

STP 1397

***Skiing Trauma and Safety:
Thirteenth Volume***

*Robert J. Johnson, Paolo Zucco, and
Jasper E. Shealy, editors*

ASTM Stock Number: STP1397



ASTM
PO Box C700
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Printed in the U.S.A.

Contents

Overview

vii

SKIING AND SNOWBOARDING EQUIPMENT

- On-Slope Evaluation of Release Bindings for World Cup Freestyle Skiers—**
S. HEIR, S. DIMMEN, AND A. EKELAND 3
- Minimum Retention Settings: Examining Prediction Methods—**I. S. SCHER AND
C. D. MOTE, JR. 11
- Design of a Learning Binding for Alpine Skiing—**D. W. GULICK AND C. D. MOTE 30
- Variable Influence in On-Snow Ski Boot Pressure Measurements—**
D. A. GOODWIN AND K. FORD 50
- Development and Validation of an Apparatus for Determining Snowboard
Boot Stiffness—**K. TORRES, J. J. CRISCO, AND R. M. GREENWALD 68

EPIDEMIOLOGY

- Injuries in Alpine Skiing, Telemarking, and Snowboarding—**A. EKELAND AND
A. RØDVEN 87
- Evolution of ACL Ruptures in French Ski Resorts 1992–1999—**J.-D. LAPORTE,
M.-H. BINET, AND D. CONSTANS 95
- Update on Injury Trends in Alpine Skiing—**R. L. JOHNSON, C. F. ETTLINGER,
AND J. E. SHEALY 108
- Ski Injury Epidemiology: A Short-Term Epidemiology Study of Injuries with
Skiboards—**R. M. GREENWALD, M. NESSHOEVER, AND M. D. BOYNTON 119
- A Two-Year Study of Skiboards—**J. E. SHEALY, C. F. ETTLINGER, AND
R. J. JOHNSON 127

Rates and Modalities of Death in the U.S.: Snowboarding and Skiing Differences—1991/92 through 1998/99— J. E. SHEALY, C. F. ETTLINGER, AND R. J. JOHNSON	132
Injuries and Risk Taking in Alpine Skiing— C. GOULET, G. RÉGNIER, P. VALOIS, AND G. OUELLET	139
KNEE BIOMECHANICS	
Laboratory Simulation of Biomechanical Knee Behavior under Skiing and Falling Loads— S. FREUDIGER	149
Critical Load Cases for Knee Ligaments at Skiing—An Engineering Approach— S. FREUDIGER AND N. F. FRIEDERICH	160
SPECIFIC PROBLEMS	
On-Slope Helicopter Evacuations of Seriously Injured Alpine Skiers and Snowboarders— R. CADMAN	177
Arthroscopically Assisted Operative Treatment of the Tibia Plateau Fractures from Downhill Skiing— T. YAMAGISHI, K. FUGII, M. TSUJI, AND D. KUROSAKA	183
Indexes	193