

Preface

Industrial problems related to elastohydrodynamic lubrication (ehl) are always arising, despite a widespread research effort accompanied by numerous specialist publications. I therefore felt it would be appropriate to write a textbook on elastohydrodynamics which explained the subject theoretically and experimentally, as well as presenting a comprehensive account of some of the latest important research findings.

I have presented the theory of ehl in some detail, in such a way that a reader who is an indifferent mathematician (this includes me) will understand it and will be able to apply it. Consequently, there are many simple illustrations for which normally a mathematician would have no need. I have also drawn heavily on original experimental techniques perfected in the Imperial College Lubrication Laboratory, many of which were developed when Prof. Alastair Cameron was its head and I was his student, and later a staff member. Accordingly I make no apology for the frequent examples of interference fringe pictures which I find so descriptive of ehl.

The book is aimed mainly at research students and assistants in the universities as well as those in industry. It is not meant to be a student textbook. Thus there are no numerical exercises.

Finally, I would like to thank my colleagues, Drs. Richard Sayles and Hugh Spikes, for their ready answers to my various queries, and Mrs. Elizabeth Hall for typing the bulk of the manuscript. Also, I appreciate the help from my poor suffering wife, Carmen, who learnt to use the word processor in order to correct and edit much of the text. I am also grateful to Steven Bedley and George Tindall for developing and printing the numerous photos

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Preface to the Second Edition

In the 12 years since the first edition of this book appeared, there have been many new developments in the subject of elasto-hydrodynamics. While the contents of the first edition remain sensibly valid, because they deal mainly with the important fundamentals of the subject, the new edition reflects these recent developments. I have had considerable help and advice in adding this new material to the book. In particular, I would like to thank Drs. C. H. Venner and A. A. Lubrecht for their suggestions concerning Multigrid methods, Dr. Phippa Cann and Prof. Hugh Spikes for advising me on recent experimental methods, Drs. Homer Rahnejat and Davood Jalali-Vahid for supplying me with some results based on new numerical methods and finally, the super sisters Margaret Todorovitich and Christene Booth, for retyping most of the new edition.