Since the first edition of this book was published in 1971, a great deal has happened in safety management. The most publicized change was the advent of OSHA, the Occupational Safety and Health Act, which went into effect shortly after the first edition appeared. The most important change, which occurred in spite of OSHA, has been the “growing up” of safety. OSHA emphasized a refocusing of attention on physical conditions, and for a while we followed in this direction. Perhaps our refusal to continue focusing on conditions indicates the maturation of safety management. We know that physical circumstances alone do not cause accidents, and we have refused to let the passage of a federal law direct us back into nonproductive activities that have proved ineffective in the past.

In recent years we have made tremendous strides toward professionalism. We have defined our scope and functions as professionals, and we are now being recognized as certified safety professionals (CSPs) and as registered professional engineers in safety (PEs). Curricula for baccalaureate and graduate degrees in safety have been established, and many people in this country now hold master's degrees and doctorates in the field. Not long ago only a handful of schools taught safety; now many do. We have also developed principles to guide us. This is important, for without principles—without our own body of knowledge—we cannot consider ourselves professionals.

Another indication of our maturation is the development and open discussion of different philosophies of, and approaches to, the practice of safety management. In the past we could talk only about a traditional approach based on the “three Es” of education, engineering, and enforcement. We now discuss total loss-control approaches, operational-error approaches, systems safety approaches, psychological approaches, and sociological approaches.

The second edition, published in 1978, incorporated many significant changes. However, those changes were minor when compared to the new material in the third edition. Changes in the field of safety that occurred between 1971 and 1978 pale in comparison to those since 1978. In almost every facet of safety management, we think and act differently today than we did in 1978. In Search of Excellence, The One Minute Manager, and a host of other books presaged a management revolution that began in the early 1980s and totally changed the way safety had been managed.

While the passage of OSHA changed safety in the 1970s (we're not sure whether for better or for worse), the additional legislation that followed OSHA changed safety even more in the 1980s (we're still not sure whether for better or for worse). In the decades since OSHA's passage, the agency enforcing the law has changed its emphasis more times than the number of years it has existed.

Research since 1978 provides us with new insights and valuable lessons in safety management. The research on accident causation led us from the domino theory to multiple causation to human-error reduction concepts. The research on effective safety programming has challenged almost every facet of traditional safety program elements. Behavior research has finally been accepted by safety managers who gradually figured out how to use all that “soft” stuff. And using all that psychological
“soft” stuff led to breakthroughs—reductions of 40 and 50 percent in the accident record almost overnight.

Traditional roles changed: The supervisor began to fade from sight as the “key man” and the worker emerged as the key; middle management became infinitely more important.

The legal world changed markedly, too. Workers’ compensation concepts began to break down. Today we see executives indicted on criminal charges. In the 1960s, only serious injuries were looked at by management (and perhaps the insurance carrier). In the 1970s, OSHA investigated the serious injury. Since the 1980s, the state police are often the first on the scene of the serious industrial injury to investigate for criminal negligence and liability.

And, of course, some real attention has been focused on occupational safety. The Bophal, Chernobyl, and Challenger incidents put more focus on safety than ever before. Our corporate world leaders in safety have been fined millions of dollars by OSHA for “inaccurate” record keeping.

These things and many more prompted a major restructuring of the third edition, making it more limited but also more complete than the first two editions:

- More limited in that it looks at the systems approach to safety programming and only lightly touches upon behavioral elements.
- More complete in that the presentation of the systems approach is much more comprehensive than in the other editions.

This fourth edition is limited to the systems, or management approach, because it coincided with the revision of Safety Management—A Human Approach; the two have become companion books. The content of each and their interface is shown in an exhibit at the end of the Introduction (page xi).

This volume is not a comprehensive book on safety management. I have yet to see any book that is. What it does do is to look at one facet of safety management—the systems approach. It is laid out in six parts. First, we look at our background, the history of changes in safety management, and at our principles. Second, we examine the concepts and techniques needed to manage safety in an organization. Then we outline some of those elements of a safety system: In Part III we discuss the elements that are proactive—what we must and can do before the accident—while Part IV looks at the reactive elements of the safety system; Part V then reviews other equally important elements. Finally, appendix material provides fault trees for a safety system and data for ergonomic design and analysis.

This edition of the book reflects the fundamental changes in our knowledge and beliefs that have taken place in recent years. The first edition preached line accountability as the key to safety performance, and this edition does the same. However, we know more now about measurement, and since measurement is the key to accountability, it must be discussed in more detail. Effective measurement of the line organization’s safety performance is the most important item in the safety program. With effective measurement you get motivation, performance, and results. Without effective measurement, you get none of these.

The ideas put forth in this book are not original. Ideas rarely are—they are transmitted from person to person and they grow in the process. This book attempts merely to record current ideas and assess their value. The thoughts expressed come from many sources and are the product of years of collecting, developing, polishing, teaching, and managing. Certain individuals, however, have contributed heavily to the material presented in the book.

D. A. Weaver helped develop many—perhaps most—of the ideas in this book. He and I worked closely for many years.

There are many others who are quoted or cited throughout the book. They are mentioned in the applicable chapters. My thanks to all of them.

DAN PETERSEN