Teach Your Kids How to Jump

By Chuck Roberts

It is not unusual to have some of your students hound you to do a class on jumping. Jumping moves are an integral part of snowboarding and skiing especially with the evolution of noncontact features in the terrain park. So why not teach a jumping class. Many of your students have probably already tried jumping with various degrees of success, so here is a chance to enhance their skiing/riding skills. The following is a progression for beginning jumping that has worked in the past and may be useful in your future lessons. First, let's look at Figure 1 which describes the basic nomenclature for a jump according to ASTM (Reference 1) and is used throughout the article.

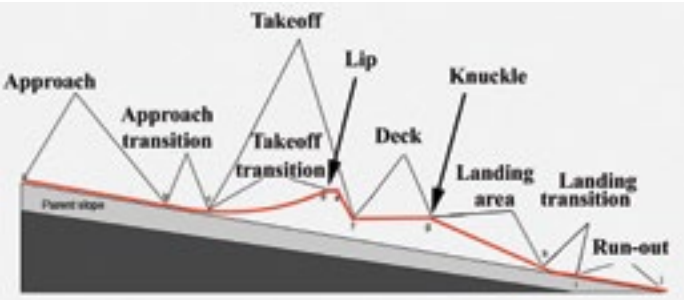

Figure 1

According to PSIA (Reference 2), using a jump (non-contact feature) has four phases: approach, takeoff, maneuver and landing (ATML). Figure 1 depicts the approach where the skier/rider adjusts speed and position ready for the maneuver. The takeoff is the upslope (takeoff transition) that governs how much air the skier/rider might achieve. The maneuver (straight air, 180, 360, etc.) occurs over the deck. The landing area is where the skier/rider regains contact and control on the snow.

Straight Air on Skis

For the beginning jumpers, practicing first jumps on a roller with a very mild takeoff transition, as shown in Figure 2, is helpful. The student experiences the lift from the jump while minimizing the backward rotation usually caused by a more rounded transition and lip (lippy). Also when using a standard jump there is the possibility of a timid jumper traveling slowly and landing on the deck, again another advantage of initially using a roller.

Figure 2

Static exercises with and without skis before dynamic exercises are a basic tenant of ski/snowboard instruction. Static exercises such as flexion and extension of the knees and ankles help your students on jumping positioning and dynamics. Make sure your students stay over their skis while flexing/extending and that they do not sit back, which occurs if the student only flexes their knees, rather than both ankles and knees. It is important at this early stage to make sure the skier's stance is vertical and not leaning excessively forward or backward. Have your students practice a gliding wedge with different wedge angles to observe their ability to adjust speed at the approach. A wedge is an appropriate way to adjust speed since the upper body should be facing downhill. Short turns can work, but after the turns are completed, the upper body must be facing downhill. Speed adjustment is necessary for regulating the desired height your students wish to achieve. Showing your class the roller you plan to use with an explanation of what is next is helpful in that they will know what to expect. Talk about riding up the transition and down the landing area and review ATML. If the roller is in the terrain park, review PARK SMART (terrain park policies, Reference 3). Check for proper positioning before the first run, feet shoulder width apart, proper skiing stance, etc.

Now, for the first run, have your students straight run over the roller without getting any air. This allows them to feel the compression at the takeoff transition, the sensation of unweighting, the lift at the takeoff and the compression upon landing. Check for sitting back/stance, insufficient flexion and extension, etc.

For those sitting back at the takeoff, a little advice on maintaining shin-boot tongue pressure or projecting the upper body slightly forward may help. Next, take the students to a higher location on the hill above the roller and repeat several times — each time at a slightly higher speed. Some will start getting air, which is the purpose of the lesson, a straight air.

Finally, introduce the pop: a bodily movement at the lip which helps get more air. Statically have the students flex the knees and ankles and push down quickly, extending the knees and ankles. (Throwing the arms in the air should be avoided because this typically causes unwanted backward rotation and difficulty at the landing). The push down exercise should result in them getting a little air statically (the pop). The next step is to ski over the roller and pop at the lip. This should enhance their degree of air time. Pop timing is important here. Some are anxious and pop too early, others may be too late, so correct accordingly. Repetition goes a long way toward getting your students comfortable with the straight air over the roller.

If everyone is getting air over the roller, there may be time to try a small jump with a lip and a minimal deck. The important thing to emphasize here is to maintain shin-boot pressure with a slight forward projection at the lip to avoid rotating backward and landing on the tails of the skis. First, try the jump without the pop since the lip should give some air. Then, add the pop for those who want more air. Keep an eye on body position especially leaning backward at the lip and correct accordingly. Emphasize PARK SMART when in the terrain park.

Figure 3

Figure 3 shows a student performing a relatively good straight air practice run. Figure 3A shows the approach adjusting speed with a wedge. Figure 3B is skiing up the takeoff transition with body position over the skis and slightly forward. The maneuver, getting straight air, did not occur since this is a first practice, but positioning is fine (Figure 3C). Notice the compression of the knees and ankles from skiing up the takeoff transition which occurs with varying degrees, depending on the radius of the takeoff transition. Finally, the landing (Figure 3D) is in a good skiing position.

Figure 4

Figure 4 shows what may happen to a student who is leaning back while performing the straight air. In Figure 4A, the skier is performing a good approach, adjusting speed with the wedge. In Figure 4B, the skier is riding up the takeoff transition with a slight backward lean. (Notice the stiff ankles.) Figure 4C shows the student getting air but leaning back, as indicated by the tails of the skis being much lower than the tips. Figures 4D and 4E show the consequences of "back seat driving." Here a little static practice sensing shin-boot tongue pressure in the boots with a slight forward projection would be helpful. However, only a slight projection forward is necessary. Too much forward projection results in the condition shown in Figure 5.

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Figure 5

Figure 6

Figure 6 shows the student performing a good straight air with a pop. At the takeoff transition, the student is flexed with center of mass projected forward (Figure 6A). At the lip (Figure 6B), the student pushes down, getting a lift from the pop as well as the lip. As a result of the slight projection forward, the skier is in the air with the body rotating slightly forward in Figures 6C and 6D, and finally landing with absorption (landing on eggshells). Figure 6E

It is important to pop by pushing down, not by throwing the upper body and arms upward (hucking) which tends to cause uncontrollable upper body movements, an undesirable rotation or tumble and difficulties in landing. This progression and exercises have worked well in the past, but are not considered an exclusive way to present a straight air lesson for skiers.

Straight Air on a Snowboard

The beginning straight air goal on a snowboard also utilizes ATML as follows: approach the jump adjusting speed by slipping to the rider's open side or short pivot turns. Flatten the board and ride up the transition with flexed knees and ankles making sure the shoulders and hips are aligned with the board. At the takeoff, push down (the pop). The maneuver is the straight air and the landing is with flexion at the landing area (landing on egg shells).

Practice static exercises with and without the snowboard before riding over the roller which entails flexing and extending the knees and ankles while holding the proper A-Frame stance; shoulders and hips aligned with the long axis of the board. Flexing and extending to get some air statically, as shown in Figure 7, is helpful. This is an important aspect of your student's stance since many have a slight upper body twist toward the heel side (open stance). This can cause rotation of the rider when traveling over a jump, resulting in a partial shifty. If the snowboard rotates during this static exercise, then there is a slight upper body twist that should be corrected.

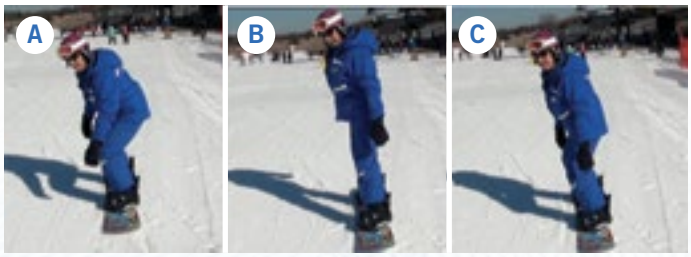

Figure 7

Figure 7 is the static exercise where the rider flexes the knees and ankles, pushes down quickly to get a little air and lands with flexion. If your students perform this static exercise without board rotation, they are ready for the roller. If the roller is in the terrain park, review PARK SMART.

Figure 8

Figure 8A shows what happens to a rider who has an upper body twist (riding open). When pushing down (Figure 8B) and getting air, the board tends to align with the twisted hips, causing rotation upon landing (Figure 8C). This should be corrected prior to trying the roller. If not corrected, the landing could be difficult, possibly resulting in a slam.

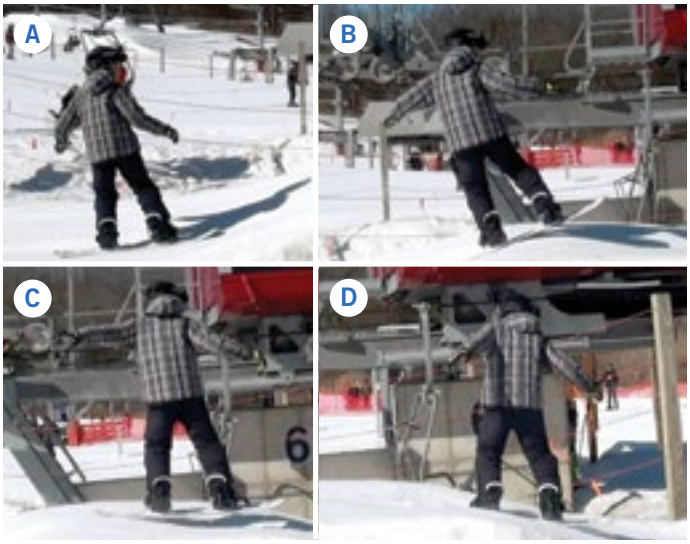

Figure 9

Figure 9 shows the ingredients of a reasonably good straight air on a snowboard. In Figure 9A, the rider, having controlled speed at the approach, is riding up the takeoff transition in good A-Frame stance with shoulders and hips aligned with the board. In Figure 9B and 9C, the rider has reached the lip and travels over the roller in good form with slight air. Figure 9D shows the landing. This is an example of a desirable outcome for the first straight air exercise over a roller.

Figure 10

Figure 10 illustrates the classic problem when riding open and approaching a jump. In Figure 9A, the rider has an upper body twist toward the heel side (riding open). This stance tends to straighten out the leading leg and collapse the trailing leg, resulting in a shift of the center of mass toward the tail. Figure 10B has the rider's center of mass over the tail of the board and an upper body twist. In Figure 10C, the rider gets air, but the board aligns with the upper body and the rider lands with the board nearly perpendicular to the direction of travel (Figure 10D). Static exercises (Figure 7) and practice riding with the correct A-Frame stance are helpful here.

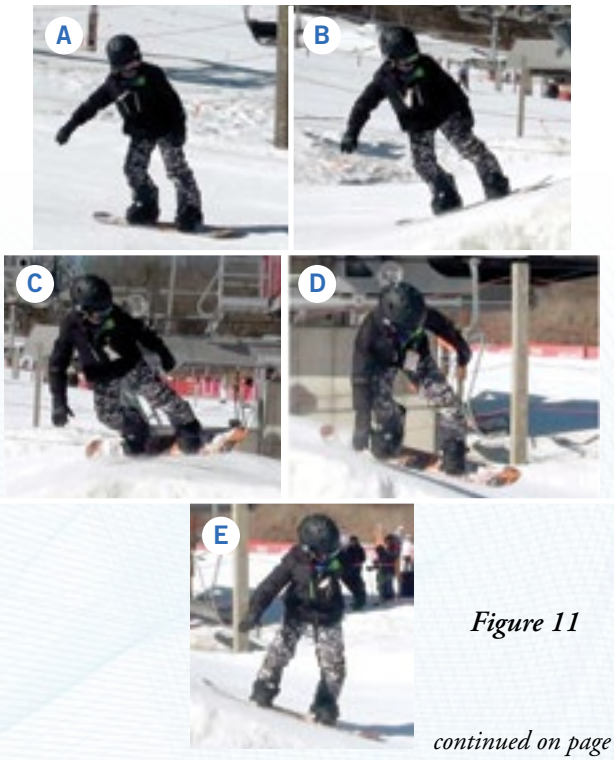

Figure 11

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Figure 11 shows a rider approaching the transition with center of mass toward the tail (Figure 11A). Although the shoulder and hips are aligned, the center of mass toward the tail results in difficulty at the transition (Figure 11B) and in controlling the board in the air (Figure 11C), since the takeoff transition tends to shift the upper body toward the tail. The rider lands on edge (Figure 11D), but manages to recover (Figure 11E). Riding practice with the proper A-Frame stance will certainly help here while performing the straight air, as well as emphasizing a flat board when riding up the takeoff transition.

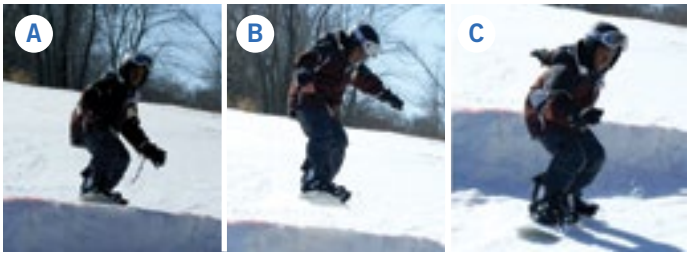

Figure 12

After your students have been getting some air and landing properly, introducing the pop adds a new dimension to the straight air, namely more height. A static exercise such as pushing down quickly is helpful here. Observe the degree of air your students get with this static exercise (Figure 7). A good outcome is to get a little air and land with flexion. Figure 12 shows a reasonably good pop. In Figure 12A, the rider is flexed traveling up the takeoff transition. In Figure 12B, the rider pushes down at the lip gaining additional height when compared to the straight air over a roller. Figure 12C shows flexion to absorb the landing (landing on egg shells).

Conclusion

Introducing your students to the beginning straight air will probably be a big hit because it is a challenge and is great fun! This maneuver/learning experience may also reveal deficiencies in normal skiing/riding. For instance, skiing with center of mass toward the tails will be magnified when attempting elementary jumps. The consequences of riding open will be magnified when trying to land a straight air. Teaching the straight air will add to your bag of tricks in helping students with their normal skiing/riding and contribute to a successful outcome in your more advanced lessons.

References

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