

THE ILLUSTRATED DICTIONARY OF PYROTECHNICS

by K.L. and B.J. Kosanke.

A Review by Robert M. Winokur

This 138 page 8½ by 11" soft bound volume is a unique contribution to the literature of pyrotechnics. In addition to the two primary authors there are eight other contributors listed including Ettore Contestabile who is listed as a senior editor and contributor. I am in an unusual position in that I am among those listed as contributors, but have also been asked to write this review. My contribution was mainly as a proof reader, although I submitted a number of additional entries and suggestions.

The content of this volume is eclectic in the extreme. It contains entries on all aspects of fireworks, from regulatory definitions to Italian and Japanese shell making. It also contains a large variety of terms used in rocketry which are not normally seen in the fireworks literature. In addition there are many terms taken from high explosive science and technology, and some from stage and movie special effects. To illustrate the eclectic nature of this volume one only has to open the pages at random. For example, on pages 74 and 75 we find "M-80" defined: "One type of small but powerful exploding device...". In the next entry we find "Mach Diamonds: Diamond shaped features exhibited by the exhaust plume of rocket motors and engines"... Several entries later we find "Magnesium, Magnalium, Magnesium carbonate and Magnus Force". Terms are sometimes grouped together based on their being closely related in definition rather than strictly alphabetically. For example, the terms "Color Purity", "Color Species" and "Color Spectrum" come before "Colored Heart" and "Colored Smoke". Although this is unusual in a dictionary, it is an extremely functional aspect of the volume.

The entries are usually considerably more than brief definitions. On average an entry is composed of a short paragraph or more, and often includes one or more illustrations in the form of diagrams, drawings and graphs. In some instances a series of closely related entries may take up several pages. For example, if one searches for the term "Mortar", the following entries are found: Mortar (fireworks), Mortar (special effects), Mortar Burst, Mortar Length, Mortar Organization, Mortar Placement, Mortar Plug, Mortar Racks, Mortar Racks - Dense-Pack, Mortar Strength, and Mortar Trough. These eleven entries take about 2½ pages and contain a wealth of information on structure, physical properties, composition, safety, and functions of mortars.

Virtually all commonly, and many not so commonly, used pyrotechnic chemicals are included. The chemical entries are necessarily brief but usually contain sufficient information to equip a reader with a fundamental understanding of the chemical. The entries on a chemical provide its physical appearance (e.g., "a white powder" or "a silvery metal") and the major ways the chemical is used.

There exists an entire set of devices and terms that are used in the movie special effects industry that are not adequately addressed in this volume. Although common devices such as "bullet hit" are defined, many other commonly used devices and materials are not included, for example, "silver match" and "mortar hit". However, in this regard there is a major problem in writing a dictionary of this type. How should the names of commercial devices be treated? The authors have made almost no attempt to address this issue (and generally for good reasons). Their solution has been to exclude nearly everything that is strictly or primarily the name of a consumer device. (Although there are a few notable exceptions to this, especially in the explosive technology area such as "Nomatch" and "Igniter Cord", which are included.)

The fact that there may be multiple terms used to refer to the same phenomena, device or material is fully recognized in this dictionary, and there are often parenthetical synonyms found after an entry. Somewhat less fully recognized is the fact that there are sometimes multiple uses of the same term. When this is recognized there is a parenthetical comment indicating that the term is about to be defined in a certain context - say either "fireworks" or "rocketry" or "special effects" or "explosives". It is rare when a term is fully recognized to have more than one meaning within a broad context. A good example of this is the term "prime". At the term "prime", the dictionary directs one to "See Pyrotechnic Prime". At "Pyrotechnic Prime" a reasonable definition is provided. "Priming" however, is defined in a completely separate entry as a "process performed to help insure ignition or initiation" (emphasis mine). If the following sentence were to confuse you, I'm afraid that the dictionary would not immediately come to the rescue. "The prime turned out to be hygroscopic and a week later we were forced to prime all the fuses again with a newly formulated prime." It seems to me that the term "prime" is both a verb and a noun and it should be unnecessary to skip about the dictionary to discover this fact.

Reading this dictionary is an education in itself. I learned much that I found interesting, especially about explosive technology. I suspect purchasers will find that they will wish to use the volume not only when a question comes to mind, but will pour through it as any avid "pyro" does with all new sources of information. And since the Kosanke's preface makes it clear that this is the first of a series of efforts, and that readers are requested to submit suggestions for "additional terms to be included", I believe that the dictionary will become increasingly encyclopedic in scope and thus increasingly useful. This volume has no parallel and it belongs on the bookshelf of every person claiming to be interested in pyrotechnics. I will end this review with a suggestion for a new entry: "Pyro" - Slang for any individual with a strong interest and involvement in pyrotechnics, sometimes prefaced with "true" to distinguish dilettantes from the "real thing". RMW