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BOOK REVIEW

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Review of: *Forensic Materials Engineering: Case Studies*

REFERENCE: Forensic Materials Engineering: Case Studies by Peter Rhys Lewis, Ken Reynolds and Colin Gagg, CRC Press LLC, Boca Raton, FL, 2004, 438 pp.

This is a new book in forensic engineering with its main focus concentrated in the area of materials and product failures. The book consists of the following 13 chapters, each of which has many subdivisions.

1) Introduction
2) Materials in Distress
3) Establishing the Load Transfer Path
4) A "Toolbox" for Forensic Engineers
5) Failure Due to Manufacturing Faults
6) Fluid Transport
7) Failure of Storage Vessels
8) Accidents in the Workplace
9) Failure of Medical Implements
10) Component Failure in Road Traffic Accidents
11) Fraudulent Insurance Claims
12) Criminal Cases
13) Intellectual Property Cases

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After some introductory chapters the authors discuss many interesting case studies for a variety of product and materials failures ranging from gears to pressure vessels to ladders to prosthetic implants, to name a few. It is also refreshing to see some space devoted to the topic of hazard identification analyses, although the authors do not use this term, when they discuss fault tree analysis (FTA) and failure modes and effects analysis (FMEA). Caution is in order, however, since the authors tend to give the mistaken impression that FTA and FMEA are always "simple" to perform, which is not generally the case. Chapter 9 will be of interest to physicians as well as engineers, while Chapter 12 on metallurgical engineering in criminal cases underscores the fact that many forensic engineers, who are typically involved in civil cases, are becoming increasingly more involved as experts in criminal cases. Special mention should also be made of Chapter 13, which typically does not appear in books on forensic engineering. Intellectual property and patent infringement cases are likely to increase worldwide and rely heavily on the use of forensic engineers in their resolution.

In general, the reviewer would classify this as a very good book in its field and one that should be considered for purchase by forensic engineers involved in failure analysis cases.