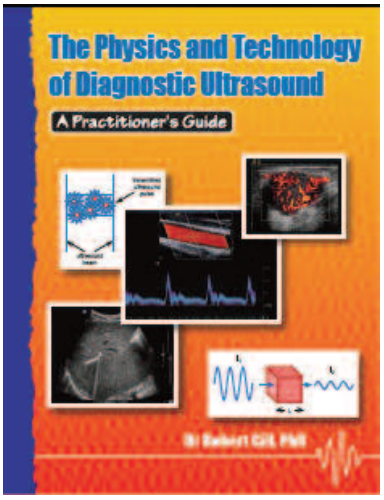

Robert Gill
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Professor Robert Gill, PhD, is an Australian electronic engineer who has worked extensively in diagnostic sonography for 30 years. His primary focus is Doppler ultrasound. Recently retired, Professor Gill has written *The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide* to help medical professionals obtain a good understanding of ultrasound physics and technology. His target audience is students enrolled in formal training programs, and the book competes directly with texts such as *Sonography Principles and Instruments*, by Kremkau, *Ultrasound Physics and Instrumentation,* by Miele, and *Ultrasound Physics and Instrumentation*, by Hykes and Hedrick, among others.

Professor Gill's book is well organized and easy to read. There are 12 chapters, starting with an introductory overview to basic mathematical concepts and ending with a final chapter on new developments such as three-dimensional sonography and elastography. Professor Gill's writing is clear and concise, and his explanations are easily understood. These are definitely strengths of the book. Key points are highlighted throughout each chapter within blue text boxes. There are ample graphics accompanying the text, and these are well designed, colourful, and clear. The ultrasound images are also of high quality.

The balancing act with which all textbook writers struggle is deciding on the amount of detail to provide. On one side, too little detail results in a good introductory text but may not meet the needs of students preparing for local or national examinations. On the other, too much detail may overwhelm students and prevent them from obtaining a good understanding of fundamental concepts.

How well does Professor Gill's book strike this balance? I suggest that this text comes very close to meeting that objective, but tends toward being an introductory text. This book would serve very well in that role or, perhaps even better, as a refresher text that could be used by practising sonographers within a clinical department. Indeed, the title, *A Practitioner's Guide*, suggests this role. At 142 pages, the amount of detail that can be provided is necessarily limited, and the author clearly admits this.

While almost all major topics are covered, students in an ultrasound program would need more emphasis on key topics and more in-depth explanation of those topics. Students would also benefit from more exercises and detailed answer keys. Professor Gill does provide "Suggested Activities" at the end of each chapter, but these are somewhat limited and the answer keys do not provide any explanation. In addition some topics are not covered at all. For example, picture archiving and communication system (PACS), which is used almost universally these days, is not explained; nor is there any significant discussion of digital terminology. In the chapter on hemodynamics, important concept of a *tardus parvus* waveform is not explored. The final chapter does cover newer concepts such as elastography, but, again, this is done in a very cursory manner. While there are numerous ultrasound images within the book, students would benefit from more examples, particularly to support concepts in the earlier chapters such as the importance of frequency, attenuation, impedance mismatch, etc.

In summary, I enjoyed Professor Gill's book and view it as a welcome addition to the current crop of ultrasound physics texts. As an introductory or refresher text, it is superb; and depending on the program and the circumstances, it may well be a good text for use within a formal program. This could certainly be the case if the program were able to supplement the information in the text with more detail and emphasis. Indeed, according to the publisher's website (www.ultrasoundbook.net), several Australian ultrasound programs including those at Charles Sturt University and the University of South Australia have already adopted the book as a prescribed or recommended course textbook. It will be interesting to see if that trend will continue in North America.

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