

SYMPOSIUM ON STRESS-CORROSION CRACKING OF METALS

Held at Philadelphia, Pa.

NOVEMBER 29-30 AND DECEMBER 1, 1944

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FOREWORD

The papers and discussion appearing in this volume were presented at a symposium jointly sponsored by the American Society for Testing Materials and the American Institute of Mining and Metallurgical Engineers and held at Philadelphia, Pa., November 29, 30, and December 1, 1944.

Late in January, 1944, Lieut. Col. C. H. Greenall, Officer-in-Charge of the Laboratory Division, Frankford Arsenal, Ordnance Department, U.S.A., suggested to the American Society for Testing Materials that it might be a propitious time to arrange for a symposium on stress-corrosion cracking at the Annual Meeting of the Society in June, and agreed to make available a number of papers relating to work being carried out at that Arsenal. The Society's Committee B-5 on Copper and Copper Alloys, Cast and Wrought expressed keen interest in the symposium, and other Society committees were contacted and agreed to cooperate. Since the subject is one of primary interest also to the American Institute of Mining and Metallurgical Engineers, it was arranged that the two organizations would jointly sponsor the symposium. A Symposium Committee was formed under the joint leadership, for A.S.T.M., of Carter S. Cole, then Chief of the Metals Branch, Conservation Division, War Production Board and now Engineer on the Headquarters Staff of the Society; and, for A.I.M.E., of E. A. Anderson, Chief of Metals Section, Research Division, New Jersey Zinc Co. (of Pa.) and chairman of the Program Committee of the Institute of Metals Division. The Symposium Committee was constituted as follows:

Active Members

| | |
|-----------------------------|----------------------------|
| C. S. Cole, Co-Chairman | E. H. Dix, Jr. |
| E. A. Anderson, Co-Chairman | R. B. Mears (Alternate) |
| H. S. Rawdon | C. H. Greenall |
| L. L. Wyman | A. L. Jamieson (Alternate) |

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| G. A. Wilson (Alternate) | |
| F. T. Sisco | Assistant Secretary, A.I.M.E. |
| G. H. Harnden | Chairman, A.S.T.M. Committee B-5 |

An organization meeting of the committee was held in Cincinnati in February, 1944. It later developed that papers could not be available in time for presentation at the Annual Meeting of A.S.T.M. in June, and that there was sufficient material in sight to justify a separate meeting which resulted in the holding of a three-day symposium late in the fall. The development of the program and the review and editing of the papers were handled by the Symposium Committee, involving seven meetings of the committee.

Through the cooperation of K. Headlam-Morley, Secretary of the British Iron and Steel Institute and of the British Institute of Metals, papers were

secured from England representing those two institutions. Mention should also be made of the cooperation given the committee in securing these British papers and in communicating with Mr. Headlam-Morley by James T. Kemp, Metallurgist of The American Brass Co., currently on duty in London as a member of the Mission of Economic Affairs, American Embassy.

It is regretted that some of the material which might have been presented is not available at this time because of security regulations and it is hoped that after the war is over these papers can be presented at some date in the not too distant future under the same auspices.

The number in attendance at the symposium was about 350 in all with an actual attendance of from 200 to 250 at each of the technical sessions. Over a 100 took an active part in the symposium in official capacity as members of the committee, or as technical chairmen, authors, or discussors of the papers.

C. L. WARWICK, *Secretary-Treasurer*, A.S.T.M.

A. B. PARSONS, *Secretary*, A.I.M.E.

PROGRAM OF SESSIONS

First Session BRASS *Wednesday, A.M., Nov. 29*

Co-Chairmen:

CARTER S. COLE, Staff Engineer, A.S.T.M.

E. A. ANDERSON, Chief of Metals Section, Research Div., New Jersey Zinc Co. (of Pa.)

Second Session BRASS *Wednesday, P.M., Nov. 29*

Co-Chairmen:

D. K. CRAMPTON, Director of Research, Chase Brass and Copper Co., Inc.

A. W. TRACY, Metallurgist, The American Brass Co.

Dinner and Technical Session *Wednesday Evening, Nov. 29*

Toastmaster:

N. L. MOCHEL, Manager Metallurgical Engineering, Westinghouse Electric Corp.

Talk on "How Do Things Look Today and For the Future"

RALPH KELLY, President, Baldwin Locomotive Works

Technical Paper on Stress-Corrosion Cracking

E. H. DIX, JR., Assistant Director of Research and Chief Metallurgist, Aluminum Company of America

Third Session BRASS *Thursday, A.M., Nov. 30*

Co-Chairmen:

W. B. PRICE, Director of Research, Scovill Manufacturing Co.

A. L. JAMIESON, Associate Metallurgist, Frankford Arsenal

First Session LIGHT METALS *Thursday, P.M., Nov. 30*

Co-Chairmen:

L. L. WYMAN, Metallurgist, General Electric Co.

M. A. HUNTER, Professor of Metallurgical Engineering and Head, Dept. of Metallurgical Engineering, Rensselaer Polytechnic Institute

Second Session LIGHT METALS *Thursday Evening, Nov. 30*

Co-Chairmen:

R. T. WOOD, Chief Metallurgist, American Magnesium Corp.

J. D. HANAWALT, Director, Metallurgical Dept., Dow Chemical Co.

First Session STEEL *Friday A.M., Dec. 1*

Co-Chairmen:

H. S. RAWDON, Chief, Division of Metallurgy, National Bureau of Standards

A. L. FEILD, Director of Research, Rustless Iron and Steel Corp.

First Session MISCELLANEOUS METALS *Friday P.M., Dec. 1*

Co-Chairmen:

E. A. ANDERSON, Chief of Metals Section, Research Div., New Jersey Zinc Co. (of Pa.)

CARTER S. COLE, Staff Engineer, A.S.T.M.

Neither the A.S.T.M. nor A.I.M.E. is responsible, as a body, for the statements and opinions advanced in this publication.

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