Tonight’s Topics

- Course evaluation
- Boots
- Wrap up
Boots
Why Are Boots So Important?

• They restrict human movement in an unnatural way
  – The higher the performance the more so
• Being able to make the movements of skiing well depends critically on boots fitting and being set up properly
• The easiest way to improve your skiing
Fit and Function

• Fit
  – Comfort
  – Immediacy
  – Warmth

• Function
  – Balance
  – Control
  – Movement
Fit

- You should never have to ski in pain
  - Be willing to spend some time in the shop
- It’s easier to make a boot bigger than it is to make it smaller
- It’s easier to make a boot softer than it is to make it stiffer
- Go to a specialist
Footbeds

- Custom
- Semi-custom
- Stock
Liners

- Quality of liner has big effect on fit
- Thermo-fit is a step up
- A liner to which you can add material is a bigger step up
- Foam
- Plug boot
- Foam tongue
Tongue and Instep

- The most crucial area of fit
- If your heel moves, pad the tongue
Foot Physiology
278. The Foot Bones, medial aspect.
276. The Foot Bones, dorsal aspect.
280. The Bones of the Leg, posterior view.
Common Terminology

- Dorsiflexion / plantaflexion
- Varus / valgus
- Pronation / supination
- Inversion / eversion
Average Range of Dorsiflexion

• Non-weight bearing
  – 20 deg. from vertical
• Weight bearing
  – 30+ deg.
Function

- Balance
  - Forward lean
- Control
  - Lateral cant
  - Radial cant
Function

• Movement
  – Knee tracking
  – Heel height inside the boot
  – Deliberate eversion
Forward Lean
Forward Lean

• Determines angle of lower leg in the sagittal plane
• Enables skier to move through a large vertical range while maintaining control over fore-aft balance
Lower Leg Angle

- Has critical effect on fore-aft balance while moving up and down
- Boots allow only small range of motion
Misconceptions

• People should ski in softer boots
• Boots should be upright
Heel Height Inside the Boot

• Does *not* have significant effect on fore-aft balance
• Adjusts fit of tongue
• Matches ankle articulation with boot
Lateral Cant
Platform Angle

- $\leq 90$ deg., ski holds
- $> 90$ deg., ski slips
Goals of Canting

- Platform angle right about 90 deg
- Ankle is reasonably close to force on ski
- Knee and hip can flex and extend without platform angle changing
- Platform and edge angles can be adjusted by rotating femur in pelvis
Lateral Cant

• When the following are lined up in the frontal plane
  – CM
  – Head of femur
  – Knee
  – Edge of ski

• The platform angle must be 90 deg
Canting the Cuff

• Built-in adjusters
  – Some aren’t very effective

• Shims
  – Cork sheets
  – Trail maps
  – Allow for radial canting

• Good for experimentation and tweaks
Planing the Boot Sole

• Good permanent adjustment
  – Non-reversible

• Most liners effectively lose cant over time
Radial Cant

- Controls how quickly tip engages
- Similar effect with toed-out boots
Knee Tracking
FIGURE 6.14

The obliquity of the ankle and the subtalar axes.
Eversion

- Rolling foot inside of boot
- Blow out shell over the navicular
Summing Up Boots

• You should never have to be in pain
• Don’t expect them to be great right away
• Spend the time to experiment
• No one else is going to make your boots perfect

It’s up to you!
Wrapping Up
• Tune into the force from the snow
• Ski with your feet and balance with your body
• Focus on function, not form
• Challenge yourself
• Avoid emulating stylish skiers, look for simplicity and economy
• Listen to others
• If someone tells you something that doesn’t make sense, ask for a better explanation
• Take responsibility for your skiing
Have Fun!

• Learn to enjoy skiing easy terrain
• Ski difficult terrain if you want to, but not if you don’t want to
• Don’t judge others by their skiing
• Don’t ski with people who judge you by your skiing