Safety in Ice Hockey

Castaldi/Hoerner, editors

ASTM

STP 1050
NOTE
The Society is not responsible, as a body, for the statements and opinions advanced in this publication.

Peer Review Policy
Each paper published in this volume was evaluated by three peer reviewers. The authors addressed all of the reviewers' comments to the satisfaction of both the technical editor(s) and the ASTM Committee on Publications.

The quality of the papers in this publication reflects not only the obvious efforts of the authors and the technical editor(s), but also the work of these peer reviewers. The ASTM Committee on Publications acknowledges with appreciation their dedication and contribution of time and effort on behalf of ASTM.
Foreword

The symposium on Safety in Ice Hockey was held on 27 Oct. 1987, in Montreal, Quebec, Canada. The event was sponsored by ASTM Committee F-8 on Sports Equipment and Facilities and by its Subcommittee F08.15 on Hockey; it was also cosponsored by the Hockey Equipment Certification Council. Robin Burns, I-TECH Sports Products, Inc., presided as chairman of the symposium, and C. R. Castaldi, University of Connecticut Health Center, and Earl F. Hoerner, Neuromuscular Diagnostic Service, served as editors of this publication.
## Contents

**Overview**

1

### Epidemiology

- The Critical Role of Epidemiological Studies in Assessing the Frequency and Causative Factors in Sports-Related Injuries—Kenneth S. Clarke 9
- Epidemiology of Eye Injuries in Hockey—Tom Pashby 29

### Rules, Officiating, and Risk Factors

- Rule Changes: Their Effect on Safety in Ice Hockey—M. Rudolph 35
- The Effect of Rules and Officiating on the Occurrence and Prevention of Injuries—Richard Parayre 37
- Assumption of Risk—Hockey Injuries—C. J. Abraham, Malcolm Newman, Stanley Shulman, and James Pugh 44
- Eye and Face Injuries in High School Hockey: Cutting Down the Risks—Frank A. Mastrangelo 52
- A Proposal for the Use of the Half Face, Clear Plastic Visor for National Collegiate Athletic Association Hockey—S. Walsh 55
- The Ice Hockey Face Guard: Health Care Costs and Ethics—Paul F. Vinger, Judith D. Bentkover, Robert Sullivan, and Jesse G. Kalin 58
- The Quebec Sports Safety Board—Its Functions, Powers, Structures, and Activities—Guy Regnier 63
BODY AND KNEE INJURIES


Effects of Body-Checking in the Pee-Wee (12 and 13 Years Old) Division in the Province of Quebec—Guy Regnier, Roger Boileau, Gaston Marcotte, Raymond Desharnais, Rene Larouche, Dany Bernard, Michel-Andre Roy, Pierre Trudel, and Daniel Boulanger

Development of a Knee Injury Protective Brace for Ice Hockey Players—Yelverton Tegner, Bengt Odelgard, and Guy Johnson

PLAYING EQUIPMENT

Safety Factors in the Modern Ice Hockey Skate Blade—G. Couture

Kinematic Analysis of the Talocrural and Subtalar Joints During the Hockey Skating Stride—T. B. Hoshizaki, G. Kirchner, and K. Hall

Ice Hockey Protective Equipment—Its Value, Capabilities, and Limitations—Earl F. Hoerner

The Dynamic Role Played by the Ice Hockey Stick—Earl F. Hoerner

Research and Development of Hockey Protective Equipment—A Historical Perspective—L. Clement and D. Jones

PLAYING FACILITIES

Design of Hockey Rinks and the Development of Standards—M. Keating and R. Norris

Natural Ice Facilities—Arthur H. Mittelstaedt, Jr.

HEAD AND FACE PROTECTION

The Canadian Standards Association and the Evolution of Head and Face Protection in Canadian Hockey—James L. Dixon

The Development of Head, Face, and Neck Protectors for Ice Hockey Players—Bengt Odelgard

Impact of Full Face and Visor Type Hockey Face Guards—Terrance A. Smith and Patrick J. Bishop
Development of an Impact Testing Method for Protective Helmets—
G. I. JOHNSON

The ASTM F 1045-87 Standard Performance Specification for Ice Hockey Helmets—C. A. MOREHOUSE

INDEXES

Author Index

Subject Index