company, Cincinnati, Ohio.
AEC Fuels and Materials Development Report.
GEMP-69 pp. 79-89, Sept. 30, 1967.
- 3A-4 COLES, A.
SKINNER, D. C. "Assessment of Thermal Fatigue Resistance
of High Temperature Alloys"
Journal of the Royal Aeronautical Society.
January, 1965 pp. 53-55.
- 3A-5 COLES, A. "The Significance of Metal Fatigue in the
Power Generation Industry"
Parsons Journal Vol. 11 #62, Summer, 1966
pp. 55-64. Also Parsons & Co. Ltd. Research
Report 655.
- 3A-6 COLES, A.
HILL, G. J.
DAWSON, R. A. T.
WATSON, S. J. "The High Strain Fatigue Properties of
Low-Alloy Creep Resisting Steels"
Conference on Thermal & High Strain
Fatigue, London, June, 1967. Institute of
Metals, M&R Series N32, pp. 270-294.
- 3A-7 ECKEL, J. F. "The Influence of Frequency on the Repeated
Bending Life of Acid Lead"
Proc. ASTM 1951 pp. 745-760.
- 3A-8 KUSUMOTO, S. "Effects of Strain Rate on High Temperature Low-
Cycle Torsional Fatigue Strength of 1Cr, 1Mo,
1/4V Cast Steel"
Hitachi Research Laboratory, Hitachi Ltd,
Japan, April, 1967.

- 3A-9 MANSON, S.S.
 HALFORD, G. "A Method of Estimating High Temperature Low Cycle Fatigue Behavior of Materials" NASA TMX-52270, 1967, Paper presented at Symposium on Thermal and High Strain Fatigue. London, June, 1967 - Institute of Metals, RM 32.
- 3A-10 MILLER, K. J. "Strain Rate Effects on Low Endurance Fatigue" Nature, Jan. 21, 1967 pp. 317-318.
- 3A-11 MILLER, K. J. "The Effect of Strain Rate on Low-Endurance Torsional Fatigue in an Alloy Steel (En 25)" Conference on Thermal and High Strain Fatigue. London, June, 1967. Institute of Metals, M&R Series 32 pp. 225-238.
- 3A-12 MORROW, JoDean
 HALFORD, G.R. "Creep Under Repeated Stress Reversals" Joint International Conference on Creep, 1963, Institution of Mechanical Engineers Paper 21, pp. 3-43 to 3-47.
- 3A-13 SLOT, T.
 MOTEFF, J. "Plastic Fatigue Properties of Heat Resistant Alloys" Nuclear Materials and Propulsion Operation. General Electric Company, Cincinnati, Ohio AEC Fuels and Materials Development Report GEMP-67 pp. 133-140, June 30, 1967.
- 3A-14 SLOT, T.
 BERLING, J. T. "Effects of Strain Rate on Low Cycle Fatigue of AISI 304, 316 and 348 Stainless Steels at Elevated Temperatures" Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, California, June, 1968.
- 3A-15 TILLY, G. P. "Fracture Behavior of Two Creep-Resistant Materials Subjected to Cyclic Loading at Elevated Temperature" Proc. Institute of Mechanical Engineers-1965-1966 Vol. 180 Pt. I pp. 1045-1058.
- 3A-16 TILLY, G. P. "Cumulative Strain Behavior of a Nickel-Chromium Alloy and an 11 Percent Chromium Martensitic Type of Steel Under the Action of Cyclic Loading" Proc. Institute of Mechanical Engineers, 1965-1966 Vol. 180 Part 3I pp. 403-413.

3A-17 TILLY, G. P.

"Influence of Static and Cyclic Loads on the Deformation Behavior of an Alloy Steel at 600°C"

Conference on Thermal and High Strain Fatigue, London-June, 1967. Institute of Metals R&M Series 32 pp. 198-210.

4. BEHAVIOR OF NOTCHES IN LCF.

- 4-1. D'AMATO, R.
PLAN, T.H.H. "Low-Cycle Fatigue of Notched and Unnotched Specimens of 2024 Aluminum Alloy Under Axial Loading"
W.A.D.C. Techn. Note 58-27. 77 pp.
Feb. 1958; AD142307
- 4-2. D'AMATO, R.
De BOER, R. "A Study of the Relationship Between Notched and Unnotched Specimens of 2024 Aluminum Alloy in The Low-Cycle Fatigue Regime"
W.A.D.C. Techn. Note 59-2.
May 1959; PB 161405
- 4-3. BARON, H.G.
BRINE, F.E. "A Note on Low-Endurance Fatigue At Regions of Stress Concentration"
International Conference on Thermal and High-Strain Fatigue. London, June 1965
The Institute of Metals, M and R Series No. 32 pp 113-121
- 4-4. BENHAM, P.P.
BELL, W. J. "The Effect of Mean Stress on Fatigue Strength of Plain and Notched Stainless Steel Sheet in The Range From 10^1 to 10^7 Cycles"
ASTM. Spec. Techn. Publ. No. 338, 1963
pp 25-46
- 4-5. BLATHERWICK, A.A.
OLSON, B. K. "Stress Redistribution In Notched Specimens Under Cyclic Stress"
Aeron. Systems Div. T.R. 61-451
Wright-Patterson Air Force Base, Ohio
October 1961.
- 4-6. BLATHERWICK, A.A.
MOWBRAY, D.F. "Stress-Strain Relationships In Low and Intermediate-Cycle Fatigue".
Proc. A.S.T.M. Vol. 64, 1964 pp 561-578
- 4-7. BLATHERWICK, A.A.
OLSON, B. K. "Stress Redistribution in Notched Specimens During Fatigue Cycling"
To be presented at the 1968 SESA Spring Meeting, May 7-10, Albany, N. Y.

- 4-8. CREWS, J. H., JR. "A Study of Cyclic Plastic Stresses At A Notch Root"
Experimental Mechanics, Vol. 6, No. 6
June 1966 pp 313-320
Also NASA TN D-3152, Dec. 1965
- 4-9. DAWSON, R.A. T. "Factors To Be Considered in The Design and Operation Of Turbines To Prevent Failure by Thermal Fatigue"
Conf. on Thermal and High-Strain Fatigue.
London, June 1967. Iron and Steel Institute.
M and R Series No. 32 pp 40-54
- 4-10. DAWSON, R.A. T.
ELDER, W. J.
HILL, G. J.
PRICE, A. T. "High-Strain Fatigue of Austenitic Steels"
Conf. on Thermal and High-Strain Fatigue.
London, June 1967. Iron and Steel Institute
M and R Series No. 32 pp 239-269
- 4-11. IBRAHIM, S.M.
MC CALLION, H.
DUDLEY, B. R. "Elastic-Plastic Deformation Around A Circular Hole In A Plate Under Cyclic Loading"
Applied Mechanics Convention 1966
Proceedings Inst. Mech. Engrs. 1965-66
Vol. 180 Part 3I pp 438-447
- 4-12. KREMPL, E. "Low Cycle Fatigue Strength Reduction In Notched Flat Plates"
Trans. ASME Paper 67-MET-13
- 4-13. MANSON, S.S.
HIRSEHBERG, M. H. "Low Cycle Fatigue of Notched Specimens By Consideration of Crack Initiation and Propagation"
NASA TN D-3146 June 1967
(Replaces NASA TMX-52126) and paper presented at the International Conference on Fracture, Sendai, Japan Sept. 1965.
- 4-14. MORROW, JODEAN
TOPPER, T. H.
WETZEL, R.M. "Neuber's Rule Applied to Fatigue Of Notched Specimens"
Presented at 70th Annual Meeting,
Amer. Society Testing Materials, Boston,
Mass. June 1967.

- 4-15. STOUT, R.D.
HICKERSON, J.P.
PENSE, A.W. "The Influence of Notches on The
Fatigue Resistance of Pressure Vessel
Steels"
Welding Journal, Research Supplement
Feb. 1968 pp 63s-71s.
- 4-16. TAYLOR, T.E. "Low Cycle Fatigue Behavior of Low
Alloy Steel Pressure Vessels"
British Welding Journal, Dec. 1967
pp 641-648
- 4-17. TROLANO, A.R.
ANDERS, F.J., JR. "An Investigation of The Plastic Fatigue
Behavior of Alloy Steel Ordnance Material"
Dept. of Metallurgy, Case Institute of
Technology. Final Report Oct. 1955
AD-80464.
- 4-18. YOUNGER, D. G. "Cyclic Plasticity and Fatigue At
Stress Concentrations"
To be presented at the 1968 SESA Spring
Meeting, May 7-10, Albany, N. Y.
- 4-19. COLES, A.
HILL, G.J.
DAWSON, R.A.T.
WATSON, S. J. "The High-Strain Fatigue Properties of
Low-Alloy Creep-Resisting Steels"
Conf. on Thermal and High-Strain Fatigue,
London, June 1967. Iron and Steel Institute.
M and R Series No. 32 pp 270-294.
- 4-20. YAO, J.T.P. "Low-Cycle Fatigue Damage of Notched
Specimens"
In: International Symposium On The
Effects of Repeated Loading of Materials
and Structures. Univ. of Mexico,
Mexico City, Sept. 1966.
- 4-21. ZWICKY, E.E., JR. "Cyclic Plastic Strain Concentration
Factors"
Trans. ASME. Paper No. 67-WA/PVP-6
- 4-22. DOLAN, T. J.
BOWMAN, C. E. "Studies Of The Biaxial Fatigue
Properties of Pressure Vessel Steels"
Welding Journal, Jan. 1955
Research Supplement pp 51s - 59s
- 4-23. KOOISTRA, L. F.
LANGE, E. A.
PICKETT, A. G. "Full-Size Pressure Vessel Testing and
Its Application to Design"
ASME Trans. Journal of Engineering
for Power. Oct. 1964 pp 419 - 428

- 4-24. MANSON, S. S. "Effect of Stress Concentration"
Book: " Thermal Stress and Thermal
Fatigue" McGraw-Hill 1966 pp 180-182
- 4-25. SMITH, R. W.
 SMITH, G. T. "Thermal Fatigue Crack Growth
Characteristics and Mechanical Strain
Cycling Behavior of A-286, Discalloy and
16-25-6 Austenitic Steels"
NASA Techn. Note D-479, 1960
- 4-26. TOPPER, F. H.
 BIGGS, W. D. " The Cyclic Straining of Mild Steel"
Applied Materials Research, Oct. 1966
 pp 202-209
- 4-27. WOOD, D. S.
 WATKINS, B. " Low Cycle High Strain Fatigue
Behaviour of A Low Carbon High
Manganese Pressure Vessel Steel"
Joint. International Conf. on Creep,
Proc. Institute of Mech. Engrs. 1963-1964
Vol. 178, Part 3A, Paper 70
 pp 3-85 to 3-92

5. LCF UNDER MULTIAXIAL STRAINING

- 5-1. ARAMAYO, G.A. "A Study of the Thermal-Fatigue Behavior of Thin Circular Discs" Thesis. Master of Science. Dept. Engineering Mechanics, Univ. of Alabama. 1965 52pp
- 5-2. CARDEN, A.E. "Low Cycle Fatigue Under Multiaxial Stress Cycling", Journal Soc. Mech. Engrs. (Japan) Semi-International Symposium, Sept. 1967, Tokyo.
- 5-3. BENHAM, P.P.
MACKENZIE, C.T.
BURNS, D.J. "A Comparison of Uniaxial and Biaxial Low-Endurance Fatigue Behaviour of Two Steels",
Proc. Instit. of Mech. Engrs. 1965-1966 Vol. 180, Part 1. Applied Mech. Convention, April 1966, Paper 12.
- 5-4. DOLAN, T.J.
BOWMAN, C.E. "Biaxial Fatigue Properties of Pressure Vessel Steels", Welding Journal, Welding Research Suppl. Nov. 1953 pp 529s-537s
- 5-5. KOOISTRA, L.F.
IVES, K.D.
TUCKER, J.T. "Equibiaxial Low-Cycle Fatigue Properties of Typical Pressure-Vessel Steels", ASME Trans. Paper 65-Met-19
- 5-6. LIBERTINY, G.L. "Short-Life Fatigue Under Combined Stresses",
Journal of Strain Analysis, Vol. 2, 1967 No. 1 pp 91-95
- 5-7. Mc CLAREN, S.W.
TERRY, E.L. "Characteristics of Aerospace Materials Subjected to Biaxial Static and Fatigue Loading Conditions",
Trans. ASME Paper 63-WA-315, 1963.
- 5-8. MAJORS, H., JR. "Correlation of Thermal Fatigue With Mean Temperature and Influence of Combined Stress"
Seattle Univ. Mech. Eng. Dept., March 1962

- 5-9. PASCOE, K. J.
DE VILLIERS, J. W. R. "Low-Cycle Fatigue of Steels Under
Biaxial Straining",
Journal of Strain Analysis, Vol. 2, #2,
1967 pp. 117-126
- 5-10. STALLONE, M. J. "Thermal Fatigue Under Biaxial
Stress Conditions",
General Electric Co. Report R60FPD92,
Evendale, Ohio 2-9-60
- 5-11. TAIRA, S.
OHNAMI, M.
SHIRAISHI, T. "Thermal Fatigue Under Multiaxial
Thermal Stresses",
Proc. Sixth Japan Congress on Testing
Materials, 1963 pp. 40-46
- 5-12. TAIRA, S.
OHNAMI, M.
INOUE, T. "Thermal Fatigue Under Multiaxial
Thermal Stresses",
Proc. Eighth Japan Congress on
Testing Materials, 1965 pp. 40-45
- 5-13. TAIRA, S.
INOUE, T.
TAKAHASHI, M. "Low-Cycle Fatigue Under Multiaxial
Stresses. Cyclic Tension-Compression
and Cyclic Torsion",
The Tenth Japan Congress on Testing
Materials, 1967, pp. 18-23
- 5-14. CARDEN, A. E. "Bibliography of the Literature On
Multiaxial Stress Fatigue"
Dept. of Eng. Mech., Univ. of Alabama
Report MH-67-AEC-2 Aug. 1967 71 pp
- 5-15. CLAREN, S. W.
PETERSON, J. J. "Research to Determine Low Cycle Fatigue
Design Data on Materials In A Multi-Axial
Stress Field"
Chance Vought Corp., Dallas, Texas
Contract AF 33 (657)-8525 1962
- 5-16. DOLAN, T. J.
BOWMAN, C. E. "Studies of The Biaxial Fatigue Properties
Of Pressure Vessel Steels"
Welding Journal, Jan. 1955
Research Supplement pp 51s - 59s
- 5-17. KENNEDY, C. R. "Effect of Stress-State On High-Temperature
Low Cycle Fatigue"
ASTM STP-338, 1963 pp 92-104

- 5-18. KYRIAKAKIS, T. "Low-Cycle Strain Behavior For Combined Stresses"
Thesis: Penn State Univ. 1962
- 5-19. MARIN, J.
OHJI, K. "Review On Uniaxial and Biaxial Low-Cycle Fatigue"
The Pennsylvania State University, Dept. of Engrg. Mechanics, August 1965
NASA CR68645 11 p
- 5-20. MULLIN, J. V. "A Study of Biaxial Strain-Cycling For Both Synchronous and Non-synchronous Conditions"
Ph. D. Thesis. Dept. of Engineering Mechanics, The Pennsylvania State University, June 1964
- 5-21. SMITH, R. W.
SMITH, G. T. "Thermal Fatigue Crack Growth Characteristics and Mechanical Strain Cycling Behavior of A-286, Discalloy and 16-25-6 Austenitic Steels"
NASA Techn. Note D-479, 1960
- 5-22. ZAMRIK, S. Y. "An Investigation of Strain Cycling Behavior of 7075-T6 Aluminum Under Combined State of Stress"
Dept. of Engineering Mechanics, The Pennsylvania State University.
Third Annual Progress Report, Oct. 1, 1967
70 pp
- 5-23. ZAMRIK, S. Y. "Use of Octahedral Shear Strain Theory In Biaxial Low-Cycle Fatigue"
Dept. of Engr. Mechanics, The Pennsylvania State University. To be presented at ASME Conference on Materials Technology, May 1968.
- 5-24. ZAMRIK, S. Y.
SCHEWCHUK, T. "Low-Cycle Fatigue of 7075-T6 Alloy In Biaxial Bending Using Modified Poisson's Ratio"
Dept. of Engr. Mechanics, The Pennsylvania State University. To be published in Experimental Mechanics. (1968)

6. ENERGY CRITERIA IN LCF

- | | | |
|------|---|---|
| 6-1 | BENHAM, P. P.
MACKENZIE, C. T. | "Push-Pull Low Endurance Fatigue of En25 and En 32B Steels at 20°C and 450°C"
Proc. Institute of Mechanical Engineers, 1965-1968, Vol 180 Part 3I, pp. 424-437. |
| 6-2 | CHANG, C. S.
PIMBLEY, W. T.
CONWAY, H. D. | "An Analysis of Metal Fatigue Based on Hysteresis Energy"
Presented at 1967 SESA Annual Meeting, Chicago, Illinois. <u>Experimental Mechanics</u> , Mar. 1968 pp 133-137 |
| 6-3 | HALFORD, G. R. | "Plastic Strain Energy Analysis of Torsional Low Cycle Fatigue"
Thesis University of Illinois, 1961. |
| 6-4 | HALFORD, G. R. | "The Fatigue Toughness of Metals: A Data Compilation"
University of Illinois, T&AM Report No. - 265, May, 1964. |
| 6-5 | HALFORD, G. R. | "The Energy Required for Fatigue"
ASTM Journal of Materials, Vol. I No. 1, March, 1966, pp. 3-18. |
| 6-6 | LIU, M. W. | "Fatigue Crack Propagation and Applied Stress Range - An Energy Approach"
Trans. ASME Paper 62-Met-2. |
| 6-7 | MARTIN, D. E.
BRINN, J. | "Some Observations on the Plastic Work Required to Fracture Stainless Steel Under Cyclic Loading"
Proc. ASTM-1956, pp. 677-690. |
| 6-8 | MARTIN, D. E. | "An Energy Criterion for Low-Cycle Fatigue"
Trans. ASME Journal of Basic Engineering, Dec. 1961. pp. 565-571. |
| 6-9 | FELTNER, C. E.
MORROW, J. | "Micro-Plastic Strain Hysteresis Energy as a Criterion for Fatigue Fracture"
Trans. ASME Journal of Basic Engineering Vol. 83, No. 1, March, 1961, pp. 15-22. |
| 6-10 | MORROW, J.
HALFORD, G. R. | "Low Cycle Fatigue in Torsion"
Proc. ASTM Vol. 62, 1962, pp. 695-709. |

- 6-11 **STOWELL, E. Z.** "A Study of The Energy Criterion
For Fatigue"
Nuclear Engineering & Design, 1966,
pp 32-40.
- 6-12 **PARDUE, T. E.** "Energy Losses and Fracture of Some
MELCHOR, J. L. Metals Resulting from a Small Number of
GOOD, W. G. Cycles of Strain"
Proc. S.E.S.A., Vol. 7, No. 2, 1949, pp. 27-39.
- 6-13 **MORROW, JO DEAN** "Cyclic Plastic Strain Energy and
Fatigue of Metals"
ASTM STP #378, 1965 pp 45-87

7. CUMULATIVE DAMAGE IN LCF

- 7-1 D'AMATO, R. "A Study of The Strain-Hardening and Cumulative Damage Behavior of 2024-T4 Aluminum Alloy in The Low-Cycle Fatigue Range"
WADC Tech. Report 60-175 April 1960
- 7-2 BARON, H. G.
CAMPION, D. J. "Surface Effects and Cumulative Damage in Low Endurance"
The Engineer, 1966, Vol. 221 pp 646-648
- 7-3 BLATHERWICK, A. A.
VISTE, N. D. "Cumulative Damage Under Biaxial Fatigue Stress"
Materials Research & Standards, Vol. 7 No. 8 August 1967 pp 331-336
- 7-4 ESIN, A. "Stress-Interaction Effects In Cumulative Fatigue Damage"
Nuclear Engineering and Design 1967 #6 pp 139-146
- 7-5 GATTS, R. R. "Application of A Cumulative Damage Concept to Fatigue"
ASME Paper 60-WA-144
- 7-6 GERBERICH, W. W. "The Phenomena of Cumulative Damage In Stress Cycling and Strain Cycling Fatigue"
Syracuse Univ. Res. Inst. , Metallurgical Eng. Dept. Tech. Report No. 3 April 1959
121 pp Metallurgical Eng. Dept. Report No. MET 575-594T3
- 7-7 GUCER, D. E. "Cumulative Fatigue at High Plastic Strains"
Trans. ASM Vol. 54, 1961 pp 176-184
- 7-8 MAARI, S. F. "Cumulative Fatigue Under Variable-Frequency Excitation"
Soc. Auto. Eng. Paper 660720.
Meeting in Los Angeles, Calif. Oct. 1966
- 7-9 MAJORS, HARRY, JR. "Thermal Fatigue Damage Under a Two-Strain-Block History"
Seattle Univ. Washington. Dept. of Mech. Engr. June 1967 119 pp AROD-4116:1-E

- 7-10. MANSON, S. S. "Interpretative Report on Cumulative Fatigue Damage in the Low-Cycle Range" Welding Journal - Research Supplement August 1964 pp 344S-352S
- 7-11. MANSON, S. S. "Application of A Double Linear Damage Rule to Cumulative Damage" In "Fatigue Crack Propagation", ASTM, STP 415. 1967 pp 384-412
- 7-12. MARIN, J. "Cumulative Damage and Effect of Mean Strain In Low-Cycle Fatigue of A 2024-T351 Aluminum Alloy" Trans. ASME Journal of Basic Engineering, Dec. 1966 pp 801-810
- 7-13. MARCO, S. M. "A Concept of Fatigue Damage" Trans. ASME 1954 Vol. 76 p627
- 7-14. MARSH, K. J. "Cumulative Fatigue Damage Under A Symmetrical Sawtooth Loading Programme" Journal of Mechanical Engineering Science, Vol. 7, June 1965 pp 138-151
- 7-15. MORROW, JO DEAN "Cumulative Fatigue Damage Under Cyclic Strain Control" Paper presented at the ASTM Meeting in Boston, Mass. June 1967
- 7-16. WEISS, V. "Effect of Several Parameters on Low-Cycle Fatigue Behavior" Acta Metallurgica, Vol. 11 #7 1963 pp 809-816
- 7-17. WEISS, V. "Low-Cycle Fatigue Damage in Pressure Vessel Materials" Trans. ASME Vol. 85, 1963 Journal of Basic Engineering pp 539-547
- 7-18. WELLS, C. H. "Low-Cycle Fatigue Damage of Udimet 700 at 1400°F" Trans. ASM Vol. 58, 1965 pp 391-402
- 7-19. YAO, J.T.P. "Low-Cycle Axial Fatigue Behavior of Mild Steel" ASTM Sp. Techn. Publ. N338, 1963 pp 5-24
- MUNSE, W.H.

- 7-20. YAO, J.T.P., "Low-Cycle Fatigue Damage of Notched Specimens"
Paper presented at the International Symposium on The Effects of Repeated Loading of Materials and Structural Elements"
Mexico City, Mexico Sept. 15-17, 1966.
- 7-21. KAECHHELE, L. "Review and Analysis of Cumulative-Fatigue-Damage Theories"
Rand Corp., Santa Monica, Calif.
RM-3650-PR 1963
- 7-22. MANSON, S. S.
HALFORD, G. "A Method of Estimating High Temperature Low Cycle Fatigue Behavior of Materials"
NASA TM X-52270, 1967
Paper presented at Symposium on Thermal and High Strain Fatigue, London, June 1967
Institute of Metals, R and M No. 32
- 7-23. MANSON, S. S.
HALFORD, G. R. "High-Strain Cumulative Fatigue Damage At Elevated Temperatures"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968

8. DESIGN AGAINST LCF

- 8-1. ALFORD, J.S. "Design Criteria and Configuration For Long-Life Aircraft Gas Turbines"
S.A.E. National Aeron. Meeting, New York April 1967 Paper 670344.
- 8-2. BARNES, J.F. "Gas Turbine Blades"
Chapter 16 - pp 297-311 in book "Thermal Stress" Edited by Benham et al.
Pitman, London, 1964.
- 8-3. BAUDRY, R.A.
COOPER, G.D. "Low-Cycle Fatigue Life of Turbine-Generator Retaining Rings Determined by Stress Cycling Tests"
Trans. ASME Journal of Basic Engineering, Paper 64-Met-11
- 8-4. BERRY, W. A.
JOHNSSON, I. "Prevention of Cyclic Thermal-Stress Cracking in Steam Turbine Rotors"
ASME Trans. Journal of Engineering for Power, July 1964 pp 361-368.
- 8-5. BURGE, H. L.
KUYPER, D. J. "Simplified Thermal Fatigue Analysis for Liquid Rocket Combustion Chambers"
Journal of Spacecraft and Rockets, Vol. 4, Jan. 1967 pp 126-128
- 8-6. CARDEN, A. E.
FRANCO-FERREIRA, E. A. "Thermal Fatigue Analysis of A Cryogenically Cooled Rocket Nozzle"
American Astronautical Society, South-eastern Symposium, Huntsville, Ala. Dec. 1966 Proceedings, Vol. 2
- 8-7. COFFIN, L. F., JR. "Design Aspects of High Temperature Fatigue With Particular Reference To Thermal Stresses"
Trans. ASME Vol. 78, 1956 pp 527-533
- 8-8. COFFIN, L. F., JR. "An Investigation of Thermal-Stress Fatigue as Related to High-Temperature Piping Flexibility"
Trans. ASME Vol. 79, 1957 pp 1637-1651
- 8-9. COFFIN, L. F., JR. "Design For Low-Cycle Fatigue"
General Electric Co. Report 59-RL-2309M
Nov. 1959 Schenectady, N. Y.

- 8-10. COFFIN, L.F., JR.
TAVERNELLI, J.F. "Experimental Support For Generalized
Equation Predicting Low Cycle Fatigue"
Journal of Basic Engineering, Dec. 1962
pp 533-541
- 8-11. COLES, A. "The Significance of Metal Fatigue in
The Power Generation Industry"
Parsons Journal, Vol. 11 #62 Summer 1966
pp 55-64
Also, Parsons & Co. Ltd. Research
Report 65/5.
- 8-12. CHUBB, E. J.
FREDERIK, C. O.
BROMLEY, W.P. "Cyclic Loading Of A Tube With Creep,
Plasticity and Thermal Effects"
Proc. Inst. Mech. Engrs. 1965-1966.
Vol. 180 Part 3I Paper 15
- 8-13. CHUBB, E. J.
TOWNLEY, C.H.A. "Computation of Strain History Of A Thick
Tube During Thermal and Pressure
Cycling"
Conf. on Thermal and High-Strain Fatigue,
London, June 1967 pp 15-27. Institute of
Metals M and R Series N32.
- 8-14. DANFORTH, C.E. "Designing To Avoid Fatigue In Long
Life Engines"
SAE Paper 660311
Nat. Aeron. Meeting, N. Y. April 1966.
- 8-15. DAWSON, R.A.T. "Factors To Be Considered In The Design
and Operation of Turbines To Prevent
Failure By Thermal Fatigue"
International Conference on Thermal and
High-Strain Fatigue. The Institute of Metals,
June 1967 pp 40-54
- 8-16. FREDERICK, C.O.
ARMSTRONG, P.J. "Convergent Internal Stresses and Steady
Cyclic States of Stress"
Journal of Strain Analysis, Vol. 1, #2
1966 pp 154-159
- 8-17. FRITZ, R. J. "Cyclic Stress For Bolts and Studs"
ASME Paper 67-MET-23
- 8-18. FITZGEORGE, D.
POPE, J.A. "An Investigation of The Factors Contributing
To The Failure of Diesel-Engine Pistons
And Cylinder Covers"
North-East Coast Inst. of Engineers and
Shipbuilders, 1955 pp 164-236

- 8-19. GABBARD, C. G. "Thermal-Stress and Strain Fatigue Analyses of The MSRE Fuel And Coolant Pump Tanks"
Oak Ridge National Laboratory
ORNL-TM-78, 1962.
- 8-20. GEMMILL, M.G. "A Review of Design and Operating Experience And The Choice of Materials"
Conference on Thermal and High-Strain Fatigue. London June 1967. Institute of Metals M and R Series N32 pp 1-14.
- 8-21. HALL, G. L. B. "Aero Gas-Turbine Engines: Integrity of The High-Energy Rotating Components As Governed By Low-Cycle Fatigue"
Conference on Thermal and High-Strain Fatigue. London, June 1967. Institute of Metals M and R Series N32 pp 28-39.
- 8-22. HOWE, P.W.H. "Mathematical Techniques Applying To The Thermal Fatigue Behavior of High Temperature Alloys"
Aeronautical Quarterly, Vol. 13 #4
Nov. 1962 pp 368-396
- 8-23. HOWE, P.W.H. Theoretical Prediction of The Comparative Thermal-Fatigue Behaviour of Two Nimonic Alloys"
Conference on Thermal and High Strain Fatigue, London, June 1967. Institute of Metals M and R Series No. 32 pp 122-141
Paper includes extensive bibliography on thermal fatigue of thin edges.
- 8-24. HOYLE, R. "Steam Turbine Rotors Investigation"
In book Thermal Stress, edited by P. P. Benham. Chapter 18, pp 325-339. Pitman & Sons, London, 1964.
- 8-25. IPSEN, P.G.
HANZALEK, F.J. "Boiler-Turbine Coordination During Start-Up and Loading of Large Units"
ASME Paper 65-WA/PWR-9 Nov. 1965.
- 8-26. JACKSON, R. L.
COULTER, S.B. "Operation of Steam Turbine To Minimize Shell Cracking"
Trans. ASME Journal Eng. for Power, Vol. 82, 1960 pp 227-245.

- 8-27. JEAL, R.H.
BINDLEY, D. "Effect of Thermal Cycling On Pre-Stressed Steam Pipelines"
Proc. Instit. Mech. Engrs. 1963-1964
Vol. 178 Pt. 3J Applied Mechanics Conv. 1964
pp 148-162
- 8-28. KOOISTRA, L. F. "Effect of Plastic Fatigue On Pressure Vessel Materials and Design"
Welding Journal, Research Supplement
March 1957 pp 120s-130s.
- 8-29. KOOISTRA, L. F.
LANG, E. A.
PICKETT, A. G. "Full Size Pressure Vessel Testing and Its Application to Design"
Trans. ASME, Journal of Engineering for Power October 1964 pp 419.
- 8-30. KUMENO, K.
HIDOI, H.
OTOMO, T. "Thermal Stress of Turbine Shell On Quick Starting"
Hitachi Review, Vol. 11 #3, July 1962 pp 35-43
- 8-31. KIRBY, H. A. "The Influence of Thermal Stresses On The Operation and Design of Large Steam Turbines"
Electro-Techniek, July 1964 pp 1-22
- 8-32. LANGER, B. F. "Design Values For Thermal Stress In Ductile Materials"
Welding Journal Sept. 1958. Research Supplement pp 411s-417s.
- 8-33. LANGER, B. F. "Design of Pressure Vessels for Low-Cycle Fatigue"
Trans. ASME, Journal of Basic Engrg.
Vol. 84, 1962 No. 3 pp 389-402.
- 8-34. LANGER, B. F.
SNOW, A. L. "Low-Cycle Fatigue of Large-Diameter Bolts"
Trans. ASME Paper 66-Pet-8
- 8-35. LECKIE, F. A.
PAYNE, D. J.
PENNY, R. K. "Use of Elastic Solutions to Obtain Lower Bounds on The Performance of Structures Under Cyclic Loading and Temperature"
Proc. Inst. Mech. Engrs. 1965-1966
Vol. 180, Part 3I, Paper 1.
- 8-36. LIBERTINY, G. Z. "Use of Fatigue Data In Design"
Babcock & Wilcox Res. Report No. 7655, 1965.

- 8-37. MANSON, S.S. Discussion of L. F. Coffin's Paper, "Experimental Support for Generalized Equation Predicting Low-Cycle Fatigue" Trans. ASME Journal of Basic Engrg. Dec. 1962 pp 537-541.
- 8-38. MANSON, S. S. "Interfaces Between Fatigue, Creep And Fracture" International Journal of Fracture Mechanics, Vol. 2 #1, March 1966 pp 327-363
- 8-39. MANSON, S. S. "Thermal Stress And Low-Cycle Fatigue" Chapter 9 Book. McGraw-Hill 1966.
- 8-40. MORROW, JO DEAN
JOHNSON, T.A. "Correlation Between Cyclic Strain Range and Low-Cycle Fatigue Life of Metals" Materials Research & Standards, Jan. 1965 pp 30-32.
- 8-41. MORROW, JO DEAN
WETZEL, R. M.
TOPPER, T. H. "Neuber's Rule Applied to Fatigue of Notched Specimens" Paper presented at the 70th Annual Meeting Amer. Soc. Testing Materials Boston, Mass. June 1967
- 8-42. NICKELL, E. H.
JACOBSEN, W.E. "Factor of Safety Considerations For Aerodynamically Heated Structures Subjected to High Cyclic Stresses" Aeron. Systems Div. ASD Techn. Report 61-508 ASTIA AD266556.
- 8-43. PETERSON, R.E. "Fatigue of Metals In Engineering and Design" ASTM Proc. 1962. Edgar Marburg Lecture.
- 8-44. PETERSON, R.E. "Design Approaches For Low-Cycle Fatigue Problems in Power Apparatus" In book: Fatigue - An Interdisciplinary Approach - Syracuse Univ. Press pp 379-397.
- 8-45. SINTON, W.
WARNER, R.E. "Reducing Thermal Stress In Turbine Cylinders Subjected to Cyclic Service" ASME paper 61-WA-120.

- 8-46. STALLONE, M. J. "Thermal Stress Fatigue: A Survey With Implications For Design" GE Report R59FPD538. July 1959 F.P.L.D., Evendale, Ohio
- 8-47. SORENSON, G. R. "Low-Cycle Fatigue In Small Turbines" CLEMETT, H. R. Experimental Mechanics, Dec. 1962 pp 353-358
- 8-48. TIMO, D. P. "The Operation of Large Steam Turbines SARNEY, G. W. to Limit Cyclic Thermal Cracking" ASME paper 67-WA/PWR-4
- 8-49. VOGEL, W. H. ET AL "Thermal-Fatigue Analysis Applied To Turbine Airfoils" Trans. ASME Paper 65-GTD-17
- 8-50. VOGEL, W. H. "Methods For Predicting Thermal Stress STEWART, O. L. Cracking in Turbine Stator or Rotor Blades" Summary Report. NASA Report CR-54636, PWA-3142, July '67 pp 60 and Appendix A, B, C and D
- 8-51. VASTA, J. "An Engineering Approach to Low-Cycle PALERMO, P. M. Fatigue of Ship Structures" Trans. Society of Naval Architects and Marine Engrs. Vol. 73, 1965 pp 178-215
- 8-52. WATSON, S. J. "Creep and Relaxation With Thermal Cycling" Book: "Thermal Stress" Edited by P. P. Benham Chapter 13. pp 240-263.
- 8-53. ARMEN, H., JR. "Discrete Element Methods for Plastic ISAKSON, G. Analysis of Structures Subjected to Cyclic PIFKO, A. Loading" AIAA-ASME Structures, Structural Dynamics and Materials Conference, Meeting March 1967. Tech. Papers pp 148-161
- 8-54. BAILEY, R. W. "Usefulness and Role of Repeated Strain Testing As an Aid To Engineering Design and Practice" International Conference on Fatigue of Metals, London, 1956 Session 2, Paper 14

- 8-55. GOESCH, W. H. "Avoidance of Thermal Strain"
AGARD-547. WPAFB, Ohio 1966
- 8-56. HARE, A.
MALLEY, H. H. "Cooling Modern Aero Engine Turbine
Blades and Vanes "
SAE Paper 660053, 1966
- 8-57. HEYWOOD, R. B. "Designing Against Fatigue of Metals"
Reinhold, 1962 425 pp
- 8-58. MUNSE, W. H.
KIEFFNER, J. F. "Influence of Thermal and Strain Cycling
on Fracture Susceptibility of Mild Steel"
Univ. of Illinois, Structural Ser. Report
No. 319, 1967
- 8-59. TIFFANY, C. F.
PALL, F. A. "An Approach to The Prediction Of
Pressure Vessel Minimum Fatigue Life
Based Upon Applied Fracture Mechanics"
Boeing Co., Seattle, Wash.
D2-22437, 1963
- 8-60. TIFFANY, C. F.
LORENZ, P. M. "An Investigation of Low-Cycle Fatigue
Failures Using Applied Fracture Mechanics"
(The Boeing Co., Aero-Space Division)
Air Force Materials Laboratory Technical
Documentary Report ML-TDR-64-53
May 1964
- 8-61. SULLIVAN, C. P.
ELLISON, E. G. "The Effect of Superimposed Fatigue On
The Creep Behavior of The Nickel-Base
Alloy Udimet 700"
Trans. ASM, Vol. 60, 1967 pp 88-98
- 8-62. WILE, G. J. "Materials Considerations For Long
Life Jet Engines"
SAE Paper 660057, 1966
- 8-63. RUIZ, C. "Design of Pressure Vessels Against
Fatigue"
"The Engineer", July 28, 1967 pp 116-117

9. CALCULATIONS OF STRAINS DUE TO CYCLING AND THERMAL LOADING

- 9-1. CHUBB, E. J.
FREDERICK, C. O.
BROMLEY, W. P. "Cyclic Loading Of A Tube With
Creep, Plasticity And Thermal Effects"
Proc. Instit. of Mech. Engrs. 1965-1966
Vol. 180, Part 3I
Applied Mechanics Conv. April 1968
Paper 15.
- 9-2. CHUBB, E. J.
TOWNLEY, C.H.A. "Computation of Strain History Of A
Thick Tube During Thermal and Pressure
Cycling"
International Conference on Thermal
and High-Strain Fatigue. London,
June 1967. The Institute of Metals
M and R Series N32 pp 15-27.
- 9-3. HOWE, F.W.H. "Theoretical Prediction of The
Comparative Thermal-Fatigue Behaviour
of Two Nimonic Alloys"
Conference on Thermal and High Strain
Fatigue. London, June 1967.
The Institute of Metals. M and R Series
No. 32 pp 122-141
Note: Paper includes extensive bibliography
on thermal fatigue of thin edges.
- 9-4. TILLY, G.P. "Cumulative Strain Behaviour of A Nickel-
Chromium Alloy and An 11 Per Cent
Chromium Martensitic Type of Steel Under
the Action of Cyclic Loading"
Proc. Inst. Mech. Engrs. Applied
Mechanics Conv. 1965-1966 Vol. 180
Part 3I, Paper No. 26
- 9-5. RAYFIELD, L.E., JR. "An Iteration Method for Estimating The
Plastic-Strain Range in Constrained
Thermal Fatigue"
Master Science Thesis. Univ. of Alabama,
Dept. of Engin. Mechanics. 1964

10. CRACK INITIATION AND PROPAGATION IN LCS

- | | | |
|------|--|---|
| 10-1 | ASTM | "Fatigue Crack Propagation"
A Symposium at 69th Annual ASTM Meeting, Atlantic City, June 1966, ASTM STP #415, 1967. |
| 10-2 | CARMAN, C. M.
KATLIN, J. M. | "Low Cycle Fatigue Crack Propagation Characteristics of High Strength Steels"
Frankford Arsenal, Philadelphia, Pa., April 1966, pp. 38, AD-635087. |
| 10-3 | HEISE, R. E. JR. | "Low Cycle Fatigue Crack Indications by Strain Gages Operating in Elastic Strain Fields"
Experimental Mechanics, Vol. 5, #7, July 1965, pp. 19A-24A. |
| 10-4 | LANGE, E. A.
CROOKER, T. W.
MOREY, R. E. | "An Investigation of the Rotating-Beam Test for Low Cycle Fatigue Crack Propagation Studies"
Materials Research & Standards, July 1965, pp. 352-358. U.S. Naval Research Laboratory, NRL Report 6056, March 17, 1964, AD 435560. |
| 10-5 | LANGE, E. A.
CROOKER, T. W. | "Low Cycle Fatigue Crack Propagation and Fractographic Investigation of Titanium Alloys in Air and Aqueous Environments"
ASM Transactions Quarterly, Vol. 59, June 1966, pp. 195-207. |
| 10-6 | LANGE, E. A.
CROOKER, T. W. | "Low Cycle Fatigue Crack Propagation Resistance of Materials for Large Welded Structures"
In "Fatigue Crack Propagation Symposium" ASTM STP 415, pp. 94-126, 1967. |
| 10-7 | LANGE, E. A.
CROOKER, T. W. | "Low Cycle Fatigue Crack Propagation in A201B, A302B and A517F. Pressure Vessel Steels"
Welding Journal, Research Supplement July 1967, pp. 322s-328s. Naval Research Laboratory Report NRL 6607. AD662189 |

10-8	MANSON, S. S.	"Interfaces Between Fatigue, Creep and Fracture" International Journal of Fracture Mechanics, V2 #1, March 1966, pp. 327-363, Also NASA Report TMX-52189.
10-9	MARIN, J. OHJI, K. MILLER, W. R.	"Cumulative Damage and Effect on Mean Strain in Low Cycle Fatigue of a 2024-T351 Aluminum Alloy" Trans. ASME Journal of Basic Engineering, Dec. 1966, pp. 801-810.
10-10	MUNSE, W. H. ROLFE, S. T.	"Fatigue Crack Proagation in Notched Mild Steel Plates" Welding Journal, Research Supplement June 1963, pp. 252s-260s.
10-11	PRICE, A. T. ELDER, W. J.	"High Strain Fatigue and Crack Propagation in Type 316 Steel" Journal of the Iron and Steel Institute June 1966, pp. 594-598.
10-12	SCHIJVE, J.	"Significance of Fatigue Cracks in Micro-Range and Macro Range" In Book "Fatigue Crack Propagation" A Symposium at 69th Annual ASTM Meeting Atlantic City, June 1966, pp. 415-457, ASTM STP #415, 1967.
10-13	SMITH, R. W. SMITH, G. T.	"Thermal Fatigue Crack Growth Characteristics and Mechanical Strain Cycling. Behaviour of A-286, Discalloy and 16-25-6 Austenitic Steels:" NASA Technical Note D-479, 1960.
10-14	STOUT, R. D. HICKERSON, J. P. PENSE, A. W.	"The Influence of Notches on the Fatigue Resistance of Pressure Vessel Steels" Welding Journal, Research Supplement February 1968, pp. 63s-71s.
10-15	VALLURI, S. R.	"Comments on Certain Investigations Relating to High Stress-Low Cycle Fatigue" Guggenheim Aeron. Lab., California Institute of Technology, Report ARL 23 July 1961, pp. 31.

- 10-16 WANG, D. Y. "Effect of Stress Ratio on Fatigue Crack Growth and Mode of Fracture in 2024-T4 and 7075-T6 Aluminum Alloys in the Low Cycle Fatigue Range" Air Force Materials Lab, Report AFML-TR-66-216, Dec. 1966.
- 10-17 WUNDT, B. M. "Crack Initiation and Propagation in Low Cycle (High Strain) Fatigue of Low Alloy Steels" Consulting Project CP-BMW-5, Sept. 1966 (Includes Review of Russian Work and References) General Electric Company Large Steam Turbine Dept. ,Schenectady , New York.
- 10-18 BOETTNER, R. C.
LAIRD, C.
MC EVILY, A. J. "Crack Nucleation and Growth in High Strain-Low Cycle Fatigue" Trans. AIME, Vol. 233, No. 2, 1965, pp. 379-387.
- 10-19 LANGE, E. A.
CROOKER, T. W. "Effects of 3. 5% Sodium Chloride Aqueous Saline Environment on the Fatigue Crack Propagation Characteristics of Titanium Alloys" In Book "Applications Related Phenomena in Titanium Alloys", ASTM Special Tech. Publication STP No. 432, 1968.

**11. LCF OF PRESSURE VESSELS
AND PRESSURE VESSEL MATERIALS**

- 11-1. BERMAN, I.
PAI, D.H. "Internal Pressure Cyclic Fatigue Test of An HY-80 Marine Boiler Drum"
Welding Journal, January 1964
Research Suppl. pp 24s-32s
- 11-2. CROSSLAND, B.
AUSTIN, B.A. "Low Endurance Fatigue Strength of Thick-Walled Cylinders: Development Of A Testing Machine and Preliminary Results"
Proc. Inst. Mech. Engrs. 1965-1966
Vol. 180 Pt. 1 No. 2 pp 43-62
- 11-3. DAVIDSON, T. E.
EISENSTADT, R.
REINER, A. N. "Fatigue Characteristics of Open-End Thick Walled Cylinders Under Cyclic Internal Pressure"
Trans. ASME 1963 Vol. 85 Journal of Basic Engineering, No. 2 p 777
- 11-4. DOLAN, T. J.
BOWMAN, C. E. "Biaxial Fatigue Properties of Pressure Vessel Steels"
Welding Journal, Nov. 1963 Research Suppl. pp 529s-538s
- 11-5. DOLAN, T. J. "Fatigue As A Factor in Pressure Vessel Design"
Welding Journal, June 1954 Research Suppl. pp 265s - 274s
- 11-6. DOLAN, T. J. "Significance of Fatigue Data in Design of Pressure Vessels"
Welding Journal, Research Suppl. May 1956 pp 255s - 260s
- 11-7. DUBUC, J.
WELTER, G. "Investigation of Static and Fatigue Resistance of Model Pressure Vessels"
Welding Journal, July 1956 Research Suppl. pp 329s - 338s
- 11-8. DUBUC, J.
WELTER, G. "Fatigue Resistance of Simulated Nozzles In Model Pressure Vessels of T-1 Steel"
Welding Journal, August 1962
Research Suppl. 368s - 374s

- 11-9. GROSS, M. R.
HEISE, R. E., JR. "Low-Cycle Fatigue Behavior Of Internally Pressurized Boxes"
Trans. ASME Journal of Engineering For Industry Paper 66-WA/Unt-1
- 11-10. HAGEN, O. "Short Endurance Fatigue of Supported, Pressurized Thin Shells"
Trans. ASME Journal of Basic Engrg. Paper 66-WA/MET-13
- 11 11. HAWTHORNE, J. R.
STEELE, L. E. "In-Reactor Studies of Low-Cycle Fatigue Properties of A Nuclear Pressure Vessel Steel"
U. S. Naval Res. Lab. NRL-6127, 1964
AD=606773
- 11-12. KOOISTRA, L. F. "Effect of Plastic Fatigue on Pressure-Vessel Materials and Design"
Welding Journal, March 1957
Research Suppl. pp 120s - 130s
- 11-13. KOOISTRA, L. F.
LEMCOE, M. M. "Low-Cycle Fatigue Research On Full-Scale Pressure Vessels"
Welding Journal, Research Suppl.
July 1962 pp 297s - 306s
- 11-14. KOOISTRA, L. F.
LANGE, E. A.
PICKETT, A. G. "Full-Size Pressure Vessel Testing and Its Application to Design"
Trans. ASME Series A, Journal of Engineering for Power, Vol. 86, 1964
pp 419 - 428.
- 11-15. LANGER, B. F. "Design of Pressure Vessels For Low-Cycle Fatigue"
Trans. ASME, Series D. Vol. 84, 1962 Journal of Basic Engineering, No. 3
pp 389 - 402.
- 11-16. LANGER, B. F.
HARDING, W. L. "Material Requirements for Long-Life Pressure Vessels"
ASME Paper 63-WA-194
- 11-17. MILLER, D. R. "Thermal-Stress Ratchet Mechanism In Pressure Vessels"
Trans. ASME June 1959. Journal of Basic Engineering pp 190-196.

- 11-18. STOUT, R. D.
GROSS, J. H.
TSANG, S. "Factors Affecting Resistance Of
Pressure Vessel Steels To Repeated
Overloading"
The Welding Journal, Research Suppl.
Vol. 32, No. 1, Jan. 1953 pp 23s - 30s
- 11-19 STOUT, R. D.
GROSS, J. H.
GUCER, D. E. "Plastic Fatigue Strength of Pressure
Vessel Steels"
The Welding Journal, Vol. 33, No. 1
Jan. 1954 Research Suppl. pp 31s - 39s
- 11-20. STOUT, R. D.
GROSS, J. H. "Plastic Fatigue Behavior of High Strength
Pressure Vessel Steels"
Welding Journal, April 1955 Research
Suppl. pp 161s - 166s
- 11-21. STOUT, R. D.
HICKERSON, J. P.
PENSE, A. W. "The Influence of Notches On The Fatigue
Resistance of Pressure Vessel Steels"
Welding Journal, Research Suppl. Feb. 1968
pp 63s - 71s
- 11-22. PADLOG, J.
RATTINGER, I. "Low-Cycle Fatigue Strength Of
Pressurized Components"
ASTM. STP No. 274 pp 65-78
- 11-23. PICKET, A. G.
GRIGORY, S. C. "Prediction of The Low-Cycle Fatigue
Life of Pressure Vessels"
Trans. ASME Paper 67-MET-3
- 11-24. WEISS, V.
SACHS, G.
GERBERICH, W. W.
LATORRE, J. V. "Low-Cycle Fatigue in Pressure Vessel
Materials"
Proceedings ASTM Vol. 60, 1961 pp 512-529
- 11-25. WEISS, V.
SESSLER, J. G. "Low Cycle Fatigue Damage in Pressure-
Vessel Materials"
Trans. ASME Journal of Basic Engineering
Series D, Vol. 85, 1963 pp 539 - 547.
- 11-26. RUIZ, C. "High Strain Fatigue of Stainless-Steel
Cylinders: Experimental Results and
Their Application to Pressure Vessel Design"
Journal of Strain Analysis, Vol. 2, No. 4,
1967 pp 290 - 297

- 11-27. TAYLOR, T. E. "Low Cycle Fatigue Behavior of Low Alloy Steel Pressure Vessels"
British Welding Journal, Dec. 1967
pp 641 - 648
- 11-28. Anonymous "Long Range Plan For Pressure Vessel Research"
Pressure Vessel Research Committee
Welding Research Council Bulletin No. 116
September 1966.
- 11-29. PENSE, A. W.
DE PAUL, R. A. "Some Microstructural and Alloying Effects Upon Low-Cycle Fatigue Life of Pressure Vessel Steels"
Paper to be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968
- 11-30. RUIZ, C. "Design of Pressure Vessels Against Fatigue"
"The Engineer", July 28, 1967 pp 116-117

**12. FLUIDIZED TECHNIQUE FOR THIN
EDGES EXPOSED TO THERMAL FATIGUE**

- 12-1. BISHOP, T. "British Use Fluid Bed For Thermal Fatigue Studies"
Metal Progress, Vol. 81, Jan. 1962
pp 116-118.
- 12-2. GLENNY, E. "A Study of The Significant Factors Governing The Thermal Fatigue Behavior of High Temperature Alloys"
Ph. D. Thesis, Univ. of London, 1962.
- 12-3. GLENNY, E., ET AL "A Technique for Thermal-Shock and Thermal-Fatigue Testing Based on The Use of Fluidized Solids"
Journal of The Institute of Metals, Vol. 87, 1958-1959 pp 294-302.
- 12-4. GLENNY, E.
TAYLOR, T. A. "A Study of The Thermal-Fatigue Behavior of Metals"
The Journal of The Institute of Metals, Vol. 88, 1959-1960, July 1960 pp 449-461
Discussion: The Journal of The Institute of Metals, Vol. 89, 1960-1961 pp 428-442
- 12-5. GLENNY, E.
COX, M. "Thermal Fatigue Investigations"
The Engineer, Aug. 26, 1960 Vol. 210
pp 346-350.
- 12-6. GLENNY, E.
TAYLOR, T. A. "New Approach To Thermal Fatigue Testing"
Engineering, Oct. 20, 1961.
- 12-7. GLENNY, E.
NORTHWOOD, J.E. "Some Observation On The Thermal-Fatigue Behavior of Casting Alloys For Gas Turbine Blading"
Foundry Trade Journal, Nov. 4, 1965
pp 607-620
- 12-8. GLENNY, E. "The Influence of Specimen Geometry On Thermal-Fatigue Behaviour"
International Conference On Thermal and High-Strain Fatigue. London, June 1967
The Institute of Metals M and R Series No. 32
pp 346-363

12-9. HOWE, P.W.H.

"Theoretical Prediction of The
Comparative Thermal-Fatigue Behaviour
Of Two Nimonic Alloys"
Intern. Conf. on Thermal and High-
Strain Fatigue, London, June 1967
The Institute of Metals, M and R Series
No. 32 pp 122-141.

**13. EQUIPMENT FOR LOW-CYCLE FATIGUE.
ALSO TESTING PROCEDURES.**

- 13-1 BENHAM, P.P. "Testing Machines for High-Strain Low Endurance Fatigue"
Conference on Recent Developments In Materials Testing Machine Design
Paper 17. Proc. IME. 1965 Vol. 180 Pt 3A
- 13-2 CARDEN, A.E. "A Discussion of Alternate Thermal-Fatigue Test Methods"
Memorandum Report #27.
Univ. of Alabama Bureau of Engin. Research. April 1964
- 13-3 CARDEN, A.E.
KYZER, R.D.
VOGEL, W.H. "Low-Cycle Fatigue of Three Superalloys Under Cyclic-Extension and Cyclic-Temper. Conditions"
ASME Paper: 67-MET-19
- 13-4 COFFIN, L.F.
WESLEY, R.P. "Apparatus For the Study of the Effects of Cyclic Thermal Stresses on Ductile Metals"
Trans. ASME Vol. 76, 1954 pp 923-930
- 13-5 COFFIN, L.F., JR. "The Significance of Cyclic-Strain Tests in the Evaluation of Materials"
Instron Engineering Corp., Canton, Mass. October 1960
- 13-6 DAWSON, R.A.T.
ELDER, W. Y.
HILL, G. J.
PRICE, A.T. "High-Strain Fatigue of Austenitic Steels"
Conference on Thermal and High Strain Fatigue. London, June 1967.
Iron and Steel Institute.
- 13-7 EISENSTADT, R.
CASILLO, A. "Description and Operation of A Low-Cycle, Elevated Temperature 10,000 In-Lb Bending Fatigue Machine With Provision for Hold Time"
Union College, Schenectady, N. Y.
To be presented at Symposium on Fatigue, ASTM Meeting, San Francisco, Calif. June 1968.

- 13-8 FELTNER, C.E.
JACKOBS, J. "Automatic Area Compensator for
Constant Stress Cycling"
Review of Scientific Instruments, Vol. 34,
Dec. 1963 pp 1360-1363
- 13-9 FORREST, P.G.
PENFOLD, A. B. "New Approach to Thermal Fatigue
Testing"
Engineering, 1961, October 20 pp 522-523
- 13-10 GALVIN, J. L. "The Forrest Machine for Low-Cycle
Fatigue Tests"
General Electric Company, Large Steam
Turbine Dept., Schenectady, N. Y.
DF67SL207 Sept. 1967
- 13-11 GERBERICH, W.W
TABER, A.P. "A Review of Equipment Having
Capabilities for Low-Cycle Fatigue Tests"
Syracuse Univ. Research Institute.
Technical Report No. 2, Sept. 1958.
Metall. Engrg. Dept. Report No.
MET575-5891T2 39 pp.
- 13-12 GROSS, M.R.
CRYRYCA, E.J. "Correlations Between Flexural and
Direct Stress Low-Cycle Fatigue Tests"
Naval Ship Res. and Dev. Center,
Annapolis, Md. Aug. 1967 22 pp.
NSRDC-2460 AD-656746
- 13-13 HEISE, R.E., JR. "Low-Cycle Fatigue Crack Indications By
Strain Gages Operating in Elastic Strain
Fields"
SESA. Exper. Mechanics. Vol. 5, No. 7
July 1965 pp 19A-24A
- 13-14 KAWAMOTO, M.
TANAKA, T.
NAKAJIMA, H. "Effects of Several Factors on Thermal
Fatigue"
Journal of Materials, Vol. 1, No. 4,
Dec. 1966 pp 719-758
- 13-15 KREMPL, E. "A Fully Automatic Testing Device for the
Determination of the Thermal Fatigue
Strength of High Temperature Materials"
Materialprufung, Vol. 5, No. 4, 1963
(In German) pp 144-153

- 13-16 LAUTZENHEISER, C.E. "Crack Evaluation and Growth During Low-Cycle Plastic Fatigue - Nondestructive Techniques for Detection"
WHITING, A.R.
WYLIE, R.D. Materials Evaluation, Vol. XXIV No. 5, May 1966, pp 241-248
- 13-17 LORD, D.C. "New Uniaxial Cyclic Strain Test Equipment"
General Electric Co. Research and Development Center Report 67-C195. May 1967
- 13-18 MORROW, JODEAN "Apparatus for Studying Cyclic Stress-Strain and Fatigue at Elevated Temperatures"
WILLEM, R.A. Experimental Mechanics, Feb. 1963 pp 48-54
- 13-19 NAKAGAWA, T. "A New Equipment for Reversing Direction of Load and the Results of Tension-Compression Plastic Fatigue Tests With This Equipment"
IDA, A. The Ninth Japan Congress on Testing Materials. March 1966 pp 11-18
- 13-20 NIPPES, E.F. "A Method of Investigating Low-Cycle Thermal Fatigue"
UY, J.C. Welding Journal, Welding Research Supplement, August 1967 pp 371s-379s
- 13-21 OLDROYD, P.W.J. "Modifications to an Instron Testing Machine for Cyclic Loading in the Plastic Range"
Proceedings. Instit. Mech. Engrs. 1955-66 Pt. 3A
- 13-22 RASTOGI, V. "A Machine for Low-Cycle High-Temperature Fatigue Testing"
ASTM Journal of Materials, Vol. 1 #4 December 1966 pp 791-808
- 13-24 SLEESWYK, A.W. "Device for Cyclic Plastic Deformation At Low Temperature"
Rev. Scient. Instrum. 1960 V. 31 p 793

- 13-25 SLOT, T. "Experimental Developments in Low-Cycle Fatigue Research of Pressure Vessel Steels at Elevated Temperatures"
Nuclear Mat. & Prop. Oper. GE-TM-66-6-11
June 1966
- 13-26 SLOT, T.
STENTZ, R.H. "Experimental Methods for Low-Cycle Fatigue Research at High Temperatures"
GE Co. GEMP-527. June 1967
Experimental Mechanics, March 1968
pp 107-114
- 13-27 SUMNER, G. "An Apparatus for Low-Endurance Fatigue Studies at Elevated Temperature for Use In an Instron Machine"
Journ. Sci. Instrum. Vol. 43, 1966 p 238
- 13-28 SCHREITZ, W.G. "Restraint Cracking Technique For Use In Simulated Weld Thermal Cycling Studies"
Welding Journal, Welding Res. Suppl.
Vol. 44 #7, July 1965 pp 3103-3168
- 13-29 TAIRA, S.
OHNAMI, M. "Fracture and Deformation of Metals Subjected to Thermal Cycling Combined With Mechanical Stress"
Joint International Conference on Creep, New York City, August 1963. Proc. Instit. Mechanical Engrs. London
- 13-30 WESLEY, R.P. "Apparatus for Study of Effects of Cyclic Thermal Stresses on Ductile Metals"
Trans. ASME Vol. 76, 1954 No. 6
pp 923-930
- 13-31 ROYLES, R.
TURNER, P. W. "Cyclic Loading Machine for Slow Fatigue Tests"
The Engineer, Feb. 7, 1964 pp 264-266
- 13-32 YAO, J.T.P.
BAKER, J. G.
JU, F. D. "A Specimen For Reversed Shear Deformations"
Materials Research and Standards,
Vol. 7, No. 12 pp 517-523

14. REVERSED AND ROTATING BENDING IN LOW-CYCLE FATIGUE

- | | | |
|------|--|--|
| 14.1 | BLATHERWICK, A.A. | "Stress Redistribution During Bending Fatigue"
<u>Experimental Mechanics</u> , April 1961
pp 128-135 |
| 14.2 | BLATHERWICK, A.A.
MOWBRAY, D.F. | "Stress-Strain Relationships in Low and Intermediate-Cycle Fatigue"
Proc. ASTM. 1964 pp 561-580 |
| 14.3 | GROSS, M.R. | "Low-Cycle Fatigue of Materials for Submarine Construction"
<u>Naval Engineers Journal</u> , Oct. 1963
pp 783-797 |
| 14.4 | GROSS, M. R.
CRYRYCA, E. J. | "Correlations Between Flexural and Direct Stress Low-Cycle Fatigue Tests"
Naval Ship Res. and Dev. Center, Annapolis, Md. Aug. 1967 22 pp
NSRDC-2460 AD-656746 |
| 14.5 | JOHANSSON, A. | "Fatigue of Steels at Constant Strain Amplitude and Elevated Temperature"
In book <u>Colloquium On Fatigue</u> , Stockholm 1955. Edited by W. Weibull, F.K.G. Odqvist |
| 14.6 | JOHNSON, W.
LAMBLE, J. H.
SAFDAR ALI, M. | "Low Cycle High Strain Bending Fatigue Tests on Ductile Metals"
International Journal Mech. Sciences 1965 Vol. 7 pp 1-13 |
| 14.7 | KAWAMOTO, M.
IBUKI, Y.
NAKAMURA, H. | "Rotating Bending Fatigue Tests of Steel In The Plastic Range"
The Seventh Japan Congress on Testing Materials. 1964 pp 13-16 |
| 14.8 | KAWAMOTO, M.
TANAKA, T.
YOSHIDA, Y. | "Plane Bending Plastic Fatigue of Ni-Cr-Mo Steel"
Bulletin of Japan Soc. Mech. Engrs. Vol. 8, 1965, #31 pp 301-307 |

- 14.9 KAWAMOTO, M.
NAKAGAWA, T.
IDA, A. "On The Variation of Stress-Strain Characteristics In The Plastic Fatigue Under Rotating Bending"
Bulletin of Japan Soc. Mech. Engrs.
Vol. 9, 1966 #33 pp 28-39
- 14.10 KRISHNASAMY, S.
SHERBOURNE, A.N. "Response Of A Plastic Hinge To Low Cycle Alternating Deflections"
Presented at 1967 SESA Annual Meeting, Chicago, Illinois
- 14.11 ROYLES, R. "Low Endurance Fatigue Behaviour of Mild Steel Beams In Reversed Bending"
Journal of Strain Analysis, Vol. 1, No. 3
1966 pp 239-247
- 14.12 THRELFALL, B. D. "High-Strain Low-Endurance Fatigue of B.S. 968-Steel Beams in Reversed Bending"
Journal of Strain Analysis Vol. 2 #1
1967 pp 28-33
- 14.13 ET AL See five (5) papers on "Reverse-Bend Fatigue" by several authors.

In book Thermal and High-Strain Fatigue
Proc. of an International Conference in
London, June 1967. The Institute of
Metals, London. Monograph and Report
Series No. 32.
- 14.14 CZYRYCA, E. J.
SCHWAB, R. C. "Effect of Mean Deflection on Low-Cycle Flexural Fatigue of Annealed 70-30 Cupro-Nickel"
Marine Eng. Lab. Naval Ship Research and Development Center, Annapolis, Md.
AD 652574, July 1967
- 14.15 HEALY, M. S. "Flexural Strain Cycling Behavior for Low-Cycle Fatigue"
M.S. Thesis. Dept. of Engineering Mech.
The Pennsylvania State Univ., June 1963
- 14.16 SACHS, G.
SCHEVEN, G. "Relation Between Direct-Stress and Bending Fatigue of High-Strength Steels"
Proc. ASTM 1957 pp 667-681

15. LCF IN TORSION

- 15.1 BENHAM, P.P. "Torsional-Strain-Cycling Fatigue of Copper at Low Endurance"
Journal Inst. Metals 1963 Vol. 91 p 404
- 15.2 JOHNSON, W.
ABDEL-AZIZ, H.A.
LAMBLE, J.H. "Low-Endurance Fatigue Studies In Torsion for Steel and Aluminum Alloy"
Proceedings of the Institution of Mechanical Engineers 1965-66, Vol. 180, Part 3I; Applied Mech. Convention, April 1966, Paper 13.
- 15.3 JOHNSON, W.
LAMBLE, J.H.
ABDEL-AZIZ, H.A. "Low-Endurance Fatigue of Mild Steel In Torsion"
Proceedings Second Conference on Dimensioning and Strength Calc. Budapest 1965. p 313
- 15.4 KUSUMOTO, S. "Effects of Strain Rate on High-Temperature Low-Cycle Torsional Fatigue Strength of 1 Cr, 1 Mo, 1/4V Cast Steel"
Hitachi Research Laboratory, Hitachi Ltd. Japan April 1967
- 15.5 MC CLINTOCK, A.
WILLNER, A. M. "Cracking in Low-Cycle Torsional Fatigue With Increasing Strain Amplitudes"
ASME Paper 61-WA-273
- 15.6 MORROW, J. D.
HALFORD, G. R. "Low Cycle Fatigue In Torsion"
Proceedings American Society for Testing Materials, 1962, Vol. 62 p 695
- 15.7 YOKOBORI, T.,
ET AL "Low-Cycle Fatigue of Thin-Walled Hollow Cylindrical Specimens of Mild Steel in Uniaxial and Torsional Tests at Constant Strain Amplitude"
Internat. Journal Fracture Mechanics, Vol. 1 1965 #1
- 15.8 MILLER, K. J. "The Effect of Strain Rate on Low-Endurance Torsional Fatigue in An Alloy Steel (En 25) "
Conference on Thermal and High Strain Fatigue, London June 1967. Institute of Metals. Monograph and Report Series #32

16. LCF OF NON-FERROUS ALLOYS

- | | | |
|------|---|--|
| 16-1 | D'AMATO, R.
PIAN, T. H. | "Low-Cycle Fatigue of Notched and Unnotched Specimens of 2024 Aluminum Alloy Under Axial Loading"
WADC TN 58-27. Feb. , 1958, ASTIA.
No. AD 142307. |
| 16-2 | D'AMATO, R.
DE BOER, R. | "A Study of the Relationship Between Notched and Unnotched Specimens of 2024 Aluminum Alloy in the Low-Cycle Fatigue Regime"
WADC Note 59-2. May, 1959, PB 161405 |
| 16-3 | ANDERSON, W. F.
WAHL, W. | "Results of High Temperature Strain Fatigue Tests on Reactor Grade Aluminum Base Materials"
Atomics International, Div. of North-American Aviation, Inc. , Canoga Park, Cal. Jan. 30, 1961, pp.42, Contract At (11-1) GEN-8.
NAA-SR-4528 (1961). |
| 16-4 | GROSS, M. R.
SCHWAB, R. C. | "Fatigue Properties of Non-Ferrous Alloys for Heat Exchangers, Pumps and Piping"
ASME Paper 66-WA/PVP-6. |
| 16-5 | HILSEN, R. R.
YEN, C. S.
WHITESON, B. V. | "Low Cycle Fatigue of Ti-6Al-4V at -423°F"
Presented at Fourth Pacific Area National Meeting of the ASTM, Los Angeles, Cal. - Oct. 1962. |
| 16-6 | HARDRATH, H. F.
ILLG, W. | "24S-T3 and 75S-T6 Aluminum-Alloy Sheet Specimens with a Theoretical Stress Cone. Factor of 4.0 Subjected to Completely Reversed Axial Load"
NASA Technical Note 3132, Jan., 1954. |
| 16-7 | HARDRATH, H. F.
LANDERS, C. B.
UTLEY, E. C. | "Axial Load Fatigue Tests on Notched and Unnotched Sheet Specimens of 61S-T6 Aluminum Alloy, Annealed 347 Stainless Steel and Heat Treated 403 Stainless Steel"
NASA Technical Note 3017, 1953. |
| 16-8 | ILLG, W. | "Fatigue Tests on Notched and Unnotched Sheet Specimens of 2024-T3 and 7075-T6 Aluminum Alloys and of SAE 4130 Steel with Special Consideration of the Life Range from 2 to 10,000 Cycles"
NASA Technical Note 3866, Dec., 1956 |

- 16-9 LIU, S.I.
 LYNCH, J.J.
 RIPLING, E. J. "Low Cycle Fatigue of the Aluminum Alloy 24 ST. In Direct Stress"
 Trans. Institute of Metals Division
 AIMME, Vol.175, 1948, pp. 469-496.
- 16-10 LIU, S.I.
 SACHS, G. "The Flow and Fracture Characteristics of the Aluminum Alloy 24 ST After Alternating Tension and Compression"
 Trans. AIMME Institute of Metals Division
 1949, pp. 193-204.
- 16-11 LIU, S.I. "Effects of Precompression on the Behavior of the Aluminum Alloy 24ST4 During Cyclic Direct Stressing"
 Journal of Metals, June, 1951, pp. 452-456.
- 16-12 LIN, H.
 KIRSCH, A. A. "An Exploratory Study on High-Stress, Low-Cycle Fatigue of 2024 Aluminum Alloy in Axial Loading"
 Man. Institute of Technology: Aug., 1956,
 AD 97143, pp. 80.
- 16-13 LOW, A. C. "The Bending Fatigue Strength of Aluminum Alloy MG5 Between 10 and 10 Million Cycles"
 Journal of the Royal Aeronautical Society,
 Vol. 59, 1955, pp. 502-506.
- 16-14 MARIN, J.
 OHJI, K.
 MILLER, W. R. "Cumulative Damage and Effect of Mean Strain in Low-Cycle Fatigue of a 2024-T351 Aluminum Alloy"
 Trans. ASME Journal of Basic Engineering,
 Dec., 1966, pp. 801-810.
- 16-15 WEISS, V.
 SACHS, G. "Thermal Cycling Under Constant Load to Low Temperatures of Aluminum and Magnesium Alloys"
 Symposium on Low Temperature Properties of High Strength Aircraft and Missile Materials. ASTM STP#287, 1961, pp. 37-50.
- 16-16 WEISS, V.
 SAULE, A
 SCHAEFFER, G. "Strength Properties of the Aluminum Alloy X2020-T6 Under Thermal Cycling"
 Syracuse University Research Institute,
 Metallurgical Engineering Dept., Report
 MET 598-599 TR 2. TR #2, Sept. 1959,
 pp. 21.

- 16-17 BENHAM, P. P. "Low Endurance Fatigue of A Mild
FORD, H. Steel and An Aluminum Alloy"
Journal Mechanical Eng. Science, Vol. 3
1961 No. 2 pp 119-132
- 16-18 BENHAM, P. P. "Axial-Load and Strain-Cycling Fatigue
Of Copper at Low Endurance"
Journal Inst. of Metals, May 1961 pp 328-338
- 16-19 BENHAM, P. P. "Low Cycle Fatigue Of An Aluminum-
MACKENZIE, C. T. Copper Alloy"
Journal of The Royal Aeron. Society, Vol. 66
Feb. 1962 pp 128-129
- 16-20 COFFIN, L. F., JR. "Geometric and Hysteresis Effects In
RAYMOND, M. H. Strain-Cycled Aluminum"
Acta Metallurgica, July 1963 pp 801-807
- 16-21 SKINNER, D. W. "Strain-Cycling Behavior for 2024-T351
Aluminum"
M. S. Thesis Dept. of Eng. Mechanics,
The Pennsylvania State Univ. June 1963
- 16-22 de L. DAVIES, V. "High Temperature Low-Cycle Fatigue
BAKKEN, K. of An Extruded Aluminum-Silicon-
Magnesium-Nickel Alloy"
Institutt for Atomenergi. Kjeller, Norway
PB 169218 Oct. 1965
- 16-23 ZAMRIK, S. Y. "An Investigation of Strain Cycling
Behavior of 7075-T6 Aluminum Under
Combined State of Stress"
Dept. of Eng. Mechanics, The Pennsylvania
State University, Third Annual Progress
Report, Oct. 1, 1967
- 16-24 ZAMRIK, S. Y. "Low-Cycle Fatigue of 7075-T6 AL Alloy
SCHEWCHUK, T. In Biaxial Bending Using Modified
Poisson's Ratio"
Dept. of Eng. Mech., The Pennsylvania
State University, 1967. To be published
in Experimental Mechanics. (1968)

17. SELECTED BOOKS AND SYMPOSIA ON FATIGUE OF METALS

Arranged by Year of Publication

- 17-1. "Metal Fatigue"
Edited by G. Sines, J. L. Waisman
McGraw-Hill, 1950 415 pages
- 17-2. "Symposium On The Effect of Cyclic Heating and Stressing
of Metals at Elevated Temperatures"
ASTM Special Technical Publication - STP No. 165, 1954
- 17-3. "Colloquium on Fatigue - International Union of Theor.
and Applied Mechanics", Stockholm 1955
Edited by W. Weibull, F.K.G. Odquist
J. Springer - Berlin 1956 339 pages
- 17-4. "International Conference on Fatigue of Metals"
London, Sept. 1956, NY City Nov. 1956
Proceed. Institute of Mechanical Engineers, London 1957 961 pages
- 17-5. "Mechanical Behavior of Materials at Elevated Temperatures"
Edited by John E. Dorn
McGraw-Hill, 1961
- 17-6. "Fatigue of Metals"
P. G. Forrest
Pergamon Press, 1962 425 pages
- 17-7. "Designing Against Fatigue of Metals"
R. B. Heywood
Reinhold, 1962 436 pages
- 17-8. "Thermal Stress"
Edited by P. P. Benham and Russell Hoyle
Pitman & Sons, London, 1964
- 17-9. "Fatigue - An Interdisciplinary Approach"
Edited by J. J. Bure, Volker Weiss
Syracuse University Press, Syracuse, 1964
- 17-10. "Symposium on Fatigue Tests of Aircraft Structures: Low-Cycle,
Full-Scale and Helicopters" pp 1-128
Presented at the Fourth Pacific Area National Meeting, Los
Angeles, Calif. Oct. 1-3, 1962
ASTM Special Techn. Publ. #338

- 17-11. "Proceedings First International Conference on Fracture"
Edited by Yokobori, Kawasaki, Swedlow
Sendai, Japan January 1965
- 17-12. "Current Aeronautical Fatigue Problems"
Proc. Symposium in Rome, April 1963
Edited by J. Schijve, et al
Pergamon Press, 1965 499 pages
- 17-13. "Thermal Stress and Low-Cycle Fatigue"
S. S. Manson
McGraw-Hill Book Co., 1966 404 pages
- 17-14. "Fatigue Crack Propagation"
Symposium presented at the 69th Annual Meeting, ASTM, Atlantic
City, July 1966
ASTM Special Techn. Publ. #415 542 pages
- 17-15. "Thermal and High-Strain Fatigue"
Proc. of an International Conference held in London, in June 1967.
Monograph and Report Series #32
Published by The Institute of Metals, 1967
17 Belgrave Square, London, S. W. 1 England 435 pages

18. SELECTED PAPERS BY P. P. BENHAM et al

- | | | |
|------|-----------------------------------|---|
| 18-1 | BENHAM, P. P. | "Fatigue of Metals Caused by a Relatively Few Cycles of High Load or Strain Amplitude"
Metallurgical Reviews Vol. 3, 1958, No. 11, pp. 203-234. |
| 18-2 | BENHAM, P. P.
FORD, H. | "Low Endurance Fatigue of a Mild Steel and an Aluminum Alloy"
Journal Mechanical Engineering Science Vol. 3, 1961, No. 2, pp. 119-132. |
| 18-3 | BENHAM, P. P. | "Axial-Load and Strain-Cycling Fatigue of Copper at Low Endurance"
Journal Institute of Metals, May 1961, pp. 328-338. |
| 18-4 | BENHAM, P.
GROOTENHUIS, P. | "Vibration and Fatigue"
Discovery, May 1962, pp. 36-43. |
| 18-5 | BENHAM, P. P.
MACKENZIE, C. T. | "Low Cycle Fatigue of an Aluminum Copper Alloy"
Journal of the Royal Aeronautical Society Vol. 66, Feb. 1962, pp. 128-129. |
| 18-6 | BENHAM, P. P.
MACKENZIE, C. T. | "Cyclical Strain Softening of a Heat Treated Steel"
The Engineer, Dec. 28, 1962, pp. 1104-1105. |
| 18-7 | BENHAM, P. P. | "Torsional-Strain-Cycling Fatigue of Copper at Low Endurance"
Journal of the Institute of Metals Vol. 91, 1962-1963, pp. 404-407. |
| 18-8 | BENHAM, P. P.
BELL, W. J. | "The Effect of Mean Stress on the Fatigue of Plain and Notched Stainless Steel Sheet in the Range from 10 to 10^7 Cycles"
ASTM Spec. Technical Publication No. 338, 1963, pp. 25-46. |
| 18-9 | BENHAM, P. P. | "Low Endurance Fatigue"
Chapter 9 in book "Thermal Stress"
Pitman & Sons, 1964. |

- | | | |
|-------|--|---|
| 18-10 | HARRIS, D. J.
BENHAM, P. P. | "Effect of High Strain Fatigue Cycles on the Brittle Ductile Transition of TwoMild Steels"
Journal Mechanical Engineering Science
Vol. 7, No.1, 1965, pp. 93-100. |
| 18-11 | BENHAM, P. P. | "Testing Machines for High Strain-Low Endurance Fatigue"
Paper No. 17, Symposium "Developments in Materials Testing" Sept. 1965
Manchester, England, Proc. Institution of Mechanical Engineers . |
| 18-12 | "BENHAM, P. P. | "Some Observations of Cyclic Strain Induced Creep in Mild Steel at Room Temperature"
International Journal Mechanical Science
Vol. 7, 1965, pp. 81-86. |
| 18-13 | MACKENZIE, C. T.
BENHAM, P. P. | "Push-Pull Low Endurance Fatigue of En 25 and En 32B Steels at 20°C and 450°C"
Institution of Mechanical Engineers, Applied Mechanics Group, Proceedings 1965-1966 Vol. 180, Part 1. |
| 18-14 | BENHAM, P. P.
OLDROYD, P. W. J.
BURNS, D. J. | "Strain Hardening and Softening of Metals Produced by Cycles of Plastic Deformation"
Institution of Mechanical Engineers, Applied Mechanics Group. Proceedings 1965-1966, Vol. 180, Part 3I, Paper 2. |
| 18-15 | BENHAM, P. P.
MACKENZIE, C. T.
BURNS, D. J. | " A Comparison of Uniaxial and Biaxial Low Endurance Fatigue Behavior of Two Steels"
Institution of Mechanical Engineers, Applied Mechanics Group, Proceedings 1965-1966, Vol. 180, Part 3I, Paper 12. |
| 18-16 | BENHAM, P. P.
RADON, J. C.
BURNS, D. J. | "The Push-Pull Low Endurance Fatigue of Cast Irons and Steels"
Journal of the Iron and Steel Institute, Sept. 1966, pp. 928-935. |
| 18-17 | BENHAM, P. P. | "High Temperature Low Cycle Fatigue: Survey of British Work"
Presented at 1967 SESA Meeting Ottawa, Ontario, Canada, May 16-19, to be published in "Experimental Mechanics". |

19. SELECTED PAPERS BY A. E. CARDEN

- | | | |
|------|---|---|
| 19-1 | CARDEN, A. E.
SODERGREN, J. H. | "The Failure of 304 Stainless Steel
by Thermal Strain Cycling at Elevated
Temperature"
ASME Paper 61-WA-200. |
| 19-2 | CARDEN, A. E. | "Thermal Fatigue-Part 1. An Analysis
of the Conventional Experimental Method"
Proceed. ASTM Vol. 63, 1963, pp. 735-
758. |
| 19-3 | CARDEN, A. E. | "Thermal Fatigue-An Analysis of the
Experimental Method"
ORNL-TM-405, 1963, pp. 69. |
| 19-4 | CARDEN, A. E. | "An Abstracted Bibliography of the
Thermal Fatigue Literature for the
Years 1954-1963."
University of Alabama, Bureau of
Engineering Research MR #26, April,
1964. |
| 19-5 | CARDEN, A. E. | "A Discussion of Alternate Thermal
Fatigue Test Methods"
Memo Report # 27, University of Alabama
Bureau of Engineering Research, April
1964, pp. 21. |
| 19-6 | CARDEN, A. E. | "Thermal Fatigue of a Nickel Base Alloy"
Trans. ASME Journal of Basic Engineer-
ing, 87D Vol. I, pp. 237-244. |
| 19-7 | CARDEN, A. E. | "Thermal Fatigue Resistance: Material,
Geometric and Temperature Field Consi-
derations"
ASME Paper 65-GTP-5. |
| 19-8 | CARDEN, A. E.
HARMAN, D. G.
FRANCO-FERREIRA, EA | "Thermal Fatigue Analysis of a Cryo-
genically Cooled Rocket Nozzle"
Southeastern Symposium on Missiles and
Aerospace Vehicles. Vol. II, pp. 102-1
to 102-12, Dec. 1966, pp. 12 |
| 19-9 | CARDEN, A. E.
KYZER, R. D.
VOGEL, W. H. | "Low Cycle Fatigue of Three Superalloys
Under Cyclic Extension and Cyclic-Temper-
ature Conditions"
ASME Paper 67-MET-19. |

- 19-10 CARDEN, A. E. Bibliography of the Literature on
Thermal Fatigue"
Dept. of Engineering Mechanics
College of Engineering, University of
Alabama, Report No. MH-67-AEC- 3
August, 1967.
- 19-11 CARDEN, A. E. Bibliography of the Literature on
Multiaxial Stress Fatigue"
Dept. of Engineering Mechanics, University
of Alabama, Report No. MH-67-AEC-2,
August 1967, pp. 71.
- 19-12 CARDEN, A. E. "Low Cycle Fatigue Under Multiaxial
Stress Cycling"
Japan Society of Mechanical Engineers,
Semi-International Symposium,
September 1967, Tokyo.

20. SELECTED PAPERS BY L. F. COFFIN, Jr. et al

- | | | |
|------|---|---|
| 20-1 | COFFIN, L. F. Jr.
WESLEY, R. P. | "An Apparatus for the Study of the Effects of Cyclic Thermal Stresses on Ductile Metals"
Trans. ASME Vol. 76, 1954, pp. 923-930. |
| 20-2 | COFFIN, L. F. JR. | " A Study of the Effects of Cyclic Thermal Stresses on a Ductile Metal"
Trans. ASME Vol. 76, 1954, pp. 931-950. |
| 20-3 | COFFIN, L. F. JR. | "The Problem of Thermal Stress Fatigue in Austenitic Steels at Elevated Temperatures"
American Society for Testing Materials, STP #165, 1954, pp. 31-52. |
| 20-4 | COFFIN, L. F. JR.
FRITZ, R. J. | "Thermal Stress and Thermal Stress Fatigue"
In "Liquid Metals Handbook", AEC, 1955. |
| 20-5 | COFFIN, L. F. JR. | "Design Aspects of High Temperature Fatigue with Particular Reference to Thermal Stresses"
Trnas. ASME Vol. 78, No. 3, April 1956, pp. 527-532. |
| 20-6 | COFFIN, L. F. JR.
READ, J. H. | " A Study of the Strain Cycling and Fatigue Behavior of a Cold Worked Metal"
International Conference on Fatigue of Metals, Now. 1956. |
| 20-7 | COFFIN, L. F. JR.
BALDWIN, E. E.
SOKOL, G. J. | "Cyclic Strain Fatigue Studies on AISI Type 347 Stainless Steel"
Proc. ASTM Vol. 57, 1957, pp. 567-586. |
| 20-8 | COFFIN, L. F. JR. | "Thermal Stress and Thermal Stress Fatigue"
Product Engineering, June 1957. |
| 20-9 | COFFIN, L. F. JR. | " An Investigation of Thermal Stress Fatigue as Related to High Temperature Piping Flexibility"
Trans. ASME Vol. 79, 1957 pp. 1637-1651. |

- 20-10 COFFIN, L. F. JR. "Strain Cycling and Thermal Stress Fatigue"
Proc. of the Fourth Sagamore Conference
1957 pp. 219-256.
- 20-11 COFFIN, L. F. JR.
TAVERNELLI, J. F. "A Compilation and Interpretation
of Cyclic Strain Fatigue Tests on Metals"
Trans. ASM Vol. 51, 1959, pp. 438-
453.
- 20-12 COFFIN, L. F. JR. "Cycling Straining and Fatigue"
In Book "Internal Stresses and Fatigue
in Metals" Book edited by G. M.
Rassweiler, W. L. Grube, Elseiner
Publishing Company, 1959.
- 20-13 COFFIN, L. F. JR.
TAVERNELLI, J. F. "The Cyclic Straining and Fatigue
of Metals"
Trans. Metallurgical Society of AIME,
Vol. 215, October 1959, pp. 794-806.
- 20-14 COFFIN, L. F. JR. "Design for Low Cycle Fatigue"
General Electric Company Report 59-
RL-2309 M, Nov. 1959.
- 20-15 COFFIN, L. F. JR. "The Stability of Metals Under Cyclic
Plastic Strains"
Trans. ASME, Journal Basic Engineer-
ing, Vol-82D, 1960, pp. 671-682.
- 20-16 COFFIN, L. F. JR. "The Significance of Cyclic Strain
Tests in the Evaluation of Materials"
Symposium on "Analytical Methods
in the Study of Stress-Strain Behavior,
Boston, Mass. Octo. 29, 1960, Instron
Engineering Corp.
- 20-17 COFFIN, L. F. JR. "Experimental Support for Generalized
Equation Predicting Low Cycle Fatigue"
Trans. ASME, Journal of Basic Engineer-
ing, Vol 84, No. 4, Dec. 1962, pp. 533-
541.
- 20-18 COFFIN, L. F. JR. "Low Cycle Fatigue: A Review"
Applied Materials Research, Vol. I,
No. 3, Oct. 1962, pp. 129-141.

- | | | |
|-------|-------------------------------------|---|
| 20-19 | RAYMOND, M. H.
COFFIN, L. F. JR. | "Geometric Effects in Strain Cycled Aluminum"
Trans. ASME Journal of Basic Engineering, Vol 85D, 1963, pp. 548-554. |
| 20-20 | COFFIN, L. F. JR.
RAYMOND, M. H. | "Geometric and Hysteresis Effects in Strain Cycled Aluminum"
Acta Metallurgica , July 1963, pp. 801-807. |
| 20-21 | COFFIN, L. F. JR. | "Low Cycle Fatigue"
ASM Metals Engineering Quarterly, Vol. 3, #4, 1963. |
| 20-22 | COFFIN, L. F.
TAVERNELLI, J. F. | "The Cyclic Strain Aging and Fatigue of a Low Carbon Steel"
International Conference on Creep, N. Y. 1963, Proc. Institute of Mechanical Engineers, Paper No. 27. |
| 20-23 | COFFIN, L. F. JR. | "The Influence of Mean Stress on the Mechanical Hysteresis Loop Shift of Aluminum 1100"
Trans. ASME Journal of Basic Engineering, Vol 860, #4, 1964, pp. 673. |
| 20-24 | COFFIN, L. F. JR. | "Cyclic Strain and Fatigue Study of A 0.1 pctC -2.0 pct Mo Steel at Elevated Temperatures"
Trans. AIME Metallurgical Society Vo. 230, No. 7, Dec. 1964, pp.1690-1699. |
| 20-25 | COFFIN, L. F. JR. | "Cyclic Strain and Fatigue Behavior of Metals in the Creep Range"
Proc. First International Conference on Fracture, Sendai, Japan, Jan. 1965, Vol. III, pp. 1543-1566. |
| 20-26 | COFFIN, L. F. JR. | "The effect of Quench Aging and Cyclic Strain Aging on Low Carbon Steel"
Journal Basic Engineering Trans. ASME Vol. 870, 1965, pp. 351-362. |
| 20-27 | COFFIN, L. F. JR. | "Cyclic Strain Softening Effects in Metals"
ASM Transactions Quarterly. Vo. 60, No. 2, 1967 , pp.160-174 |

- 20-28 COFFIN, L. F. JR. " An Investigation of the Cyclic Strain and Fatigue Behavior of a Low Carbon Manganese Steel at Elevated Temperature"
International Conference on Thermal and High Strain Fatigue, London, June 1967, The Institute of Metals, M & R Series No. 32, 1967, pp. 171-197.
- 20-29 COFFIN, L. F., JR. "Introduction to High-Temperature Low-Cycle Fatigue"
"Experimental Mechanics", May 1968
pp 218-224

21. SELECTED PAPERS BY S. S. MANSON, ET AL

- 21.1 MANSON, S.S. "Behavior of Materials Under Conditions of Thermal Stress"
NASA Report 1170 1954 34 pp
(Supersedes NASA TN2933)
- 21-2. MANSON, S. S. "Thermal Stresses in Design"
Series of Articles in Machine Design,
1958, 1959, 1960 and 1961.
- 21-3. MANSON, S. S. "Cyclic Life of Ductile Materials"
Machine Design, July 7, 1960 pp 139-144.
- 21-4. MANSON, S. S. "Thermal Stresses And Thermal Shock"
Chapter 13 in book "Mechanical Behavior of
Materials at Elevated Temperatures"
Editor - John E. Dorn McGraw Hill 1961.
- 21-5. MANSON, S. S. "Discussion to L. F. Coffin's Paper (Pages
533-537)"
Trans. ASME Vol 84. Journal of Basic
Engineering, No. 4, Dec. 1962 pp 537-541
- 21-6. MANSON, S. S.
SMITH, R. W.
HIRSCHBERG, M.H. "Fatigue Behavior of Materials Under
Cycling In Low and Intermediate Life Range"
NASA Note D-1574, April 1963.
- 21-7. MANSON, S. S.
HIRSCHBERG, M.H. "Fatigue Behavior In Strain Cycling in The
Low-and Intermediate-Cycle Range"
In Book "Fatigue An Interdisciplinary Approach"
Proc. 10th Sagamore Army Res. Conf.
Syracuse Univ. Press, N.Y. 1964 pp 133-178
- 21-8. MANSON, S. S. "Interpretive Report On Cumulative Fatigue
Damage in The Low Cycle Range"
Welding Journal, Research Supplement
August 1964 pp 344s-352s.
- 21-9. MANSON, S. S. "Fatigue: A Complex Subject - Some
Simple Approximations"
Experimental Mechanics, Vol. 5, July 1965
pp 193 - 226.

- 21-10. MANSON, S. S. "Interfaces Between Fatigue, Creep and Fracture"
International Journal of Fracture Mechanics
Vol. 2, No. 1, 1966 pp 327 - 363.
- 21-11. MANSON, S. S. "Crack Initiation and Propagation in Notched
HIRSCHBERG, M.H. Fatigue Specimens"
Proceedings of the First International Conference on Fracture. Vol 1 Japan Society for Strength and Fracture of Materials. 1966
pp 479 - 498 Replaced by NASA TND-3146.
- 21-12. MANSON, S. S. "Thermal Stress and Low-Cycle Fatigue"
Book, McGraw-Hill Book Company, 1966.
- 21-13. MANSON, S. S. "Low Cycle Fatigue of Notched Specimens By
HIRSCHBERG, M.H. Consideration of Crack Initiation and Propagation"
NASA TNL-3146. June 1967
(Replaces NASA TMX-52126.)
- 21-14. MANSON, S. S. "A Method of Estimating High Temperature
HALFORD, G. R. Low Cycle Fatigue Behavior of Materials"
NASA TMX-52270 1967
Presented at "Symposium On Thermal and High Strain Fatigue" sponsored by the Institute of Metals, London, England, June 1967.
- 21-15. MANSON, S. S. "Application of A Method of Estimating High
HALFORD, G. R. Temperature Low-Cycle Fatigue Behavior of Metals"
NASA Report TMX-52357
Paper presented at National Metals Congress, A.S.M., Cleveland, Oct. 1967.

22. SELECTED PAPERS BY JO DEAN MORROW ET AL

- 22-1. MORROW, JO DEAN
SINCLAIR, G. M. "An Analysis of Cyclic Stress Behavior For Conditions of Controlled Strain"
Univ. of Illinois T & A. M. Report No. 543
August 1957
- 22-2. MORROW, JO DEAN
SINCLAIR, G. M. "Cycle - Dependent Stress Relaxation"
ASTM Spec. Techn. Publ. 237, 1958
pp 83-109
Also T & AM Report No. 543, Univ. of Illinois August 1957
- 22-3. MORROW, JO DEAN
ROSS, A. S. "Cyclic Stress Behavior of A-286 Alloy for Conditions of Controlled Strain"
Univ. of Illinois TAM Report No. 563
Sept. 1958
- 22-4. MORROW, JO DEAN
WILLEM, R. A. "Cyclic Stress-Relaxation of U-700 And R-41 At Elevated Temperature"
Univ. of Illinois, TAM Report No. 583,
February 1960
- 22-5. MORROW, JO DEAN
ROSS, A. S.
SINCLAIR, G. M. "Relaxation of Residual Stresses Due To Fatigue Loading"
SAE Trans. Vol. 68, 1960 pp 40-48
Also Univ. of Illinois TAM Report No. 568, Jan. 1959
- 22-6. MORROW, JO DEAN "An Investigation of Plastic Strain Energy As A Criterion For Finite Fatigue"
Report to the Carrett Corporation,
Phoenix, Ariz. August 1960
- 22-7. MORROW, JO DEAN
ROSS, A. S. "Cycle-Dependent Stress Relaxation of A-286 Alloy"
Trans. ASME Journal Basic Engrg. Sept. 1960 pp 654-660
- 22-8. MORROW, JO DEAN
FELTNER, C. E. "Micro-Plastic Strain Hysteresis Energy As A Criterion For Fatigue Fracture"
Trans. ASME Journal of Basic Engrg. Vol. 83, No. 1, March 1961 pp 15-22
Also Univ. of Illinois TAM Report No. 576, May 1959

- 22-9. MORROW, JO DEAN
HALFORD, G. R. "Low-Cycle Fatigue In Torsion"
Proc. ASTM Vol. 62, 1962 pp 695-709
Also Univ. of Illinois TAM Report No.
203 October 1961
- 22-10. MORROW, JO DEAN
WILLEM, R. A. "Apparatus For Studying Cyclic Stress-
Strain and Fatigue At Elevated
Temperatures"
Experimental Mechanics, Feb. 1963
pp 48-54
- 22-11. MORROW, JO DEAN
TULER, F. R. "Cycle-Dependent Stress-Strain
Behavior of Metals"
Dept. of Theor. and Applied Mech.
Univ. of Illinois, TAM Report No. 239
March 1963
- 22-12. MORROW, JO DEAN
HALFORD, G. R. "Creep Under Repeated Stress
Reversals"
Joint International Conference on Creep
New York City 1963. Paper #21 (3-43,
3-47) Institution of Mech. Engineers,
London, England
- 22-13. MORROW, JO DEAN
JOHNSON, T. A. "Correlation Between Cyclic Strain
Range and Low-Cycle Fatigue Life of
Metals"
Materials Research & Standards,
January 1965 pp 30-32
- 22-14. MORROW, JO DEAN "Low Cycle Fatigue Behavior of
Quenched and Tempered SAE 1045 Steel"
Univ. of Illinois TAM Report No. 277
April 1965
- 22-15. MORROW, JO DEAN
HALFORD, G. R. "Techniques For The Direct Determina-
tion of Nonlinear Strains"
WETZEL, R. M. Preprint No. 17; 11-2-65. "Instrument
Society of America" 20th Conference,
Los Angeles, Calif. Oct. 1965
- 22-16. MORROW, JO DEAN "Cyclic Plastic Strain Energy And
Fatigue of Metals"
ASTM Spec. Techn. Publ. No. 378, 1965
pp 45-87

- 22-17. MORROW, JODEAN
TULER, F. R.
"Low Cycle Fatigue Evaluation of Inconel 713C And Waspaloy"
Trans. ASME, Journal of Basic Engrg.
Vol. 87 No. 2, June 1965 pp 275-289
Also Univ. of Illinois TAM Report No. 635, June 1963
- 22-18. MORROW, JODEAN
LANDGRAF, R. W.
ENDO, T.
"Determination of The Cyclic Stress-Strain Curve"
Paper to be presented at the 70th Annual Meeting ASTM Boston, Mass. June 1967
- 22-19. MORROW, JODEAN
TOPPER, T. H.
SANDOR, B. I.
"Cumulative Fatigue Damage Under Cyclic Strain Control"
Paper to be presented at the 70th Annual Meeting ASTM, Boston, Mass. June 1967
- 22-20. MORROW, JODEAN
ENDO, T.
"Cyclic Stress-Strain and Fatigue Behavior of Representative Aircraft Metals"
Paper to be presented at the 70th Annual Meeting ASTM, Boston, Mass. June 1967
- 22-21. MORROW, JODEAN
TOPPER, T. H.
WETZEL, R. M.
"Neuber's Rule Applied To Fatigue Of Notched Specimens"
Paper to be presented at the 70th Annual Meeting, ASTM, Boston, Mass. June 1967
Also Aeronautical Structures Lab Report No. NAEC-ASL-1114. June 1967

23. SELECTED PAPERS BY S. TAIRA, ET AL

- 23-1. TAIRA, S.
OHNAMI, M. "Thermal Fatigue of Stainless Steels"
Proc. Fourth Japan Congress on Testing
Materials, 1961. pp 45 - 49
- 23-2. TAIRA, S.
OHNAMI, M.
MINATA, H. "Thermal Fatigue Combined With
Mean Stress"
Proc. Fifth Japan Congress on Testing
Materials, 1962 pp 45 - 49.
- 23-3. TAIRA, S.
OHNAMI, M.
SHIRAISHI, T. "Thermal Fatigue Combined With
Fully Reversed Mechanical Stresses"
Sixth Japan Congress on Testing
Materials, 1963. pp 34 - 39.
- 23-4. TAIRA, S. "Thermal Fatigue and Its Relation to Creep
Rupture and Mechanical Fatigue"
In book: "High Temperature Structures and
Materials" pp 187 - 213.
Proc. of the 3rd Symposium on Naval
Structural Mechanics, Columbia Univ., Jan.
1963. Edited by A. M. Freudenthal, et al
Pergamon Press 1964.
Paper includes considerable literature
references.
- 23-5. TAIRA, S.
OHNAMI, M. "Fracture and Deformation of Metals
Subjected to Thermal Cycling Combined
With Mechanical Stress"
Joint International Conference on Creep, 1963.
Paper 25. Proceedings of the Institute of
Mechanical Engineers, 1963-1964, Vol. 178,
Part 3A.
- 23-6. TAIRA, S.
OHNAMI, M.
MINATA, H.
SHIRAISHI, T. "Thermal Fatigue and Cyclic Mechanical
Strain at Elevated Temperature of 18-8 Cb
Stainless Steel and 2.25 Cr-1 Mo Steel"
Bulletin of the Japanese Society of Mechanical
Engineers, Vol. 6, No. 22, 1963 pp 169 - 177.
- 23-7. TAIRA, S.
OHNAMI, M.
SHIRAISHI, T. "Thermal Fatigue Under Multiaxial Thermal
Stresses."
Proc. Sixth Japan Congress on Testing
Materials, 1963 pp 40 - 46.

- 23-8. TAIRA, S.
OHNAMI, M.
KYOGOKU, T. "Thermal Fatigue Under Pulsating Thermal Stress Cycling"
Bulletin of Japan Society Mechanical Engineers, Vol. 6 #22, 1963 pp 178 - 184.
- 23-9. TAIRA, S.
OHNAMI, M.
INOUE, T. "Thermal Fatigue Under Multiaxial Thermal Stresses"
Proc. Eighth Japan Congress on Testing Materials, 1965. pp 40 - 45.
- 23-10. TAIRA, S.
INOUE, T.
TAKAHASHI, M. "Low Cycle Fatigue Under Multiaxial Stresses"
Proceedings of the Tenth Japan Congress on Testing Materials, 1967. pp 18 - 23.
- 23-11. TAIRA, S., ET AL "Thermal Fatigue Under Multiaxial Thermal Stresses In The Case of Spheroidal Graphite Cast Iron"
Journal Society Material Science, Japan Vol. 16 #161, 1967. pp 24 - 30

24. SELECTED PAPERS BY G. SACHS, V. WEISS ET AL

- | | | |
|-------|---|--|
| 24-1 | SACHS, G.
LIU, S. I.
LYNCH, J. J.
RIPLING, E. J. | "Low Cycle Fatigue of The Aluminum Alloy 24 ST In Direct Stress"
Trans. Am. Inst. Mining and Metallurgical Engrs., Inst. Metals Div. 1948 p 469 |
| 24-2. | SACHS, G.
YEH, T. H.
TONG, K. N. | "Strength Properties of Specimens from Autofrettaged Gun-Tubes. Cyclic Stress-Strain Relation of A Heat-Treated Gun Steel"
Syracuse Univ. Research Institute Metall. Eng. Dept., Report No. MET345-579T9 May 1957 |
| 24-3. | SACHS, G.
SCHEVEN, G. | "Relation Between Direct-Stress and Bending Fatigue of High-Strength Steels"
Proc. ASTM 1957 V. 57 pp 667-681 |
| 24-4. | SACHS, G.
SCHEVEN, G.
TONG, K. | "Effects of Hydrogen on Low-Cycle Fatigue of High-Strength Steels"
Proc. ASTM 1957 V. 57 pp 682-697 |
| 24-5. | SACHS, G.
TABER, A. T. | "Relations Governing Low-Cycle Fatigue: A Summary of The Pertinent Literature"
Syracuse Univ. 1958 AEC Contract AT(30-1)-2141 |
| 24-6. | WEISS, V.
SAULE, A.
SCHAEFFER, G. | "Strength Properties of The Aluminum Alloy X-2020-T6 Under Thermal Cycling"
Syracuse Univ. Res. Inst. Metallurg. Eng. Dept. Report No. MET 598-599TR2 September 1959 |
| 24-7. | WEISS, V.
SACHS, G.
GERBERICH, W.W. | "Low-Cycle Fatigue of Pressure Vessel Materials"
Proc. ASTM Vol. 60 1960 pp 512-519 |
| 24-8. | WEISS, V.
SESSLER, Y.
PACKMAN, P. | "Low Cycle Fatigue of Pressure Vessel Materials"
Syracuse Univ. Research Institute Report No. MET. E575-662-F June 1962 |
| 24-9. | WEISS, V.
SACHS, G. | "Contributions to Low-Cycle Fatigue"
Zeitschrift Fur Metallkunde Vol. 53 1962 No. 1 p 37 (In German) |

- 24-10. WEISS, V.
SESSLER, J. G. "Strain-Controlled Fatigue In Pressure
Vessel Materials"
Trans. ASME Paper 63-WA-226 (1963)
- 24-11. WEISS, V.
SESSLER, J. G. "Low-Cycle Fatigue Damage of Pressure
Vessel Materials"
Trans. ASME Journal of Basic Engineering
Vol. 85, 1963 pp 539-547
- 24-12. WEISS, V.
SESSLER, J.
PACKMAN, P. "Effect of Several Parameters on Low-
Cycle Fatigue Behavior"
Acta Metallurgica Vol. 11, July 1963
pp 809-816
- 24-13. WEISS, V. "Analysis of Crack Propagation In
Strain-Cycling Fatigue"
In Book: "Fatigue - An Interdisciplinary
Approach" Syracuse Univ. Press 1964
pp 179-186

25. SELECTED RUSSIAN BOOKS ON LCF:

- 25-1. FRIDMAN, Ya. B. PROF. "Strength and Deformation In Non-Uniform Temperature Fields"
Book edited by Prof. Ya. B. Fridman
Translated by Consultants Bureau,
New York City 1964 115 p
Russian Title: "Prochnost I Deformatsya V Neravnom Temper. Polyakh" Atomizdat
1962
- 25-2. SERENSEN, S.V. "Problems of Mechanical Fatigue"
Collection of papers. Edited by S. V. Serensen, 1964, 380 p Book in Russian
Russian Title: "Voprosy Mekhanicheskoy Uсталosti" Podredakstsey S. V. Serensena. Izdatelstvo "Mashinostroyeniye" Moskva 1964
- 25-3. "Thermal Stresses In Elements of Turbine Machinery"
Report of Scientific Meeting. Collection of Papers, Volume 2. Book in Russian
Russian Title: "Teplovye Napryazheniya V Elementakh Turbomashin" Vypusk II, Akad. Nauk. Ukrainskoy SSR, Kiev, 1962
175 pp
- 25-4. "Thermal Stresses In Structural Elements"
Report of Scientific Meeting. Collection of Papers, Volume 3. Book in Russian
Russian Title: "Teplovye Napryazheniya V Elementakh Konstruktsii" Vypusk III, Akad. Nauk. Ukrainskoy SSR, Kiev 1963
223 pp
- 25-5. PISARENKO, G.S. PROF. "Problems of High Temperature Strength In Machine Design"
Symposium. Collection of papers., Vol. II Edited by Prof. G. S. Pisarenko, 1963
Book in Russian. Russian Title: Voprosy Vysokotemperaturnoy Prochnosti V Mashinostroyenii. Trudy Vtorovo Nauchno-Tekhnich. Sovyeschanya" Izdat. Akad. Nauk. Ukrainskoy SSR, Kiev, 1963
336 pp

- 25-6. PISARENKO, G. S. "Thermal Strength of Materials and Structural Elements"
Symposium. Collection of papers. Vol. III
1965. Edited by G. S. Pisarenko. In Russian.
Russian Title: "Termoprochnost Materyalov I Konstruktsyonnykh Elementov" Akad.
Nauk. Ukrainskoy, SSR., Kiev, 1965
333 pp
- 25-7. PISARENKO, G. S. "Thermal Strength of Materials and Structural Elements"
Symposium. Collection of papers. Vol. IV
1967. Edited by G. S. Pisarenko. In Russian.
Russian Title: "Termoprochnost Materyalov I Konstruktivnykh Elementov" Vypusk IV.
Akad. Nauk. Dumka, Kiev, 1967
539 pp
- 25-8. MOSKVITIN, V. V. "Plasticity During Variable Loadings"
Book in Russian. Russian Title:
"Plastichnost Pri Peremennykh Nagruzheniyakh" V. V. Moskvitin
Izdatelstvo Moskovskogo Universiteta 1965
263 pp
- 25-9. "Strength and Dynamics of Aviation Engines"
Collection of papers. Vol. 3 Book in Russian
Russian Title: "Prochnost I Dinamika Avyatsyonnykh Dvigately" Sbornik Statey.
Vypusk 3. Izdatelstvo Mashinostroyeniye Moskva 1966
- 25-10. PISARENKO, G. S. "Strength of Materials at High Temperatures"
Edited by G. S. Pisarenko, et al Book in Russian. Russian Title: "Prochnost Materyalov Pri Vysokikh Temperaturakh"
Akademya Nauk Ukrainskoy SSR, Izdat. "Naukova Dumka" Kiev, 1966 795 pp
- 25-11. BALANDIN, U. F. "Thermal Fatigue of Metals"
Book in Russian Russian Title:
"Termicheskaya Ustalost Metallov"
U. F. Balandin Izdat. "Sudostroyeniye" Leningrad 1967 272 pp

- 25-12. SERENSEN, S. V.
SHNEYDEROVICH, R.M. "Resistance to Deformation and Fracture For Small Number of Load Cycles"
Collection of 13 papers. Edited by S. V. Serensen, R. M. Shneyderovich. Book in Russian. Russian Title: "Soprotivlenye Deformirovaniyu I Razrusheniyu Pri Malom Chisle Tsiklov Nagruzheniya"
Akademia Nauk SSSR. Izdatelstvo Nauka. Moskva, 1967. 170 pp
- 25-13. SERENSEN, S. V. "Structural Strength of Light Alloys and Steels"
Collection of papers. Book in Russian
Russian Title: "Konstruktsionnaya Prochnost Lekkikh Splavov I Staley" Sbornik Statey Pod Redaktsiey S. V. Serensena, Trudy Moskov, Avyats. Tekhnol. Inst. Vypusk 61. Moskva, 1964" 168 pp
- 25-14. Russian Periodical. "Zavodskaya Laboratoriya" is translated complete into English by "Consultants Bureau" (N. Y. City)
The original English title: "Factory Laboratory" was changed to "Industrial Laboratory"
- 25-15. Russian Periodical
"Metallovedeniye i Termicheskaya Obrabotka Metallov" is translated complete into English by "Consultants Bureau (N. Y. City). The title is "Metal Science and Heat Treatment"
- 25-16. "Thermal Strength of Heat Resisting Steels"
Collection of papers. Book in Russian.
Russian title: "Termostoykost Zharoprochnykh Splavov"
Moskva Oborongiz 1962

26A. SELECTED PAPERS BY U. F. BALANDIN, ET AL

- 26A-1. BALANDIN, U. F. "Thermal Fatigue of Metals"
In book: "Metallovedeniye Vypusk #3"
(Sudpromgiz) 1959 pp 230-262
Russian Title: "Termicheskaya
Ustalost Metallov" In Russian.
- 26A-2. BALANDIN, U. F.
BRATUKHINA, V.A.
ET AL "Method of Testing Materials Exposed
to Long Operation of Cyclic Thermal
Stresses"
"Industrial Laboratory" 1960 No. 10
(Transl. from "Zavodskaya Laboratoriya"
1960 #10, see "25-14")
- 26A-3. BALANDIN, U. F. "Investigation of Long-Time Exposure
to Cyclic Thermal Stresses at Elevated
Temperatures"
Periodical "Fizika Metallov I Metallovedeniye"
1961 No. 4 pp 519-525
In Russian.
- 26A-4. BALANDIN, U. F. "Thermal Fatigue of Metals"
Periodical: "Metallovedeniye I Termicheskaya
Obrabotka Metallov" 1961 No. 3 pp 2-8
See "25-15" In Russian.
- 26A-5. BALANDIN, U. F.
ZOLOTUKHINA, M.A. "A New Method of Evaluating Resistance
to Thermal Fatigue for Structural
Materials"
"Industrial Labor." Jan. 1961 pp 66-68.
(Transl. from "Zavodskaya Laboratoriya"
1961 #1)
- 26A-6. BALANDIN, U. F.
BRATUKHINA, V.A. "Investigation of Initial Stages of Thermal
Fatigue by Measuring Microhardness"
Periodical. "Fizika Metallov I
Metallovedeniye" 1962 No. 1 pp 122-125
In Russian.
- 26A-7. BALANDIN, U. F. "The Comparison of Results of Short and
Long Term Thermal Fatigue Tests"
"Industrial Labor." June 1963 pp 797-799
(Transl. from "Zavodskaya Labor." 1963 #6
pp 746-748)

- 26A-8. BALANDIN, U. F. "On The Time Dependence of Thermal Fatigue Strength"
"Industrial Labor." Oct. 1963 pp 1346-1348
(Transl. from "Zavodskaya Labor." #10
pp 1222-1225)
- 26A-9. BALANDIN, U. F.
GUBIN A. V. "Thermal Fatigue With A Superimposed Mechanical Load"
"Industrial Laboratory" Oct. 1964
pp 1551-1552 (Transl. from "Zavodskaya Labor." 1964 No. 10 pp 1254-1255)
- 26A-10. BALANDIN, U. F. "Estimate of Strength of Materials Exposed to Combined Action of Thermal Stresses and Constant Mechanical Load"
In book. "25-7" pp 333-342 (1967)
In Russian.
- 26A-11. BALANDIN, U. F. "Thermal Fatigue of Metals"
Book - "25-11", 1967, 272 pp
In Russian.

26B. SELECTED PAPERS BY N. S. MOZHAROVSKI, ET AL

- 25B-1. MOZHAROVSKI, N. S. "Fatigue Strength of Metals Under Conditions of Repetitive Thermal Loadings Due to Operating Conditions of Machine Parts"
In book: "25-5" pp 179-190. 1963
In Russian. Russian Title: "K Voprosu O Vynoslivosti Metalla Pri Povtornom Nagruzhenii"
- 26B-2. MOZHAROVSKI, N. S. "Investigation of Thermal Fatigue Under Multi-axial State of Stress"
VASILENKO, N. V. In book "25-6" pp 250-255. 1965
In Russian. Russian Title: "Issledovaniye Termicheskoy Uсталosti Pri Slozhnom Napryazhennom Sostoyanii"
- 26B-3. MOZHAROVSKI, N. S. "On The Problem of Thermal Fatigue of Alloys With the Boundary Conditions Taken Into Account"
Industrial Labor. Vol. 29, No. 6, June 1963
pp 794-797. See "25-14" (Transl. from "Zavodskaya Labor." June 1963, pp 743-746)
- 26B-4. MOZHAROVSKI, N. S. "About Hysteresis Energy as The Main Criterion of Destroying Metal At Cyclic Monoaxial Stress" AD-637439, TT-66-62112, 1964 In English.
PISARENKO, G. S.
- 26B-5. MOZHAROVSKI, N. S. "On Parameters of Thermal State, Degree of Rigidity of Loading and Of Their Effect on Primary and Secondary Plastic Deformation Due to Cyclic Thermal Loading of Metals"
In book "25-6" pp 256-260, 1965
In Russian. Russian Title: "O Parametrakh Teplovovo Rezhima, etc."
- 26B-6. MOZHAROVSKI, N. S. "On Some Effects of Time Factors On Fatigue Life of Metals Exposed to Cyclic Thermal Loads"
In book "25-7". pp 348-355 (1967)
In Russian.

- | | | |
|--------|---------------------|--|
| 26B-7. | MOZHAROVSKII, N. S. | "Lifetime and Creep of Metals
Subjected to Pulsating Thermal Stresses"
Periodical: Akademia Nauk Ukrainskoy
SSR, Dopovidi, Seria A. Vol. 29 Sept. 1967
pp 835-838. In Ukrainian. |
| 26B-8. | MOZHAROVSKII, N. S. | "Investigation of The Behavior of Different
Metals In Cycling Thermal Loading"
In: "Trudy Kievskavo Politechn.
Instituta" 1962, Vol. 37 In Russian. |

26C. SELECTED PAPERS BY S. V. SERENSEN, P. I. KOTOV, ET AL

- 26C-1. SERENSEN, S. V.
KOTOV, P. I. "On Method of Thermal Fatigue Testing (A Review)"
"Factory Laboratory" Sept. 1959
pp 1221-1232 See "25-14"
(Transl. from Zavodskaya Labor." 1959
#9, pp 1097-1106)
- 26C-2. SERENSEN, S. V.
KOTOV, P. I. "Tests With Cyclic Thermal Stresses of Varying Severity in The Investigation of Thermal Fatigue"
"Factory (Industrial) Laboratory"
Oct. 1959 pp 1272-1279 (Transl. from
"Zavodskaya Labor." 1959 #10 pp 1216-1223)
- 26C-3. SERENSEN, S. V.
KOTOV, P. I. "The Process of Elasto-Plastic Deformation of Alloy EI-437B During Thermal Fatigue"
Periodical "Teploenergetika", 1960 #8
pp 60-66 . In Russian
- 26C-4. SERENSEN, S. V.
KOTOV, P. I. "Test Equipment For The Investigation of Elasto-Plastic Deformation During Tension - Compression"
"Industrial Labor.", March 1960 (Transl.
from Zavodskaya Labor.", 1960 #3
pp 332-335)
- 26C-5. SERENSEN, S. V.
KOTOV, P. I. "Determination of the Elastic-Plastic Strain Occurring During the Thermal Fatigue Process"
"Industrial Labora." Oct. 1960 pp 1312-131
(Transl. from "Zavodskaya Labor." 1960
#10 pp 1133-1137)
- 26C-6. SERENSEN, S. V.
KOTOV, P. I. "Bauschinger Effect For Alloy EI-437B During Cyclic Deformation In A Wide Range of Temperatures"
Periodical "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1960 #5
In Russian. pp 65-74

- 26C-7. KOTOV, P. I. "Characteristics Of The Process of Elasto-Plastic Deformations of Alloy EI-437B During Cycling Loading With Constant Stress Amplitude" Periodical, "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1960 #7 In Russian. pp 78-86
- 26C-8. SERENSEN, S. V.
KOTOV, P. I. "Investigation of The Process of Elasto-Plastic Deformation of Alloy EI-437B During Cycling Loading" Periodical, "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1960 #12 In Russian. pp 110-126
- 26C-9. KOTOV, P. I. "Cyclic Elasto-Plastic Deformation of Alloy EI-437B Caused By Loading and Heating" Periodical, "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1961 #1 In Russian. pp 123-138
- 26C-10. SERENSEN, S. V.
KOTOV, P. I. "Approximation of Deformation Diagrams During Cyclic Loading of Alloy EI-437B Beyond Proportional Limit In Wide Temperature Range" Periodical, "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1961 #5 In Russian. pp 60-73
- 26C-11. KOTOV, P. I. "Thermal Fatigue of Alloy EI-437B In The Presence of Variable Degree of Rigidity of Loading" Periodical "Izv. Vysshykh Uchebnykh Zavedenii. Mashinostroyeniye" 1962 #10 In Russian. pp 69-80
- 26C-12. SERENSEN, S. V.
KOTOV, P. I. "Assessment of Thermal-Fatigue Strength By Varying the Rigidity of Loading" "Industrial Laboratory" Oct. 1962 pp 1312-1316. (Transl. from "Zavodskaya Labor." 1962 #10, pp 1233-1238) In Russian.

- 26C-13. SERENSEN, S. V.
KOTOV, P. I. "A Method of Recording The Cycles of Variable Temperature and Stresses During Thermal Fatigue Tests" "Industrial Laboratory", Aug., 1961 pp 1013-1017. (Transl. from "Zavodskaya Labor.", 1961 #8 pp 1013-1018)
- 26C-14. SERENSEN, S. V.
MAKHUTOV, N. A. "Investigation of Deformation And Fracturing of Soft Steel Caused by Small Number of Cycles" "Industrial Laboratory", Jan. 1964 (Transl. from "Zavodskaya Labor." 1964 #1 pp 72-77)
- 26C-15. SERENSEN, S. V.
DULNEV, R. A. "Methods For The Determination Of The Temperature Field of A Test Bar During Thermal Fatigue Testing" "Industrial Laboratory", Apr. 1964 (Transl. from "Zavodskaya Labor.", 1964 #4 pp 468-472)
- 26C-16. SERENSEN, S. V.
MAKHUTOV, N. A. "Development of Cracks and Of Fracture In Low-Alloy Alloy Steel During Cycling Loading" In book "25-13". pp 133-151 (1964) In Russian.
- 26C-17. MAKHUTOV, N. A. "The Effect of Loading Characteristics On Fracturing of Low-Alloy Steel" In Book "25-13" pp 152-167 (1964) In Russian.

26D. SELECTED PAPERS BY R. M. SHNEYDEROVICH, A. P. GUSENKOV

V. V. LARYONOV, N. A. MAKHUTOV, ET AL

- 26D-1. SHNEYDEROVICH, R. M.
GUSENKOV, A. P.
ET AL "Some Characteristics of Repeated
Deformation Curves for Symmetric
Loading Cycle"
Periodical "Izvestiya Akademii Nauk SSSR,
OTN, Mekhanika I Mashinostroyeniye"
1960 #5 pp 108-112 In Russian.
- 26D-2. SHNEYDEROVICH, R. M.
SERENSEN, S. V. "Investigation of Stress State and Of
Strength for Elasto-Plastic Cyclic
Deformation"
Periodical, "Izvestiya Akademii Nauk SSSR,
OTN, Mekhanika I Mashinostroyeniye".
1961 #4 pp 136-140 In Russian.
- 26D-3. SHNEYDEROVICH, R. M.
GUSENKOV, A. P. "Resistance to Strain Under Low-Cycle
Load"
"Industrial Laboratory", Sept. 1961
pp 1125-1130. See "25-14" (Transl.
from "Zavodskaya Labor." 1961 #9
pp 1124-1128
- 26D-4. SHNEYDEROVICH, R. M.
SERENSEN, S. V. "Elastoplastic Cyclic Deformation and
Low-Cycle Fatigue"
Proc. ASTM, 1961 pp 789-799
- 26D-5. SHNEYDEROVICH, R. M. "The Load Carrying Capacity of Compon-
ents Subjected to Repeated Static Loading"
Russian Engineering Journal, 1962 #1
pp 13-19. (Transl. from "Vestnik
Mashinostr." 1962 #1 pp 17-25)
- 26D-6. SHNEYDEROVICH, R. M.
GUSENKOV, A. P. "A Method for The Investigation of Cyclic
Strain Diagrams Obtained at Constant
High Temperatures"
"Industrial Laboratory" Dec. 1963
pp 1644-1648. (Transl. from "Zavodskaya
Labor.", 1963 #12 pp 1476-1480)
- 26D-7. SHNEYDEROVICH, R. M.
BEKSH, T. A. "Methods of Strength Evaluation From
A Small Number of Load Cycles"
"Industrial Laboratory" Dec. 1964
pp 1860-1865. (Transl. from
"Zavodskaya Labor." 1964 #12 pp 1491-1496)

- 26D-8. SHNEYDEROVICH, R. M. "Fatigue Due to Elasto-Plastic Deformation"
In book See "25-12" (1964) pp 194-210
In Russian.
- 26D-9. SHNEYDEROVICH, R. M. "Some Features of Rupture in Low-Cycle
SENKOV, A. P. Tension-Compression Loading"
"Industrial Laboratory", June 1965
pp 885-389. (Transl. from "Zavodskaya
Labor." 1965 #6 pp 720-725)
- 26D-10. SHNEYDEROVICH, R. M. "The Comparison of The Low-Cycle
GUSENKOV, A. P. Fatigue Curves Obtained in Testing
LARIONOV, V. V. With Soft and Hard Load Application"
"Industrial Laboratory", Dec. 1965
pp 1867-1870. (Transl. from "Zavodskaya
Labor.", 1965 #12 pp 1494-1497)
- 26D-11. SHNEYDEROVICH, R. M. "Deformations and Rupture Criteria
SERENSEN, S. V. Under Low-Cycle Fatigue"
Proc. of the Second SESA International
Congress on Experimental Mechanics.
Sept. -Oct. 1965 pp 415-420
- 26D-12. SHNEYDEROVICH, R. M. "Characteristics of Cyclic Elasto-Plastic
GUSENKOV, A. P. Deformation at Elevated Temperatures"
Periodical "Mashinovedenye" 1965 #1
pp 86-90 In Russian.
- 26D-13. SHNEYDEROVICH, R. M. "Criterion for Strength of Machine Parts
GUSENKOV, A. P. For Low-Cycle Loading"
Periodical, "Mashinovedenye", 1965 #2
pp 70-78 In Russian.
- 26D-14. SHNEYDEROVICH, R. M. "Characteristics of Cyclic Deformation
GUSENKOV, A. P. At Elevated Temperatures"
In book, "25-12" (1967) pp 64-75
In Russian.
- 26D-15. SHNEYDEROVICH, R. M. "Investigation of Deformation Processes
SERENSEN, S. V. And of Fracture Criteria of Metals For
Cyclic Loading in Elasto-Plastic Region"
In book, "25-12" (1967) pp 5-15
In Russian.

- 26D-16. SHNEYDEROVICH, R. M.
GUSENKOV, A. P. "Resistance to Cyclic Elasto-Plastic Deformation at Elevated Temperatures"
In book, "25-7" pp 291-301 (1967)
In Russian.
- 26D-17. GUSENKOV, A. P. "Characteristics of Cyclic Deformation Diagrams at Normal Temperatures"
In book, "25-12" (1967) pp 34-63
In Russian.
- 26D-18. GUSENKOV, A. P.
LARYONOV, V. V.
KALUGIN, O. N. "The Investigation of Cyclic Deformation Diagrams and of Fracturing Conditions for A Low Number of Loading Cycles"
In book, "25-12" (1967) pp 16-33
In Russian.
- 26D-19. GUSENKOV, A. P.
LARYONOV, V. V. "Conditions for Fatigue and For Quasistatic Fracturing for Low-Cycle Loading"
In book, "25-12" (1967) pp 83-92
In Russian.
- 26D-20. LARYONOV, V. V. "Kinetics of State of Stress and Fracturing In Zones of Concentration For Cyclic Hardening"
In book, "25-12" (1967) pp 93-103
In Russian.
- 26D-21. LARYONOV, V. V.
LEVIN, O. A. "An Approximate Evaluation of The Kinetics of Stresses In A Strip With Opening In Cyclic Deformation"
In book, "25-12" (1967) pages 126-140
In Russian.
- 26D-22. MAKHUTOV, N. A. "Investigation of Low-Cycle Fracture Of A Low-Carbon, Low-Alloy Steel"
Periodical "Mashinovedenye" 1965 #2
pp 83-88 In Russian.
- 26D-23. MAKHUTOV, N. A. "Kinetics Of Deformation and Fracturing For Cyclic Softening"
In book, "25-12" (1967) pp 104-118
In Russian

26D-24. MAKHUTOV, N. A.
 GORODETSKII, V. N.

"Calculation of State of Stress In A
Plate With Circular Opening In Case
of Cyclic Deformations of Softening
Materials"

In book, "25-12" (1967) pp 141-151
In Russian.

26D-25. YABLONKO, V. Y.

"On Some Peculiarities Of The System
'Machine-Test Pi ce' Under Low-Cycle
Loading"

In book, "25-12" (1967) pp 162-169
In Russian.

26E. SELECTED PAPERS BY N. B. SOBOLEV, V. I. EGOROV, ET AL

- 26E-1. EGOROV, V. I.
FRIDMAN, Y. B. "Effect of Work-Hardening On Progressive Damage Under Thermal Fatigue"
H. Bratcher Translation HB5448
Transl. from periodical "Metallovedeniye I Termicheskaya Obrabotka Metalloy"
1960 #7 pp 2 -30 See "25-15"
- 26E-2. SOBOLEV, N. D.
EGOROV, V. I.
FRIDMAN, Y. B. "On Thermal Fatigue Testing Under Conditions of Pure Shear"
"Industrial Laboratory" April 1960
See "25-14" (Transl. from "Zavodskaya Labor." 1960 #4 pp 467-472)
- 26E-3. SOBOLEV, N. D.
EGOROV, V. N.
FRIDMAN, Y. B. "Some Problems of Thermal Fatigue In Reactor Design"
Periodical "Atomnaya Energya" 1961 #6
pp 606-619 In Russian.
- 26E-4. SOBOLEV, N. D.
EGOROV, V. I. "Investigation of Resistance To Fracture In Thermal Fatigue for Different States of Stress"
In book, "Issledovaniya Po Zharoprochnym Splavam" Vol. IX pp 81-88. Symposium 1961. Izdat. Akademii Nauk. SSR, Moskva 1962 In Russian.
- 26E-5. SOBOLEV, N. D.
EGOROV, V. I. "Strength Criterion In Thermal Fatigue"
Periodical "Doklady Akademii Nauk SSSR" 1962 Vol. 147 #2 pp 350-352 In Russian.
- 26E-6. SOBOLEV, N. D.
EGOROV, V. I. "A Technique for Thermal-Fatigue Testing Under Uniaxial Stress Condition"
"Industrial Labor." Oct. 1962 #10
pp 1317-1321 (Transl. from "Zavodskaya Labor." 1962 #10 pp 1238-1242)
- 26E-7. SOBOLEV, N. D.
EGOROV, V. I. "On Relative Evaluation of The Thermal Fatigue Strength of Materials"
"Industrial Labor." June 1963 #6 pp 790-793
(Transl. from "Zavodskaya Labor." June 1963 pp 739-742)

- 26E-8. SOBOLEV, N. D.
EGOROV, V. I. "Investigation of Resistance of Heat Resisting Steels to Thermal Fatigue for Different States of Stress" Periodical, "Izvestiya Vysshykh Uchebnykh Zavedenii. (IVUZ) "Mashinostroyeniye" 1963 #6 pp 29-39 In Russian.
- 26E-9. SOBOLEV, N. D.
EGOROV, V. I. "Thermal Fatigue and Thermal Shock" In book, "25-1". (1964) pp 62-115
- 26E-10. SOBOLEV, N. D. "On Thermal Fatigue" In book, "25-2" (1964) pp 211-219 In Russian.
- 26E-11. SOBOLEV, N. D.
PIROGOV, E. N. "Method of Studying The Damage Associated With Thermal Fatigue" "Industrial Labor.", Aug. 1966 #8 pp 1213-1216 (Transl. from "Zavodskaya Labor.", Aug. 1966 pp 984-987)
- 26E-12. SOBOLEV, N. D.
PIROGOV, E. N. "Recording The Parameters of Thermal-Fatigue Loading By Means of A Double Mechanical Diode" "Industrial Labor.", May 1967 #5 pp 730-732 (Transl. from "Zavodskaya Labor.", May 1967 pp 617-620)
- 26E-13. SOBOLEV, N. D.
EGOROV, V. I. "Strength Criteria for Thermal Fatigue" In: "Doklady Akademii Nauk SSSR-Tekhnicheskaya Fizika Vol. 147 #2, 1962 pp 350-352 In Russian.

26F. PAPERS BY OTHER AUTHORS

- 26F-1. ELTER, E. "Plastic Deformations and The Number of Cycles for Fracture"
In book, "Proceedings of the Second Conference on Dimensioning and Strength Calculations" Hungarian Academy of Sciences. Budapest 1965 pp 275-286
In English.
- 26F-2. DULNEV, R. A. "Thermal-Fatigue Tests Including Holding Periods at The Maximum Temperature of The Cycle"
"Industrial Labor." Aug. 1966 pp 1217-1220.
(Transl. from "Zavodskaya Labor." 1966 #8 pp 988-991) see "25-14"
- 26F-3. FILATOV, V. M.
SOLOVIEV, D. V.
ET AL "Load Programming In Thermal Fatigue Tests"
"Industrial Laboratory" Oct. 1966
pp 1566-1567. (Transl. from "Zavodskaya Labor." 1966 #10) pp 1280-1281
- 26F-4. FILATOV, V. M. "Thermal Method of Loading In Intermittent Testing"
"Industrial Labor." Nov. 1966 pp 1696-1699
(Transl. from "Zavodskaya Labor." 1966 #11, pp 1386-1389)
- 26F-5. FILIPENKO, V. N. "On The Effect of Stress Concentrators On The Resistance to Thermal Fatigue Of Heat Resisting Steel EI-703"
In book, "25-7" pp 370-375 (1967)
In Russian.
- 26F-6. GETSOV, L. B. "The Problem of Strength of Gas Turbine Parts Exposed To Many Thermal Cycles"
In book, "25- 5" pp 239-247 (1963)
In Russian.
- 26F-7. GETSOV, L. B.
KOSTYUCK, A. S.
ET AL "On The Service Life of Power Plant Components Under Strain-Cycling Conditions"
"Thermal Engineering" 1965 #1 pp 60-66
(Transl. from "Teploenergetika" 1965 No. 1 pp 48-53)

- 26F-8. FRIDMAN, Y. B.
ROYTMAN, I. M. "Testing Of Metals With Repetitive Variable Loads In Plastic Range" Periodical, "Zavodskaya Laboratoriya" 1947 #4 pp 452-463.
In Russian.
- 26F-9. FRIDMAN, L. I. "Investigation of Repetitive Heating and Cooling" In book, "25-3" pp 149-155 (1962)
- 26F-10. FRIDMAN, L. I. "Variation of Plastic Deformations Due to Repetitive Non-Uniform Heating" In book "25-4" pp 120-131 (1963)
In Russian.
- 26F-11. FRIDMAN, L. I. "Plastic Deformations Caused By Repetitive Non-Uniform Heatings" In book, "25-9" pp 80-100 (1966)
In Russian.
- 26F-12. IVANOVA, V. S.
RAGOZIN, U. I. "Relationship Between Deformations and Number of Cycles to Fracture In Metals Under Cycling Loading" In periodical "Izvestiya Akad. Nauk, Metally" 1965 #6 pp 106-110
In Russian.
- 26F-13. KOGAYEV, V. P.
STEPNOV, M. N.
ET AL "Resistance to Repeated Loading of A Chrome-Nickel-Vanadium Steel In A Elasto-Plastic Region" In book, "25-13" pp 86-104 (1964)
- 26F-14. LARIONOV, V. V.
BOGDYL, P. T.
PRIGOROVSKI, N.I. "A Method of Studying Elasto-Plastic Deformations With Repeatedly Varying Loads" "Industrial Laboratory" Sept. 1965 pp 1388-1391 (Transl. from "Zavodskaya Labor.", 1965 #9 pp 1116-1119)
- 26F-15. NIKITINA, L. P. "Thermal Fatigue of Heat-Resistant Materials Under Conditions of Uniaxial Stressed State" Translation AD-63744C. 1964
FTD-TT-65-1364, TT-66-62113
In book, "25-2" pp 226-233 (1964)

- 26F-16. ODING, I. A.
KOSTOCHKIN, Y. V. "Damage of Metal Due to Thermal Fatigue"
Periodical, "Izvestiya Akademii Nauk SSSR,
OTN. Metallurgiya i Toplivo" 1960 #1
pp 101 to 104. In Russian.
- 26F-17. ODING, I. A.
KOSTOCHKIN, Y. V. "Deformation and Failure in Thermal
Fatigue"
Transl. Henry Bratcher #5380 1960.
Transl. from periodical "Metallovedeniye i
Termich. Obrabotka Metallov" April 1960
#4 pp 26-29 See "25-15"
- 26F-18. PISARENKO, G. S.
BUGAI, V. I.
ET AL "Investigation of Non-Elastic Deformations
In Metals During Cyclic Deformations"
In book, "25-6" pp 160-169 (1965)
In Russian.
- 26F-19. PISARENKO, G. S. "Strength of Materials and The Carrying
Capacity of Structural Elements at High
and Low Temperatures"
Periodical, "Prikladnaya Mekhanika"
Oct. 1967 pp 44-52
In Russian.
- 26F-20. PISARENKO, G. S.
ET AL "Investigation of Thermal Strength of
Ductile Materials"
In book, "25-10" pp 715-732 (1966)
In Russian.
- 26F-21. STANYUKOVICH, A. V.
NIKITIN, V. I. "Estimate of Fatigue Strength of Steels
In Elasto-Plastic Range at High
Temperature"
In book, "25-2", pp 220-225 (1964)
In Russian.
- 26F-22. STRIZHALO, V. A. "Ratio of Heat Strain to Loading Rate
During Thermomechanical Fatigue Testing"
"Industrial Laboratory" May 1967 pp 733-734
(Transl. from "Zavodskaya Laboratoriya"
1967 #5 pp 620-622)
- 26F-23. TROSHCHENKO, V. T.
BUGAI, V. I. "The Dependence of The Fatigue Life
Of Steels On Plastic Strain During Cycling
Under Uniform and Non-Uniform Stresses"
"Industrial Labor.", Dec. 1965 pp 1875-1877
(Transl. from "Zavodskaya Labor." 1965 #12
pp 1501-1503)

- 26F-24. VEYTSMAN, R. I. "On Strength of Tubes Subjected To Internal Pressure and Variable Thermal Loading In Plastic Region"
In book, "25-2" pp 234-238 (1964)
In Russian.
- 26F-25. FILIPENKO, V. N. "The Procedure of Investigating Thermal Fatigue of Sheet Heat-Resistant Materials"
Periodical "Poroshkovaya Metallurgiya"
Vol. 5, No. 7, July 1965 pp 84-87
In Russian.
- 26F-26. MALKEVICH, A. V.
MARINETS, T. K.
ET AL "Effect of The Change In Temperature Conditions on The Cyclic Strength"
Periodical: "Izv. Vysshikh Uchebnykh Zaved. Mashinostroyeniye" 1964 #12
In Russian. pp 39-48
- 26F-27. SOKOLO, V. S. "Investigation of The Thermal Fatigue of Steel EI-612 For The Uniaxial Stressed State"
Periodical: "Trudy Moskovsk. Energ. Inst. 1963 Part 47 pp 225-233
- 26F-28. KLYPIN, A. A. "The Phenomenon of Thermal Fatigue and The Mechanism of The Failure of Heat-Resistant Alloys at High Temperatures"
Thesis: Moskovskii Avyatsyonnyi Institut. 1954
- 26F-29. PLATONOV, A. A.
SKLYAROV, N. M. "Testing of The Thermal Strength of Heat-Resisting Alloys By Accumulating Permanent Deformation"
In book "25-16" (1962)
In Russian. pp 53-63
- 26F-30. PLATONOV, A. A.
SKVORTSOV, G. V.
SKLYAROV, N. M. "Test of The Thermal Strength of Heat-Resisting Alloys Using Rigid Clamping"
In book "25-16" (1962) pp 64-69
- 26F-31. SKLADNOV, I. K.
SKLYAROV, N. M. In book "25-16" (1962) pp 70-78
In Russian.

- 26F-32. ZHUKOV, S. L.
 SKLADNOV, I. K.
 LAPITSKII, Y. A. "Investigation of The Thermal Strength
 of Heat-Resisting Sheet Alloys"
 In book "25-16" (1962) pp 165-169
 In Russian.
- 26F-33. STEPNOV, M. N.
 GYATSINTOV, E. V.
 KOGAYEV, V. B. "Resistance to Repeated Loads of An
 Alloyed Chrome Nickel Vanadium Steel
 In The Elasto-Plastic Range"
 In book "25-13" (1964) pp 86-104
 In Russian.
- 26F-34. DULNEV, R. A. "Resistance of Heat Resisting Steels To
 Thermal Fatigue As A Function of
 Temperature Cycle"
 In book "25-7" (1967) pp 360-365
 In Russian.
- 26F-35. MOLCHANOV, E. I.
 BUTRYAKOV, V. N. "Investigation of Thermal Strength of
 Materials Under the Combined Action
 Of Thermal and Mechanical Stresses"
 In book "25-7" (1967) pp 455-459
 In Russian.

27. JAPANESE REFERENCES ON LCF. IN ENGLISH.

- 27-1. KATOH, N. "An Experimental Study of The Effects of Hold Time On The Thermal Fatigue of 18-8 Cb Steel" Trans. Japan Soc. Mech. Engrs. 1961 #76 pp 410-423 In Japanese. English Summary.
- 27-2. KATOH, N. "Interrelation Between Thermal and Elevated Temperature Fatigue Resistance of AISI347 Stainless Steel" Proc. 1st Intern. Conference on Fracture. Sendai, Japan 1966 pp 1567-1580
- 27-3. KAWAMOTO, M. TANAKA, T. "Completely Reversed Axial Fatigue Tests of Steel In The Plastic Range" The Fifth Japan Congress on Testing Materials. 1962 pp 36-40
- 27-4. KAWAMOTO, M. FUJITANI, K. "Small Cycle Fatigue Under Constant Strain and Constant Stress" The Fifth Japan Congress on Testing Materials 1962 pp 41-44
- 27-5. KAWAMOTO, M. KOIBUCHI, K. YAMAZI, Y. "Axial Fatigue Tests On Ni-Cr-Mo Steels In The Plastic Range" The Sixth Japan Congress on Testing Materials, 1963 pp 18-21
- 27-6. KAWAMOTO, M. TANAKA, T. NAKAJIMA, H. "Thermal Fatigue Behavior of Steels Subjected To Cyclic Mechanical Strain Independently" The Sixth Japan Congress On Testing Materials, 1963 pp 30-33
- 27-7. KAWAMOTO, M. TANAKA, T. NAKAJIMA, H. "Thermal Fatigue Behaviors Subjected To Mechanical Strain Cycling Or Stress Cycling" The Seventh Japan Congress on Testing Materials. 1964 pp 4-6
- 27-8. KAWAMOTO, M. IBUKI, Y. NAKAMURA, H. "Rotating Bending Fatigue Tests Of Steel In The Plastic Range" The Seventh Japan Congress on Testing Materials. 1964 pp 13-16

- 27-9. KAWAMOTO, M.
TANAKA, T.
NAKAJIMA, H. "Effect of Heating and Cooling Speed
and Hold Time On Thermal Fatigue"
Bulletin of Japan S.M.E. Vol. 7, 1964
#25 pp 21-27
- 27-10. KAWAMOTO, M.
TANAKA, T.
YOSHIDA, Y. "Plane Bending Plastic Fatigue Of
Ni-Cr-Mo Steel"
Bulletin of Japan S.M.E. Vol. 8, 1965
#31 pp 301-307
- 27-11. KAWAMOTO, M.
NAKAGAWA, T.
IDA, A. "On The Variation of Stress-Strain
Characteristics In The Plastic Fatigue
Under Rotating Bending"
Bulletin of Japan S.M.E. Vol. 9 1966
No. 33 pp 28-39
- 27-12. KAWAMOTO, M.
TANAKA, T.
NAKAJIMA, H. "Effect of Several Factors On Thermal
Fatigue"
ASTM Journal of Materials. Vol. 1, No. 4,
Dec. 1966 pp 719-758
- 27-13. KOIBUCHI, K.
YAMANE, M. "Stress-Strain Curves Under Variable
Stresses"
Bulletin of Japan Soc. Mech. Engrs.
Vol. 10 #40, 1967 pp 601-610
- 27-14. KUSUMOTO, S. "Effects of Strain Rate on High-Tempera-
ture Low-Cycle Torsional Fatigue
Strength of 1 Cr, 1 Mo, 1/4 V Cast
Steel"
Hitachi Research Laboz. Hitachi Ltd.
Japan April 1967
- 27-15. MINAMI, Y.
FUKUDA, Y. "Low Cycle Corrosion-Fatigue Of High
Tensile Steels" Part I.
Sixth Japan Congress on Testing
Materials. 1963 pp 27-29
- 27-16. MINAMI, Y.
ITAGAKI, H. "Low Cycle Corrosion-Fatigue of High
Tensile Steel. Part II"
Seventh Japan Congress on Testing
Materials. 1964 pp 104-107
- 27-17. MIKI, H.
SUGIMORI, M. "On The Behavior of Metals In Thermal
Fatigue"
Sixth Japan Congress on Testing
Materials 1963 pp 47-50

- 27-18. NAKAGAWA, T.
IDA, A. "A New Equipment For Reversing Direction of Load And The Results Of Tension-Compression Plastic Fatigue Tests With This Equipment" Ninth Japan Congress on Testing Materials. 1966 pp 11-18
- 27-19. SUSUKIDA, H.
ANDO, T. "Effect of Low Cycle Fatigue On The Brittle Fracture of Steel" Ninth Japan Congress On Testing Materials. 1966 pp 19-21
- 27-20. TAIRA, S. For papers by S. Taira, et al see topic 23.
- 27-21. TAKENAKA, Y. "Fatigue of Metals Under Repeated Finite Strain" Bulletin Japan Soc. Mech. Engrs. Vol. 3, 1960 pp 419-424
- 27-22. UEDA, TARO
TARAKA, MASAO
KANNO, HIROSHI "Studies on The Thermal-Fatigue Under Conditions of Transient Temperature Gradient In Cross-Section" Osaka Univ. Technology Reports Vol. 16, Oct. 1966. pp 631-641
- 27-23. YOKOBORI, T.
YAMANOUCHI, H.
YAMAMOTO, S. "Low-Cycle Fatigue Of Thin-Walled Hollow Cylindrical Specimens of Mild Steel In Uniaxial and Torsional Tests At Constant Strain Amplitude" International Journal Fracture Mech. Vol. 1, 1965 #1 pp 1-3
- 27-24. KATOH, N. "Theory of The Thermal Fatigue Strength of Austenitic Stainless Steel" Trans. Japan Soc. Mech. Engineers N215, 1965 (In Japanese)
- 27-25. KAWAMOTO, M.
KOIBUCHI, K. "Estimation of The Thermal Lives Under Actual Loads by Hereditary Method" Bulletin Japan Society of Mechanical Engineers, Vol. 8, Feb. 1965 pp 1-7

**28. SELECTED GERMAN REFERENCES
ON LCF. IN GERMAN.**

- 28-1. HAVAS, I. "Tension-Compression Tests With Constant Amplitude of True Strain"
"Materialprufung" Vol. #8 (1966) #9
pp 321-324
- 28-2. KREMPL, E. "An Axial Spring Supported Cylindrical Bar Exposed to Temperature Variations"
"Forschung a.d. Gebiete d. Ingenierwesens" 1962 No. 5 pp 133-140
- 28-3. KREMPL, E. "On The Fatigue Strength For Finite Life of Nimonic 80A Under Cyclic Thermal Stresses"
"Materialprufung" Vol. 5 (1963) #7
pp 274-283
See Items 2-38, 2-39 for English equivalent.
- 28-4. KREMPL, E. "A Fully Automatic Testing Equipment For the Determination of Fatigue Strength of High Temperature Materials Stressed By Thermal Fatigue"
"Materialprufung" Vol. 5 (1963) pp 144-153
- 28-5. KREMPL, E. "Low-Cycle Fatigue of Metals-A Review Of The State of Research"
"Materialprufung" Vol. 9 (1967) No. 2
pp 37-44
- 28-6. WEISS, V.
SACHS, G. "Contributions to Low-Cycle Fatigue"
"Zeitschrift Fur Metallkunde" Vol. 53, 1962 No. 1, p 37
- 28-7. WELLINGER, K. "Ferritic and Austenitic Pressure Vessel Steels"
"Mitteilungen Der V.G.B." Oct. 1962
pp 301-303
- 28-8. WELLINGER, K.
KUSSMAUL, K. "Fatigue Behavior of Steels When Exposed To Alternating Loading In the Plastic Range"
"Mitteilungen Der V.G.B." Oct. 1964
pp 342-357

- 28-9. WELLINGER, K.
GASSMAN, H.
ET AL " Alternating Plastic Deformation and
Strain Concentration Factor"
VDI-Berichte No. 129, 1968 6 pp
(In German)
- 28-10. WELLINGER, K.
LUFT, G. "Tensile Tests Under Pulsating Load On
Notched Samples Within The Limits of
The Fatigue Strength for Lifetime"
Mitteilungen Der V.G. B. June 1968
(In German) pp 210-215
- 28-11. WELLINGER, K.
LIEBRICH, M. "Notch Sensitivity of Steels In The Low-
Cycle Fatigue Region"
Periodical "Konstruktion" 1968 No. 3
(In German) pp 81-89