

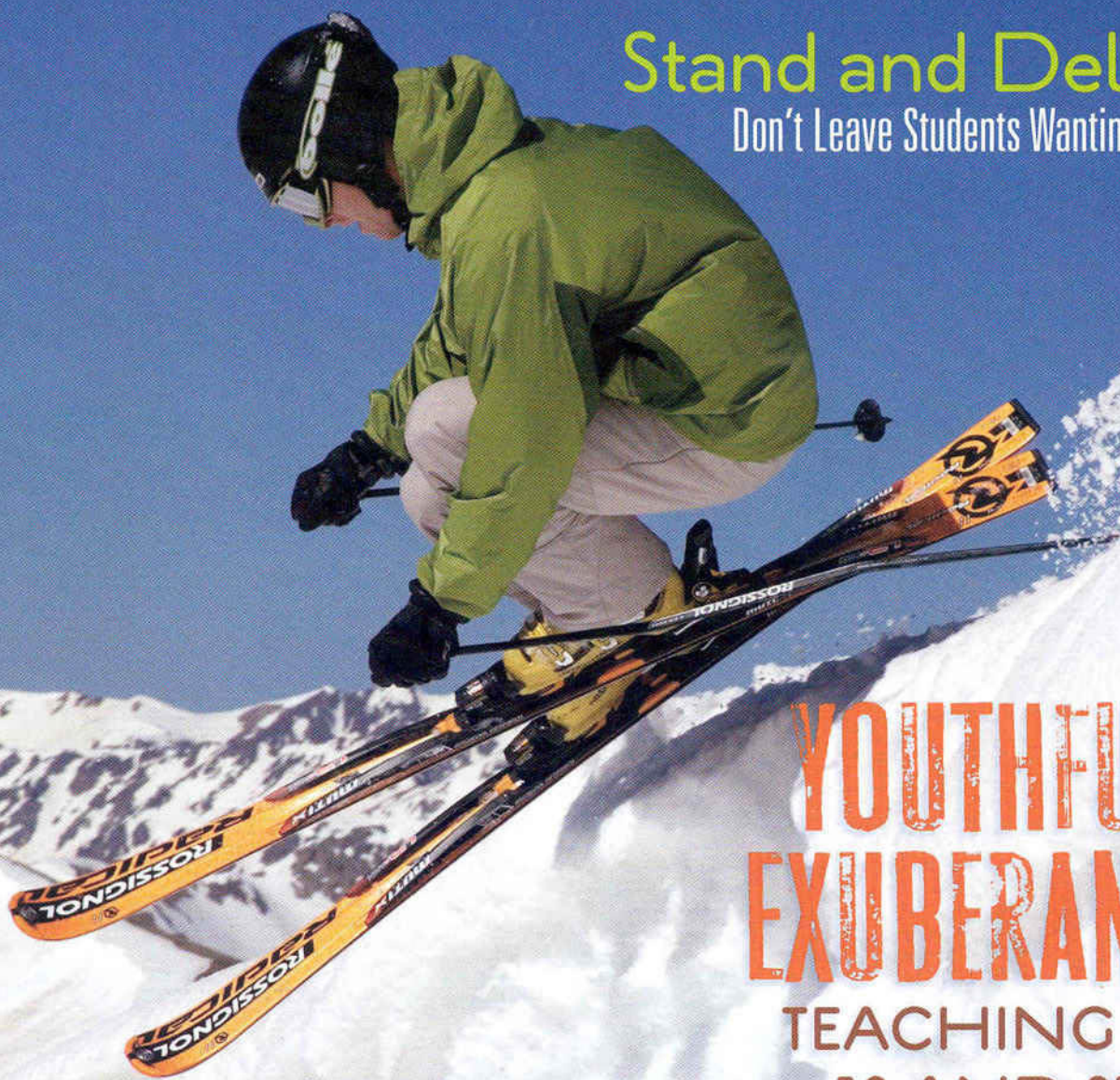
the professional

PROFESSIONAL SKI INSTRUCTORS OF
AMERICA EDUCATION FOUNDATION

SPRING
2008

skier

Stand and Deliver
Don't Leave Students Wanting



YOUTHFUL
EXUBERANCE

TEACHING AT
18 AND 87

Making a Change?
Dare to Be Ugly ... at First

Hyper Sensitivity
How to Help Kids with ADHD

NON-PROFIT ORG.
U.S. POSTAGE
PAID
DENVER, CO
PERMIT NO. 4185

big air starts with small air (to avoid big error)

TO YOUNG FREESTYLE SKIERS—who envision themselves performing perhaps a cork, rocket air, or iron cross with a tail grab—getting big air and scoring long hang times is what it's all about. But in order to get big air, these hot dogs first have to master the skills of getting small air. A fun lesson that emphasizes basic jumping skills perfected on small features will go a long way toward preparing students to fly the friendly skies.

Before the lesson, do a little preparation of your own by cruising the terrain park in search of relatively small jumps with mild lips (fig. 1). These provide the perfect training ground for straight-air, the goal of the lesson. As you test these jumps yourself, try to get a feel for the appropriate approach speed for the roll-in to the jump as well as the condition of the landing zone.

A well-structured lesson should cover the approach, takeoff, maneuver, and landing (ATML), but in an elementary way—at least until your class gets the feel of beginning jumping. For newbies, a cruising altitude of about 1 foot is attainable, but trying to fly higher than that can be too scary at first. A gentle roll-in (i.e., approach zone) serves to keep the student from generating too much speed in the approach, while a mild lip helps yield a controlled takeoff and comfortable jump height. A relatively wide and smooth landing zone will make it easier to complete the air in style. Starting out on appropriate terrain breeds confidence and helps students anchor the skills necessary for bigger jumps.

Before I get into some specifics of beginner straight-air, some housekeep-



The author (third from the right) poses with some of his young freestyle posse.

ing reminders are in order. These days many skiers prefer to wear a helmet, especially in freestyle settings. For more information on helmet considerations, consult the National Ski Area Association's Lids on Kids website (www.lidsonkids.org). Also, each of your students should have a working knowledge of terrain park etiquette, including the hand signals used to indicate whether the jump is clear. Remind students to exit the ramp area immediately after their maneuver and ski to a designated area out of the main traffic lane. In addition, caution them that if they fall they should recover and move away as quickly as possible. Check out www.terrainparksafety.org (and refer students to the site) for other important safety tips.

PHOTOGRAPHIC EVIDENCE

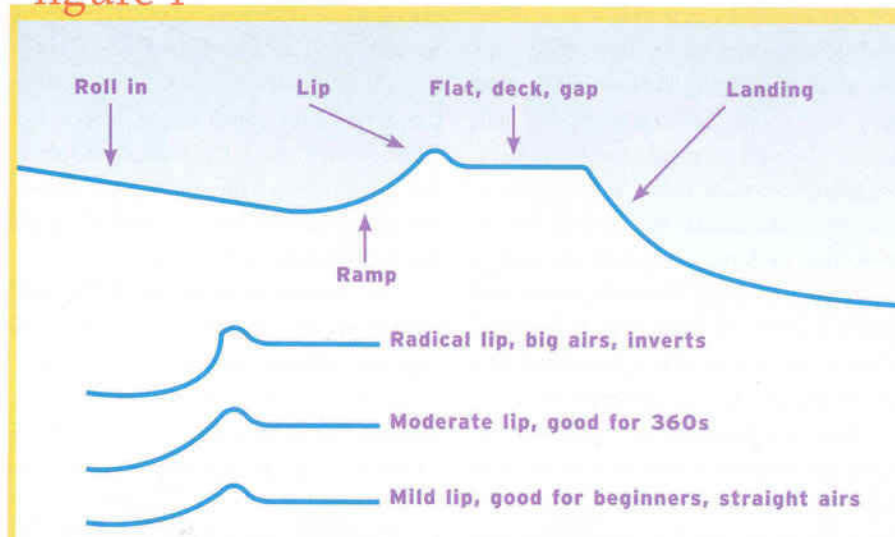
A picture, as they say, is worth a thousand words, so let's analyze the technique and tactics—both good and not so good—of some skiers in action (or

stop-action, to be more precise). Photo sequence 1a–h shows the essence of a properly executed straight air jump. The skier in photo 1a is approaching the jump at moderate speed after slightly braking with a wedge. The wedge is an excellent speed adjustment technique for the roll-in phase, requiring little upper body movement and allowing a quick return to the jump position.

The skier is moderately flexed with his center of mass (CM) neutral over



figure 1



the skis (photo 1b). With the advent of shaped skis, a slight edge may be helpful to keep the skis stable at the roll-in. By the time the skier reaches the ramp phase, the appropriate speed should have been achieved and the wedged skis changed to parallel. For this basic maneuver, flat skis at the jump lip are desirable, being easier to master. Edging skis at the lip is reserved for more advanced moves, which may require a more stable platform for rotary tricks.

As the skier travels up the ramp, his center of mass is neutral with respect to the skis, but the axis through the center of mass (and perpendicular to the skis) is slightly aft of vertical (photo 1c) because of the slope of the ramp. He, no doubt, feels compression of the body here because of the change in direction of travel upward. In lessons for beginning jumpers, choose

a feature with a mild lip to reduce the effect of compression, which will be a strange feeling initially. As the skier prepares for take off, a forward projection of the body should occur (similar to projecting the body in a turn on the snow), which adds stability to the flight. Photo 1d shows the takeoff, which significantly affects the nature of the maneuver. As shown, the skier should be slightly flexed and perpendicular to the skis. Having the weight forward results in pitching forward, and having the weight back often means landing in the "back seat."

Photos 1e through 1g show the maneuver, a straight air. Legs and hips are flexed to provide a compact position to react easily to corrections necessary to perform the maneuver. Some flexion (Photo 1e) is a result of the compression from the jump.

In photo 1g, the skier prepares for the landing by extending his legs and hips. The skier completes the straight air by landing with flexion to absorb the force (photo 1h). In addition, he rolls onto his edges to improve stability during the run-out. As can be seen, flexion and extension are primary ingredients in this move, as is equal weighting of the skis at takeoff.

TO AIR IS HUMAN AND DIVINE

There are many ways to teach students to do straight-air jumps. The following progression starts out with static and dynamic exercises that emphasize flexion and extension.

First, have the student flex and extend the knees, ankles, and hips statically. Check for a neutral stance during these exercises. Some younger skiers, or skiers of small stature, may have trouble flexing in stiff boots. As a result, they'll tend to sit back, which can cause them to pitch backward at takeoff.

Next, have students practice a straight run on gentle terrain, checking to see that each student has equal weight on flat skis. Unequal weighting of skis invites a roll when traveling over a jump. Have students try out some narrow wedges to get a feel for the speed control they will need for the roll-in and then return to the parallel position (with flat skis) they'll use when preparing to jump. Once they're comfortable with this exercise, have them practice flexion and extension

CONTINUED



PHOTOS BY CHUCK ROBERTS

PHOTO 2A



PHOTO 2B



CONTINUED FROM PAGE 39

dynamically while skiing over a roller or mogul. Caution them to avoid excessive extension in an attempt to get air. They'll achieve lift-off not by extending but by making proper use of approach speed and the lip of the jump.

Photo 2a shows a student practicing absorption while skiing over a roller. This skier needs more practice with flexion and extension. The skier in photo 2b is constantly skiing in the "back seat" and needs additional neutral-stance

practice. One of the challenges of teaching the straight air is that you will be dealing with bad habits developed over the student's skiing career; habits that may not grossly affect skiing but will have a significant impact on jumping.

Once everyone has a relatively neutrally-balanced stance, it's time to hit the park and perform a straight air over a jump with a mild lip. Photo sequence 3a-e shows a young student who is inexperienced at jumping and is approaching in a cautiously slow manner (photos 3a-c).

Since he has approached slowly, he is on the verge of a stall (photo 3d) and flops over the lip with no air (photo 3e). For a first time over a lip jump, this was not a bad performance. It gave him the confidence to try for—and attain—more air on his next attempt. The forward stance in photos 3c and 3d is likely a result of anticipating the jump but getting to it so slowly.

Help students with these tendencies adopt a more neutral stance as they get more air. Otherwise, with such small jumps, the student will most likely land on the flat or deck, which yields a little harder landing than the normal landing area. This condition is mitigated by the small height achieved in the jump.

Photo sequence 4a-f shows an example of a relatively good straight air. The approach speed is adjusted with a narrow wedge and a neutral stance (photo 4a).

As the skier rides up the ramp (photos 4b and 4c), the stance is square (facing the direction of travel) and the skier is perpendicular to the skis, (even though the pitch of the ramp makes it look like he is leaning back.) The maneuver (photo 4d) is compact, with some hand adjustment to limit roll brought on by slightly unequal weight on the skis.

The extension looks good for landing (photo 4e), and absorption (photo 4f) appears balanced, although slightly back because of sticky snow conditions. This student has achieved the lesson goal to negotiate a jump under control, with an impressive 3 feet of air.

Photo sequence 5a-d shows a student pitching forward in the maneuver phase of the jump. The approach appears centered, but while on the ramp (Photo 5b), the body is nearly vertical, which places the center of mass slightly ahead of the boots. This causes a forward rotation in the maneuver phase (Photos 5c and 5d).

Encourage students prone to this misalignment to project the body forward but not overly so (i.e., the center position in figure 2). When the center of mass is too far forward, the skier will be pitched forward. When it is too far to the rear, the skier will land on the tails of the skis. Both concepts are important to grasp when performing straight airs. Note: While you can start out by emphasizing a neutral

PHOTOS 3A-3E



PHOTOS BY CHUCK ROBERTS

PHOTOS 4A-4F



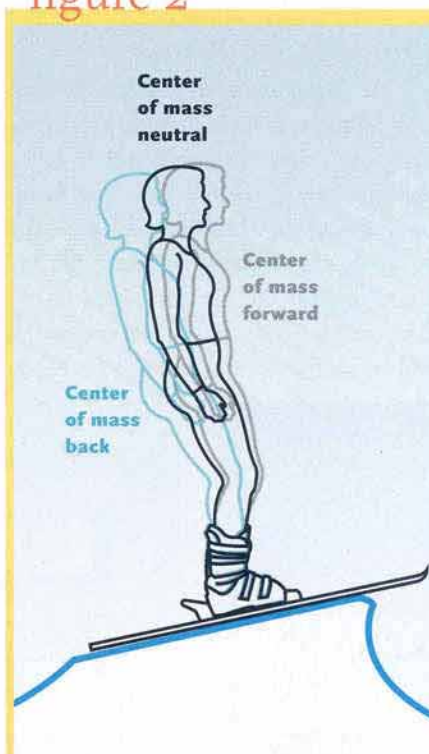
PHOTOS BY CHUCK ROBERTS

PHOTOS 5A-5D



PHOTOS BY CHUCK ROBERTS

figure 2



stance at takeoff, as skiers become more proficient with their straight airs you can help them learn to “project” their center of mass/body core into the direction of motion (much as skiers project their CM from one turn to another when gliding down a slope.) Provided they are “projecting” rather than merely leaning forward, they’ll be in solid position to land well and ski away clean.

Photo sequence 6a-f is an example of the skier’s center of mass being back at takeoff, resulting in backward rotation. The approach looks controlled and neutral (photos 6a and 6b), but near takeoff you can spot some slight extension, a shift of the center of mass toward the tails of the skis (photos 6c and 6d), and a lack of the flexed, compact stance.

This results in a tail-first landing (photo 6e) and a near loss of balance to the rear (photo 6f). It should be noted that this type of landing strains the anterior cruciate ligament (ACL) and is not recommended. With students who dis-

play these tendencies, work on a more compact and neutral stance at take-off. Again, skiers should attain air as a result of the hip and not from excessive extension movements. To give your students a means of instant movement analysis, consider videotaping their jumps or taking still digital photos. The student in photo sequence 6a-f is the same student seen in photo 2b, illustrating how a slight deviation from the neutral stance can have a significant impact on the execution of the jump.

SIX EASY PIECES

If you need a quick “cheat sheet” for teaching straight airs, here’s this progression in six easy steps:

1. Do static flexion and extension exercises; checking and correcting for neutral stance.
2. Do dynamic flexion and extension exercises (straight run); checking and correcting for neutral stance and equally weighted skis.

3. Perform straight runs with change-up of parallel to wedge and back to parallel to practice speed control.
4. Ski over a roller while flexing/extending and adjusting speed on the approach; checking and correcting for neutral stance and speed control.
5. Ski over a mild jump; observing take-offs and landings especially. Correct for backward rotation, forward rotation, or unequal weighting of the skis.
6. Ski over mild and moderate jumps, using video or digital still photos for instant movement analysis.

CONTINUED

PHOTOS 6A-6F



PHOTOS BY CHUCK ROBERTS

CONTINUED FROM PAGE 41

The straight air is a relatively challenging move to learn because everything must be correct at takeoff: body position appropriately projected into the jump, body facing the direction of travel with equal weight on each ski, and sufficient speed to clear the deck and land on the down slope. Some of your young students will be aggressive and try to go for big air

right off, while others will be timid and be happy with a "lip flop" on a first try.

By the end of the class, you may see a variety of skill levels emerge, with each student working at his or her level. With the straight air mastered, your young students are poised to learn maneuvers with grabs, perform 180s (i.e., landing switch with the tails of the skis facing downhill), and even more advanced spins.

Yes, the sky is the limit . . . but first you have to make sure your students' initial attempts to get airborne are safe and fundamentally sound. ♦

Chuck Roberts has taught alpine skiing since 1970 and snowboarding since 1987. He is a PSIA-certified Level III alpine and AASI-certified Level II snowboard instructor at Wisconsin's Wilmot Mountain.