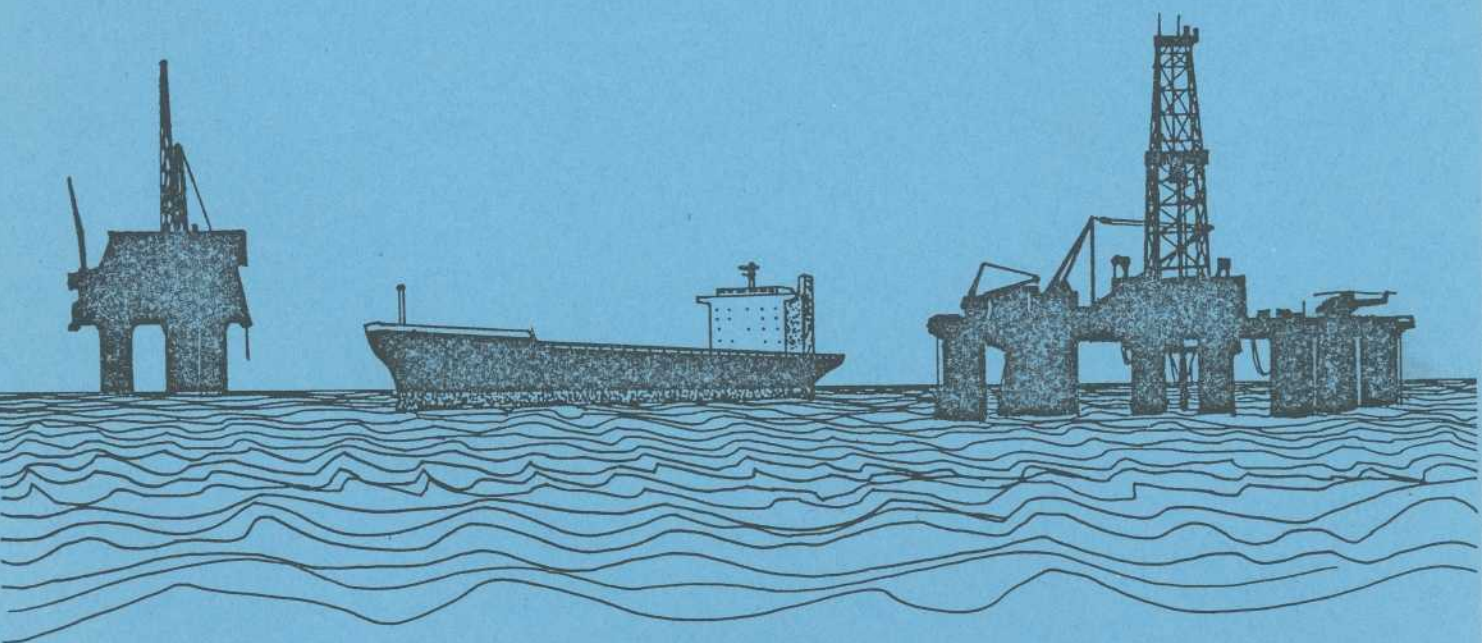


SECOND
INTERNATIONAL WORKSHOP
ON WATER WAVES
AND FLOATING BODIES

University of Bristol

March 16-19, 1987



Second International Workshop on Water Waves and Floating Bodies

D.V. Evans, Editor

Report No. AM-87-06

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ABSTRACT

A workshop was held at the University of Bristol on 16-19 March 1987 for specialists performing theoretical research on the interactions of water waves with floating or submerged bodies. This report contains extended abstracts of the papers presented, and a summary of the discussion.

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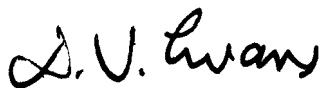
1. INTRODUCTION

The Second International Workshop on Water Waves and Floating Bodies was held at the University of Bristol, U.K., from 16-19 March 1987. This report *contains* extended abstracts of all the papers presented at the Workshop together with some of the discussion which took place following the talks as submitted in written form to the editor. The abstracts are arranged in alphabetical order of the first-named author. Also included is a full list of titles and authors, plus a list of participants' names and addresses.

A total of 34 papers were presented at the Workshop plus two additional informal talks from participants from U.K. companies. As at last year's Workshop a high standard of presentation and content of papers was maintained and a lively level of discussion prevailed throughout the three days, both inside and outside the lecture theatre, although not all participants were prepared to commit their verbal comments to paper.

Full financial support for all graduate students and research assistants requesting it in order to participate in the Second Workshop was made possible through a grant from the Science and Engineering Research Council, on behalf of the Marine Technology Directorate Ltd. We would like to express our thanks to MTD Ltd. for their generous support.

Although the style and format of the Workshop is still evolving, we believe that this *annual* event has now firmly established itself in the Calendar as a unique forum for informal discussion and exchange of ideas in the broad area of water waves and floating bodies. The Third Workshop will be held at Woods Hole, Massachusetts, U.S.A. from 10-13 April 1988. Final arrangements and details will be announced later in the year.



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2. LIST OF TALKS

- Baar, J.J.M. & Price, W.G., (Brunel, UK), "Applications of Neumann-Kelvin theory"
- Calisal, S.M. & Chan, J.L.K., (Vancouver, Canada), "Breaking waves simulation"
- Cointe, R. (IFP, France), Jami, A. (LNH, France) & Molin, B. (IFP, France), "Nonlinear impulsive problems"
- Evans, D.V., (Bristol, UK), "The maximum efficiency of wave-energy devices near coast lines"
- Germain, J-P. & Berrada, J. (IMG, France), "Floating bodies in shallow water"
- Greenhow, M., (Trondheim, Norway), "Water entry and exit of a horizontal cylinder"
- Grue, J., (Oslo, Norway), "Wave drift damping and low-frequency oscillations of an elliptic cylinder in irregular waves"
- Grue, J., Mo, A. & Palm, E., (Oslo, Norway), "The forces on an oscillating foil moving near a free surface"
- Han, F.S. & Stansby, P.K., (Manchester, UK), "On the application of the boundary element method to two-dimensional free-surface interactions with bodies"
- Higo, Y., (Hiroshima, Japan), "Non-linear hydrodynamic forces acting on two-dimensional bodies oscillating with a large amplitude"
- Hung, S.M. & Eatock Taylor, R., (UC London, UK), "Second order time harmonic forces on bodies in waves"
- Jefferys, E.R., (Conoco, UK), "Numerical problems of first order diffraction theory"
- Kim, M.H., (MIT, USA), "Second order diffracted waves around an axisymmetric body"
- King, B.K. & Beck, R.F., (Michigan, USA), "Time-domain analysis of wave exciting forces"
- Korsmeyer, F.T., (Massachusetts, USA), "on the first- and second-order time-domain radiation problems"
- Linton, C.M., (Bristol, UK), "The heave added-mass and damping coefficients of a semi-submerged torus"
- McIver, P., (Brunel, UK), "Drift forces on multi-element structures"
- Mehlum, E., (Norwave A.S. Norway), "Scattering of surface waves over a variable bottom topography: the Ekofisk equation"
- Newman, J.N., (MIT, USA), "The exciting force and moment in long waves"
- Papanikolaou, A. & Zaraphonitis, G., (Athens, Greece), "on the second-order steady motions of 3D bodies in waves"

Peregrine, D.H., Dold, J.W., Tanaka, M., Lewy, M. & Cooker, M., (Bristol, UK), "Some computations of steep unsteady water waves"

Reitan, A., (Trondheim, Norway), "Wave-power absorption by an oscillating water column with rectangular geometry"

Schultz, W.W., (Michigan, USA), "A complex-valued integral method for free surfaces with intersecting bodies"

Sclavounos, P.D., (Massachusetts, USA), "The vertical wave drift force on floating bodies"

Sen, D. & Pawlowski, J.S., (Memorial University, Newfoundland), "Two dimensional flows with the free surface"

Simon, M., (Manchester, UK), "on the analytic form of wave solutions in the frequency domain"

Thomas, G.P., (UC Cork, Ireland), "The diffraction of water waves by a circular cylinder in a channel"

Ursell, F., (Manchester, UK), "Trapping modes in the theory of surface waves"

Vinje, T., (Veritec A/S, Norway), "Non-linear analysis of oscillating water columns"

Walton, P., (Manchester, UK), "On the use of integral equations in water wave problems"

Wu, C-F. & Yeung, R.W., (California, USA), "Nonlinear wave-body motion in a closed domain"

Wu, G.X. & Eatock Taylor, R., (UC London, UK), "Treatment of the second order derivatives for a ship advancing in waves"

Wu, X-J., (Brunel, UK), "An interior integral equation method for water wave radiation and diffraction problems"

Zhao, R. & Faltinsen, O.M., (Trondheim, Norway), "Interaction between regular waves, current and a two-dimensional free-surface-piercing body"