

13

LEVEL 1

MODERN SKIING

Argentine Alpine Skiing Technique
METHODIC PROGRESSION



AADIDESS

Asociación Argentina de Instructores de
Esquí, Snowboard y Pisteros Socorristas

PREFACE

The presentation of the book Modern Skiing fills AADIDESS, in general, and the Board of Directors and me, in particular, with pride since together with the Course Manuals that accompany it, this book is a tool that will help to further elevate the process that our Association is going through. With the final insertion among the most qualified countries in the worldwide teaching of skiing, as our Level 3 Instructors have been distinguished with the SIA Card (there are only 12 countries, out of 38 members, with this distinction), my appointment as a member of the ISIA Presidium as Vice-President for America and the State's recognition of the Degree for the Higher Institute (formerly Academy) graduates, we could consider ourselves satisfied. However, we have faced a new challenge: Argentina's nomination to host the Interski Congress 2015 will allow us to bring home our associates and the most outstanding ski instructors in the world. Together with this, we have started a new cycle of spreading the activity, getting hold of the Ski and Snowboard Teaching Programme in schools, sponsored and financially supported by the Tourism Promotion Board of the National Secretariat of Tourism. The support of the National Secretary of Tourism, Mr. Enrique Meyer and Mr. Hugo Sartor, who interpreted the scope of our action, has been and will be fundamental. We will continue working until we achieve the dreams that move us: to confirm the Argentine Instructor as a teaching leader at an international level.

Martin Bacer

AADIDESS President

ISIA Vice President for America

RECOGNITION

In view of the permanent evolution of the activity and its ever wider spreading, it was necessary to update the material used in the training of instructors and the teaching of lessons. Having decided on the project of replacing the 2002 Manual by a more modern one, I assumed the responsibility of making it a reality before the Directive Commission. This book, The Modern Ski, was already being written in the snow, by the person who has developed all the Technical Concepts from 1984 until today, Justy Olivieri. Naturally, I asked him to put it on paper, and this is the result. I will skip Justy's introductory words, as they would be redundant.

Muchacho Prebisch

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RECOGNITIONS

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I would like to thank Alberto Prebisch, in particular, for believing and encouraging me so that I could finish this book. To Juanjo Hernandez, for offering himself to discuss and confront his ideas with mine so that, through agreement, we would end up saying the same. To those who believe that it is worth carrying on learning, instead of aging. To those who offered themselves for demonstrations and photographs.

TERMINOLOGY

For a better understanding of the most frequently used terms, their meaning is detailed below:

ABSORPTION: action of partial or total absorbing of the weight that is transferred to the supporting plane

ACCELERATION: speed increase

ATTITUDE: Dynamic pre-action position. E.g. basic stance (BS)

ANGULATION: movement that doses the edging.

BALANCE CENTRE: point located, in normal position, at the intersection of the projection line of the centre of gravity and the transverse axis of the feet at the level of the arcs of them.

BODY AXES (imaginary):

Longitudinal (vertical): It crosses the body from the head to the point where the heels join.

Transversal: It goes from one shoulder to the other.

Sagittal: It goes from chest to back.

BODY PLANES (imaginary):

a) Sagittal plane: divides the body vertically into two symmetrical halves: right and left.

b) Front plane: divides the body into two halves: anterior and posterior.

c) Transverse plane: divides the body into two halves: upper and lower.

CENTRE OF GRAVITY: point located, in a normal position, approximately at the level of the third sacral vertebra. It varies according to the physical type and any movement displaces it.

CHANGE OF EDGES: The skis are rolled on their longitudinal axis to change the support edge (right to left and vice versa).

COMPENSATE: To adjust efforts and movements to counteract or take advantage of external forces.

COMPRESSION (PHASE OF): phase in which the load tends to increase because the track of the centre of mass (CM) converges with that of the skis.

COUNTER-ROTATION: movement of the body, or part of it, on its longitudinal axis, in the opposite direction to that of movement.

CRITICAL POINTS: Points where the direction of increase or decrease of the speed in bend is inverted. It can be maximum or minimum. Therefore, the external forces supported by the skier are as well. It varies according to the type of turn, snow and driving quality.

CUTTING: to drive on the edges in order to reduce skidding.

DECELERATION: slowing down of speed.

DEPRESSION (PHASE OF): Phase in which the load tends to decrease, due to the divergent track of the CM.

DOWNHILL: Ski or part of it, pole or part of the body, which is lower in relation to the slope.

EDGING: (edge-taking): action of arranging the skis on the uphill edges traverse and internal in turn, through angulation.

EFFORTS: isometric, isotonic or auxotonic (internal forces) muscle contractions to generate and control the desired actions.

EMPIRICAL: based on practice and routine.

EVERSION: action of turning the foot plant outwards. It is the opposite of inversion

EXTENSION: increase of the articular angles. See technical definition.

EXTERNAL: Ski or part of it, pole or part of the body, in relation to the turn being made.

EXTERNAL FORCES: They are the gravitational ones and those that occur as a result of displacements and variations in the terrain.

FALL LINE (FL): The steepest and most direct imaginary line of an ideal slope.

FLEXION: decrease of the articular angles. See technical definition.

GESTURE: set of actions that determine changes in direction e.g. wedge turn.

HALF TURN: It is a 180° change of direction made in the same place.

INFLEXION POINT: point in a bend where the direction of its bending changes.

INTERNAL FORCES: Muscular efforts.

INTERNAL: Ski or part of it, pole or part of the body, in relation to the turn being made.

INVERSION: action of turning the foot plant inwards. It is the opposite of eversion.

KINESTHESIA: perception of their own movements, muscular tensions, articular frictions.

LOAD (APPARENT WEIGHT): Intensity of force applied to the support surface.

MASS: (of the body): set of particles that make up the body.

METHOD: an orderly way of talking or proceeding.

NARROW TRACE: position of the skis parallel to each other and slightly separated to allow adequate leg independence.

PRESSURE: action of the body against the support surface.

RELEASE OF THE EDGES: (action of): reduction of the angle of the EDGES in relation to the snow (decrease of the angulation).

ROLL: (referred to the roll of the ski /s): passage from one edge to another of the ski (s). It can be done with one ski at a time (independent way: wedge christy) or both at the same time (simultaneous way: parallel).

ROTATION (of the body): turning of the body or part of it, on its longitudinal axis, in the direction of the turn, at a higher speed than the supporting base (skis).

SENSE: perception through the senses. To feel...

SKIDDING: Slide of the skis traverse or rounded, on the edges.

SKIS AXES:

Longitudinal: It goes from the tip to the tail.

Transverse: It divides the ski into two parts: anterior and posterior.

Sagittal: perpendicular to the base of the skis.

SPEED: precise velocity of movement.

STAGGER: distance between the tips of the skis in the longitudinal direction.

SUPPORT: Load increase on both skis, part of them or one, by means of internal forces.

TURN: change of direction.

UPHILL: ski or part of it, pole or body part, which is higher in relation to the slope.

VISUAL ANTICIPATION: evaluation of the time - space - terrain parameters, which, prior to the decision, will determine the actions and the amount of the effort needed.

WEIGHT: (of the body): mass by acceleration of the Earth's gravity.

$P = m \cdot G = x \cdot NW$

WEIGHT TAKING: action of controlling the absorption of the body weight by the articular angles.

WIDE STANCE: position of the skis parallel and separated to the width of the hips.

VEHICLE

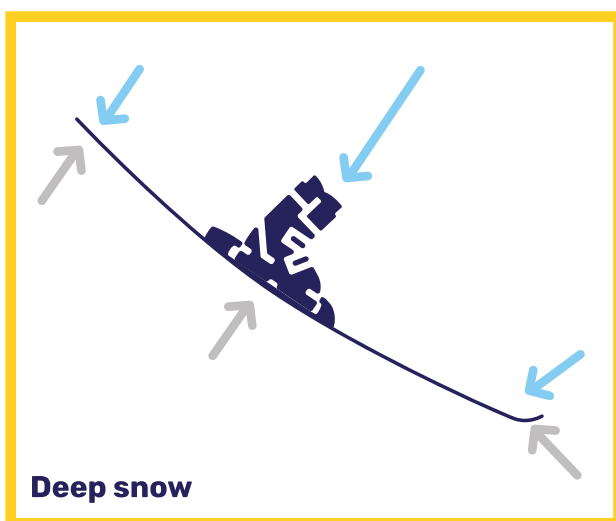
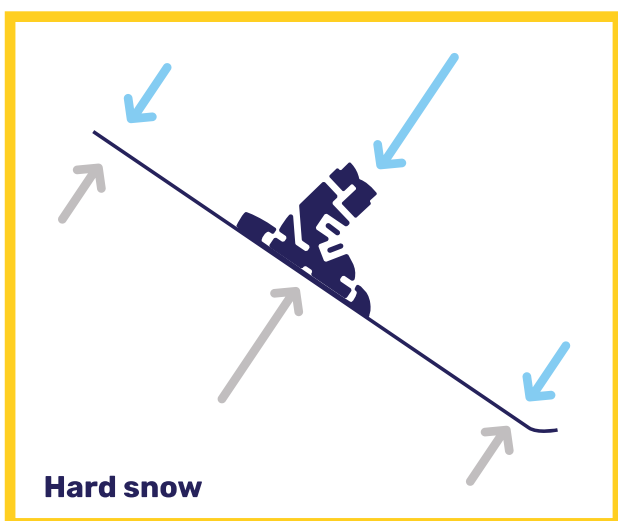
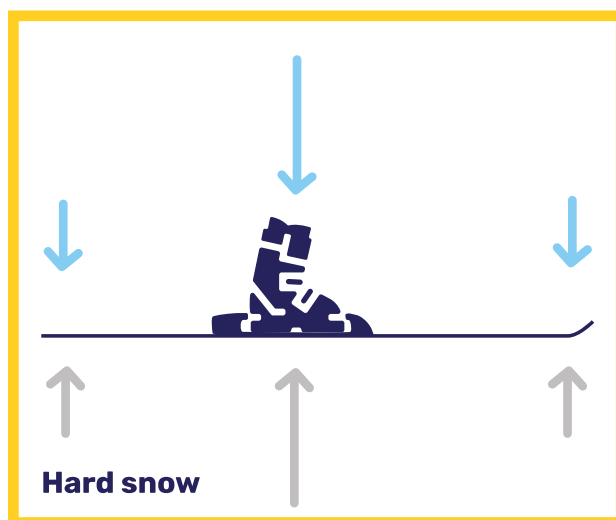
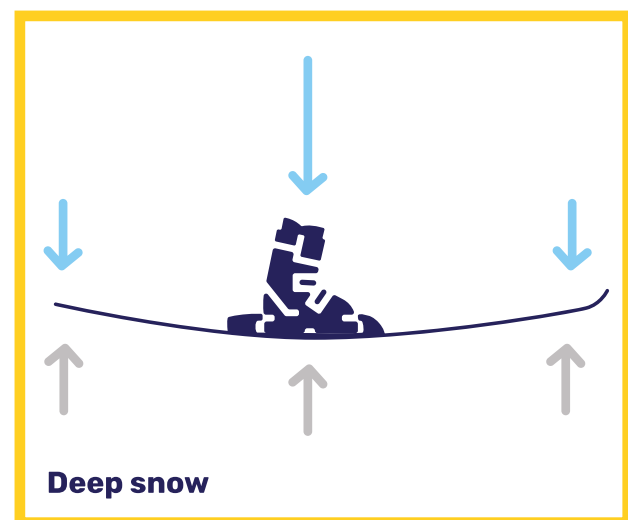
The skis are vehicles with particular mechanical characteristics, which we use to move, in the case of 'alpine' or 'downhill' ski, motorized by the action of gravity and the inclination of the terrain, taking advantage of the properties of the snow. Understanding the operation of the ski/snow assembly and its interaction possibilities allows us to determine the necessary actions and the most appropriate technique to control the movements of the vehicle, and therefore, our own. Before analysing the particular bio-mechanics of alpine skiing, it is necessary to highlight the substantial differences among the ski vehicles we are interested in, which we can classify into two groups: single or double. The single ones are those where the bindings are both on the same board, whereas the double ones are those where the bindings are mounted on two independent boards, one for each foot. We call the first group Snowboard and the second group Ski. There are three main groups in skiing: Alpine, Nordic and Telemark. In all cases, the most important difference is the system of fastening to the footwear, which conditions the necessary actions to optimize the achievement of the objective. In the understanding that the technical concept of compensation is valid for the generality of these, we move on to deal with the specific issue: Alpine Skiing.



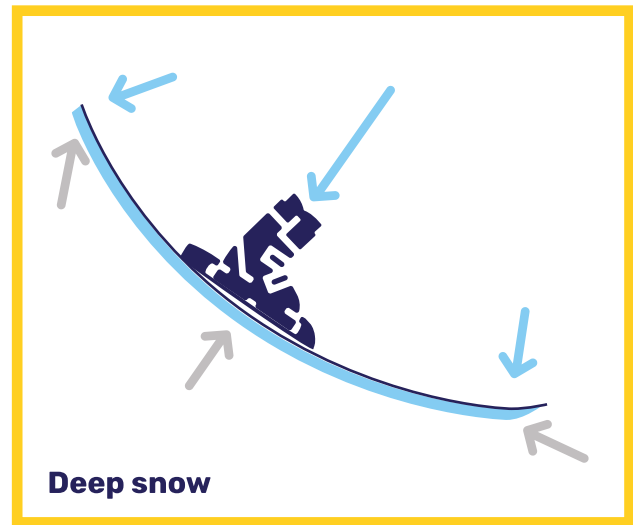
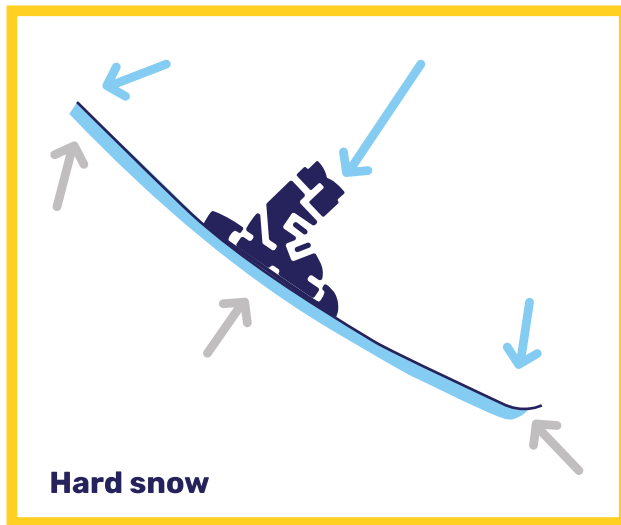
SKIING: operation. The skis are made to slide on their base, lengthwise or sideways or as it is more common, in a combination of both displacements. The base in contact with the snow also has steel edges that allow the ski to impact on the snow when we lean on them. Regardless of the particular characteristics of each 'ski model' designed to adapt to different snow conditions and demand, they all work in a similar way: when carving, as a result of the applied load and the resistance of the snow, it tends to follow a curved track.

We call alpine skiing to controlled descents where the skier moves on two boards with a firm grip on both the toe and heel of the boots, regardless of their length or width.

SKIING WITHOUT DIFFERENCE IN HEIGHT



SKIING WITH DIFFERENCE IN HEIGHT



BOOTS: operation. The boots are the link between our body and the skis. Their function is to transmit the skis and the body the movements and efforts of the feet, so they must be adjusted. To some extent, they are part of the vehicle, fulfilling the function of a 'cabin'. Once they have been fitted to the 'bindings', they form a unit with the skis.

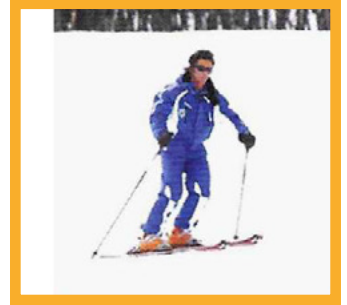
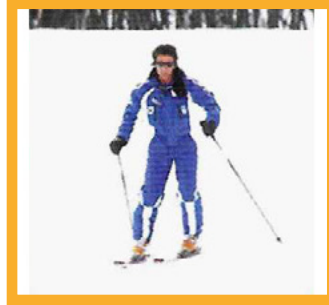
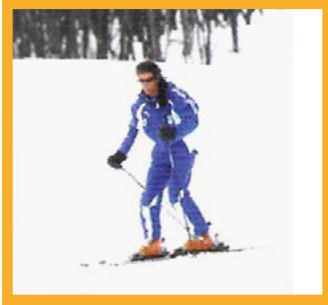
POLES: Used for driving, balance, rhythm and position sensors.



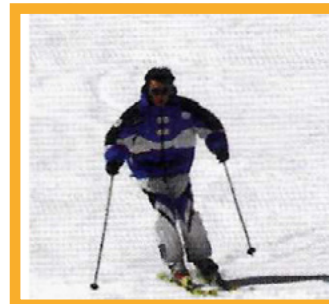
ACTIONS

The necessary actions to drive the skis and modify the tracks are common to all the techniques, varying the sequence and amount of the mentioned actions according to how the mechanisms of action are used (efforts, movements). These are:

- **Visual anticipation:** Evaluation of time, space, terrain, prior to action.
- **Directional:** Rotations, pivots, turns.



- **Weight management:** Extend, flex.



- **Edge management:** Angle, anticipate, change edges.



At all levels of skiing, from beginners to competition, these actions are linked, interacting either primitively or finely,

The selection of the sequence, direction and intensity of the movements to control the necessary actions will determine the technique used.

TECHNIQUE

'The technique can be taught, the balance must be discovered'.

Skiing technique is the sequence of MUSCULAR CONTRACTIONS AND DECONTRACTIONS (efforts, movements) carried out by the skier to coordinate and dose the ACTIONS necessary to drive his vehicle during the trips.

Techniques are valued by:

Efficiency: relationship between effort and result.

Acceptability: time relation between the Beginner, Advanced and Mastery phases. This is valid for both recreational and sport skiing, as learning the technique to be used must be directly related to the time available to obtain the desired result. In competitive skiing, the concept of effectiveness becomes important, which is the result of efficiency and psychophysical abilities.

COMPENSATION TECHNIQUE

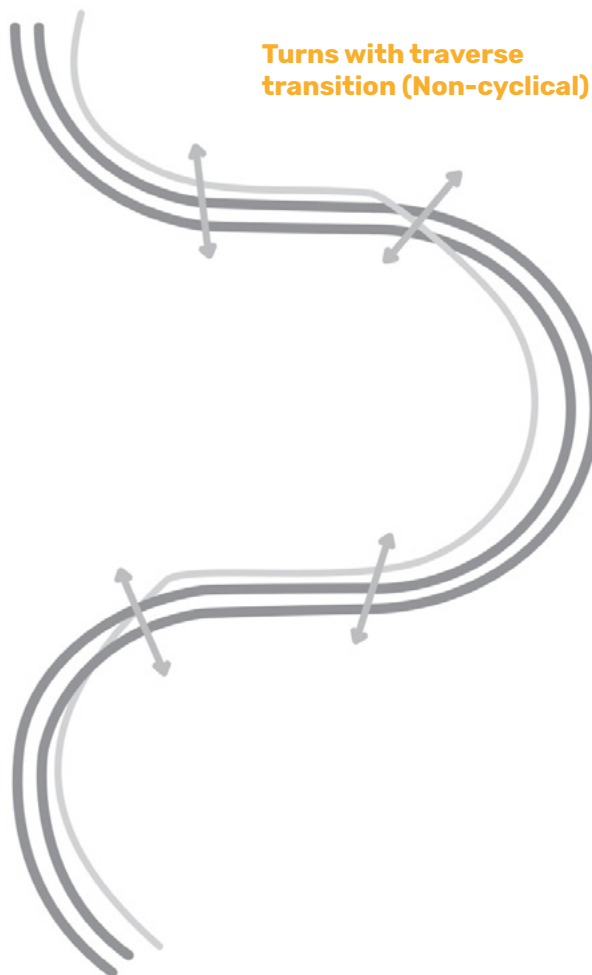
Definition: CT is the sequence of EFFORTS (muscular contractions, movements) to be executed by the skier during his movements, in order to generate the necessary actions and achieve his objective with EFFICIENCY (economy), taking advantage of the mechanical characteristics of the vehicle and the reaction of the snow.

The EFFORTS have the objective of allowing the adequate control of the snowboard-snow relationship, having to be automated according to this relationship and not as a structured sequence. This is easily achieved when learning and teaching are oriented towards the discovery of the correct sensations through tactile, kinaesthetic and vestibular sensors.

The following are intrinsic conditions of the CT: Trying to keep the OPTIMAL LOAD constant, Direct Passage of the centre of mass (CM) in the Change of edges, Efficiency (taking advantage of external forces). The turns can be considered as non-cyclical (joined by traverse transitions) and cyclical (linked). In the non-cyclical turns, the impulse phase is repeated for each change of direction. Every sequence of linked turns needs an impulse phase to produce the first change of position (edge), which will make the first change of direction possible, to then take advantage of the forces generated by the movement in the successive changes.

Four phases are considered in non-cyclic turns: Preparation, Start, Main and End. In cyclic turns, after the initial impulse, the Preparation phase coincides with the Finalization phase, so we can describe three phases: Finalization-Preparation. Finish-Start and Main. The Finish-Start, stated as a phase, is precise and instantaneous. It must produce the change of edges; therefore, the change of direction. This point is called 'Inflexion point' (IP).





ACTIONS, EFFORTS AND MOVEMENTS OF CT

VISUAL ANTICIPATION

Starting from 3/4 of the previous turn, fix the focus of the view at the end of the next turn, by passive counter-rotation of the head.

WEIGHT

It is regulated by the effort of the body's extensor muscles. The increase in weight is achieved either actively (extension) or passively (isometric effort).

A decrease in weight (absorption) is achieved by decreasing the effort of the extensors of the foot/leg assembly to allow flexion, in a passive (gravitational) manner, more or less gradually.



EDGING

Regulation of the angle of incidence of the skis on the snow, by means of the degree of inversion of the inner foot - inversion of the outer foot, to adapt the position of CM in relation to the skis. For practical purposes, the angle of both skis is regulated, with the rotation-inversion of the inner foot, while the outer foot regulates the weight.



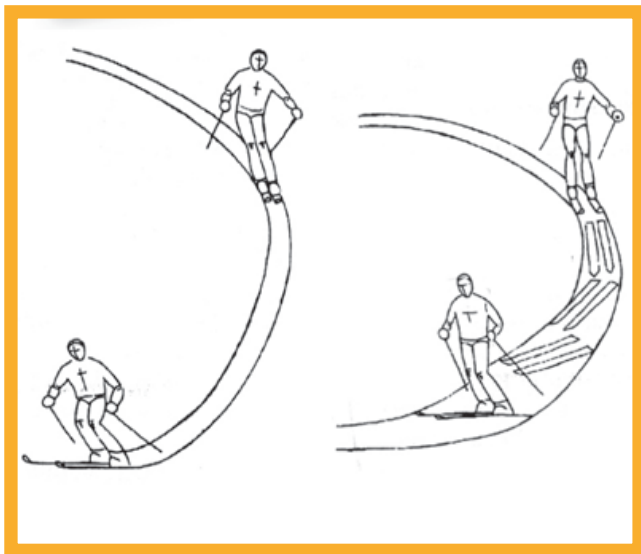
CHANGE OF EDGES

It is caused by the inversion of the downhill support foot (outside the curve that ends). It is done before the weight is taken on the ski uphill (inside the curve that ends). In parallel turns it must be simultaneous.



STEERING ACTION

This is the action of directing the skis, simultaneously or alternatively, by rotating the lower limbs (feet-legs) towards a predetermined point when, due to the speed, the desired angle of the turn, mechanical characteristics of the skis used and so on, this point cannot be reached with the normal deformation of the skis. During the turns, it produces a controlled skid on the edges and distributed, as far as possible, over the entire angle of the turns. By emphasizing the SA of the inner foot/ski, correct execution is facilitated.

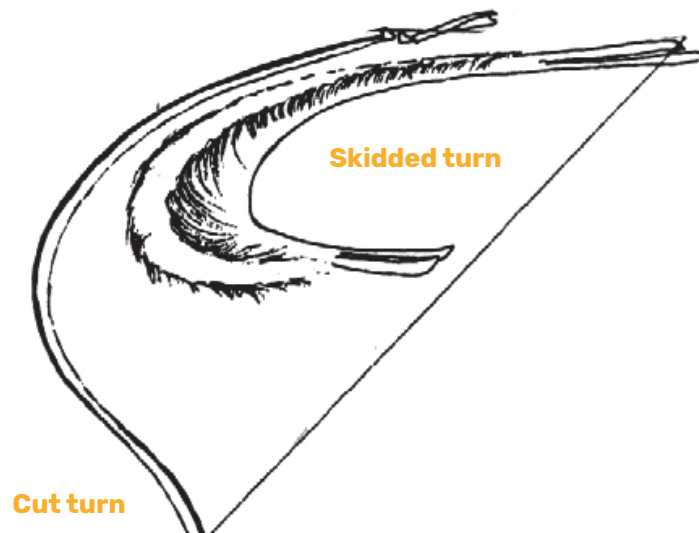


POLE PLANTING

This is carried out as vertically as possible, avoiding the hand/arm overtaking during preparation. This should be done by slightly increasing the flexion of the corresponding elbow and wrist, with the aim of advancing the tip of the pole and not the handle, to avoid shoulder rotation. It marks the moment when the compensation of the trunk starts. The moment is determined by the speed and type of turn. It facilitates control of inertial forces and SA.

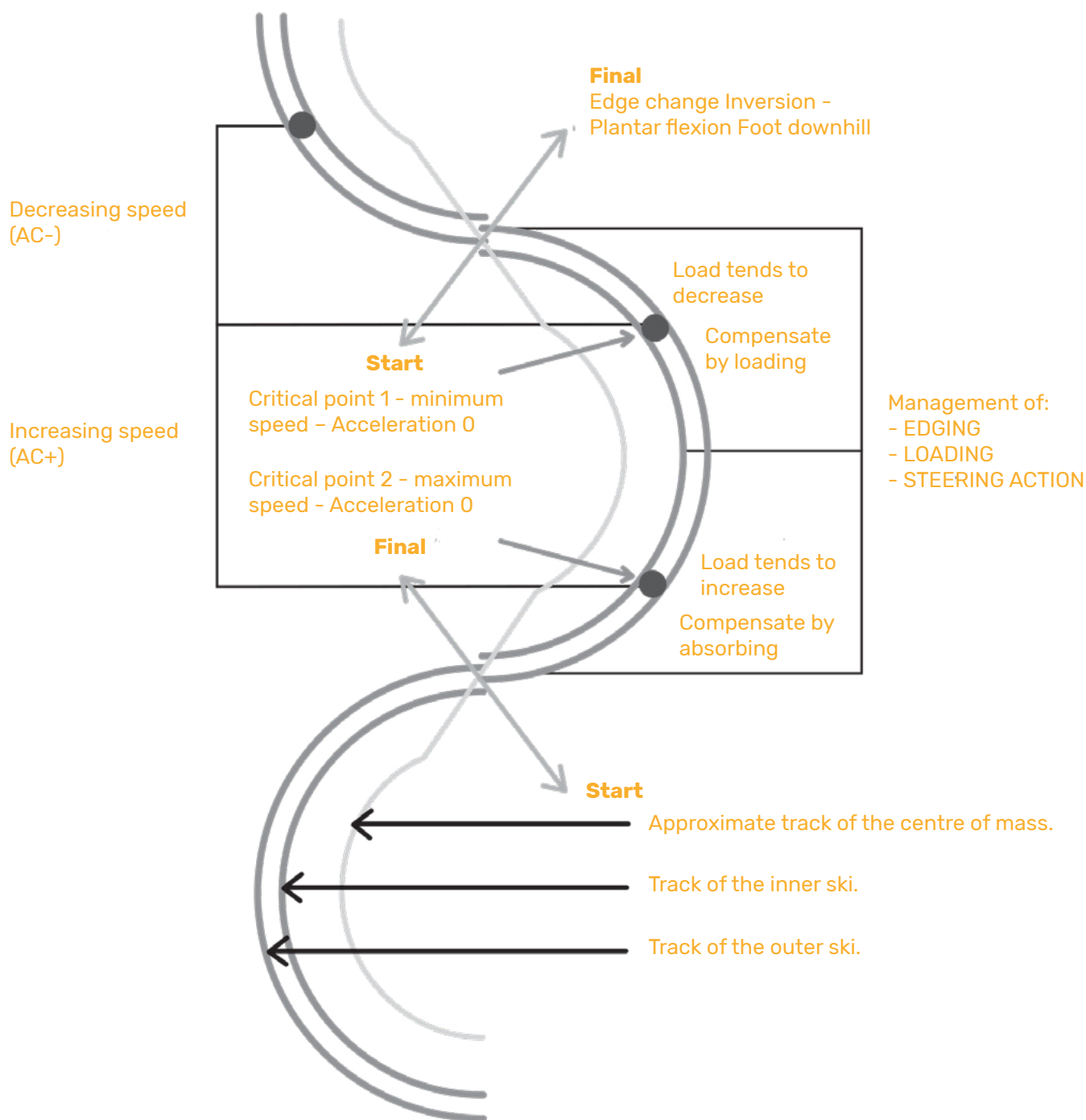


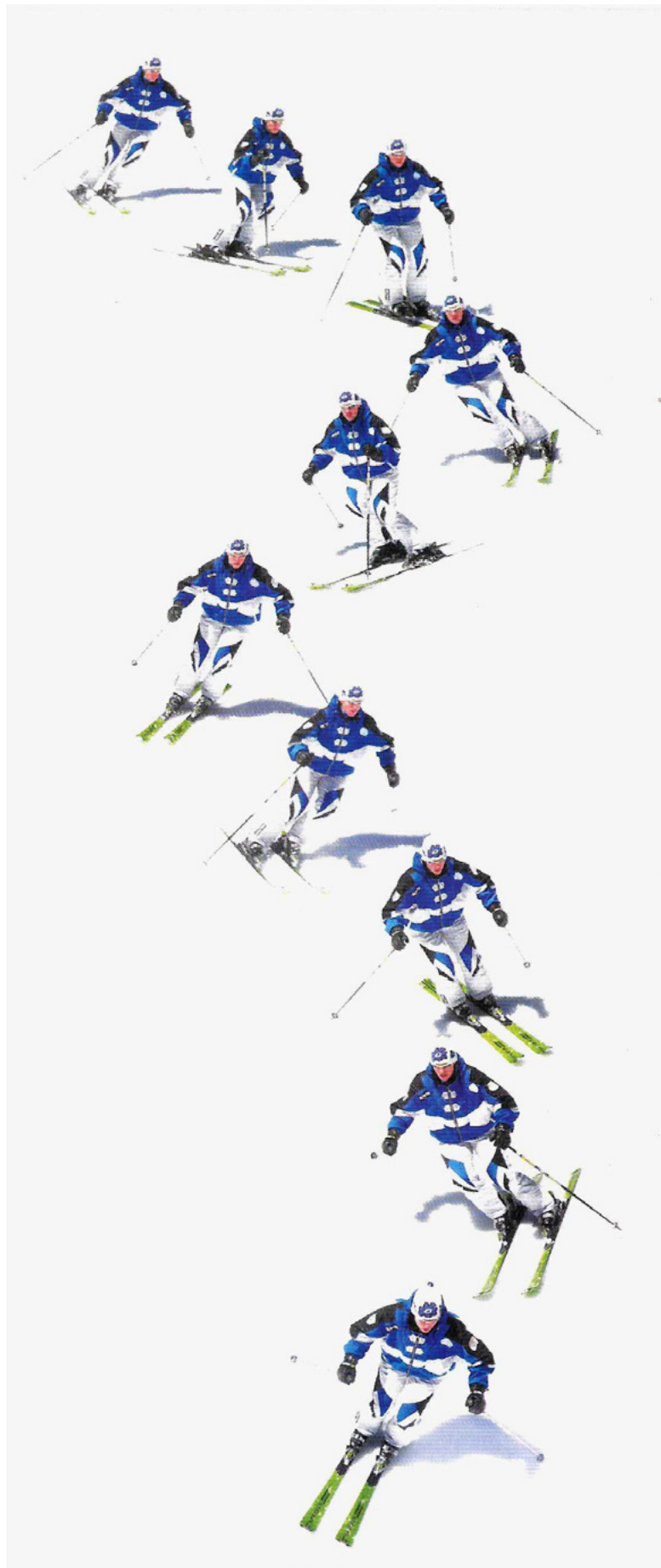
Note: the sequence of Actions mentioned above, correctly interpreted by means of dosed and gradual movements and efforts, allow the performance of Driven Turns, either skidded or cut. Cut turns are those where the skidding is reduced to the necessary minimum.



TYPE TURN

To facilitate the study and understanding of the CT, let us look at a succession of linked, symmetrical turns in hard, smooth and evenly sloping snow conditions, which we will call Type Turn (TT).





PHASE, ACTIONS, EFFORTS

- 1. End-Preparation (EP):** Visual anticipation, passive counter-rotation of the head, pole-grip downhill, by bending the wrist, weight management, (passive bending) and distribution on both skis, gradual decrease of angulation.
- 2. End-Start (edge change):** Started by rolling the foot-ski downhill, receiving the weight on the new support edge (the inner edge of the ski-uphill).
- 3. Main: (of steering):** Start of the steering action of the lower limbs, maintaining the weight as constant as possible on the support platform, by means of the adequate efforts of the external foot-leg assembly, regulating with the internal foot the edging, the pressure and distribution of the weight. Since the edging angle is a function of the specific speed (celerity), it increases in the acceleration phase, from CP 1 to CP 2, and decreases in the deceleration phase. Visual anticipation, and so on, (phase 1 re-starts). The pole will be planted between the start and the maximum slope, to facilitate compensation of the trunk when necessary.

MODERN TEACHING SYSTEM

ACTION CONCEPT

Since the birth of the Compensation Technique, in 1984, we have worked permanently on perfecting both our vision of what to do in each of the stages of the Technical Progression and the movements tending to obtain the desired result. This was done according to the principle: maximum performance with the minimum necessary effort... and so on, neglecting a basic Principle of Education, which is to clearly understand HOW to obtain the result.

THE SKIS ARE VEHICLES

As such, we must drive them so that they take us along the chosen path, instead of carrying them. From this concept, we will teach how to ski as we would teach how to drive or ride a motorbike or bicycle.

Good skiing means knowing how the skis will interact with the slope and snow and making adjustments efficiently. As we link turns, the skis will accelerate and decelerate, generating Inertial Forces we can take advantage of or suffer from.

To teach is to explain what will happen and how to operate, in an environment controlled by the Instructor.

Learning means understanding how to get the skis to take us where and how we want to go, the same as with a bicycle, car, and so on.

It is progressing from reflex reactions to what is happening, to conscious and planned actions and adjustments, and, with practice, to automatic reactions to visual and sensory stimuli.

We must explain the desired result and focus the student's attention on the actions necessary to obtain it, instead of perfecting movement structures. By perfecting the actions, the mechanisms are perfected, as well. Actions are perceptible, as is the result in the primary stages of learning. The perception of the movements and muscular tensions is only possible in the advanced stages of the training, while the reactions of the vehicle and the variations of pressure at the extremes of sensation are easily perceived.

LET'S DO WITH OUR FEET WHAT WE WANT THE SKIS TO DO...

Boots and bindings can be used to transfer the movements and levers exerted by the body to the skis, OR THE LOWER PART OF THE BOOT TO TRANSFER THE MOVEMENTS OF THE FEET TO THE SKIS, AND THE UPPER PART, THE MOVEMENTS OF THE FEET TO THE BODY. IT MAY SEEM THE SAME, BUT THE RESULT WILL SURPRISE YOU! We must tell the students what to do with their feet, how to do it and feel the skis and the snow interacting through their feet. Let's focus the instructions on what the foot/feet must do to get the desired result.

Example:

Bend your feet to... the right, left, uphill

Press the arc/s, tighten the foot...

Loosen the arc, round it

Scrape off the snow with the edge of the inner foot

Edging

Load

Absorb

S. Action

In linked turns, the feet keep the body inside the turn that is being performed, when leaning to edging, until the outer foot (downhill) voluntarily detaches from the support base, and 'seeks' the new edge. As a result, the change of edge of the other foot/ski occurs automatically and as a reflection of balance, it takes up the 'weight/load' on the new edge again.

The idea is to teach the Actions and efforts of the feet, rather than the movements that such Actions will eventually produce

In this way, the movements will be a function of the actions and these will be a function of time, space and terrain, all foreseen by the visual stimulus or as we call it:

VISUAL ANTICIPATION

To turn the ski vehicle, we determine where (by looking), we edge that way (we bend the feet towards)... we load (we tense the external foot) and 'steer' the feet towards... So far, we have mentioned the following ACTIONS:

- VISUAL ANTICIPATION: judges the situation and determines the sequence and intensity of successive Actions.
- EDGING: rolling/inverting the inner foot, to lean the body.
- LOADING: flattening the arc of the supporting foot, tensing or relaxing, to control the reaction of the snow.
- STEERING ACTION: scrape with the tail of the inner ski (of the inner foot). As the turn progresses towards its end, the load will tend to increase, so a gradual contraction of the 'feet' will allow us to absorb the surplus, causing a gradual bending of the legs.

In linked turns, the end of one is determined by the next, so VISUAL ANTICIPATION will determine when to 'release' (instantly eliminating the load from the external ski downhill, to allow the passage of the body to the interior of the new turn). This is done by means of a rapid plantar flexion and simultaneous inversion of the external foot downhill, causing a very rapid and precise change of edges and a reflex search for the load of the other foot (the external leg will gradually extend "searching" for the appropriate load).

We have now added the following ACTIONS to our recipe:

PASSIVE ABSORPTION: GRADUAL FLEXION

CHANGE OF EDGES: PLANTAR FLEXION-INVERSION OF THE FOOT DOWNHILL

LOAD (taking of...) TENSION OF THE NEW EXTERNAL FOOT

The right combination of these ACTIONS will help us to DRIVE THE VEHICLE.

As you can see, all the ingredients are present in every turn we try, from the very beginning of the progression, with the exception of the change of edges in wedge turns. Thus, we are giving the student all the technical background from the beginning making the learning process become an active search for the right sensations of interaction between skis and snow and a refining of the ACTIONS that will perfect that relationship.



- VISUAL ANTICIPATION

- EDGING

- LOAD

- STEERING ACTION

- ABSORPTION

- VISUAL ANTICIPATION

- CHANGE OF EDGES...

Everything dosed in the right proportions, and a lot of practice.

FROM WEDGE DESCENT TO SUPER PARALLEL

GLOBAL PROGRESSION

FROM WHAT TO DO TO... HOW TO DO IT!

WEDGE DESCENT	in a wedge, 'crush the arcs of the feet', 'scrape the snow with the arcs of both feet', 'Feel the inner edges', and so on.
WEDGE TURNS	'look towards...' -'round the arc of the left foot' ... 'to go to the left of the right'... Steer towards..., skid the tail of the... (external)
WEDGE CHRISTY	'look, open wedge, loosen foot arc...downhill, skid, brake with..., look... '
BASIC LINKS	'Open the right door to go right' . the left.... imagine you lower the door handle with your foot, scrape with the tail of the interior and so on.

At this point, the student has all the ingredients - ACTIONS needed to ski well. The rest is the guided process of learning to dose and apply the ACTIONS, according to the desired result, the snow, the particularities of the vehicle used, the speed, the time and space available. As you can see, the emphasis throughout the progression is on determining the desired direction and 'letting go' of the previous direction.

IF WE LEARN TO IDENTIFY THE RIGHT SENSATIONS WITH OUR FEET, WE CAN EXPECT TO FIND THEM AGAIN, MORE AND MORE OFTEN AND IN CHANGING SITUATIONS.

This is not a painful process. On the contrary, it is a constant and fantastic discovery of new, more intense sensations of power, control and harmony, as we flow down the slope, more efficiently with each descent.

Then, if we continue to try, the day will come when, like a miracle, some of us will discover that THE MOUNTAIN is ALIVE by feeling its heart beating as we caress it with the skis.

THIS IS THE TIME WHEN TECHNIQUE BECOMES ART.

METHODOLOGICAL PRINCIPLES

‘To make learning a safe, dynamic, fun and permanent process’.

From easy to difficult.

From the known to the unknown.

From the basic form to the fine form.

Choosing and using the terrain correctly.

Adapting to the speed and capacity of the student.

To control the demand.

PILLARS OF TEACHING: SECURITY, FUN, LEARNING

GENERAL ASPECTS

Safety: Act prudently in all situations and explain the reasons for certain behaviours necessary to avoid accidents or uncomfortable situations.

Snow: The instructor must be familiar with the effects of the sun, wind and temperature of the snow. He must learn to anticipate weather conditions when looking at the area to minimize the chances of accidents, especially off the marked runs.

Terrain: Learning is more efficient when the conditions of the terrain do not cause apprehension to the student, so the correct choice of terrain is very important. The success of the learning process depends to a great extent on the correct choice of land. The degree of the slope, the snow and the landform condition it, making it easy or difficult. Bear in mind that, on the same slope, different snow conditions vary in difficulty.

Fear: How to treat students with fear is perhaps the most important skill that the instructor must acquire. Low intensity fear can help the learning as it creates an atmosphere of greater attention. But when the intensity is higher, it causes uncontrolled reactions and muscle tension, which interrupts the learning. The most common fears are fear of the void, fear of falls and accidents, fear of failure and fear of others. Fear can range from a state of controlled tension to total contraction of the muscles of the body, which inhibits movement and causes fatigue, loss of coordination and balance.

TECHNICAL PROGRESSION

1. WEDGE TURN
2. WEDGE CHRISTY
3. BASIC PARALLEL
4. BASIC LINK
5. SUPER PARALLEL
6. SHORT PARALLEL

ATTITUDES AND TECHNICAL GESTURES

We call attitude the dynamic pre-action position with which we move or start to move. We call technical gesture a sequence of changes in direction.

ATTITUDES

Basic Stance (BS): feet at the same height and weight distributed over the entire sole of both. Ankles, knees, hips and waist slightly bent, semi-flexed arms, a little open, and slightly forward of the body, relaxed shoulders and at the same height.



Advanced attitude



Correct

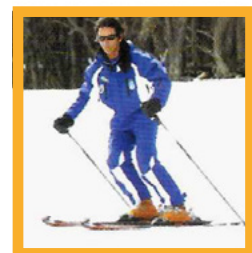
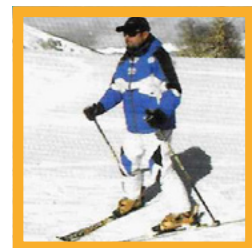


Delayed attitude

Direct Descent: Fall Line Movement (FL), in BS.

Wedge descent: Displacement in FL with sliding wedge skis.

Traverse Descent: Diagonal movement across a slope, with the skis parallel, with weight distributed on both edges uphill. Edging is made easier by inverting the foot uphill.



TECHNICAL GESTURES

We have divided the Technical Gestures into three, according to their function:

1. Support: they are used independently of the technical level, according to the situation.

- a. Turning steps
- b. Step ladder
- c. Step scissors
- d. Skidding
- e. Uphill turn
- f. Half- turn in place (in Spanish: vuelta María)
- g. Skating step
- h. Braking turn

2. Basic:

- a. Wedge turn
- B. Wedge christy
- c. Basic parallel turn
- d. Basic link.

They are performed on a preferably hard, plain and firm track.

3. For advanced training:

- a. Super parallel
- b. Short parallel
- c. Ground jumps

They are performed in all types of terrain and snow conditions, adapting to them. E.g.: Deep snow, off-piste, bumps, hard and smooth, soft and smooth slopes, and so on.

METHODICAL PROGRESSION

Beginners 1:

- a. Introduction to the equipment.
- b. Movements on the plane, without skis.
- c. Movements on the plane, with skis.
- d. Direct descent.
- e. Direct descent by wedge.

Beginners 2:

- a. Exercises for a wedge turn.
- b. Wedge turn.
- c. Diagonal descent.
- d. Skidding.
- e. Wedge Christy notions.

Intermediate 3:

- a. Wedge christy.
- b. Uphill turns.

- C. Absorption of the terrain.
- d. Notions of basic parallel.

Intermediate 4:

- a. Basic parallel.
- b. Basic linking.
- c. Introduction to terrain with bumps.
- d. Introduction to deep snow.
- e. Introduction to terrain jumping.

Advanced 5:

- a. Super parallel.
- b. Short parallel.
- c. Bumps.
- d. Deep snow.

Experts 6:

- a. Adaptation of the Super Parallel and Short Parallel to all terrain.
- B. Terrain and obstacle jumps.
- c. Off-piste skiing.
- d. Notions of giant slalom.
- e. Notions of slalom.

NOTE: Although we will try to respect the Technical Progression, we must know how to adapt it to the terrain conditions and psychophysical factors of the students.

TEACHING DEVELOPMENT

BEGINNERS 1

GENERAL SYLLABUS

Objectives: to familiarize the student with the equipment and the environment.

Terrain: the easiest available. Start on FLAT terrain.

TEACHING PROGRESSION

- 1. INTRODUCTION TO THE TEAM:** Movements on the plane, without skis.
- 2. MOVING AROUND:** Movements on the plane, with skis.
- 3. DIRECT DESCENT**
- 4. DIRECT WEDGE DESCENT**
- 5. TRAVERSE WEDGE DESCENT**

- 1. INTRODUCTION TO THE TEAM.** Explanation of the material and its function. Learning to put on and take off skis and poles. Various movements and movements on a flat surface, without skis.



Movements on a flat surface, without skis. Feeling your feet, weight changes, little jumps, and so on. Opening the wedge, closing, taking lateral steps on flat feet and with the edges of the boots, feeling the weight on the "edges of the feet".



Look ahead. basic stance.



2. MOVEMENTS

With 1 ski



With 2 skis

Start on a flat surface and work up a slight slope.

Slide the skis back and forth. Slide with both skis by pushing poles. Make yourself low, make yourself high, make yourself wide, make yourself narrow (discover the balance). Turn, separating the tails (around the tips). Lateral steps, supporting the edges of the feet on the side towards which you are going (edging). On the place, 'scrape' with the arcs of the feet to wedge. (Steering action, Edging by separation of legs) Crush the two arcs (Loading).

3. DIRECT DESCENT IN BS, weight distributed on both feet, descend in fall line. From Direct Descent, scrape with the arcs - crush the arcs. (Edging, Loading, Steering Action)

4. DIRECT WEDGE DESCENT From Direct Wedge Descent, 'loosen' the arc of a foot (absorption, change of weight-load). Repeat to the other side.



4. TRAVERSE WEDGE DESCENT



Note: Use a student's fall to teach everyone how to stand up. Teach how to stand up by taking off a ski or both, in case the student is alone and falls.

RECOMMENDATIONS

- Explain and demonstrate BS on a regular basis.
- Make changes of direction to sensitize the feet.
- Emphasise relaxed action.
- Check that the students feel as comfortable as possible when moving around in flat places to develop foot impulses by not relying on poles.
- Give the students as much space as possible. As there is no such space (flat spaces), it is necessary to adapt to the terrain and begin to move traverse and/or in a wedge, avoiding the direct descent part.
- Ensure, when possible, that there is a flat surface or counter-slope so that the skis can stop by themselves.
- Control the students who climb higher and higher, having difficulties with balance when descending.
- Control that the speed of descent is adequate to the level of the students (reduced) to avoid defensive attitudes for fear of it
- When the students feel confident, introduce the various exercises to give them a feeling of greater control of their skis.
- Develop gradual movements.
- Control general fatigue. Take breaks to get to know the students better and to explain the future progression of learning.
- Share the joy that the students feel during the first descents.
- Get them used to looking ahead (the trail, the future descent, the instructor, the other skiers, and so on.)
- Develop the first wedge movements on the flat surface, obtaining the first sensations coming from the feet (draw a foot on the snow to describe how and where to feel).
- Use the same terrain as for direct descent.
- Combine direct descent exercises with wedge descent exercises.
- Explain that 'stepping on the brakes' gradually from a small wedge to a medium wedge and to a large wedge controls the speed of the skis.
- Teach how to feel the weight on the downhill foot, on the wedge traverse.
- Teach how to brake uphill (uphill turn principle).

BEGINNERS 2

GENERAL SYLLABUS

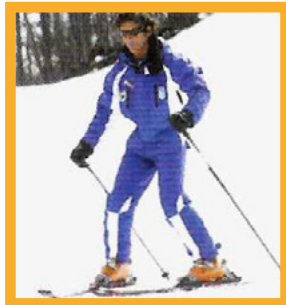
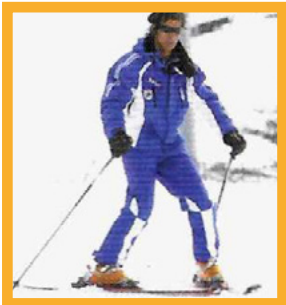
Objectives: To learn how to use the beginners' ski lifts. Be confident in using them in your free practice. Combine actions, regulate efforts. Achieve traverse movements, and wedge changes of direction. Anticipate visually and use the vehicle. Learn to compensate for (slight) speed variations.

Recommendations: Make sure that the students are in condition to go down the run by the ski lift to be used. Explain everything about going up and down the ski lifts. Show how the other skiers climb. Follow the instructions of the ski lift staff. If possible, ask for the speed of the ski lift to be reduced. In the case of chairlifts, the instructor must go first to assist the students on arrival. In the case of ski lifts or T-bars, go up last to help them get hooked and to be able to control, during the ascent, any students who may have fallen.

Terrain: Beginners' runs (slight slope). Use of variations in the terrain. Wide 'green' runs.

TEACHING PROGRESSION

- 1. EXERCISES FOR THE WEDGE TURN:** from the wedge DD, relax one foot of support, then the other, and so on. From wedge traverse, relax the downhill foot (round the arc...) 'sweep' out the tail of the outer ski. Combine sweeping the tail of the outer ski, with sweeping the tip of the inner one.
- 2. WEDGE TURN:** From Wedge Traverse Descent, prepare the ski pole. Release the downhill support, starting the steering action of the inner foot on the tip of the ski and of the outer foot on the tail of the ski (outwards). At the end, prepare the ski pole, and so on. Traverse wedge descent, roll uphill foot and 'scrape' with the tail of the corresponding ski. Open wedge, repeat, open wedge, continuing with wedge turn.



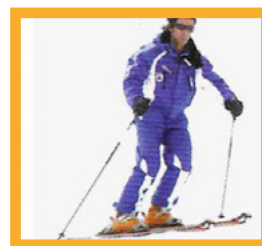
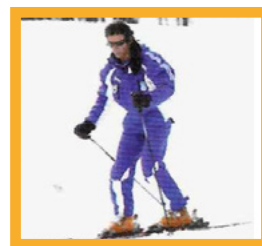
- 3. TRAVERSE DESCENT:** in both directions, parallel skis, on the uphill edges.



Join with wedge turns. Increasing speed gradually, start the roll and steering action of the inner foot before the end of the wedge turn. – Work on the traverse steering action of the uphill foot in diagonals, opening and closing the wedge, causing a smooth slide. –The instructor will have to demonstrate the wedge turns with the support of the pole so that it is unconsciously incorporated into the image of the gesture formed by the student, but the instructor must not demand it at this level. – Use feedback as often as possible. – Vary the class with easy and more difficult exercises to keep the students' motivation.

4. SKIDDING: as a movement, lateral or traverse, to lose height, decreasing the lateral effort of the feet, until you feel that the skis begin to slide on their edges laterally, the weight will be distributed on both skis. As a guideline, it is useful to recommend support on uphill ski.

As a steering action, emphasizing the SA of the inner ski, supported on the edge, produces a rounded skidding of both skis. Bear in mind that skidding occurs by slightly reducing the edge or increasing the steering action, never by flattening the skis.



INTERMEDIATE 3

GENERAL SYLLABUS

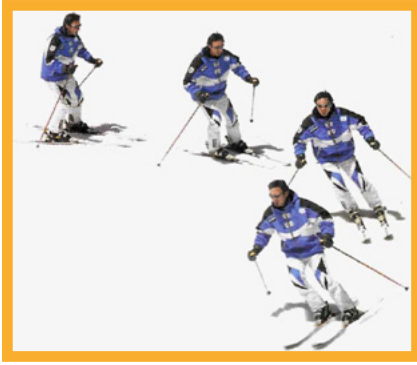
Objectives: Coordination and fine-tuning of actions: Edging, Alternating Change of Edges, Steering Action. To improve basic attitudes. Progressive development of the rhythm and speed of movement. First sensations of simultaneous change of edges (basic parallel).

Terrain: Snow, if possible, compact and hard. Blue tracks with or without bumps and slight changes of slope. Use of all possible variations of the terrain.

TEACHING PROGRESSION

1. Wedge christy: gradually increase speed, gradually anticipate the roll of the inner foot (Change of Edge), to activate the Steering Action of it. Gradually reduce the Traverse and Wedge Traverse to emphasize the rhythm. Start the roll and the Steering Action closer and closer to the start of the turn. Insist on the steering and edging work of the inner foot, to avoid losing weight on the outer foot.





The guidelines or 'triggers' to be used are intended to bring about changes in position smoothly. Change from DD to DD in a wedge, scraping with the arcs of the feet (Change of edge from uphill ski). Open a door handle with the downhill foot (Change of weight, by absorption, and Change of Edge). Scraping with the tail of the inner ski to 'brake' (Steering Action). Brake with the inner ski.

2. Notions of basic linking: Increasing the rhythm in WC (Wedge christy) starting the roll and the SA without opening the wedge. Triggers such as: change the bottom one, release the left/right one... Little finger ... and so on will keep the students focused on their feet. Working with rhythm and making good use of the run will allow a quick transition between the WC and the Basic links.

3. Basic Parallel: Parallel turns, with traverse transitions (not cyclic). The change of edges takes place before the start of the SA, by means of the inversion of the downhill foot. As a consequence of this inversion, the change of weight and load-taking of the new external ski is also produced. It will be used to move and work on the specific attitude, arms, preparation of the ski pole, taking care not to 'cross the entire slope', exposing oneself to being run over from above. The Attitudes must be worked on by means of analogies that allow the student to relate to a familiar image (skiing 'gorilla', 'carrying a bowl with water', 'carrying a stretcher', 'dragging the poles as sensors').

RECOMMENDATIONS

In the case of group classes, change the student who follows the instructor frequently, so that everyone can blend in and find the sensations. In the 'one by one', maintain an adequate dynamic and reduce waiting times. Remember that you learn to ski by skiing. All the time remember the Visual Anticipation, which from this stage is the most important thing, since you have all the technical elements and you can only coordinate them according to Time-Space.

INTERMEDIATE 4

GENERAL SYLLABUS

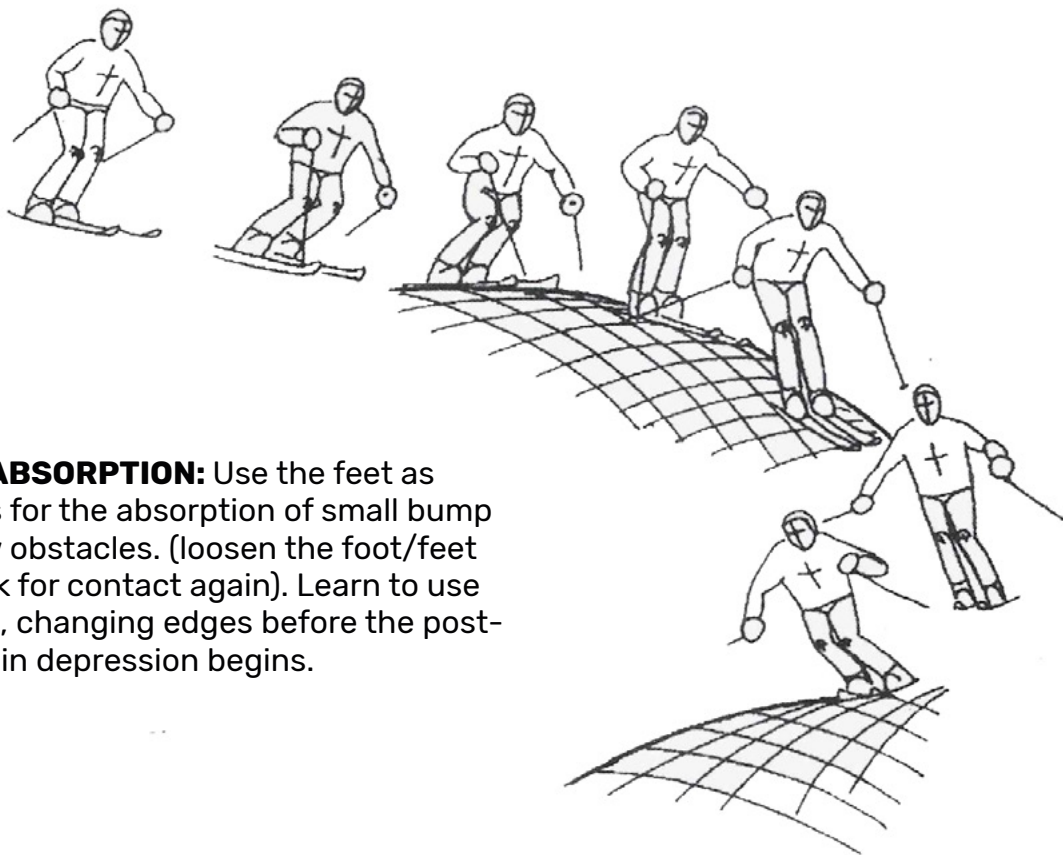
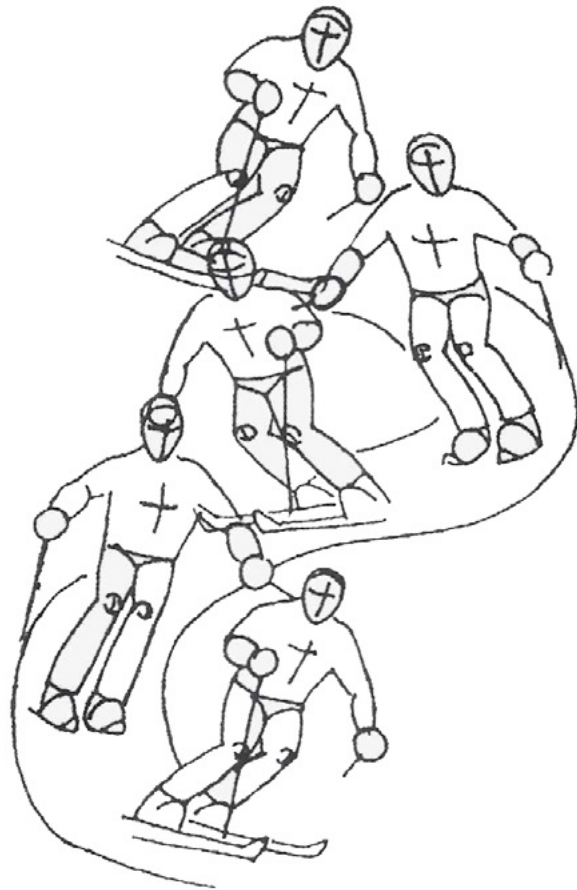
Objectives: Basic linking with changes in pace and economy of effort, adapting to variations in terrain and snow. To improve the coordination and amount of the necessary actions during the turns. Improve load control, combined with the edging caused by the inner foot. Adjust the support platform, controlling the stagger of the inner ski. Refine the Steering Action of the inner foot/ski, working specifically on the 'roll over'. Adapting to different types of snow. Understanding the operation of the supporting platform, managing the absorption of bumps with the feet.

Terrain: Medium to steep slope (blue and red runs).



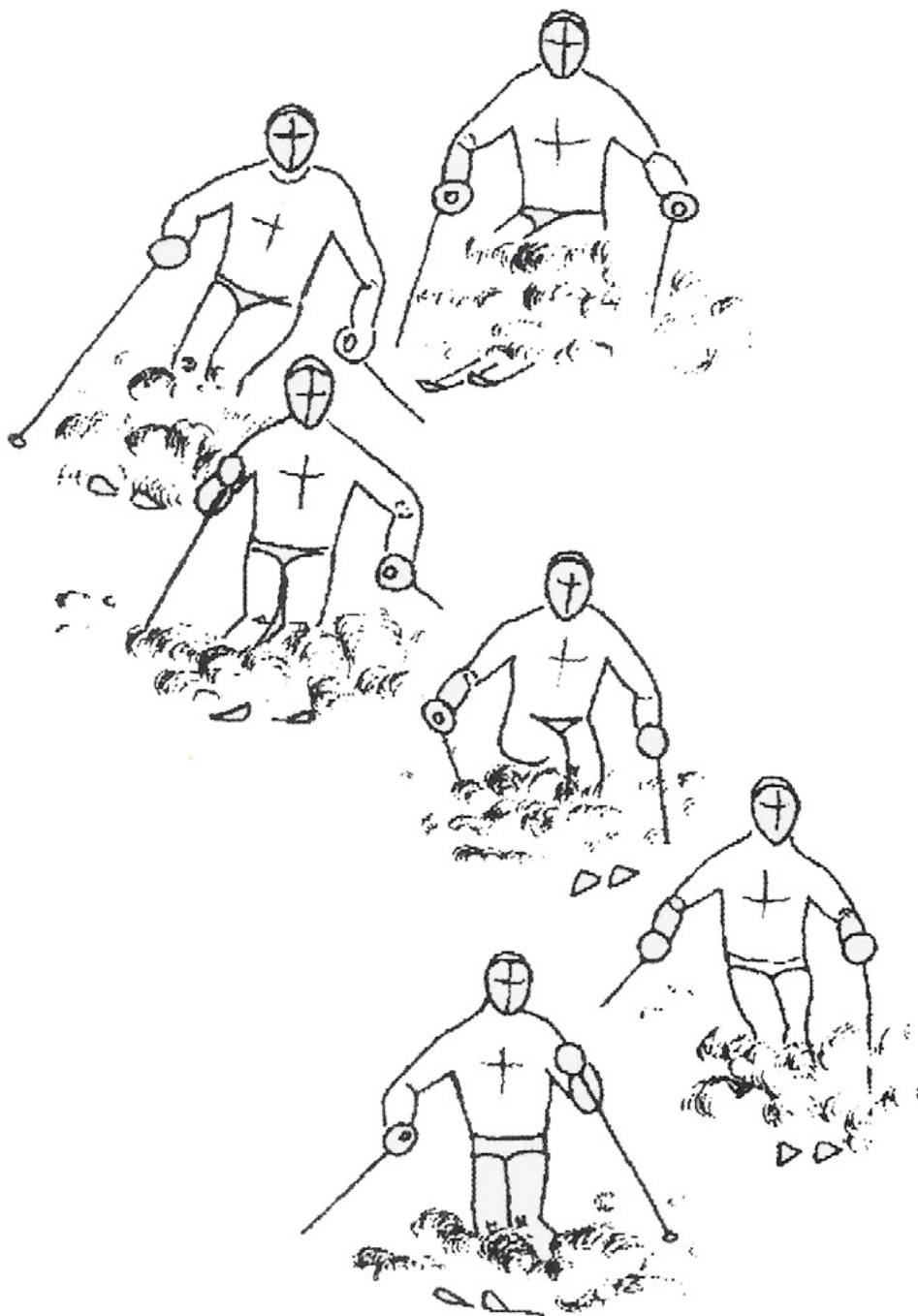
TEACHING PROGRESSION

- 1. BASIC LINKING:** Refine the preparation during the previous turn. Release and roll the downhill foot. Gradually, vary rhythms and speed, looking for ease and spontaneity. Maintain the emphasis on Visual Anticipation and the Steering action of the inner foot/ski. Gradually, work on the Load Control by tensioning the outer foot (keep the sponge flat under the outer arc and release the inner arc). squeeze the sponge, and so on.



- 2. BUMP ABSORPTION:** Use the feet as triggers for the absorption of small bump or snow obstacles. (loosen the foot/feet and look for contact again). Learn to use the skis, changing edges before the post-mountain depression begins.

- 3. UNPREPARED SNOW:** Use the feet to move the platform in relation to the body, instead of the body in relation to the platform, during acceleration and deceleration caused by the snow, which affects the anterior-posterior balance.



Always, no matter what type of snow or terrain, the edges are changed before the Steering Action is initiated. This also applies to deep snow. The Steering Action will always be initiated with the tail of the inner ski...

ADVANCED 5

GENERAL SYLLABUS

Objectives: Refine the coordination of the Loading and Edging actions in order to achieve high speed turns - Super parallel.

Refine the coordination of the Loading, Edging and Steering actions in short linked turns - Short Parallel.

Adapt to all types of snow and slope conditions.

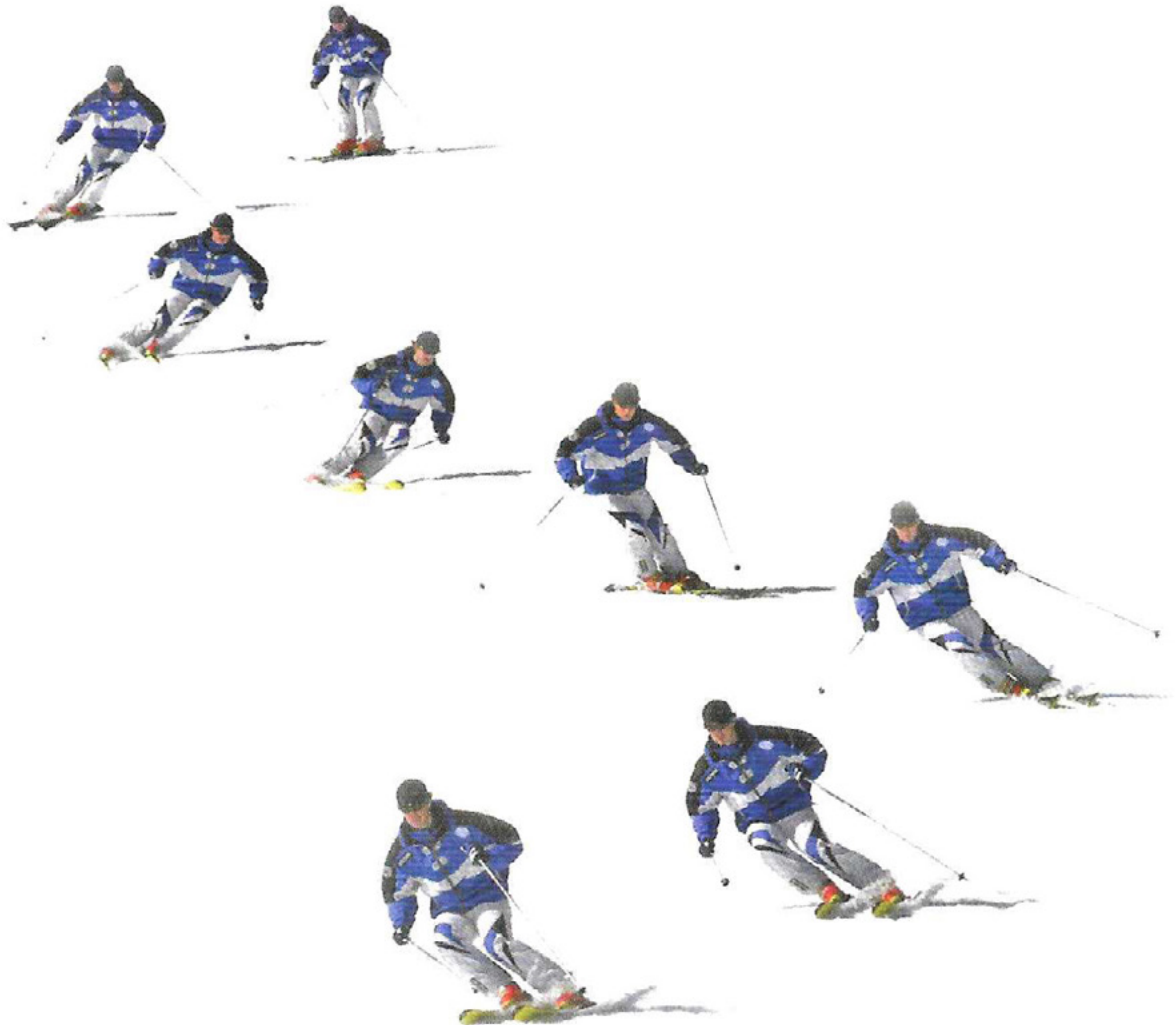
Apply to bumps, deep snow and off-piste.

Experiment with 'extreme slopes'.

Terrain: Red and black runs. Pronounced bumps and depressions. Variations in snow type that do not affect students' safety.

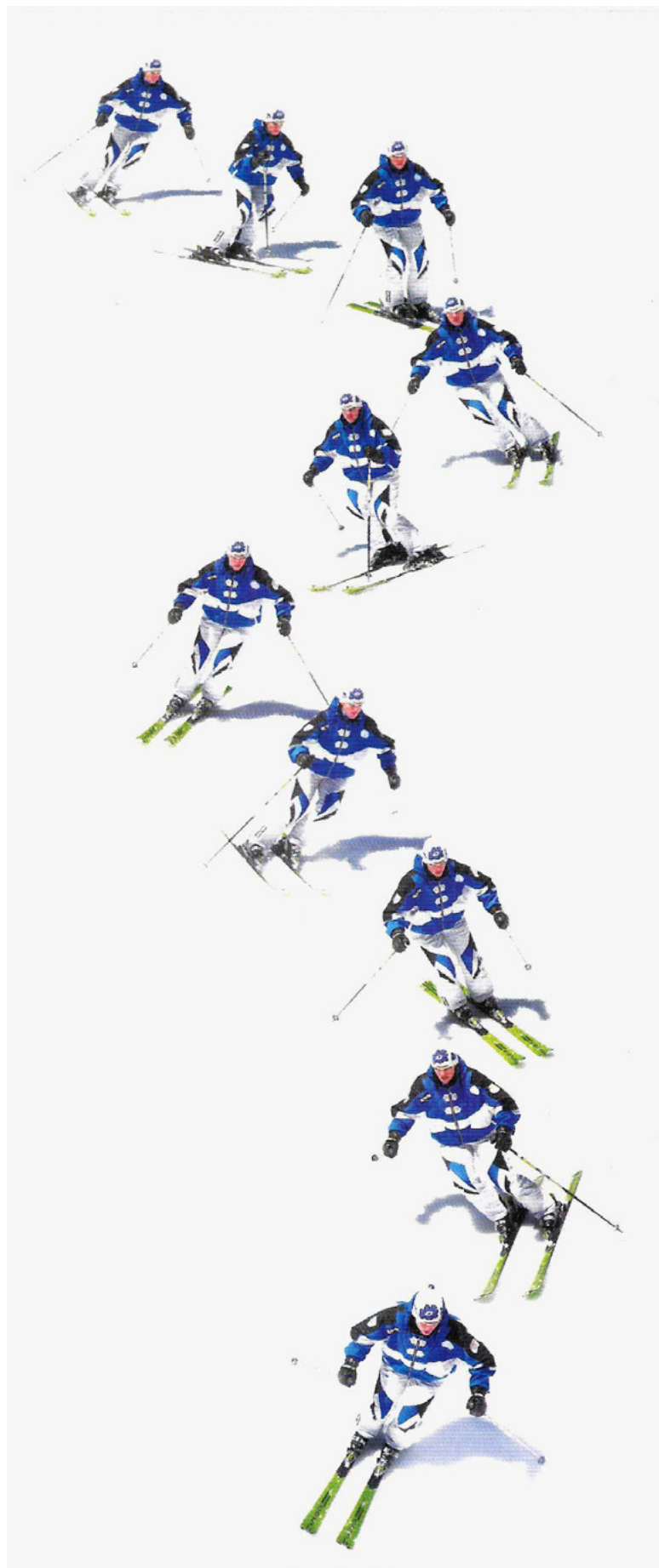
TEACHING PROGRESSION

- 1. SUPER PARALLEL:** Cut turns. From long and fast turns linking, increase the tension of the outer foot to transmit more load. Adapt the edging angle. Emphasize Visual Anticipation. The change of edges will occur when releasing downhill support and rotating the foot (start the change trying to put the little toe under the foot). Work on rhythm to achieve homogeneous arcs.



2. SHORT PARALLEL: Linkings of turns of short arcs, the most carved that the ski to be used allows . Extremely dynamic, they require precise coordination of actions and proper interpretation of speed variations (accelerations and decelerations) that occur in reduced time and space, subjecting the body to significant inertial forces.

A correct amount of the Steering Action of the inner foot and the exact distribution of the load along the skis, by means of the marked edging at the beginning of the turn, is achieved with a lot of practice of this gesture in all types of snow and slopes.



3. BUMPS: Interpret the most appropriate gesture, according to the type of bumps that are crossed. Usually they are skied in short parallel, absorbing the excesses of load on ascent and trying to load in the depression. The proper way to ski them is to look for the change of edges during the 'ascent', to take advantage of the ski cut. Control speed and increase steering action with the Inner ski/foot. Always change the edge before starting SA.



- 4. DEEP SNOW:** Adapt the actions to the resistance of the snow. A correct distribution of weight on both skis is of fundamental importance.



Turns should be initiated with Edge Change, followed by Steering Action of the inner ski/foot (sweep the tail of the...). It is important to try and 'dip' the tips in the snow after the edge change, to allow the carving of the skis, since at the end of the turn, they tend to rise and leave us behind. It is very similar to skiing on bumps, so you can use the same guideline to look for the Change of Edges before reaching the summit of the ascent at the end of the turn.

EXPERTS 6

GENERAL SYLLABUS

Objectives: To perfect the fine coordination of actions.

To refine the efforts according to the adequate management of the external forces that are generated with the displacements in all conditions and all terrains.

To control the platform to facilitate the dynamic balance.

To understand and anticipate the relationship ski-snow-slope, to optimize the efforts.

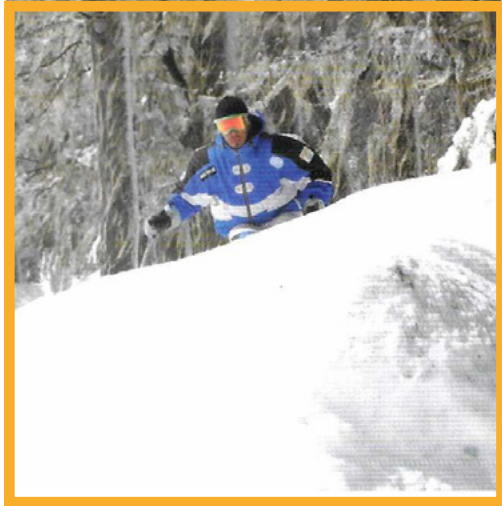
Terrain: All types of terrain and snow.

TEACHING PROGRESSION

- 1. PERFECTION OF SUPER PARALLEL AND SHORT PARALLEL:** Varying rhythms, arcs, slopes and speed to refine force and effort management and improve fine coordination between Actions. Practise sequences of varied turns, Slalom and Giant Slalom types. 'Play' with the Load, Weight and Pressure. Have fun, if you are at this level, you already ski quite well!
- 2. STRONG SLOPES:** Practise speed control through Short Parallel with marked Steering Action of the Inner Ski. Maintain the chosen pace. Avoid 'braking' with the tip (downhill) to eliminate 'stems' from below and bounces or its sinking.
- 3. TERRAIN AND OBSTACLE JUMPING:** Work on impulse coordination, starting from the feet (push against the snow). Absorb the 'landing' by bending your legs.



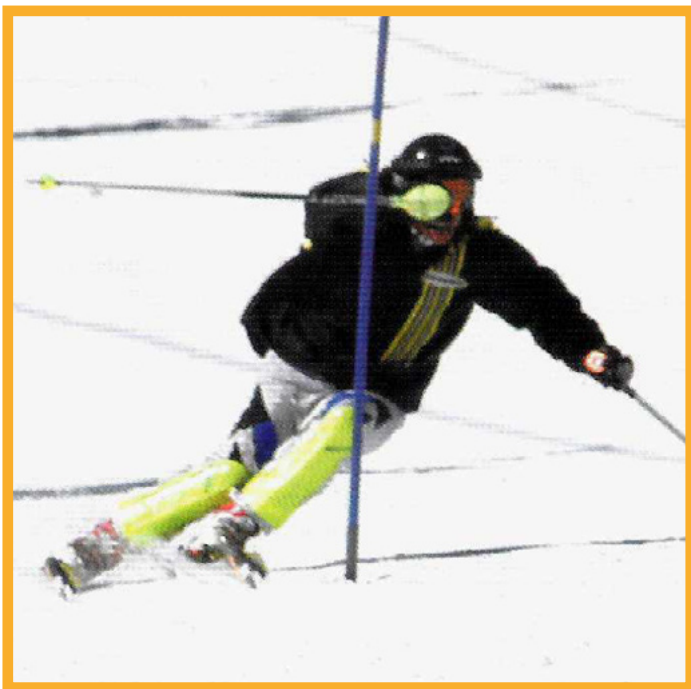
Front fantasy jumps,(Grab, Spread Eagle, Twist)



Practise simple jumps in the Park.

Jump on a bump and land on the descent of the next bump. 'Pre-jump': rapid contraction of the foot, leg and trunk flexors, to take off the skis from the snow. It is used to 'avoid' the peak of a slope change and to decrease the flying phase.

4. GIANT SLALOM: In simple and rhythmic traces, improve Visual Anticipation. (where to look and when). Begin in terrains with little slope and gradually increase it. It is important to wear a helmet and arm protection (corpetto) to avoid fear of contact with the poles. Interpret tracks and not only linkings. Optimize the driving. Improve the timing.



5. SLALOM: Combination of short arc and variable arrow turns, depending on the slopes, in a forced trace, marked with simple pole gates or only the 'inside' pole, which must be covered in the shortest time possible. The use of helmet and hand and leg protection is essential. Make short turns adapting to the rhythm imposed by the trace. Development of the ability to vary the rhythms of actions and movements to achieve the maximum possible forward speed, respecting the trace. Visual anticipation and recognition of the ideal line. How to knock down the poles.

Terrain: Gentle, medium and strong slopes, with compact and hard snow.

RECOMMENDATIONS

Start with easy traces, with a homogeneous rhythm, for setting.

Use head protection. (slalom helmet), hand protection and 'shin pads'.

Increase the difficulty gradually.

Work the different adaptations separately: type of turn, changes of rhythm, line, knocking down poles, position of arms, pole planting, and so on, using all the learning support elements available.

These, as well as other variants (Free-Style Half-pipe, Big Air Ski Cross), are sport disciplines of alpine skiing and require specific training

Even though they are recreationally derived first and regulated afterwards, from the generic activity, and are, as playing, gradually introduced into the practice of daily skiing, their improvement is the TRAINERS' task..



The development of the capacity to adapt to all situations that may arise requires, first, a mastery of the efforts and actions necessary to effectively drive the vehicle, and then an intense situation training that allows to automate the responses to visual and sensory stimuli, shortening the neuro-muscular response times. It is the task of the future Trainers to achieve, on the foundations of the Argentine Technique, and apply innovative training systems, to educate athletes with BIG DREAMS and not BIG FANTASIES.



LEARNING, ALWAYS.



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