

BOOK REVIEW

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A Review of *Introduction to Forensic Engineering*

Randall Noon, CRC Press, 1992

Forensic Engineering is a burgeoning field in the United States and elsewhere with specialized courses appearing in the engineering curricula at several colleges and universities. Unfortunately, this short book of 200 text pages organized into 21 chapters, does not capture the essence of this exciting and rapidly expanding field. To be sure, the book does contain some useful information but it is not a general treatment where a novice could learn something without prior background or exposure. This reviewer also feels an incorrect impression is created by entirely focusing attention on after-the-fact investigations (Monday morning quarterbacking) of accidents or failures with no attention devoted to the very significant role of forensic engineering in accident and injury prevention through effective design. The book appears to be merely a soiree of the author's excursions into forensic engineering through his consulting company. Furthermore, only very few scientific references are given although the number of topics treated is large.

The book starts out with the first five chapters devoted to vehicular accident reconstruction and photography. The analyses are generally oversimplified, being based only on particle mechanics considerations. Furthermore, I consider it a very serious omission that computer reconstructions were not even mentioned and nothing was said about the growing use of animations and simulations. The chapter on photography was disappointing and said nothing about enhancement techniques or photogrammetry, both of which are extremely important.

Many of the subsequent chapters—on such diverse topics as lighting, storm lightning damage, vibration and blasting damage,

arson for profit, hail damage, drought and its effects, water pipe freeze-ups—are very short (4 to 6 pages) and do not treat the subjects adequately. It is not clear why they were included as full chapters. The chapter on slips and falls is reasonable although it does not consider current research and does not distinguish between Coulomb and viscous friction. This reviewer also takes great issue with the philosophy as well as the comments expressed in Chapter 19, "Principles of Machinery Guarding." The author apparently is delegating the major role of man-machine interface safety to the employer through OSHA and diminishing the role(s) that designers/manufacturers have in designing a safe product before it leaves their control. Not only is this bad engineering, but it is also contrary to strict liability and implied warranty considerations. Chapter 20, "The Engineer as Expert Witness" is very short and better treatments can be found in full-length books devoted to this topic. Furthermore, since this reviewer happens to be an engineering professor for 30 years, it can be safely said that the statements in the chapter concerning undergraduate engineering are seriously in error, as well as very misleading to non-engineers. Engineering students are indeed taught—and likely have always been—that all design represents a series of trade-offs and that there is no unique answer, even though the foundations of the subject are rigorously based in "hard" science. Analyses, as well as designs, are only as good as the data on which they are based although the natural laws underlying the subject are rigorously correct. It is a disservice to the profession to present a short treatment which cannot adequately cover the many facets of a subject, and can lead to many serious misinterpretations.

This book falls far short of its potential and if it is read at all, should be done with discretion.

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