

Nonlinear Acoustics

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Preface to the Original Edition

The idea of writing this book occurred to the author one night while he was in the hospital, between surgical operations. Whether he was under sedation at the time, or whether the idea was an hallucination, is best left to the judgment of the reader.

The opportunity to write the book was provided by a sabbatical leave from Brown University, spent in the Department of Electrical and Electronic Engineering at the University of Birmingham (U.K.) in 1971, and the writer extends his thanks to the Department Head, Professor David Tucker, Dr. O.H. Berkday, for their help in making the stay both possible and fruitful. Particular acknowledgment must be made to the University and Department librarians at Birmingham for their courtesy and helpful service.

The finishing of a book requires the assistance and cooperation of many. Thanks are of course due to Brown University on many points. The writer is also grateful to his colleagues in the Department of Physics at Brown, especially Professors A.O. Williams, Jr. and Peter J. Westervelt, for conversations on acoustical problems that have assisted in the preparation of this book. Special thanks are due Professor Mark B. Moffett of the University of Rhode Island who, in the spirit of "once a graduate student, always a graduate student," reviewed a good fraction of the book in some detail. The book was supported by the Naval Sea Systems Command under Contract N00024-72-C-1397 with Brown University.

The author acknowledges with thanks the cooperation of Academic Press for allowing to use materials in this book from the author's previous publications with that company. Acknowledgment should also be made to various secretaries who worked on parts of the manuscript, with special thanks to Miss Maureen Byrne, who typed most of the text twice.

Finally, gratitude is due to my wife and family, for putting up once again with an author in the house.

Robert T. Beyer

Preface to the ASA Edition

When this book first appeared, nonlinear acoustics had just reached a plateau of intense activity. Some of this was caught in the text, but a great deal of it came later and was unavoidably missed. This reprinting of the 1974 text (which actually appeared in 1976) provides an opportunity at least to note some of the developments since that time, and to supply a list of references, where the reader can follow the new developments in more detail. In order to avoid the expense of a major overhaul of the text, these additional comments and references are included as an Appendix.

The reprinting also provides an opportunity to make corrections of errata. The author is grateful to David T. Blackstock, who furnished him a list of such corrections many years ago, and to Ken Rolt, who recently supplied some additional ones. And there are a few that the author himself has found.

The author is also grateful to the late Francis H. Fenlon, who wrote a long and critical review of the text in JASA (61, 1395-1996(1977, with many useful suggestions, some of which are referred to in the Appendix). In addition, he thanks Professor I.I. Glass of the University of Toronto for making available material on shock waves that was only referenced second hand in the 1974 publication.

It should be noted that the preface of the original publication was dated 14 February 1974, the occasion of the author's thirtieth wedding anniversary. He is now delighted to renew the dedication of this book to his wife in this, the year of their Golden Wedding Anniversary.

Robert T. Beyer

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