

Winter Sports Supplement

Due to the rapid development of skiing into a sport participated in by tens of thousands, the total number of skiing injuries has reached such dimensions to warrant studies that will lead to the reduction of the injury rate. The increase in the total number of injuries is not the only factor of interest.

There has also been a significant difference in the type of injuries incurred, and these seem to be clearly differentiated between adults and children. In children, the occurrence of injuries to the lower extremities has shown very little change. In adults, however, their occurrence has sharply decreased and has been replaced by more serious injuries to the upper extremities and skull.

Some causative factors are

"The increase in the total number of injuries is not the only factor of interest."

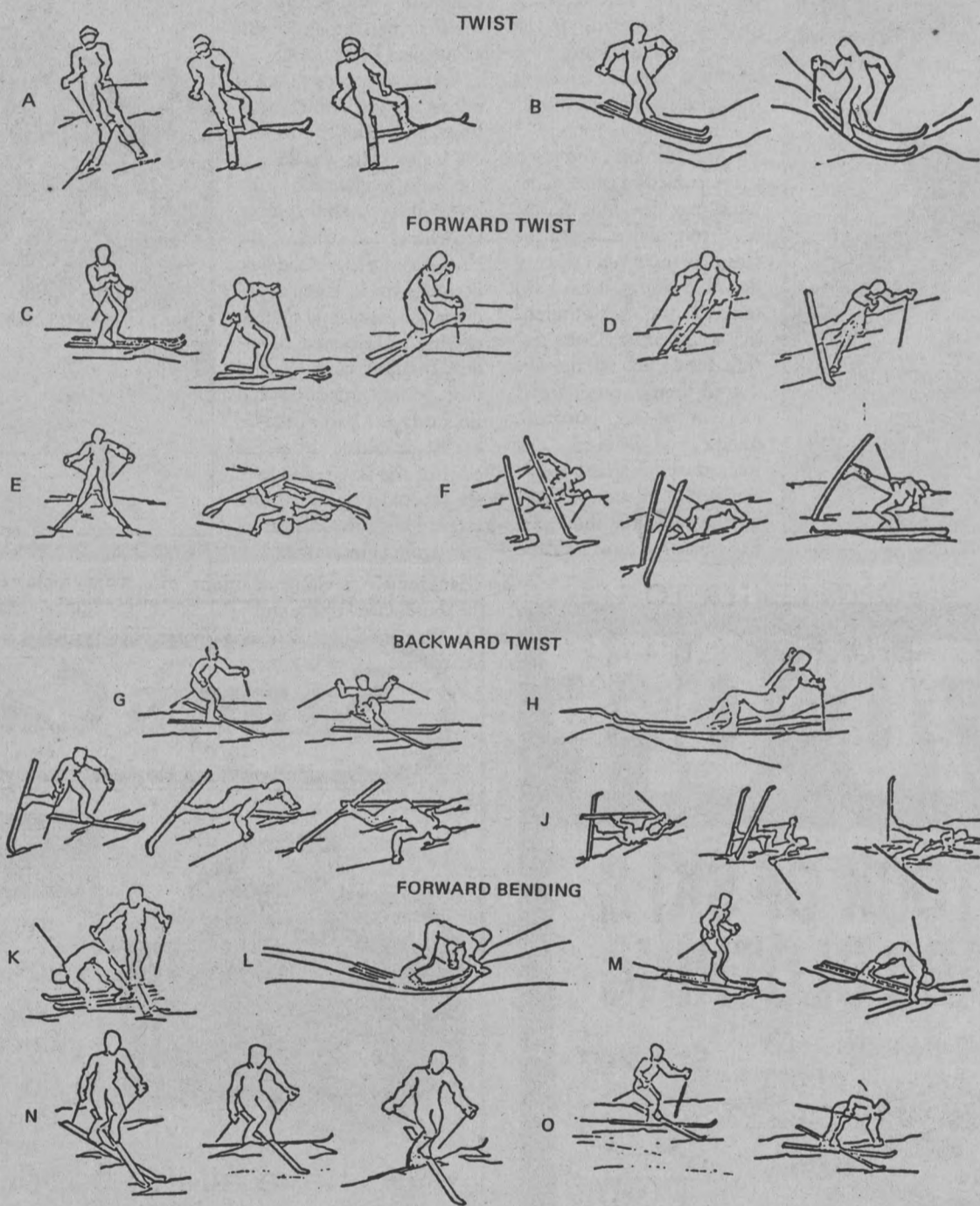
the condition and overcrowding of the ski slopes and changes in skiing technique due to developments in skiing equipment. For this reason, the types of injuries most commonly observed from 1958-1960 will be scrutinized, because during this time safety bindings were used by very few skiers.

Statistics show that safety bindings have caused a significant reduction in the number of spiral fractures observed in the lower leg. However, after the ski has been released, it becomes the potential cause of an accident to another skier.

Ankle straps made from either a firm material or from an elastic material should be used so that the skier will retain his ski. These straps can also cause an injury if the skier falls, because the skis often whip ar-

Skiing Safety

Hard-to-read research prepared for you, the winter sports fan.



ound unexpectedly, the edges thus cutting and bruising the fallen skier. In some cases, these injuries have proven to be fatal. In an effort to reduce this danger, the "Ski Stopper" was developed. When the skis are released from the boot, a brak-

ing mechanism that should prevent the skis from sliding further is triggered.

Modern skiing technique demands that the foot be firmly attached to the ski. This requires a perfectly fitting high boot that is firmly bound to the ski so that the

heel cannot be lifted. In the past, this was possible. The short ski boots used years ago came just above the malleoli and were made of soft leather. When the skier had to stop suddenly the line of force ran through the ankle joint causing dislocation or

fractures.

The use of hard plastic boots causes a total arthrodesis of the foot so that even minute movements in the joints are impossible to perform. However, the use of new materials and style has led to the observation of

a new family of fractures in different areas of the foot and lower leg. Sudden stops, such as those caused by skiing into an obstacle or by the boot hitting the slope after the ski has been released, result in the now typical "boot top" fracture. It is related to the hypomochlion works on a "locus minoris resistentiae" of the metaphysis. Because of this, the "boot tops" fracture typically appears as a transverse, oblique, or short spiral fracture, but it has also been observed as a compound fracture in the distal third of the lower leg.

Articular fractures of the pilon tibia result when compressive, bending, and shear forces occur. Individual forces acting on the lower leg during a sudden stop can be represented as a vector,

"Articular fractures of the pilon tibia result when compressive, bending, and shear forces occur."

which through its use can explain how each type of fracture occurred. Increasing the height of the ski boot from 20 cm to 25 cm does not significantly change the force vectors acting during a sudden stop, although the bending force is reduced by 6 percent to 7 percent. The greater height also moves the location of the fracture a few centimeters proximally to bring it into the cortical region. Some alteration in the forces acting during a sudden stop would be more helpful in injury prevention than increasing boot height.

The primary force acting on the tibia when it is perpendicular to the ground is reduced as the tibia is inclined forward. When the tibia makes an angle of 30 degrees to the ground, the

See OUCH, p.2A

To the extreme! To the extreme!

OUCH

Continued from p.1A
 pressure is reduced by approximately 13 percent. Pressure can be reduced further by increasing the height of the boot by 5 cm; then pressure on the tibia when it is inclined at an angle of 45 degrees is reduced by 30 percent. During an abrupt stop, the lower leg should be able to rotate forward to decrease the angle between the anterior tibia and the ground in order to reduce bending forces acting on the tibia. The sheer and compressive forces that occur at this time are not affected by this rotation.

The majority of ski boots are 20-30 cm high, with a forward inclination of 15-18 degrees and an elastic component of approximately 10 degrees. Some boots have a hard, stable lateral joint built in. The newest products have, in addition, a shock absorber over the instep. Boot tops have become increasingly softer, so that the occurrence of fractures of the distal tibia will become less frequent.

Because of its shape, the ski pole is a relatively dangerous piece of sports equipment. The most common injuries occur during abduction of the thumb. When the skier holds the



From the Warren Miller film, "Snowriders 2." Photo by Max Bervy.



From the Warren Miller film, "Snowriders 2." Photo by Mark Weaver.

pole tightly, his thumb is slightly abducted. If he should fall forward, the thumb is abruptly hyperextended and abducted, resulting in a strain or rupture of the first MP joint and often accompanied by lesion of the joint capsule. This is the most common injury of the thumb incurred during downhill skiing; it has been referred to as "skier's thumb" in the literature. Compression forces act on the abducted thumb, causing dislocation of the proximal, middle, and distal joints or fractures of the first metacarpal. The fractures characteristic of this force are transverse fractures near the

base, osteoepiphysiolysis of the first metacarpal, as well as Bennets Fracture.

When the pole gets stuck during a run, strong rotational and transactional forces occur. The shoulder is the most vulnerable joint under these conditions, but sometimes the hand or the elbow is injured. As the pole becomes stuck, the arm abducts and outwardly rotates, causing a dislocated shoulder. In most cases, luxatio omi occurs anteriorly and inferiorly as a part of the labrum glenoidale from the edge of the bony capsule of the shoulder joint is torn away. Here, the danger of relaxation is increased.

A small although serious proportion of ski injuries occurs on the casualty list when the body is struck by the pole or a fragment of the pole. Injured parts include the facial bones, the eyes, the ribs, and the sternum. A fatal puncture wound to the neck has been observed, caused by a pole grip after collision. The post mortem autopsy of this person revealed bleeding in the musculature of the neck and a thrombosis of the internal carotid artery. Perforation wounds of the chest wall and heart have also been observed.

Serious injuries do not generally occur when the

grip of the pole strikes the chest as long as the deformation of the chest is less than 4 cm. This involves a pressure of approximately 3 kg/cm squared, or, within an area of 20 cm squared, a force of 60 kg/cm squared.

In conclusion, approximately 12.5 percent of all skiing injuries are caused by the equipment. Of these, 46 percent are caused by the poles, 38 percent by the boots, and approximately 14 percent by the skis themselves. It is hoped that an alliance of science and industry can improve the equipment more in order to reduce the number of skiing injuries occurring each year.



From the Warren Miller film, "Snowriders 2." Photo by Mark Weaver.

20% TO 70% OFF

ENTIRE STOCK OF SKI & SNOWBOARD CLOTHING

- Snowboard Sales & Rentals
- Ski Rentals
- Pro Ski Tunes & Repairs
- Snowboard Tunes



Women's Black Stretch Ski Pants
\$99.99 Reg. \$149.99

Waterproof Ski Gloves
\$24.99 Reg. \$34.99
GORDINI

EUROPA Men's and Women's Ski Bibs
\$59.99 Reg. \$95 Youth \$49.99

COLUMBIA Snowboard pants
\$59.99

PASSPORT NOWON
Snowboards, Snowboard Boots & Bindings on SALE!

We've Got What You Want

Goleta Sports

Lovelace & Sons Inc.

5775 Calle Real • Goleta • 964-8703

HOURS • M-W 10-6PM, Th-FRI 10-7PM, Sat 9-5PM, Sun 11-5PM

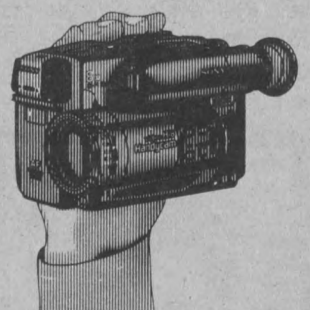
Samy's Camera



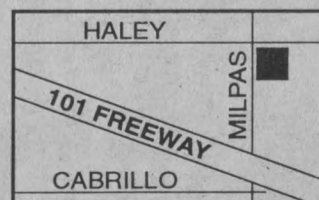
Variety of Student Discounts Available

- 20% off photo finishing
- 20% off camera rentals
- Discount on all photo supplies
- Art Studio 120 Upper Division Photography

- We have all the supplies for UCSB Photography Classes
- Cameras, Film, and Accessories
- Binoculars • Dark Room Supplies
- 24-Hour Quality Film Processing
- Video Cameras and Accessories
- Video Camera Rentals
- Videotape Duplications



Only 10 Minutes from Campus



SANTA BARBARA

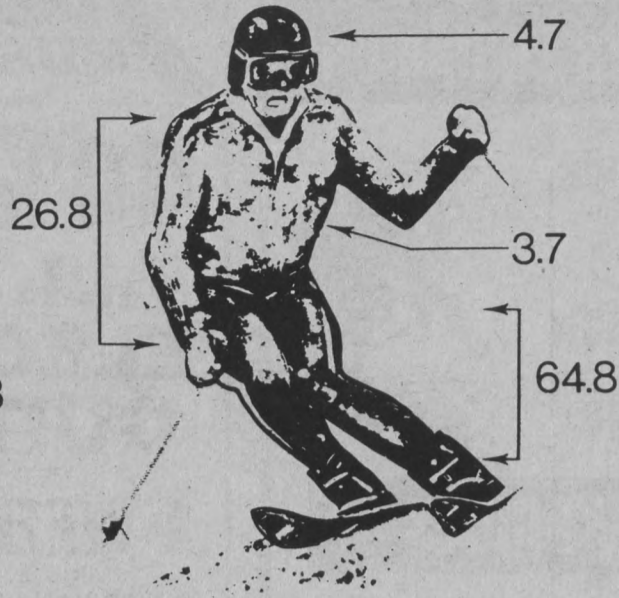
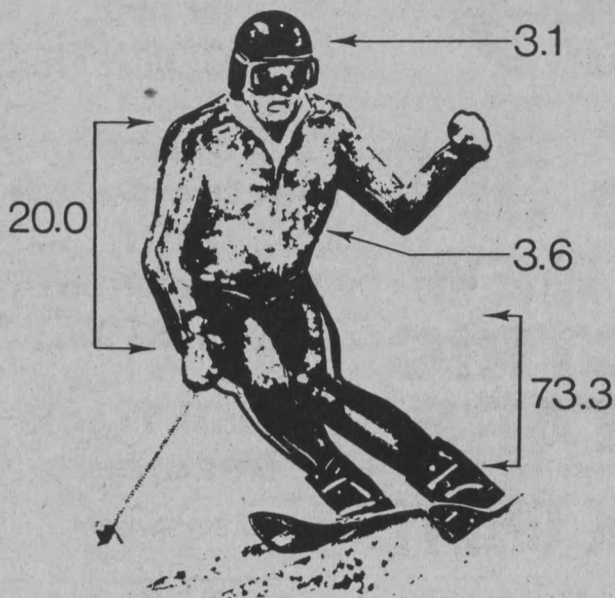
910 East Haley St.
963-7269

STORE HOURS

M-F 8-6
 Sat 9-5

73/74

75/76



That Hurts!

Distribution of ski injuries, 1973-74 and 1975-76 seasons, expressed as percent of total for each year. As can be seen, an increase in the number of injuries of the upper extremities has taken place.

WOODSTOCK PIZZA Woodstock's Great Specials!
All Your Favorites At All Time Low Prices

Student Special
\$7.99 LARGE 1 topping Pizza

presents... **Rubes**
By Leigh Rubin

"All school year long - just flash your student ID."
Must mention when ordering
Tune In Here For Tomorrow's Special!

THE WRITER

THE DIRECTOR

THE STUNT DRIVER

How cops in L.A. fulfill their Hollywood fantasies

Woodstock's Pizza 928 Emb. del Norte 968-6969

NISSAN PATHFINDER PRESENTS
WARREN MILLER'S SNOWRIDERS 2
THE JOURNEY CONTINUES

Snowboarding! Skiing! Comedy! Adventure!
TUES, NOV 18 • UCSB CAMPBELL HALL
7 & 9 pm • Sponsored by UCSB CAC

WED, NOV 19 • ARLINGTON THEATER
7 & 9:15 pm • 1317 State St., Santa Barbara

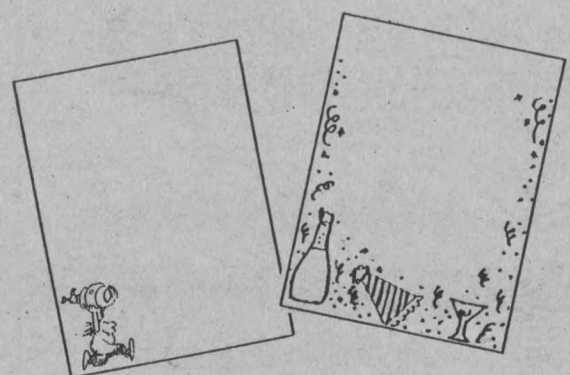
SAVE 50¢! Advance DISCOUNT Tickets at Copeland's, Mountain Air, Goleta Sports & Tempo Music (IV)

THE TERRITORY AHEAD **Budweiser**
KRUZ 103.3 FM The 1st-Cumulus Variety Station
Win a Ski Vacation to SIERRA SUMMIT
Details in the Nexus

Do you have friends, roomies, or significant others who are celebrating a birthday?

Show them you care with a personalized greeting from You in the Classified Birthday Box! Different borders to choose from — and the greeting is in your words — your artwork! All for \$3.25!

Come to the Nexus Ad Office to make the most unique birthday greeting on campus for your friends! Storke Tower, Room 1053, 893-3828.



Happy Birthday to You ...

AGGRESSIVE SOCCER CO.



RECEIVE 10% DISCOUNT WITH AD

- Full Line of Men's and Women's Equipment
- Original Jerseys from All Over the World
- Lettering and Logos
- Shoes
- Socks
- Goalkeeper Accessories

720 N. MILPAS SANTA BARBARA, CA 805-963-4919

We Buy and Sell Used and New Sports Equipment

New and Used Snowboards,
Skis, Boots, and Clothing
New Vans Snowboard Boots
Switch Auto-Lock Bindings



ALL AT LOW, LOW PRICES

Used Surfboards, Skateboards,
Rollerblades

We can outfit you for any sport, all year long,
at the lowest possible prices.

Reduce your cost by trading in your used equipment!



**WE BUY • SELL • TRADE • CONSIGN
USED AND NEW SPORTS EQUIPMENT**

Store Hours: Mon.-Sat. 10-8pm, Sun. 11-6pm
4850B Hollister Ave. • 967-9889
Turnpike Shopping Center—at the corner of Turnpike and Hollister.



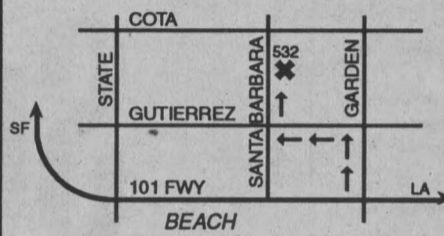
Serving Santa Barbara Since 1969

**40% OFF
ALL NEW
ELECTRIC
GUITARS**
except Music Man

1 WEEK ONLY!

MUSIC MAN 4 & 5-String Basses
Fretted & Fretless in Stock

Last MUSIC MAN Van Halen
Guitars Are Here!



Hours: Mon-Sat 11-6

Check us out on the WEB
<http://www.west.net/~fancymus/>

963-0987

**532 SANTA BARBARA ST.
SANTA BARBARA**



No Unreasonable Offers Accepted

**BIGGEST
IN THE
TRI-COUNTIES**

Acoustic/
Electric Guitars
with
built-in Pickup
from \$199

Multi Track
Recorders
from \$299

Multi Track
Processors
from \$149

All Wireless
Systems
at 40% OFF

Tons of
New & Used
PAs and
Sound
Equipment

Strings & Cords
at 2 for 1*

*e-Ball

WINTER GETAWAYS

Like it Cold?

Ski Tahoe \$345
3 Nights Horizon Hotel, RT Air from LAX,
2 Day Lift Tickets

Ski Aspen \$600
3 Nights Hotel, RT Air from LAX, 2 Day Lift Tickets

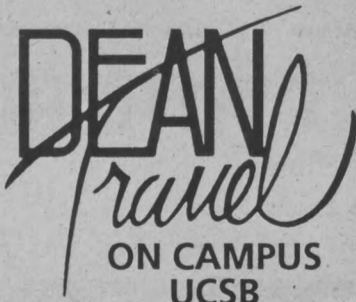
Ski Park City Utah \$556
4 Nights Hotel, RT Air from LAX, 4 Day Lift Tickets

Or HOT?

Cruise Mexico \$479
7 Day Cruise Includes All Meals & Entertainment

Sandals Jamaica \$1279
6 Nights Hotel, RT Air from LAX, All Meals, Drinks,
Sports & Entertainment

Maui \$649
6 Nights Hotel and RT Air from LAX



Air, Eurail, Cruises
& More! Call Us!

2211 UCen
M-F 9-5
968-5151

CST1072800/10

LEARN TO SCUBA DIVE

\$149⁹⁵

*Simply the Easiest and Best Course
Available in the Santa Barbara Area*

- Tailored Scuba means on your schedule and your pace
- No crowded classes; learn in our 90° indoor pool
- Flexible schedules: days, evenings or weekends – you decide!
- Includes unlimited access to our training pool, all text and planning materials, and use of scuba and environmental protection equipment
- STUDENT DISCOUNTS**



**CALIFORNIA
WATERSPORTS**

5822 Hollister Ave. (next to 7-11)

(805) 964-0180