

PROCEEDING OF THE
6TH WORKSHOP ON THE HYDRAULICS OF RIVER ICE

October 23-25, 1991

Lord Elgin Hotel

Ottawa, Ontario

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FOREWORD

The Sixth Workshop on the Hydraulics of River Ice was one of a continuing series held to provide a forum for the presentation of research results on ice in rivers and to share practical experience. The primary focus was the numerical modelling of river ice conditions, particularly the latest developments on such models as "RIVICE". There were also contributions on related topics. A successful and well attended Short Course preceded the Workshop. Over two days, a variety of topics were covered related to numerical modelling of river ice conditions.

In Session C during the proceedings, one of the contributions was a video presentation entitled, " Frazil and Anchor Ice - A Laboratory Study ", produced by G. Tsang of the National Hydrology Research Institute.

The workshop proceedings usually contains summaries of the discussion that followed the presentation of each paper. There was an unfortunate loss of some key materials during the workshop and the inclusion of the discussions in this publication was not possible.

The organizing committee would like to thank the authors, workshop participants and those who provided assistance during the workshop.

DEDICATION

This volume of Proceedings, 6th Workshop on River Ice, is dedicated to Dr. R. Larry Gerard. Larry passed away November 5, 1991 at his home in Edmonton, after a long and courageous battle with cancer. He was fifty-one years old and had worked for over twenty years on hydrotechnical aspects of ice, first as a Research Officer at Alberta Research Council, and later as a Professor at the University of Alberta.

During this time, Larry made superb contributions to this field of engineering, particularly with regard to river ice breakup and jamming, and forces exerted by river ice on structures. His teaching skills and dedication to his students were of the highest order. Larry's excellent contributions have been widely recognized by the engineering profession, not only in Canada but throughout the world.

Shortly before his death, the Subcommittee on Hydraulics of Ice Covered Rivers established the Gerard Medal, to be awarded for the best paper submitted to each of the bi-annual Workshops that are sponsored by the Subcommittee. The Gerard Medal was inaugurated at the 1991 Workshop of which the Proceedings are presented in this volume. Larry formally accepted this honour by a letter dated October 23, 1991; the letter was presented at the Workshop and is reproduced on the next page.

Larry's passing has left a large void among his colleagues and friends. Those who knew him, and this probably includes most ice engineers and scientists, appreciated his stimulating presence, his sense of humour, his courtesy and consideration for others, and the warmth of his friendship. We all miss him very much.





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October 23, 1991

Dr. S. Beltaos
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Re: Medal for best paper offered in the Hydraulics of ice-covered rivers workshops

Dear Spyros:

This is a very belated acknowledgement of your letter telling me that the 'Hydraulics of ice-covered rivers' Subcommittee would like to associate my name with the above medal. This is a most gracious offer and it is an honour to accept with sincere thanks and gratitude, in the full recognition that there have been others - yourself and Dr. Davar included - who have done as much if not more to further the subject in Canada.

I accept the honour on behalf of you all in the hope that the name will represent the philosophy that the best research for Canadians to undertake is research on Canada's special problems of which the 'Hydraulics of ice-covered rivers' is such an obvious and important item in our field of Hydraulic Engineering. As well as answering our own problems, we will also be developing an expertise which we can share with other nations which have the same problems but do not have the urgency or the resources to take on the research. It is for these reasons that, since I have been in a position to do so, I have been involved in and encouraged research in the hydraulics of ice-covered rivers and, in particular, the field verification, appreciation and application of the results of this research in the work-a-day world of engineering. It is a delight to think that the above medal will provide a means whereby I can continue to lend my name to the future support of a topic that has been so important to me.

Please pass on my gratitude to the Subcommittee for the opportunity and honour.

My sincere apologies for the long delay in this response. I very much regret that my health precludes me being with you at the initiation of the award. I hope it goes well.

Yours very sincerely,

R. Gerard, Ph.D., P.Eng.
Professor of Civil Engineering

RG/ds

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