

Accessible Recreation

Tools and techniques for
snowboarding and whitewater
rafting

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February 17th, 2009



Snowboarding instruction

- Snowboarding is a “gravity sport”
- PSIA/AASI* defines the “American Teaching System”:
 - Teaching Concepts
 - Learning Concepts
 - Movement / performance concepts

* PSIA: Professional Ski Instructors of America
AASI: American Association of Snowboard Instructors

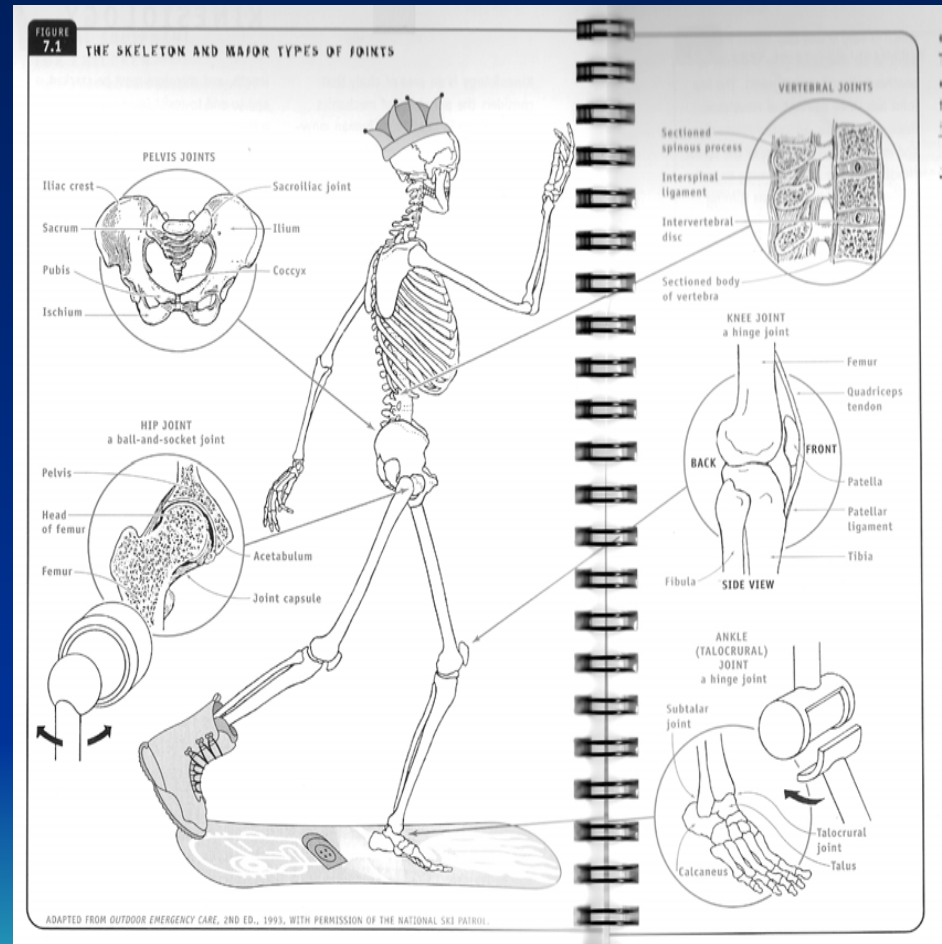
Movement / performance concepts

- Biomechanics
- Board / interface mechanics
- Board performance



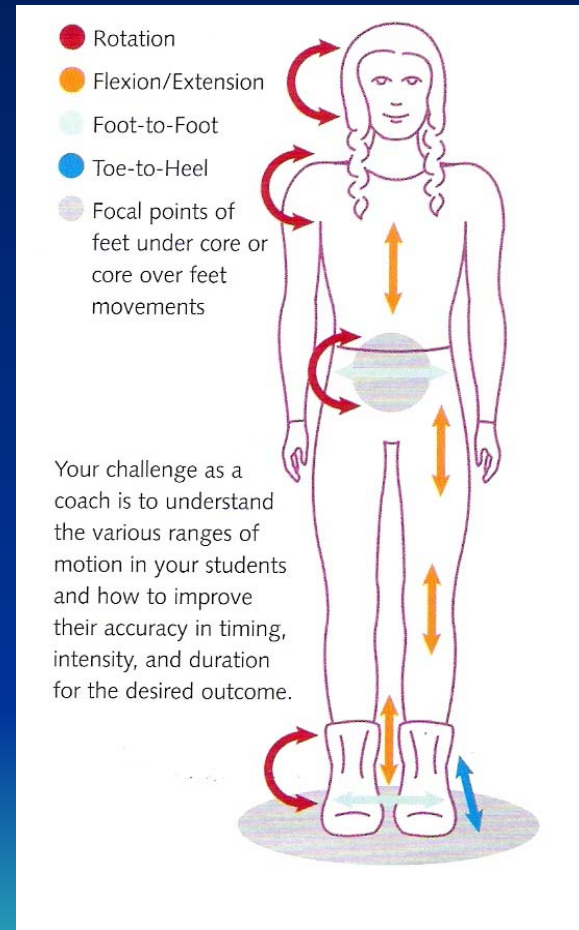
Biomechanics

- Types of joints
 - Fused
 - Skull, pelvis
 - Hinge
 - Knee, elbow
 - Ball-and-socket
 - Hip, shoulder
 - Complex / combination
 - Ankle, wrist, spine



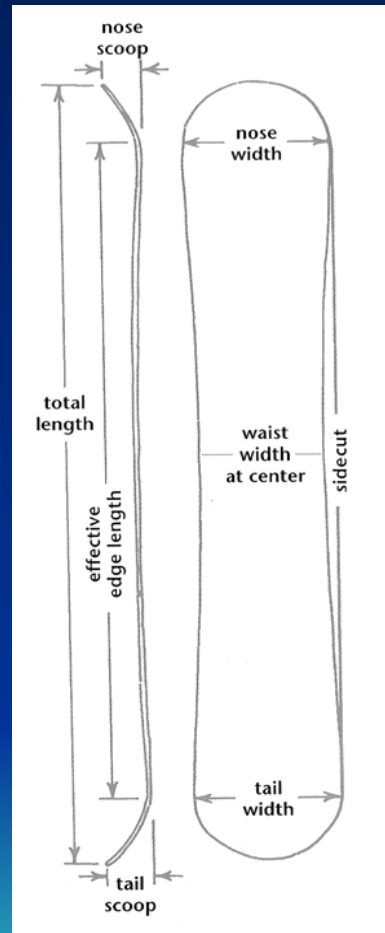
Biomechanics

- Body movements
 - Rotation
 - Flexion / extension
- Pressure onto the board is achieved through each foot by body movements, and by reactive pressure from the snow
- Control results from a combination of gross and fine muscle movement



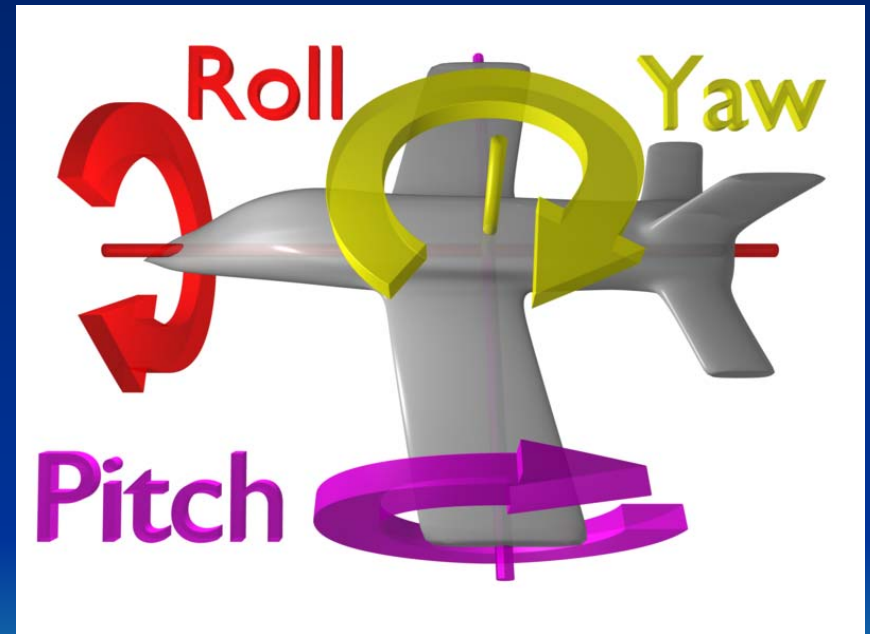
Board / interface mechanics

- Board
 - Length
 - Sidecut
 - Stiffness
- Bindings
 - Stance width
 - Stance angles
 - Forward lean
- Boots
 - Stiffness

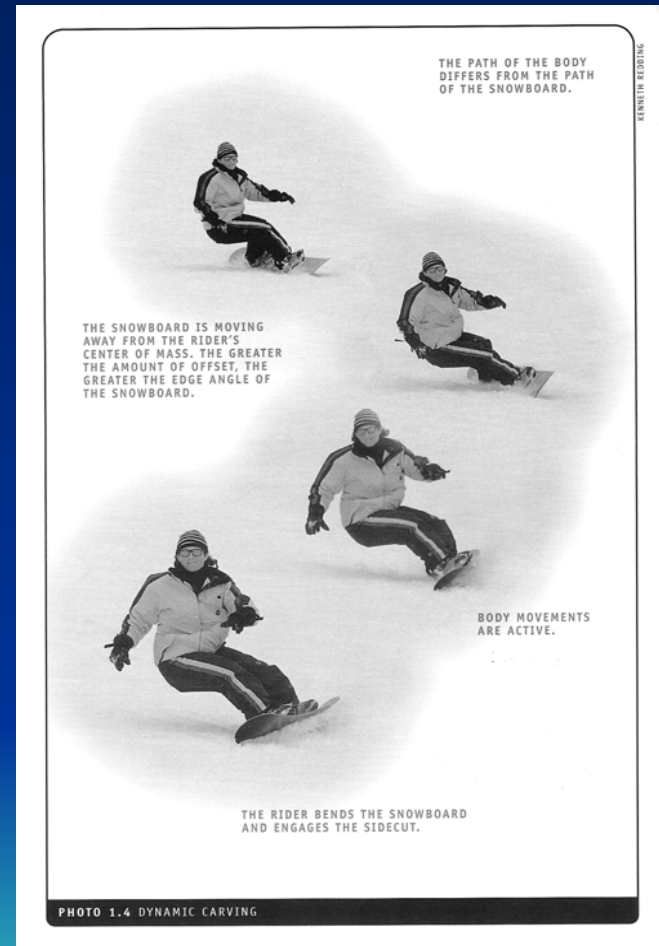
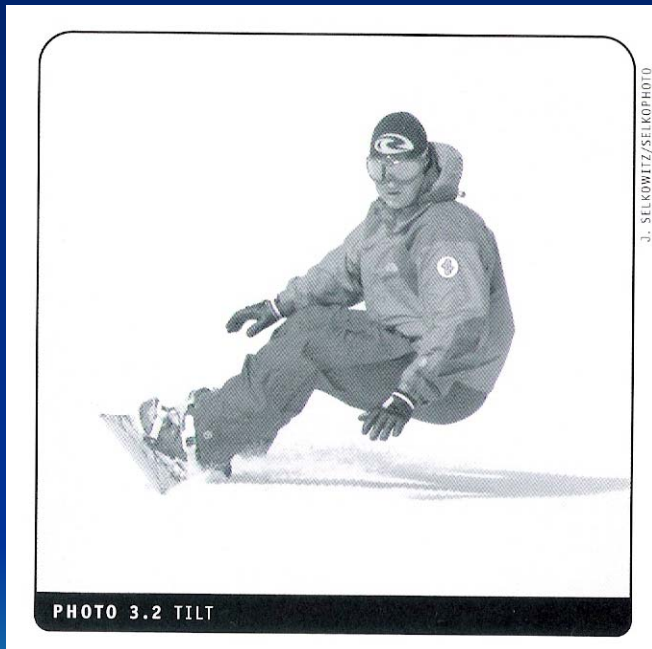


Board performance

1. Rotation (“Pivot”) = Yaw
 - Like steering a car, bicycle
 - More effective with a flat board
2. Edge angle (“Tilt”) = Roll
 - (Also prevents board from slipping down hill)
3. Fore/aft pressure = Pitch
 - Used for tricks, powder
 - Also used to “de-camber” the board
4. Torsional flex (“Twist”)
 - Unique to snowboarding



Turning using board performance



Adaptive snowboard equipment

- Tethers
 - Control speed in the “fall line”*
 - Turns the nose of the board (“Pivot”)
 - No tilt or twist control

* The “fall line” is the steepest slope down the mountain from a given point; the direction a ball would roll



The “Board Buddy”

- A windsurf boom and hip harness
- Allows the instructor to rotate the hips of the rider
- Also allows speed control
- Better than holding the rider directly



The ski “Slider”



The “Rider Bar”



Early Rider Bar development



Whitewater rafting



Accessible rafting



Adaptations in rafting



Rafting for the whole family...



More information...

Organizations:

Challenge Aspen www.challengeaspen.com

Environmental Traveling Companions (ETC) www.ectrips.org

Disabled Sports USA Far West www.dsusafw.org

Bay Area Outreach and Recreation Program (BORP) www.borp.org

Reading:

Inclusive and Special Recreation: Opportunities for Persons with Disabilities –
Kennedy, Austin & Smith

Bold Tracks: Teaching Adaptive Skiing – O’Leary, H.

PSIA Adaptive Manual – Schrupp, W.