

# Physical Asset Management

Nicholas Anthony John Hastings

# Physical Asset Management

With an Introduction to ISO55000

Second Edition



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There is a vast amount of organizational documentation in this field. This includes the ISO55000 and IEC 60300 series standards, and the American Petroleum Institute publications. On the other hand there are relatively few conventional books. I am reminded of a joke that I heard on the radio... A teacher told her students to write an essay on a subject of their own choosing. A boy submitted an essay called, "My Dog". Having read it, the teacher handed it back and said, "This essay is exactly the same as your brother wrote last year." The boy said, "It's the same dog."

Special thanks are due to my wife Tina, who developed a wonderful family and a prize winning garden while I was stuck in the study or away on-site.

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## About the Author



**Nicholas Anthony John Hastings** has worked for over 50 years in the field of engineering asset management. His early career was in the British Army. He attended the Royal Military Academy, Sandhurst, and the University of Cambridge and served in the Royal Electrical and Mechanical Engineers. He worked initially in maintenance management and later in asset management policy, focusing on planning for the ongoing sustainment of equipment fleets and the development of repair/replace decision guidelines.

From 1977 to 1994 he was professor of operations research at Monash University in Melbourne, Australia, and from 1994 to 2001 he held the Mount Isa Mines Chair in Maintenance Engineering at Queensland University of Technology, Brisbane, Australia. His work involved asset management projects in manufacturing, mining, electricity supply, water supply, gas industry, and defense. In 2006 he was awarded the Medal of the Maintenance Engineering Society of Australia for contributions to reliability and engineering asset management. In 2009 he was an expert witness on asset management issues for the Victorian Bushfire Royal Commission into the Black Saturday bushfires, Australia's worst bushfire disaster.

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# About the Book

Physical asset management is the management of fixed assets such as machinery, vehicles, equipment, plant, buildings, and infrastructure. This book presents a systematic approach to the management of these assets from concept to disposal. It makes particular reference to the ISO 55000 series of asset management standards.

It is designed to be suitable as:

- A textbook for a course in asset management to senior undergraduate or graduate students in asset management, engineering management, public works engineering, systems engineering, industrial engineering, maintenance engineering or operations management.
- A reference point for engineers and managers working in the asset management field.
- An introduction to ISO55000 and a reference point for the techniques required to implement this standard.

The book introduces the general principles of physical asset management, covering all stages of the asset life cycle. This starts with initial business appraisal and proceeds through identification of fixed asset needs, capability gap analysis, financial evaluation, logistic support analysis, life cycle costing, management of in-service assets, maintenance strategy, outsourcing, budgeting, cost-benefit analysis, disposal, and renewal. Industries to which this is applicable include: manufacturing; distribution; mining; electricity generation and supply; oil and gas; water; roads; railways; aviation; shipping; hospitals; retail centers; defense material; recreation and sporting facilities and local government.

The chapters in this book are designed to introduce material in a logical sequence. As a whole year educational program it is suggested that Chaps. 1–16 provide material for the first semester and Chaps. 17–29 provide material for the second semester.

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