

KL and BJ KOSANKE et al. *The Encyclopedic Dictionary of Pyrotechnics (and related subjects)*. (Obtainable from: www.jpvyro.com/ref-series/encyclopedic-dict-pyro/) Review by Chris Pearce

The *Encyclopedic Dictionary of Pyrotechnics* is a new publication, produced by the well-established and respected *Journal of Pyrotechnics* and currently available in CD format. It is a major work, compiled by four primary editors (Ken and Bonnie Kosanke, Barry Sturman and Robert Winkour) along with a team of secondary authors and contributors – all of whom have specialised knowledge in particular areas within the broad field of pyrotechnics.

In essence, the publication is an updated and greatly expanded version of the original *Illustrated Dictionary of Pyrotechnics*, first published in 1995. It contains over 4600 individual entries, some 3000 photographs and illustrations, 600 pyrotechnic formulations, and 500 data tables. It is without doubt a major work – something of a *magnum opus*, in fact, and thoroughly comprehensive in its coverage of all aspects of pyrotechnics from both practical and theoretical standpoints. However, it goes beyond that and reaches into historical, legal, and even social areas – creating a final document that is by far the most extensive publication of its type ever to have appeared to date.

According to the notes accompanying the CD, each entry was assigned to one of fourteen subject areas and then at least three technical editors, with expertise in one of those subject areas, reviewed each entry. This was followed by copy editing by multiple authors addressing format and other minor text related issues. In all, over one hundred individuals contributed to the final publication which has ensured a high standard of editing and accuracy. It is thoroughly cross-referenced and supported by website references where appropriate, enabling the reader to gain more information if required.

The degree of detail with regard to pyrotechnic chemistry is substantial. A complete data table is provided for each chemical, including formula weight, melting point, auto-ignition temperature etc., along with useful health and hazard information. There is much information relating to basic chemistry such as bonding, reaction mechanisms etc – so the ‘dictionary’ is really also a text book of the physical sciences in certain respects. The gas laws and a considerable amount of thermodynamic theory is also covered in a clear, consistent and systematic way. Likewise, topics related to physics (such as basic electrical circuit and quantum theory) are treated well and properly developed so that, within each entry, and where appropriate, there are worked examples and practical applications of the theory. In that sense the book is also a useful working manual.

The subject coverage is very wide in its scope. While much of the publication is devoted to *fireworks* per-se, the authors have also included many entries related to rocketry, weapons technology, and theatrical pyrotechnics – even including non-pyrotechnic devices such as gas powered confetti cannons. No stone is left unturned; anything remotely associated with pyrotechnics warrants inclusion – there is even a reference to *Fireworks* magazine as a publication aimed at ‘fireworks enthusiasts and the trade’. On the same page, we have reference to a ‘fireworks store’ (US) as being ‘a permanent structure dedicated to primarily to the sale of fireworks to the general public’ (in other words, there is an attempt to define a ‘shop’!). I include this only to illustrate just how comprehensive the *Encyclopedic Dictionary* really is. It is not aimed at a particular level of understanding or educational status and this can be viewed as a positive feature – there is something for everyone. Readers interested in the history of fireworks will not be disappointed: there are many entries relating to fireworks that have recently disappeared for one reason or another – the ‘english cracker’ (jumping jack) and ‘devil amongst the tailors’ (candle mine) are just two such examples.

The publication is richly illustrated and the quality of the line drawings is good. Great attention has been paid to this aspect and pictures are used to support the text where appropriate. This is a great strength of the book, giving it strong visual appeal. Historical inclusions are a significant feature and some readers will particularly enjoy the extensive references to firecrackers and the wealth of ‘brand labels’ that have given rise to a popular collecting hobby in the USA.

The authors have gone to some lengths to ensure that the overall content is not exclusively American, which will broaden the appeal of the *Dictionary*. A large number of entries pertain to the UK – particularly in relation to legislative aspects. There is reference to the British *Pyrotechnic* Association – an example of where a little tidying up is needed. While there is a natural bias in favour of the ‘States’, there are a considerable number of entries that relate to the UK, Canada and Australia and comparisons are made where appropriate; the approach to hazard classification is a case in point.

At present, the *Encyclopedic Dictionary* is available in CD format. The complete ‘hard copy’ would run to over 1200 pages and occupy several volumes, at a correspondingly high price! Yet this would be the best way to view and enjoy such a monumental piece of work, which deserves to be published in the traditional way on that rather outdated medium – paper! It is hoped that the authors will be able to produce a limited number of hard copies for sale, at a sensible price, in the near future. The CD version is acceptable, but presents as a series of pdf files; it is not an interactive version with search facilities etc., which means that cross-referencing is not easy.

I would thoroughly recommend this work to anyone who has any interest in pyrotechnics. It has broad appeal – from the enthusiastic amateur to the seasoned practitioner and is presented in such a way that it is, in effect, a ‘text book’ and practical manual rolled into one. It is certainly encyclopedic in its coverage and goes way beyond the normal role and purpose of a dictionary. Students preparing for the BPA firer or senior firers examinations will find this publication to be of great value, and it should occupy a place on the shelf (or in the CD rack!) of anyone who is working in the field of pyrotechnics, whatever their area of specialisation.