Introduction

The papers in this book address a range of topics concerned with snow skiing and injuries resulting from snow skiing. The topics discussed include biomechanics and injuries of the knee; biomechanics in cross country and alpine skiing; ski boots; ski release bindings including testing, their adjustment and electronic designs of bindings; epidemiology of alpine skiing injuries in Japan and Germany; spinal and other injuries; use of helicopter evacuation in first aid; and the efforts by the International Ski Association (FIS) to control injuries in competitive skiing. These papers were presented, along with more than 35 others, at the Sixth International Symposium on Skiing Trauma and Skiing Safety held in Naeba, Japan, 22–27 April 1985. The meeting was co-sponsored by ASTM Committee F-27 on Snow Skiing and the International Society for Skiing Safety (ISSS).

ASTM turned its attention to standards for skiing in 1972 with the formation of a subcommittee, F8.14, to the ASTM Committee F-8 on Sports Equipment and Facilities. The ISSS was founded in 1974 to provide a forum for communication of original findings, studies, research, observations, and experiences relating to safety in skiing and in the broadest context. Members are represented through all professional and practical associations with skiing. The first meeting of the ISSS was held at Riksgränsen on the border of Sweden and Norway about 240 km north of the Arctic Circle. The organizer of the meeting and the President of the ISSS is Dr. Ejnarr Eriksson of the Karolinska Hospital in Stockholm. The subsequent conferences, held about every two years, were held in the Sierra Nevada, Spain, in April 1977; in Queenstown, New Zealand, in July 1979; in Bormio, Italy, in June 1981; and in Keystone, CO, USA, in May 1983.

The proceedings of the first five ISSS symposia were published and form an important body of literature on skiing safety; they can be located through contact of Dr. Eriksson of the ISSS. The first symposium was published in Orthopedic Clinics of North America, Jan. 1976. The proceedings of the second symposium was entitled Skiing Safety II, published by the University Park Press, Baltimore, MD, 1977. The proceedings of the third and fourth volumes, entitled Skiing Safety III and Skiing Safety IV, were published by the Technischer überwachungs-Verein Bayern of Munich, 1982. The fifth volume, entitled Skiing Trauma and Skiing Safety, was the first published by the ASTM as Special Technical Publication (STP) 860, April 1985. That volume and the current one are refereed publications building on the earlier four volumes. These books form the
foundation for what is known about skiing injuries and describe the current thinking and standards for research and development in the skiing injury field. ASTM will continue with the publication of the refereed symposium volumes, the next being the Seventh ISSS-ASTM Symposium held at Chamonix, France, in May 1987.

The symposia sponsored by the ISSS and ASTM bring together those interested in skiing safety in an open forum allowing free expression and an interchange of ideas. The participants included internationally recognized experts representing equipment manufacturers, engineers, physicians, academics, biomechanicans, statisticians, ski area operators, ski retailers, ski patrollers, instructors, and a few skiers. Only through such a regular international meeting can the changing patterns of the skiing injury problem be addressed so that our common goal of making skiing a safer and more satisfying activity can be achieved.

The articles presented in this book represent the considered opinion of the individual authors based upon their studies and investigations. The reader must be aware that these are research papers on topics that are still developing. The papers in this volume have been reviewed by the peers of the author, meaning that the standard of the presentation and the work behind the paper are sufficiently high to merit presentation of the author's work, ideas, and opinions. It does not mean that the conclusions of the paper represent the opinion of the reviewers, ASTM, ISSS, or the editors. Most research opinions presented in this volume should be expected to evolve in future volumes. It was Albert Einstein who said, "The most a scientist can hope for is that his theory will become a special case of a more general theory."

This book and the former ISSS-ASTM volumes are excellent places to start if one wants to understand what is known about skiing and skiing safety; they represent the most substantial body of authoritative literature on skiing.

C. D. Mote, Jr.
University of California
Berkeley, CA 94720;
editor

Robert J. Johnson
University of Vermont
Burlington, VT 05405;
editor