

TOBOGGAN MANEUVERS DEFINED

As an OET instructor, it's essential to understand the maneuvers from a technical and performance level. Please use this guide to help you as you prepare your lessons. Remember, knowing this material and being able to accurately teach and demonstrate it is part of your duties as an instructor.

First, it's good to review the **Fundamentals of Snow Sports**: PSIA developed the fundamentals to say, "This is what we see as 'great' in almost all the interpretations and styles of snow sports." The fundamentals can help guide you in how to view both your skills and the skills of your students. They relate to three areas: Pressure, Edging, and Rotation. All elements are blended and are constantly changing.

| | Ski | Snowboard | Telemark |
|-----------|--|--|---|
| 1 | Control the relationship of the center of mass to the base of support to direct the pressure along the length of the ski (Fore-Aft Pressure) | Control the relationship of the center of mass to the base of support to direct pressure along the length of the board | Control the fore/aft relationship of the center of mass to the base of support to manage pressure along the length of the skis. |
| 1a | | Control the relationship of the center of mass to the base of support to direct pressure along the width of the board | Control the lateral the relationship of the center of mass to the base of support to manage pressure from ski to ski |
| 2 | Control pressure from ski to ski and direct pressure toward the outside ski | Control torsional flex of the board using flexion/extension and rotation of the body. | Control the size, duration, intensity, rate, and timing of the lead change to manage fore/aft stability. |
| 3 | Control edge angles through a combination of inclination and angulation | Control the board's tilt through a combination of inclination and angulation. | Control edge angles through a combination of inclination and angulation. |
| 4 | Control the skis rotation (turning, pivoting, steering) with leg rotation, separate from the upper body | Control the board's pivot through flexion/extension and rotation of the body. | Control the turning of the skis with rotation of the feet and legs in conjunction with discipline in the upper body. |
| 5 | Regulate the magnitude of pressure created through ski/snow interaction | Control the magnitude of pressure created through the board/surface interaction | Regulate the amount of pressure created through ski/snow interaction with flexion & extension movements |

Tips for your training session:

Begin your session by getting to know your students by name and asking them about their goals. When teaching toboggan skills, it is a good idea to go through some stretching exercises, including the lower back, abdomen, and oblique muscles. Starting in an athletic stance, have them twist their upper body to the left and right, opening the hips in the same and opposite direction to allow a greater twisting distance. Please take note of their ability to accomplish this during this warm-up as a point of reference for skills you will be teaching during your session.

When a student struggles with a skill, the trainer must formulate a **"progression"** or series of drills to help the student bridge the gap in their learning. The trainer can help the student build techniques to reach the goal by focusing on smaller tasks. A new task should build on the previous, creating a sequence of success. Guide the students in making discoveries in a safe environment and give them time to practice. Giving a student time to learn is often our biggest flaw. Work to find the "one item" that will assist them the most instead of presenting them with a series of instructions. Remember the three learning styles: Kinesthetic (doing), Visual (seeing), and Auditory (hearing). Work to blend all three.

Toboggan Maneuvers come in two types:

- * Static: A maneuver where the participant(s) is not progressing down the hill.
- * Dynamic: A maneuver done while the participant(s) progresses down the hill.

Because we are training "patrollers," we often forget they are our "customers." Another way to put it, if they were paying for your lesson, would they take another lesson with you?



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Over the following pages, you will find the standard toboggan maneuvers defined with performance cues and sample progressions. These are for you to review and think about. Work to make learning SAFE and FUN!!!!

Traverse:

A directional maneuver in which the skier or snowboarder moves across the slope is the skis/snowboard moves perpendicular to the fall line. When teaching a traverse, find a moderate slope with little traffic to avoid the public while crossing the hill.

Problems to watch for:

Uphill ski is not making a track in the snow. Tips are diverging. Skis should be weighted equally, with a bit more on the downhill. Both uphill edges are pressed firmly into the snow. The uphill ski should be slightly in front of the downhill.

The snowboard edge does not "cut" through the snow. Work to keep the body balanced and positioned over the edge of the board.

Progression:

Ski: Begin by facing slightly downhill with the feet, ankles, and knees tipped into the hill. This will bring the ski on edge. Begin sliding across the fall line while creating separation between your upper and lower body. Work to change your edge angle through tipping and pressure progressively. The goal is to create a track or railroad tracks across the hill.

Snowboard: Begin with your body balanced over the heel side of the snowboard. Keep knees and ankles flexed and hands in front of the body. Now try Toe Side

Fundamentals Reference: 1, 3, 5

Sideslip:

A method of moving down the hill with the skis or snowboard perpendicular to (across) the fall line. Teaching a sideslip should be done on a moderately groomed slope. Avoid a flat slope where over-tipping downhill can cause balance and edging issues. Pick a place where the fall line is evident and does not vary. Practice slide slipping faster and slower.

* **Skiers:** Using a hip-width athletic stance, open the hips downhill so the pelvis/upper body faces downhill. Inside (uphill), half of the body is slightly raised, and forward of the outside (downhill) half. Tipping the feet, ankles, and knees into the hill increases the edge angle and slows slipping; tipping feet downhill decreases the edge angle and increases the rate of slipping. Manage fore/aft balance and pressure to maintain a path down the fall line. Although both skis are weighted, the downhill ski will have more weight than the uphill ski. Skis should remain parallel to the fall line.

* **Snowboarders:** With an athletic stance, knees and ankles flexed. Allow the board to decrease the edge angle by extending the ankles while on the heel edge or flexing the ankles while on the toe edge. Increasing the edge angle slows slipping while decreasing the edge angle increases the rate of slipping. Manage lead and rear foot pressure to maintain a path down the fall line. Keep your hand up and in front of the body.

Problems to watch for:

The patroller cannot maintain a constant rate of slipping: Work on angulation to manage the amount of edge angle. This will allow the patroller to regulate the speed of descent better. Skiers must manage foot-to-foot/lateral pressure, applying more pressure to the downhill ski.

The skier is showing no tip lead with the uphill ski. Opening the hips downhill will cause the uphill ski to come forward. A line through the ski tips should parallel a line drawn across the hips.

The skier's tips are divergent with the uphill ski turned uphill. Apply more pressure to the uphill ski so it tracks with the downhill ski.

The snowboarder is heeling out and falling. This is usually caused by a lack of flex in the knees. When the board slides too fast, it can be a reaction for the Snowboarder to extend the knees to maintain balance. When the knees are opened fully, the Snowboarder will begin to fall backward, and the board tips beyond the optimal edge, accelerating the slipping until the Snowboarder hits the snow—accentuated with icy conditions. The snowboarder must use ankle flexion to increase the heel edge angle while flexing the knees—ankle extension for the toe edge.

TOBOGGAN MANEUVERS DEFINED

Sideslip: continued

Progression:

Static: Begin in a balanced position. Practice flexing one knee and ankle, extending the opposite ankle and knee. This causes the feet to tip onto the edge. Now repeat in skis. Dynamic: Begin on a moderate slope. Feel the edge pressure as you take steps uphill, followed by short slides back down. Work both sides/edges. Progress to a steeper slope. Practice speed control by varying the amount of edge angle. Focus on Balance, Upper and Lower Body Separation, and Angulation vs. Inclination

For snowboard: Heel Side: Sit facing down the slope on your heel edge, with your board perpendicular to the fall line. Bring your bum closer to the board and lift your body off the snow, holding yourself up in a crab-like position. To engage the slip, release pressure off your heel edge by pushing down slightly through your toes. The pressure that you put into your toes will act like a gas pedal, speeding or slowing your movement. Try moving left and right by increasing the pressure on one side and then the other. Once you feel comfortable and in control of how much pressure you are applying, push yourself up with your hands into a standing position. To keep your balance standing, hold your hands over the nose and tail of your board.

The Toe Edge Sideslip starts the same as the heel edge. Flip over and kneel on the ground before lifting your bum in the air and using your hands to steady you as you put pressure on your heel edge to start slipping. Again, use even pressure and small movements for a smooth, consistent slide.

Fundamentals Reference: 1, 2, 3, 5

Falling Leaf:

A maneuver in which the skier/snowboarder sideslips forward and backward while traveling directly down the fall line in an imaginary corridor. Teaching the falling leaf is best done after sideslip practice. Using the same stance and terrain as the sideslip, students can vary their descent laterally by applying pressure to the tip or tail of the ski by flexing at the ankle. More flexion brings a balanced center of mass forward; skiers' weight should be felt at the front of the foot. Less flexion brings a balanced center of mass to the rear, and the skier's weight is felt across the whole foot. The skis can also be steered using rotary. Blending both movements, pressure, and rotary gives the patroller more flexibility for a snowboard, changing the location of the pressure on the board with independent lead or rear ankle flexion/extension, causing torsional flex/twist. This is an excellent way to go around objects or built-up snow. After perfecting pressure movements, introduce rotary movements to enhance the fore and aft transitions. Fore and aft paths will begin to arc.

Problems to watch for: Never use the word 'LEAN' or suggest that we want the student to come out of balance to accomplish this skill. Applying forward or aft pressure is done through flexion or extension, not leaning the upper body.

Progression:

Ski: Start from a moderately groomed terrain where the fall line does not vary. Review the slide slip and add pressure to alter direction while maintaining a corridor. Also, have the student steer the flat ski (rotary) to achieve the same outcome. Working to blend both movement patterns is the goal. Later, work into advanced terrain where the fall line varies; multiple fall lines exist, or moguls.

Snowboard: Start from a moderately groomed terrain where the fall line does not vary. Review the heel side slide slip, then begin with weight equally distributed between the feet and practice slowly lowering the toes of the lead foot to twist the board and begin directional sideslip. Lift the toes on the lead foot to stop. Now repeat by slowly lowering the toes of the rear foot to twist the board and begin the directional sideslip. Lift the toes on the rear foot to stop. Alternatively, try the same exercise, but instead of lifting/lowering toes, try the same exercise while flexing the front ankle, knee, and hip to pressure the nose or tail of the board.

(Fundamentals Reference: 1, 2, 3, 5)

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Hockey Stop/Emergency Stop:

A maneuver used to bring the sled to a quick, controlled stop. From a neutral athletic stance, the front operator simultaneously flexes the ankles, knees, and hips while pivoting both feet across the fall line as they apply increasing pressure and edge angle to stop the toboggan. Teaching a Hockey Stop should be done on a moderately groomed slope. Pick a place where the fall line is evident and does not vary. Remember, this is a 90-degree pivot, not a short radius turn. The student will maintain a straight path down the fall line throughout the maneuver. Review pivot slip mechanics. While this description includes directions for flexing both legs, the inside ski will be more flexed. The pivot must be quick, edge engagement firm, and equal on both skis after completing the rotation. An athletic stance is maintained through the stop and can be held after completion.

Snowboard: From a neutral athletic stance, the front operator simultaneously flexes the ankles, knees, and hips while pivoting both feet across the fall line as they apply increasing pressure and edge angle to stop the toboggan. Teaching a Power Stop should be done on a moderately groomed slope. Pick a place where the fall line is evident and does not vary. Remember, this is a 90-degree pivot, not a short radius turn. The student will maintain a straight path down the fall line throughout the maneuver. Rider must resist the urge to extend their legs to stop. Instead, it should focus on fleeing the ankles, knees, and hips to increase the edge angle and stop.

Problems to watch for:

There are arcs at the end of the stop, either fore or aft. Are the students getting their skis/snowboard pivoted 90 degrees before applying the edge required for stopping? Is the Center of Mass CENTERED over their Base of Support? Are they engaging the shovel of the ski as if performing a short radius turn? Are they extending the legs and pushing the snowboard away from the body, creating chatter?

Progression:

Review the Side Slip and Pivot Slip (if already taught) and work on a moderate slope with an excellent straight fall line. Work to steeper terrain and varying fall lines.

Fundamentals: 1, 2, 3, 4, 5

Pivot Slip:

A transition maneuver in which a patroller sideslips, then pivots their skis/board 180 degrees while on the snow, then sideslips again while maintaining a constant speed. **Pivot Slips are the most technical skill taught by Toboggan Instructors as they incorporate all the fundamentals of skiing/snowboarding.** Introducing the Pivot Slip should be done in conjunction with the Side Slip, Falling Leaf, and Hockey Stop as a progression. Balance is paramount when doing pivot slips. The skis/board will spin 180 degrees under a stable upper body. The pivot point is under the center of the skis. Skis are pivoted simultaneously and at a constant rate. Flexion and extension of the ankle are constant throughout the pivot, like peddling a bicycle. As your uphill ski begins the extension movements, the downhill ski begins the flexion movements, Flattening the ski and causing it to seek the fall line.

For a snowboard, the pivot slip begins with the torsional flexing of the board. Torsional flex is created by flexing one leg, pressuring the toe of one foot while extending the other, and pressuring the heel, causing the board to twist. This movement reduces the pressure on the nose of the snowboard and allows it to begin to flatten and pivot. Torsional flex can be complimented by rotating the lead Knee/Femur under a stable upper body to aid in steering the board into and out of the fall line. Think about pushing the lead knee towards the side you want to pivot to. The rider's center of mass is centered over the base of support. The path should be directly down the fall line with very little drift from side to side. Both skis should always remain in contact with the snow throughout the maneuver.

Problems to watch for:

Skis form a wedge between sideslips. This can be because the skis are not pivoting simultaneously. If the new inside ski is flat and pivoting late, then working on simultaneous pivoting will fix it. If the new inside ski is not twisting off the edge and not retracting, then there is a natural wedge where skis are on opposing edges. Picking up the inside ski will be how your students will get out of this situation. The instructor must recognize when the inside ski's edge is engaged and not just spinning late. *Excessive tip lead; see side slip stance directions.* A wedge or balance centered too far forward or back might steer the ski more across the fall line. Remember, pivoting the skis/board in the fall line is the goal.

TOBOGGAN MANEUVERS DEFINED

Pivot Slip: Continued

Progression:

Start from a moderate, groomed terrain where the fall line does not vary. Refresh Slide slip and Falling Leaf. While doing the falling leaf, get the students to make good arcing movements, then introduce a single transition when the skier is arching and traveling in reverse; as the momentum begins to stall, have them keep the rotary movement going while extending the uphill leg and flexing the downhill leg. This will allow the pivot to happen, and the skier will continue out of the pivot forward in the same direction as they were in reverse. They continue doing the falling leaf with a new uphill and downhill ski. Have them work until they can transition each pass, and then lessen the length of the falling leaf arc until it is gone.

Fundamentals: 1, 2, 3, 4, 5

Uphill Techniques:

Skating:

A method of propulsion in which the skier presses from foot to foot while keeping the skis in a diverging position. The inside edge of the weighted ski is engaged as the skier moves forward. In snowboarding, the rider moves the board forward by pushing with the free foot. When teaching skating, begin on a flat slope. Separate the tips of the skis to create a reversed wedge; this is the diverging position. Pick up one ski and take a small step forward. Place it flat on the snow as you push off and lift the other ski. Glide on the first ski while maintaining the diverged position. As your momentum stalls, step and glide on the other ski while pushing off and lifting the ski still on the snow. (Fundamentals 1, 2, 3, 5)

Herringbone (Hike):

A diverging ski position is helpful for climbing hills. The skier faces uphill with ski tips pointing at an angle away from each other and walks up the hill on alternating feet while edging to avoid slipping backward.

When teaching the herringbone, start on a flat or moderate slope. Demonstrate by positioning the skis in a reverse wedge position. The ski tips are diverging, and the tails are a short distance apart. The skis are tipping, so the inside edges are digging into the snow. Place the poles outboard of the skis. In a simultaneous movement, take a step forward with one foot and the pole from the same side. This is a hiking move with NO gliding. Repeat with the other foot and pole. Once this maneuver is mastered, move to a gentle incline, then a moderate slope. Note: on steeper terrain, the reverse wedge is widened for stability. (Fundamentals 1, 2, 3, 5)

Sidestep (Hike):

A method of moving up the hill in which the skier steps up the hill one ski at a time with the skis across the fall line. When teaching the Sidestep hike, start on a flat or moderate slope. The skis are positioned parallel to each other and perpendicular to the fall line. Balancing on the downhill ski and pole step uphill with the uphill ski while lifting the uphill pole and placing them down in a wide stance. Then, balance on the uphill ski and pole while bringing the downhill ski and pole uphill and place them down in a comfortable stance. (Fundamentals 1, 2, 3, 5)

Snowboard (Hop/Hike)

A method of moving up the hill in which the snowboarder steps up the hill with the snowboard across the fall line and on the toe edge. For short distances, snowboarders can use lateral hops to move uphill for longer uphill travel. It will be necessary for snowboarders to remove their back foot from the binding. Begin with the board tilted on its toe edge and the rear foot uphill of the board. Take a large step uphill with the rear foot followed by smaller uphill steps with the front foot /board.