

### PROCEEDINGS

OF THE

## SECOND HYDRAULICS CONFERENCE

June 1-4, 1942

Edited by
J. W. Howe
and
HUNTER ROUSE

University of Iowa Studies in Engineering

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# Proceedings of the Second Hydraulics Conference

June 1-4, 1942

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IOWA INSTITUTE OF HYDRAULIC RESEARCH
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### Edited by

J. W. Howe

Head of Mechanics and Hydraulics Department State University of Iowa

and

HUNTER ROUSE
Associate Director in Charge
Iowa Institute of Hydraulic Research

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# SECOND HYDRAUGICS CONFERENCE

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#### FOREWORD

Apparent to all engineers has been the decided trend of recent years toward a study of the fundamental aspects of fluid behavior. Although hydraulic engineers have contributed in no small measure to present-day knowledge of flow principles, they have come to find it mutually profitable to exchange experiences with other professions engaged in essentially similar fields of endeavor. Therefore, while the First Hydraulics Conference, held at Iowa City in 1939, summarized current practice in specific phases of hydraulic engineering, the theme of the Second Conference was advisedly chosen to stress the astonishing similarity of principles utilized by the wide variety of professions dealing with fluid motion.

With this purpose in mind, the Iowa Institute selected as speakers for its Second Hydraulics Conference authorities from the fields of aeronautical, civil, chemical, marine, and mechanical engineering, and geology, meterology, and oceanography—with particular heed to those who could call attention to knowledge of fluid behavior which might benefit the war effort. It was with no little pride that the Institute was able to present a technical program of twenty-four stimulating papers, all but three of which were read by the authors themselves despite the limitations of time and travel imposed by war conditions. Gratifying, too, was the attendance of 150 engineers and scientists representing the thirty states designated on the accompanying map. Even the weather man felt

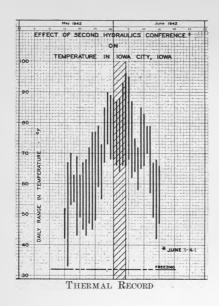


STATES REPRESENTED AT CONFERENCE.

the spirit of the meeting and poured out an unrestrained supply of heat which sent the thermometer to its highest point of the year—infact, certain of the U. S. Geological Survey Engineers were convinced that the Conference oratory was the

direct cause of the heat, and placed the accompanying graph in evidence.

This bulletin contains the Conference papers in the order in which they were read. Not all of the Conference was devoted to



technical sessions, however: indeed, several other events may be equally well remembered. As the guests arrived on Sunday, they were taken Dawson's home, to Dean where a buffet supper was served and an opportunity was provided for introductions and visiting. On Monday evening Dean Dawson presided at a banquet at which Dean Stoddard, the recently - appointed Commissioner of Education for the State of New York, made the prinicpal address. All of Tuesday afternoon was de-

voted to an inspection of the Institute laboratory, where apparatus used in instruction and in experimental research projects was in operation. That evening, a collection of research films was shown; John S. McNown of the University of Minnesota, Thomas R. Camp of the Massachusetts Institute of Technology, Robert Knapp of the California Institute of Technology, and Hunter Rouse and A. A. Kalinske of the University of Iowa gave comments and explanations as films from their respective laboratories were projected. Perhaps the high point of the Conference was the banquet Wednesday night. Hunter Rouse as toastmaster called, in turn, upon J. C. Stevens, H. U. Sverdrup, and B. A. Bakhmeteff, each of whom gave brief but unusually interesting talks ranging from Shakespeare through Arctic exploration to world affairs.

The valuable papers and the stimulating personal contacts which have come from the First and Second Hydraulics Conferences emphasize the desirability of holding further meetings of this type. In the period immediately ahead, great progress will undoubtedly be made in the field of fluid motion, and material for another Conference program will soon become available. It is therefore with considerable anticipation that the Institute looks forward to its Third Hydraulies Conference, even though the intervening period may be prolonged by war conditions.

J. W. HOWE.

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