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PreSonus has also joined at the Silver level. Attero Tech has joined the Standards Sustainer program at the basic level. The generosity and support of all three companies is greatly appreciated.

The standards work of the Audio Engineering Society has been vital to the advancement of the audio industry. Numerous standards in development are driving an expansion of the AES standards operation. That necessitates an expanded base of funding. Unlike other technical societies with standards programs the AES does not charge participation fees. The Society believes that a completely open process ultimately produces better and more widely accepted standards. Consequently other sources of revenue are required.

Standards Sustainers provide critical funding for this effort. Besides enabling the development of standards that underlie fundamental technology in the audio industry, the program offers participants significant marketing and public relations exposure. The Audio Engineering Society is a 501(c)(3) nonprofit organization and 100% of the contribution is tax deductible to the fullest extent of the law.

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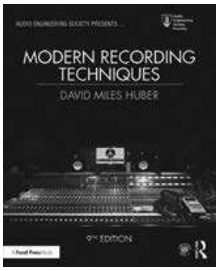
Book reviews

Modern Recording Techniques, 9th ed.
David Miles Huber
2018, Focal,
New York, NY.
xxvi + 616



Sound recording and music production text books are rarely as comprehensive as *Modern Recording Techniques*. Now in its ninth iteration, David Miles Huber introduces new topics to this well-established book including the Apple iOS in music production, as well as recognizing the upswing in analog systems. As an academic and lecturer in this field for more than a decade, I have set chapters from various iterations of this book as required reading for both vocational training courses and University degrees. The relevant content and symbiosis with standard recording and production curricula are two key strengths of this text but its overall accessibility and, critically, its pace are what sets this text book apart from similar titles.

Huber begins with an introductory chapter that reviews the range of workplaces —including professional recording studios and project studios—where recording takes place. After short paragraphs on multimedia audio, to include games, video and film, and location recording, Huber turns his attention to agency, that is, the personnel involved in the production process. At this point, it is clear this book is targeted towards students and practitioners with access to a professional recording studio; the role definitions presented here are commensurate with large-scale commercial or pedagogical studios and not smaller facilities. Huber attempts to tackle some serious issues in the introduction, to include career development, and women and minorities in the industry. I do feel the introduction would have been stronger with an expanded section on recording processes leaving the sociological topics to others perhaps better equipped to deal with them.

Where this book shines is in the organization of theoretical elements, all of which are critical to a thorough understanding of sound recording and music production. Chapters in this book are equally valuable to undergraduate-level sound recording and music production students as they are to working professionals looking for a quick theoretical refresh. "Sound and Hearing" (p. 43) and "Studio Acoustics and Design" (p. 75) cover what I would call the "essentials" of theory. Each section is carefully presented using text, supporting images, and diagrams—all of which are complementary to the scientific detail. The prose is technical and accurate yet never simplified; Huber succeeds in striking this very difficult balance between getting the theory across without ever dumbing it down.

Many sound recording text books privilege theoretical elements over day-to-day practice and process. *Modern Recording Techniques* successfully delivers both and this is particularly apparent in Chapter 4, "Microphones: Design and Application" (p. 105). Huber is careful to cover all the necessary theory, focusing on the construction on ribbon, condenser and dynamic microphones and, vital for any sound recording course, polar patterns, frequency response, and impedance. The chapter evolves to include placement techniques on a wide range of acoustic and electric instruments. This is extremely useful for programs and courses (including my own—Music Recording and Production Techniques at the Australian National University) where the student cohort features a mix of classical, jazz, and contemporary backgrounds and, therefore, exposure to a broad instrument base in both performance and recording situations.

Huber recognizes the resurgence of analog tape and as such, dedicates Chapter 5 (p. 175) to its discussion. There is no doubt that tape recording practice sparks curiosity among many of today's recording students, most of whom are digital natives. To that end, this chapter serves as a good introduction to tape and recording for someone otherwise working in the digital domain, since it features the right balance of theory and maintenance while avoiding deeper topics of hysteresis and webers.

Another of *Modern Recording Techniques* strengths lies in its chapters on Digital Audio. Such is the nature of 21st Century recording that students are—with only the rare exception—operating wholly within the digital domain. Digital audio literacy is paramount, yet all too often

skipped over. This important theoretical area is by no means a pedagogical given; Huber clearly recognizes this and delivers all the necessary theory, to include topics such as conversion and transmission in a clear and accessible tone. Similarly, plenty of time is given to the DAW in Chapter 7 (p. 219) where Huber breaks down a DAW signal chain to work on hardware and controllers, drivers, software, connectivity, and I/O as well as key topics such as DSP. Here, the structure of Huber's presentation is particularly beneficial: subheadings, short explanations accompanied by key bullet points, and illustrations allow the reader to "connect the dots" and follow the theory, yet at the same time allow those looking for a quick refresh to get to the point quickly without having to wade through pages of text.

The thorough chapter on MIDI (p. 281) sits at the heart of the book, covering all the necessary theory, connectivity and sampling/sequencing aspects. It does, however, tend to overstate the presence of MIDI systems in today's workflows. More ubiquitous is the applied use of software triggers and it is this section (p. 319) that could perhaps be expanded for the next edition. Additionally, while the DIY tutorials featured in most of the chapters are useful, those featured in the MIDI chapter would differ depending on the user's particular DAW.

My only criticism of this book is later chapters are a little unwieldy and lack the flow of the first half of the book. A new—and necessary—chapter on the iOS in Music Production (p. 337) follows on from MIDI, but then the book returns to digital audio with a chapter on formats and file types (p. 349); this essential content would have been better assimilated into Chapter 6, "Digital Audio Technology."

The book seems to jump back and forth between chapters on synchronization back to amplifiers and power, back to (largely digital) effects processing, and then on to noise reduction. On the one hand, presenting the chapters in this way allows readers to get to a key technical point quickly. On the other hand, the first half of the book's careful organization starts to unravel and the natural flow of topics becomes blurry.

The content is steered back on track with comprehensive chapters on mixing (p. 449), monitoring (p. 493), and mastering (p. 533). Here, the importance of ear training and critical listening is prioritized, which makes a refreshing change to the hundreds of online mixing "how-to" videos, many of which dive straight into the process and ignore the fact that learning to mix takes a great deal of time and experience. Huber's conscientious approach to both mixing and mastering is a perfect companion to those new to such disciplines. Here, the balance between artistic and scientific aspects of mixing, as well as technical features of console channel strips (both hardware and software) are well-explained and illustrated. I wholly agree with Huber's concluding remarks in that "the answers will come to you when you simply sit down and mix, mix, mix!" (p. 491).

The monitoring chapter traverses broad and diverse topics including mix test environments such as a car and in-ear monitoring systems. Plenty of attention is given to the importance of monitor placement and critical differences between active/passive monitors and near/far field monitoring in practice.

Huber's enthusiasm for immersive audio shines through in a detailed chapter focused on surround sound (p. 515). Here, topics such as speaker placement and calibration are explained with plenty of relevant context, including film and television environments.

Another of *Modern Recording Techniques* highlights is its chapter on mastering (p. 533). Here, instead of focusing too heavily on technical details, Huber poses a series of critical questions surrounding mix preparation, mastering engineer choice, and process. This is a good example of the way Huber slows the reader down, encouraging them to listen to their mixes critically and really consider the process in relation to their work before they reach for the technology—it is precisely this work ethic I like to instil in my students, which makes *Modern Recording Techniques* an ideal text book.

Overall, Huber's 9th edition of *Modern Recording Techniques* is everything a music technology academic could hope for in terms of a "nuts-and-bolts" sound recording and production curriculum companion. Thorough, well-structured, and featuring plenty of foundation and intermediate-level theory and application, it is an excellent all-round text book—perfect in places—for students, teachers, and practitioners alike. Huber chose to highlight this ninth edition with a purple hue in a nod to the late Prince, a fitting tribute to an artist dedicated to the art of recording.

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