Heinrich Revisited: Truisms or Myths

SECOND EDITION

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For at least 50 years, safety professionals who have wanted to move the state of the art forward in the practice of safety and to have the practice considered as a profession have questioned the validity of some of the premises on which their practice has been based. Several of those premises are offered by H. W. Heinrich in the four editions of his book *Industrial Accident Prevention: A Scientific Approach*. As safety professionals have published articles and included chapters on the subjects in books, they have recognized the importance of eliminating from the practice of safety those premises that, upon examination, would be deemed invalid. Considerable progress has been made, but there is much more to do.

I was one of those authors. One of my papers in which I reviewed the origin of the Heinrichean premises—how they changed over time and their validity—was published in the October 2011 issue of *Professional Safety*, the journal of the American Society of Safety Engineers. Its title was “Reviewing Heinrich: Dislodging Two Myths from the Practice of Safety.”

An outcome of that publication was the awareness of how deeply embedded some of Heinrich’s premises are in the minds of safety practitioners and the personnel they advise. This is a serious problem. The practice of safety will not be considered a profession as long as myths are the basis for the counsel many safety practitioners give to management and operating personnel.

Colleagues have suggested that what I wrote previously needs reinforcing because they continue to encounter numerous situations in which Heinrichean premises are cited as fact, with the resulting recommended preventive actions being inappropriate and ineffective. Although some safety practitioners may not recognize Heinrich’s name, his misleading premises continue to be perpetuated, as they are frequently cited in speeches and papers.
The practice of safety is one of the many occupational specialties in which myths have become standardized and deeply embedded. Our current situation is described well in *The Standardization of Error* by Vilhjalmur Stefansson.

Stefansson makes the case that even without adequate supporting evidence, people are willing to accept as fact what is written or spoken. When studies show that a supposed fact is not true, dislodging it is difficult because that belief has taken root in the minds of people and, thereby, become standardized. Stefansson pleads for a mindset that accepts as knowledge only that which can be proven and cannot be logically contradicted. His convincing assertion applies to all fields of endeavor except for mathematics.

**CHANGES TO THIS EDITION**

The first edition of this book was published in 2002. Since then, references in safety-related literature to the subjects covered in two of the chapters in the first edition are notably infrequent. For that reason, I do not include those chapters in the second edition. They were:

- Chapter 8: Principles of Accident Prevention, which pertained to Heinrich’s three “principles of scientific accident prevention”; and
- Chapter 9: Axioms of Industrial Safety, in which Heinrich’s 10 axioms were listed.

The chapters from the first edition that appear in the second edition have been updated, they present new material, and a more precise approach is taken in detailing the inadequacy of the subjects discussed.

Some readers of the first edition of this book suggested that, while the analysis and logic presented were supportable, they would have liked more guidance on current thinking and practice. This second edition responds to that critique, and the following new chapters have been added:
• **Chapter 8: Heinrich on Incident Investigation**
  Heinrich’s approach to incident investigation still dominates in some organizations even though it is inadequate. Incident investigation is receiving more attention in the practice of safety because studies show that, usually, the process is not done well.

• **Chapter 10: Currently Accepted Premises**
  Examples are given of premises that have evolved and become accepted in the practice of safety in the past several years.

• **Chapter 11: Avoiding and Reducing Human Error**
  I analyze the transition taking place whereby practitioners in human error prevention more frequently suggest that recognition be given to the source of human error, which is in the design of the workplace and work methods.

• **Chapter 12: ANSI/AIHA Z10-2012**
  This chapter highlights the revision of the Occupational Health and Safety Management Systems standard published in 2012, which outlines recommended occupational health and safety management systems.

• **Chapter 13: Prevention through Design: The Standard**
  Guidance is given pertaining to the new standard on prevention through design that was adopted in 2011.

• **Chapter 14: Macro Thinking: The Socio-Technical Model**
  This chapter promotes macro thinking as opposed to micro thinking—the latter being common in the practice of safety. Also, a socio-technical model for an operational risk management system is presented.

• **Chapter 15: Guidance on Incident Investigation**
  This chapter gives considerable hands-on detail on making incident investigations.

This second edition provides guidance for safety practitioners on eliminating the myths that have been prominent in the practice of safety and includes material that can serve as the basis to improve the advice they give on accident prevention systems.