

help to reduce the occurrence of incidents, to save lives, and to prevent injuries and material damage.

**J.A. Barton**

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*Safety, Systems and People*, by Sue Cox and Tom Cox, Butterworth–Hienemann, Oxford, 1996, £30.00, 339 pp. ISBN: 0-7506-2089-7

This book presents a treatment of safety management based on a systems approach; it explores the theory and practical implications of such an approach. Intertwining the authors' general approach to systems theory is a belief in the need to integrate the design and management of safety related hardware and software with the management of people—hence the title; *Safety, Systems and People*. The authors give a thorough review of the psychological and organizational factors and the processes underpinning the effective management of safety at work. However the approach is sufficiently broad to cover the management of work related activity that has implication for the health and safety of the public and the environment.

The book is divided into three parts. Part 1 provides the background and justification for a quality approach to managing safety. It introduces the main concepts and reviews existing approaches to safety management and models of accident causation. This leads to the conclusion that a general systems approach to safety management is needed. Part 1 comprises the following chapters:

1. Why manage safety?
2. Hazard, harm and risk: the basic equation
3. Safety science and safety management

Part 2 focuses on the psychology of safety and a systems model based on three components: the organization, the job, and the person. This approach has been recommended by the UK Health and Safety Executive. The discussion encompasses recent developments such as complexity theory. The issue of organizational culture is treated with a healthy degree of scepticism supported by the findings from empirical studies. The individual is treated as an active information processor. Five chapters cover:

4. A systems framework for the management of safety
5. The organization
6. Jobs and tasks
7. The person
8. Work-related stress

The implications of the theory and framework for the management of safety developed in Parts 1 and 2 is explored in Part 3. This deals with the two fundamental objectives identified earlier:

- Control of safety by the design of safe and healthy organizations and safe systems of work; and
- the control of safety through the ongoing effective management of work and safety

In Chapter 4 the first objective is described as non-adaptive control, and the second as adaptive control. All four chapters in Part 3 contain discussion on both. The chapters are:

9. Safety: management responsibilities and practices
10. Safety management: strategies
11. Managing the work environment: the design of safe work
12. Managing people and their attitudes to safety

The interdependence of these four areas is underlined.

I found the book interesting to read. It brings together in one volume much of what is now considered to constitute a quality approach to management which embraces safety. The arguments are supported by many citations to relevant research and related works—typically 50 or so per chapter. Each chapter is well referenced to other parts of the text and concludes with a succinct and useful summary. The cross referencing means that the reader can dip into the “story” at any part and quickly pick up the thrust of the approach. I only spotted a couple of mistakes in these forward and backward references.

The authors claim that the book is presented in a style and at a level appropriate for informed line managers, health and safety professionals, and final year and Masters level students. I agree.

The book contains some useful practical pointers, but there is some digging to do. This is not a chore as the book flows along nicely.

C. Nussey

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*Major Hazards Monograph: Sulphur Trioxide, Oleum and Sulphuric Acid Mist.* Richard Griffiths (ed.), Institution of Chemical Engineers, Rugby, UK, 1996/A5 softback, £25.00, 70 pp. ISBN: 0 85295 373 9.

Recently there have been two significant releases of sulphur trioxide/oleum in the UK. Last summer a release from a pressurised tank led to what was described as a large white cloud. The release occurred near a major road and motorway. Motorists and local residents were advised over the radio networks to close windows and shut off ventilation systems. No one was seriously injured but a number of people were taken to hospital.