



## Book review

*Dispelling Chemical Engineering Myths: Third Edition*, Trevor Kletz, Taylor Francis, 1996, 202 pp., ISBN 1-56032-438-4

The first edition of this book was called ‘Myths of the Chemical Industry, or 44 Things a Chemical Engineer Ought NOT to Know’. The second edition included some new myths and had the title ‘Improving Chemical Industry Practices — A New Look at Old Myths of the Chemical Industry’. For the third edition, 8 myths on technology, 7 on management, and an entirely new section of 16 myths on toxicology and the environment have been added, making a total of 91 myths; also some of the earlier material has been revised.

The book is based on the authors experience as a safety advisor in the chemical industry; in particular that dealing with incident lessons dissemination and seeing that the lessons learnt were not forgotten. Trevor would describe an incident and then ask his audience why the accident happened and what should be done to prevent a re-occurrence. One of the incidents analysed was the fire at a refinery in Feyzin in 1966. In this incident a large LPG sphere became engulfed by fire, failed catastrophically, and the resulting fireball killed several people. It transpired that most engineers believed that properly sized, designed and maintained pressure relief valves should have prevented the LPG sphere failing and that protection against overheating was not necessary. This is Myth 2 in the book. Suitable relief valves will prevent a vessel bursting at its design temperature and somewhat above it, but not at temperatures that are high enough to weaken the metal. Once people challenged their false belief they realised it could not be correct; in essence they had accepted the belief uncritically. Myth 2 is less true today than it was at the time of the incident. Most engineers realise that vessels need to be protected against high and low temperatures as well as high pressure and vacuum.

Chapter 1 describes 55 myths about technology, including ‘we should do all we can to remove hazards’; ‘plants are made safer by adding on protective equipment’; ‘fire is worse than smoke’; and ‘computers introduce new problems’.

Chapter 2 presents 21 myths about management. These include ‘accidents can be prevented by following detailed rules and regulations’; ‘the best way of conveying information to people is to tell them’; ‘policies lead to actions’; and ‘management controls should be sudden and abrupt’.

Chapter 3 describes the 16 myths about toxicology and the environment. Included here are: ‘natural materials are safe’; ‘we should recycle whenever possible’; and ‘fuel economy can prevent the catastrophic results of the greenhouse effect’.

Chapter 4 deals very briefly (two pages), but amusingly, with myths in other walks of life.

There is also a glossary dealing with the differences between certain management terminology in the USA and the UK.

The book aims to encourage engineers in the chemical industry to adopt a more sceptical approach. It should succeed providing the book is used and not left on the shelf to gather dust. This edition should be particularly useful for trainers, young engineers and students developing an active interest in safety and related issues. It will also be a useful addition to the bookshelf of more experienced engineers and those who have moved into management as a reminder that to achieve safety you usually need to find out and understand what you don't know (or knew but have forgotten!).

**Clive Nussey**