

A

ab·sor·bing: /əb'zɔ:bɪŋ/ *v.* Body movements such as flexing and extending to help reduce, increase, or maintain the pressure on the skis base or edges that results from terrain variations or turn dynamics.

aero·dy·nam·ics: /ar-ō-dī-'nam-iks/ Refers to how well an athlete moves through the air. The smaller the skier can make themselves usually the more aerodynamic they are.

aft: /'aft/ *adv.* Toward the rear or tail of the ski(s).

align·ment: /ə'laimənt/ **1:** The positioning of the body so that the forces derived from the interaction of the skis on the snow pass through the body's center of mass to produce the intended movement. **2:** The interrelationship of the ski boot forward lean, zeppa, canting, and the binding's delta angle on the stance of the skier.

an·kle an·gu·la·tion: /'aŋ-kəl/ Rotation of the ankle to assist with edging the ski.

an·gu·la·tion: Creating lateral angles in the body for balance while resisting the external forces from the turn or gravity. This can occur with the hip, knee, ankle, or a combination of the three. –Syn. comma position.

an·tic·i·pa·tion: /an'tisə'pāSHən/ *n.* **1:** A movement in preparation for turning, during which the upper and lower body are brought into a twisted relationship. The consequently stretched muscles are quicker and stronger in contracting and causing movement. The hips play an intermediary role. A skier can anticipate by twisting the torso in relation to the legs, or the legs in relation to the torso. Usually, both mechanisms interact with one being dominant. **2:** Mental expectation for any action on skis precedes the physical execution of movements.

apex: /'ā-ɪpeks/ The point in a ski turn that coincides with the fall-line.

arc: /ark/ The curved track left by a carved turn.

ath·le·tic stance: /aTH'letik stans/ A body posture such that the skier is biomechanically aligned in their joints and muscle lengths so they can react optimally to external forces or respond with agile movements as the demand dictates.

B

banking: The action, or result, of tipping the entire body toward the inside of the ski turn. Usually has a negative connotation.

blocking pole plant: The action of stabilizing the torso through pole contact with the snow in conjunction with the edge set at turn completion. –Syn. breaking pole plant.

C

carving: The skis, traveling along their longitudinal axis through the arc of a turn, where the tails follow as closely as physically possible the same path as the tips of the skis.

catching the edge: *slang.* Establish balance and pressure quickly on new outside ski.

center-of-mass: The point in the skier's body where the skier's weight is concentrated during a specific body posture. –Syn. CM, CoM, center of gravity. The terms "center-of-mass" and "center-of-gravity" can be used synonymously.

cen·trif·u·gal force: /sen'trif(y)əgəl fɔrs/ A pseudo-force, or effect, that is "felt" when the skier is attempting to following a curved path.

cen·trip·e·tal force: /sen'tripətɪ fɔrs/ A force that causes a body to follow a curved path; always directed toward the center of the curved path. In skiing centripetal force is

exerted on a turning ski's edges and bottoms by the snow.

clean skis: *slang.* Ski-snow interaction that has very little friction and braking.

come from behind: *slang, archaic.* Tactic where the ski racer performs a large percentage of his or her turn above the gate.

co-or-di-na-tion: /kō,ōrdn'āSHən/ Behavior of two or more joints in relation to each other to produce skilled activity.

coun-ter: /'kountər/ To oppose or to go to the opposite way. In skiing, typically referred to a relationship in which the lower body turns against or opposes the upper body or vice versa.

countering movements: Movements that place the upper and lower body in a twisted relationship, for example, allowing the feet to continue to turn while stabilizing the upper body with a pole plant. Skiers generally use countering movements to put the body into an anticipated position.

counter position: A body position in which the chest does not face the direction of travel. In a traverse the chest faces downhill, in a turn it faces the outside of the turn.

counter-rotation: Movement of the upper and lower body about the vertical axis in opposite directions.

cross-over: Moving the body's center-of-mass (CoM) forward and across the skis. The CoM moves from the inside of one turn to the inside of the next turn.

D

deep: *slang.* A tactic where the ski racer gives lateral distance to the gate. Not to be confused with vertical distance.

de-lib-er-ate prac-tice:

/di'libərit 'praktəs/ *adj. v.* Repetitious training that has a specific focus.

DIRT: Acronym for Duration, Intensity, Rate, and Timing. Used in ski instruction and coaching when talking about ski technique.

dirty: *slang.* The result of a stivot, redirect, or skid at turn initiation.

downhill ski: 1: The ski which is most down the hill or lower in elevation than the

other ski. **2:** Type or variety of ski used for the downhill ski racing event.

drag: The force that opposes an object's motion. In skiing this is usually through the air and on the snow.

E

edge angle: The degree of tilt of the ski about its longitudinal axis in relation to the supporting surface. Skis placed flat on the snow have an edge angle of 0°.

edge change: Tipping a ski from one edge or set of edges to a new edge or set of edges.

edge control: The ability to maintain proper adjustment of the angle between the skis' running surface and the snow for the ski maneuver being performed.

edge control movements: Movements that increase or decrease edge angles.

edge lock: A situation where the ski is aggressively edged with the intent of staying on the edge.

edge release: Flattening the skis by changing the angle of the edge relative to the slope.

edge set: A purposeful edge engagement that provides a platform for the next turn.

edging: The interaction of the ski with the supporting surface (snow) and, more specifically, relates to the angle between the running surface of the ski and the snow.

edging movements: Movements that increase or decrease edge angle.

e-qui-lib-ri-um: /,ēkwə'librēəm/ *n.* A state of equal internal and external forces to create balance.

ex-ten-sion: /ik'stenSHən/ *n. 1:* An unbending of a joint between the bones of a limb by which the angle between the bones is increased. **2:** Lengthening or straightening of the muscle; any movement resulting in an increase of a joint angle.

ex-ten-sors: *n.* Muscles that enable extension at a joint.

external forces: An outside force affecting performance.

F

fall-line: The imaginary path, through any single point on the slope, that follows the steepest descent. The fall-line is the trail on which a ball would roll if it were released down the slope.

FIS: Acronym for Fédération Internationale de Ski (International Ski Federation). The governing body for international ski racing.

flex-ion: /'flekSHən/ *n.* A bending of the joint between the bones of a limb that diminishes the angle between the bones.

flex-ors: /'flek,sər,-,sôr / *n.* Any muscle which creates flexion.

flipping the ski: *slang.* In slalom, it refers to the rapid rotation of the ski from its uphill edge to its new downhill edge very rapidly, as opposed to "rolling the ski" which is slower. It is intended to offer the skier early edge and allow for early pressure.

force: An agent or action that produces a change in the speed and/or direction of a body's motion. External forces include gravity, air resistance, and ski-to-snow and pole-to-snow interactions. Internal force is generated by muscle contractions.

fore: Toward the tips of the skis. In front of the bindings.

fric-tion: /'frikSHən/ *n.* Resistance to an object sliding across a surface. A ski sliding on ice experiences less friction than a ski sliding through wet snow.

fron-tal plane: /'frəntl plān/ *adj.* A vertical plane or any plane parallel to it that passes through the body from side to side, dividing it into anterior and posterior halves. –Syn. lateral plane, coronal plane.

full gas: *slang.* Going 100%.

G

gate: 1: Two or four poles in which the skier must ski between. **2:** Slang for "pole".

glide: Using the least amount of edging necessary to achieve the desired direction of travel.

gliding: Forward sliding of the skis, either in a direct line down the hill or through a turn.

glisse-ment: /glees-mahn/ *French* Referring to optimizing the actions of the skier and ski in which there is limited distraction from achieving the goal of the turn or run. A carved turn has more glissement than a skidded turn. A damped ski has more glissement than a vibrating ski. A tuck has more glissement than a standing position.

grounded: *slang.* Keeping the ski on the snow.

H

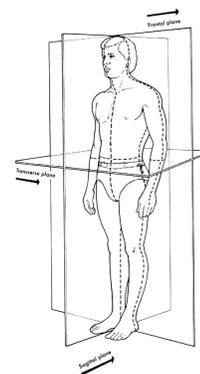
hip angulation: Internal rotation of the femur, with slight adduction and flexion of the hip of the outside turning leg along with external rotation of the inside leg's femur and hip flexion.

hip ro-ta-tion: /hip rō'tāSHən/ *n.* Turning the hips, usually in the direction of the intended turn, for positive or negative effects.

hor-i-zon-tal depth: /,hôrə'zän(t)l/ /depTH/ The horizontal distance the ski racer is from from gate.

hor-i-zon-tal dis-tance: /,hôrə'zän(t)l // 'distəns/ The length (usually in meters) across the hill in which the turning gate is set.

hor-i-zon-tal plane: /,hôrə'zän(t)l// plān / *n.* A horizontal plane or any plane parallel to it which passes through the body, near the navel, dividing it into upper and lower halves of equal mass. –Syn. transverse plane.



I

in-cli-na-tion: /,inklə'nāSHən/ *n.* Deviation from a vertical body position. Specifically, inclination refers to the angle formed by the head-to-feet axis of the body and the line of action. A skier is inclined when angulating

or banking. This term is used to describe the overall appearance of the body in relationship to a vertical reference.

Inclination may be sideways in the frontal plane or forward/backward in the sagittal plane.

inside arm clear: Method in slalom ski racing in which the inside arm, or arm closest to the gate, is used to move the gate out of the way such that the ski racer can take a tighter path to the gate.

inside ski: The ski which is most inside the arc of the turn.

internal force: A force produced by the muscles of the body.

K

kin·es·thet·ic: /kɪn əs 'θet ɪk/ *adj.* The body's sense of motion.

ki·netic en·er·gy: /kə 'netik 'enərjē/ *n.* Energy of motion.

knee angulation: An appearance of a lateral angle of the skier's knee that is from the internal rotation of the femur with adduction and flexion of the knee.

L

lateral movements: Side-to-side body movements used to create edge angles and to maintain body balance while managing or resisting forces.

lateral space: The amount of horizontal distance across the hill that the ski racer allows when approaching the gate.

left foot turn: A ski turn where the left foot (ski) is on the outside of the ski path. A left foot turn would be a right hand turn.

linked turns: Ski turns without or with limited traverse such that the completion and initiation phases blend seamlessly together.

lower body: The parts of the body that includes the legs. Specifically the femurs down to the feet. Not the pelvis.

M

meter: Equal to 39.37 inches.

method: The process whereby a sport is taught. Methodology is the overall approach to, or orderly arrangement of, the process of teaching various movement options.

movement analysis: The process of assessing a skier's ability – the movement patterns and skill blending – and identifying the cause-and-effect relationships. The coach analyzes the separate components of the athlete's movements to determine the focus of the training and identify the steps that will produce the desired results. –Syn. movement assessment, observational assessment, observation, systematic observation, qualitative assessment, qualitative analysis, skill analysis, visual analysis, subjective analysis, clinical diagnosis, error detection, and eyeballing.

N

Newton's 1st law of motion: An object continues in a state of rest or constant velocity unless acted on by an external force.

Newton's 2nd law of motion: The resultant force acting on an object is proportional to the rate of change of momentum being in the same direction as the force.

Newton's 3rd law of motion: If one object exerts a force on another then there is a simultaneous equal and opposite force on the first object exerted by the second.

Newton's laws of motion: The relationship between force and motion formulated by Sir Isaac Newton.

O

outside arm clear: Method in slalom ski racing in which the outside arm is used to move the gate out of the way such that the ski racer can take a tighter path to the gate. –Syn. "cross-block".

outside edge: 1: The left hand edge of the left ski and/or the right hand edge of the right ski. 2: The ski edge which is farthest from the center of the skier or ski turn.

outside ski: The ski which is on the outside of the arc during a ski turn.

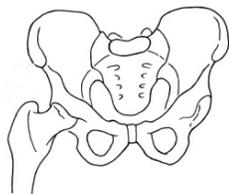
P

parallel position: A body position that is continually changing throughout the turn but maintains parallel skis, and an aligned lead of the inside of the body to allow for equal ankle flexion. Skier's ankles, knees, hips and shoulders are aligned corresponding to the lead (inside) ski.

parallel turn: A turn made on corresponding ski edges with simultaneous edge release and engagement. The skis remain parallel throughout the turn as opposed to converging or diverging.

pel-vis: /'pelvis/ *n.*

A cone-shaped bony ring made up of the right and left pelvic bones joined in front and in back.



picking up the ski:

slang. Finding the inside edge of the new outside ski early in the turn.

pin (pin it): *slang.* Go for it!

pinch: 1: A turn that is overly tight on the gate resulting in insufficient space for the skier's body. **2:** A turn that decreases radius after the gate, creating a "comma" shaped turn.

pipe: *slang.* A carved turn.

pivoting: Turning the skis about an axis perpendicular to the running surface which results in the skis being displaced at an angle to the skier's direction of travel.

pole: The FIS term for the tall (1.8m) red and blue sticks placed in the snow that ski racers ski around.

pole plant: Touching or brushing the pole tip in the snow as a signal to change direction, to assist with the change of direction, to help stabilize the upper body, or to help maintain balance.

pole swing: Movement of the ski pole in the direction of the new ski turn center either from the movement of the skier's center-of-mass or from the skier's wrist and arm motions.

pole touch: A more modern term which replaces pole plant when the tip of the pole

is touched to the snow surface rather than firmly inserted into the snow surface.

pole use: Movements that involve the ski poles, such as swinging, touching, planting, or gate clearing using the ski poles. Timing, placing, and technique of the pole movements affect rhythm and timing of the turn as well as direction and outcome of body movements.

pressure: The distribution of force over an area. Pressure underneath the ski can be fore/aft, side-to-side, or ski to ski.

pressure control: The action of actively adjusting the pressure exerted by the skis against the snow.

pressure control movements: Movements that may affect pressure on the skis. Pressure control and manipulation is achieved through leverage, flexion, extension, redistribution of weight from foot to foot, increasing and decreasing edge angle, muscle tension, changing turn shape and size, etc.

pro-gres-sion: /prə'greSHən/ *n.* Ordered steps of learning on a continuum of easiest to mastery.

pull radius: *slang.* Shortening or tightening the turn radius.

R

rebound: The recoil or springing back of a decambered ski. When a skier bends the skis through the turn (i.e., decambering) and then releases the pressure and forces, the skis can rebound and create a snappy linkage from turn to turn.

redirect: A turn initiation technique where the skis are pivoted to "redirect" them before edging.

reference-of-correctness: Refers to body position(s) that are regarded as vital to the maintenance of dynamic balance.

re-trac-tion: /ri-trak-shuh/ *n/ n.* Flexion of the legs as a result of muscular effort causing the skis to come to the body (active retraction) or allowing the legs to fold due to a terrain change such as a bump (passive retraction).

right foot turn: A ski turn where the right foot (ski) is on the outside of the ski path. A right foot turn would be a turn to the left.

rolling the ski: *slang, archiac.* Movement of the ski from its uphill edge to its new downhill edge. Older term that has been replaced with "flipping the ski".

rotary movement: Movements that increase, limit, or decrease the rotation of the skis. Rotary movements can be either with the entire body, or with the lower body rotating in the opposite of the upper body.

rotary push-off: A mechanism of pushing off from one or both feet in a manner that imparts a rotary motion to the body about its vertical axis. A pushing off that creates a pre-rotation and an up unweighting.

S

sag-it-tal plane: /'sajɪtl plān/ *n.* Vertical plane, or any plane parallel to it that passes through the body from front to back, dividing it into right and left halves. –Syn. anteroposterior.

se-quential leg ro-ta-tion: /si'kwɛnCHəl leg rō'tāSHən/ *adj.* A non-simultaneous rotation of the legs such that one leg is used as a platform against which the opposite leg is rotated. Diverging, converging step turns are examples.

shelf: The squared off edge that is left on the gate side of a rut.

si-mul-ta-ne-ous leg ro-ta-tion: /,sɪməl'tānēəs leg rō'tāSHən/ *adj.* Rotation of both legs at the same time.

skidding: The composite result of ski moving forward (sliding) and sideways (slipping).

skill(s): 1: Movements that are dependent on practice and experience for their execution, as opposed to being genetically defined. **2:** The level of proficiency on a specific task or limited group of tasks acquired through practice and experience. **3:** A learned movement that is controlled, coordinated, and efficient. **4:** Indigenous movements that have fundamental or basic intrinsic features that the sport could not do without.

skillful: 1: consists in the ability to bring about some end result with maximum certainty and minimum outlay of energy, or time and energy. **2:** is the process of mastering redundant degrees of freedom in the moving organ. A conversion to a controllable system.

sliding: Forward movement of the skis in the direction of their longitudinal axis.

slipping: Movement of the skis sideways. Slipping can occur with the skis perpendicular to the line of travel (sideslipping) or in other orientations, such as in a turn.

snow contact: The skis and edges maintain contact with the snow.

square position: *slang.* Skier stance where the hips and shoulders are perpendicular to the longitudinal axis of the skis.

steering: The muscular guidance of the ski into the turn by a twisting action of the lower limbs resulting in the change of the skier's direction.

stalancing: *slang.* Refers to staying in balance while in motion using stance as a tool.

sti-vot: A high speed skid at turn initiation used in alpine ski racing to improve line while maintaining speed. "st" from steering and "ivot" from pivot.

straddle: When each leg goes to a different side of a race gate.

strong inside half: *slang.* Cliché that refers to body alignment where pelvis and shoulders align with the lead change of the skis.

T

tac-tics: /'taktik/ *n.* The strategic application of technique and line, based on experience and skill, to a given turn or turn sequence, terrain or snow condition.

tech-nique: /tek'nēk/ *n.* The manner in which fundamental elements of skiing are executed. A movement option for accomplishing a given goal.

timing: The precise sequencing of the various turn phases in relation to the fall-line, rhythm, and set of the gates, speed and

terrain conditions, all the while maintaining dynamic balance and the optimal line.

traverse: /trə'vərs/ *v.* To ski across the slope in a horizontal or diagonal path.

turn shape: The geometric form of the turn made by the skis in or on the snow: round, ellipse, angled, elongated, etc.

U

unweighting: Taking varying amounts of weight off the skis to manipulate and control pressure.

uphill ski: The ski that is of higher elevation when compared to the other ski when on a slope.

upper body: Part of the human body that includes head, arms, and torso (which includes the pelvis).

up-weighting: Pressure created under the skis by active extension of the legs.

up-unweighting: Unweighting accomplished by slowing or stopping an extension. The intensity of the lightness